On Dennett’s: ‘Consciousness Explained’

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Abstract  
In this paper, we apply mathematics to some of the ideas presented in DC Dennett’s book: “On Consciousness. We see that such an approach can explain how the human mind and consciousness evolved. We use electrical engineer to devise a circuit of the mind.  

Keywords: Consciousness; Astrotheology Math; Evolution; Mind.

Introduction  
DC Dennett has written a book wherein he describes the functioning of the human mind. His description is in words. In this paper, I put numbers and functions and math to how I think the mind works. We will see how the sense evolved to meet the universal signal. A knowledge of AT Math is helpful from my previous papers on Astrotheology. We being with the familiar Clairnaut equation.  

Clairnaut Differential Equation  
\[
d^{2}E/dt^{2} - G = 0  
\]

\[
\int \int d^{2}E/dt^{2} = \int \int G  
\]

\[
E = G^{3/3}  
\]

\[
E = (6.67)^{3/3} = 0.9891 = \sqrt{\pi} = \text{Power}  
\]

@E=0 Minimum  
\[
0 = G^{3} = (1 - \ln \pi)^{3}  
\]

\[
= (0.1447)^{3}  
\]

\[
= 0.00000133 = -0  
\]

Now, \(2^{3/2}xG=0.6994\)\(\approx 7\)  

\[
1/7 = \text{Economic Multiplier}  
\]

\[
1/6.997 = 14.29\%  
\]

\[
= 1/7  
\]

\[
e^{129} = 1.1536 = 1/0.866 = 1/\sin 60^{\circ}  
\]

Figure 1. Plot of \(E^{3/3}\) Noe minimum is at \(t=0\) where \(-1 < t < 1\)  

Univ. Signal = \(1/\sqrt{3}\)  

\[
s = 4/3 = |E| \cdot \text{sin 0}  
\]

\[
1/\pi = \text{freq of the human mind}  
\]
\[ \frac{4}{3} = E(\pi) \sin 0 \]
\[ \frac{4}{3} (\frac{1}{\pi}) = \sin 0 \]
\[ 0.4244 = \sin 0 \]
\[ 0 = 25.1 = \text{Period T} \]
\[ = 0.4383 \text{ rads} \]

Continuing:

\[ \frac{1}{\pi} = s \cdot t \]
\[ \frac{1}{\pi} = Et^2 \sin 0 \]
\[ Et^2 \sin 0 \cdot t = 1 = \frac{1}{\sqrt{3}} \]
\[ Et^2 \sin 0 - \frac{1}{t} = 1 = \frac{1}{\sqrt{3}} \]
\[ (1)(\pi)^2 \sin 0 - 1 = \frac{1}{\sqrt{3}} \]
\[ \pi^2 \sin 0 = 15773 \]
\[ \sin 0 = 1593 \]
\[ 0 = 9.17^\circ = 0.16 \text{ rads} \]
\[ 90^\circ - 9.17 = 0.80829 = \frac{1}{0.1234567} \]

**Figure 2. The Mind as a binominal tree**

\[ v = \frac{d}{t} \]
\[ 3 = \frac{(2^{21})}{t} \]
\[ t = 6.990 \approx 7 \]
\[ \frac{1}{t} = E = 1/7 = 0.1430 \]
\[ (0.1430)^2 = 1.226 \]
\[ \frac{1.266}{2.04} \approx 2 = L = \text{Reaction Time} \]
\[ t^2 - t - 1 = 1 \]
\[ t^2 - t - 2 = 0 \]
\[ t = 2; -1 \]

Prime Numbers by Gauss

\[ \lim_{x \to \infty} \frac{\pi(x)}{\frac{x}{\ln x}} = 1 \]
\[ 12/\left[\frac{31}{31}\right] \approx 3.49 \approx 3.5 \]
\[ SE = SE' \]
\[ t^2 - t - 1 = 12/t = 1/0.2 = 5 \]
\[ SE = SE' \]
\[ t^2 - t - 1 = E = 12/t = 1/0.2 = 5 \]
\[ t^2 - t - 6 \]
\[ t = 3; -2 \]

\[ \Delta E = 1/\Delta t \]
\[ \Delta E \cdot \Delta t = 1 \]
\[ 5 \cdot \Delta t = 1 \]
\[ 5(0.2) = 1 \]

True!

Moment of Creation

\[ \text{Mom.} = F \times d \]
\[ t = f \times d \]
\[ 1 = F \times d (1/t) \]
\[ 1 = (2.666)d(5) \]
\[ d = 0.75 = 3/4 = 1/s \]
\[ st = 1 \]
\[ s = 1/t = E \]
\[ E = s = E \sin \theta \]
\[ 1 = 1 \sin \theta \]
\[ \theta = \pi/2 \]
\[ s = E \sin \theta \]
\[ 4/(15) = t \sin \theta \]
0.2666/2.666=1/10

Let \(\sin 0 = \cos 0\)

\[
\sin^2 0 + \cos^2 0 = 1
\]

\[
\sin = \frac{1}{\sqrt{2}}
\]

\[
\pi = \frac{\pi}{2}
\]

Consciousness = \[\int \frac{1}{t} - t = E\]

\[
2t^3/3 - t^2/2 - t = E
\]

\[
t^2 - 3t - 4t = 1/\sqrt{3}
\]

\[
t^2 - 0.75t - 1.577 = 0
\]

\[
t = 0.852; 1.852
\]

\[
E = 1/t = 54; 1.174
\]

\[
PE = Mc^2
\]

54 = M(8.9) = 6.00

\[
PE = Mc^2
\]

1.174 = M (8.9)

M = 0.1307

A = 1/2bh

A = 2 \times 1/2 bh

A = bh

\[
2t^1 \times 2t^1 = 2
\]

\[
= 2.14175
\]

\[
2.14175/3 = 23.830
\]

\[
Ln 23.03 - 3.1367
\]

\[
y = y'
\]

\[
Ln t = 1/t
\]

\[
1/t = 1/3.1367 = 1/\pi = \text{freq}
\]

For the four triangles:

\[
2x/1/\pi = 2/0.6366 = t_0 \quad \text{Moment of Creation}
\]

\[
t^2 - t - 1 = 0
\]

\[
|D| = 4 \quad E = 11 \Rightarrow 11 \text{ dimensions}
\]

Eigenvalue = 3 \quad E = 5 \Rightarrow SE = SE'

Eigen Vector = \(\sqrt{3}\) \quad E = 2.67 \Rightarrow S.F.

P = PR

\[
= (4/3)^2(2.67)
\]

= 4.78

= 1/231

= Fdt

\[
1/21 = 2.67(2^{1/2})(t
\]

\[
t = 85
\]

\[
E = 1/t = 0.85
\]

= 117.6

\(\pi\) Senses

\[
F = Ma
\]

\[
2.67 = M(1/\sqrt{2}) = 3.77 = 1/265
\]

\[
V = iR
\]

\[
= (4/3)(-2) = -8/3
\]

\[
F = -ks
\]

\[
= -83 = 0.4233 s
\]

\[
s = 6.3 = 1/0.1587
\]

\[
= 1/[1 - \sin 1]
\]

\[
= 1 - \csc 60°
\]

\[
= 1/\text{Moment}
\]

\[
= 1/t = E
\]

\(\pi\) Senses = 2.67 = SF

The Concept of Multiple Drafts of Consciousness

Consciousness = sin^2 0 + cos^2 0 = 1 \Rightarrow t = [1/ (1 - Ln t)]

\[
t = 1/(1 - Ln t)^7
\]

\[
t = 1/(1 - Ln t)^7
\]

(1 - Ln t)^{7/7} = 1^{1/7}

1 - Ln t = 1

Ln t = 0

\[
t = 1
\]

\[
\sum \text{Senses} = 1/\pi + \pi + \sqrt{0.666} + 4 + \sqrt{3} = 1.0008
\]

\[
E = t^2 - t - 1 = (1)^2 - 1 - 1 = -1
\]
\[ E = (1 - \ln t)^7 - 1 \quad @t=1 \]

Freq=1/T=1/(1/t)=t=1

E=(1-Ln t)

Temporal Window

\[ 1 \leq t \leq \pi \]

E=(1-Ln t)

\[ = (1-Ln \pi) = -0.1447 \]

\[ t = 1/E = -6.909 \]

Period T=251.6 1/T=397

\[ \Delta t = 691 - 397 \text{ msec} \]

=294 ~300 Speech Act.

E=(1-Ln t)^7

\[ = (1-Ln (294))^7 = 502.6 \text{~500 msec which is equal to the reaction time for a touch.} \]

The Mind is a magnetic field with L=2 Henries

\[ \text{Ln} 2 = 0.693-7 \]

(1-Ln (294))0.693

\[ 20 \text{ msec} \]

\[ 200 \text{ msec} \]

\[ \text{Sum Sensms}=1.0008 \]

Hearing =\( \pi \)

Sight = \( 1/\pi \)

Taste = \( \sqrt{G} \)

Touch = \( 4 \)

Smell = \( \sqrt{3} \)

Thought: Picture Sound Motor

318 100 358

T=terminal

\[ 380 \text{ Hz} \text{ =Light} \]

20+200+100=320~318=1/\pi \quad \text{Speech}
20+200+358=570=1/√3  Smell/Memory/Motor
E=1-Ln(0.538)=1.619+1.6183 Golden Mean
\( t=E=0.617 \sim 0.618 = (-1)^{i=j} \)
0.020+1+0.200+0.358=157.8=π/2=90° Real-Imaginary

\[ V=\sin 60 \ deg+j(\pi/2) \]
=0.866+j970
=183/6
1/V=1/183.6=0.5444
0.5444/√3=0.31466~π=1/E=t

\[ E=1-Ln(0.538)=1.619+1.6183 \]

**The Senses**

\[ R=πi+4+\sqrt{0.666+\sqrt{3+1/π}} \]

**Figure 4. Senses Circuit**

**Note:**

Amps across inductor =1117=1/c²
P=i²R
1.776=(4/3) x R
R=1
Σ Senses
Reaction Times:
1Amp=1 Coulomb/sec
t=1.602/A

Hearing 1.602/171=93.7+220=314=π

Touch 1.602/218=734+220=954

Taste 1.602/666=240+220=460

Smell 1.602/943=170+220=390

Sight 1.602/1115=144+220=364

Range of reaction times:
314≤t≤954
Now for the evolution of human consciousness:

**Human Functions** = 5 Senses

- R = 1
- P = iR
- $177 = (4/3)^2(1)$
- $P = VA$
- $177 = V(A)$
- $177 = V(S/3)$
- $V = 4/3$
- $V = iR$
- $4/3 = (4/3)(1)$

**Universal Circuit:**

- $V = iR$
- $(4/3)(0.4233) = 3.14$
- $V = iR$
- $=(4/3)(1/\pi) = 0.4233$
- $V = iR$
- $=(4/3)(2) = 8/3$
- $V = 3.14 + 0.4244 - 8/3 = 89.84 \approx 2.997^2 = c^2$

**Multiple Drafts of Consciousness**

$E = (1 - Ln t)^2 = 1 = \sin^2 \theta + \cos^2 \theta$

$t = 1$

Let $\sin \theta = \cos \theta$

$\theta = 45^\circ$

$E = (1 - Ln 1)^2 = 1 = \sin^2 \theta + \cos^2 \theta = 1$

$2 \sin^2 \theta = 1$

$\sin \theta = 1/\sqrt{2}$

$\theta = 45^\circ$

$E = (1 - Ln \pi)^2$

$\text{Let } t = \pi$

$E = (1 - Ln \pi)^2 = 0.000001330$

$1330 = \text{Internal Clock.}$

Now from the Circuit of the senses:

$5644 - 5444 = 0.2$ 0.2 = 0.0200 msec = 0.2

**Now:**

$1/0.2 = 5 = E$
SE=SE’
\[ t^2-t-1=2t-1 \]
Let \( t=3 \)
\( 5=5=E \)
Consider the input to the Mind as \( 1/c^2 \)
\( E=Mc^2 \)
\( 1=Mc^2 \)
\( M=1/c^2 \)
\[ 1/c^2=Mass=1/0.8982=0.1113 \]
\[ 1/E=Ln t \]
\[ E1/E=946 \]
\( E=1057=(-70 \text{ mV})+(35 \text{ mV})=\text{PE of a nerve cell.} \)
\[ 1/V=M \]
\( 1/E=Ln t \)
\( M=1/c^2=Ln t \)
\( 0=Ln t \)
\( t=1 \)
Now for the reaction time of the senses:
Motor 338msec
Sight 318
Hearing 100
Taste=460
Touch 954
\[ \Sigma 2190/5=438 =\text{Average.} \]
\[ 20+200+438=658 \]
Range
\[ t_{min}=1-(Ln 0.318)^2=589 \]
\[ t_{max}=1-(Ln 0.954)^2=936 \]
\[ \Delta t=588 \]
\[ E_{min}=1/589=16977 \]
\[ E_{max}=1/936 =1.0683 \]
\[ \Delta E=17/2=0.8493 \]
\[ PE=Mc^2 \]
\[ 17/2=Mc^2 \]
\[ M=946 \]
\[ E=(1-Ln t)^7 \]
\[ t=257.6 \]
Equations of consciousness:
\[ \sin^2 \theta +\cos^2 \theta=1=t=(1-Ln t)^7 \]
\[ 1-1^7=0=(-Ln t)^7 \]
\[ 0.857^{1/7}=(-Ln t)^{1/7} \]
\[ 33.99=(-Ln t)^1 \]
\( Ln t=-1/33.99 \)
\[ =294.2 \]
\[ E=251.6=\text{Period T} \]
\[ =1/freq \]
\[ freq=1/397=1/4=\text{Touch } \Rightarrow \text{Pleasure and Pain} \]
\[ E=(1-Ln t)^7 \]
\[ E=251.6=\text{Period T} \]
\[ =1/freq \]
\[ freq=1/397=1/4=\text{Touch } \Rightarrow \text{Pleasure and Pain} \]
\[ E=(1-Ln t)^7 \]
\[ 1\leq t\leq \pi \]
\[ t=397 \]
\[ E=(1-Ln t)^7 \]
\[ \Delta t=691-397=294=\text{Speech Act} 100+200=300 \text{ msec} \]
The Mind as a magnetic field:
\[ L=2 \]
\[ Ln 2=0.693-7 \]
\[ (1-Ln 0.294)^{0.693} \]
\[ =\sqrt{3} \]
\[ =\text{Smell} \]
So we have evolution working on the four F’s (Flight Feed, Fight; ; Mate)
Sight =65%
Taste=17%
Smell=12%
Hearing (Language)=6.5%
Touch =5%

d\[65% + 17% + 12% + 6.5% + 5\% = 105\% = (70 + 35)\text{mV} \]

d\[\text{Touch} = 4\% = |D| \]

Smell =\(\sqrt{3}\)=
Eigen vector

\[\Sigma \text{Senses}=1=\text{Consciousness} \]

\[\Delta V=70+35=105\text{mV} \]

\[V=iR \]

\[105.0=(4/3)\cdot R \]

\[R=2625=1/380\ \text{Hz Light } = 1/\text{Sight} = 1/t \]

\[t=\pi \text{ Hearing freq}=1/\pi \]

\[Taste=\sqrt{0.666}=\sqrt{G} \]

\[G=1/150 = \text{Language group.} \]

\[\theta=60^\circ = \pi/3 \]

\[1/c=3 = 1/\text{Eigen value} \]

\[t^2-t-1=3^2-3\cdot 1=5 \Rightarrow \text{SE}=\text{SE}' \]

\[=3^2-3\cdot 1=5 \Rightarrow \text{SE}=\text{SE}' \]

- Sight=64% Mate (Sex) (5.1%) ; Feed (16.7%); Flight or Flee (friend or foe)(42.2%)
- Hearing (Language) =65% Feed (16.7%); Mate (5.1%); Fight; Flee (42.2%)
- Taste= 16.7% Feed.
- Smell =12% Taste (Feed)
- Touch =5.1% Mate (Pleasure or pain)

So, we have sight, hearing, touch, smell, and taste-evolved.

Humans had ape sized brains for 3.5 mya

\[t/E=286 \]

\[E=(1\cdot\text{Ln } t) \]

\[286=(1\cdot\text{Ln } t) \]

\[286/2=1\cdot\text{Ln } t \]

\[0.1443=1\cdot\text{Ln } t \]

\[t=2.3065 \]

\[\text{Ln 23.065} = 3.138-\pi \Rightarrow \text{Sight} \]

The Human brain increased in size by 4 x’s at 2.5 mya

\[M=4 \]

\[K.E.=1/2Mv^2 \]

\[=1/2(4)(1/\sqrt{2})^2 \]

\[=1=|t=E \]

\[=\sin^2 0-\cos^2 0=1 \text{ Consciousness} \]

\[t/M=1/4=2.5 \text{ mya} \]

\[KE/M=1/4 \Rightarrow \text{Touch } \Rightarrow \text{Pleasure vs pain.} \]

\[t=6 \text{ mya} \]

\[E=1/6=1.67 \Rightarrow \text{ Taste } \Rightarrow \text{Feed.} \]

\[\text{Language (Hearing) } = 150,000 \text{ ya} \]

\[\sqrt{1/G} \]

\[=1/150,000=1/t=E \]

\[E=6.66 =G \]

\[t=10,000 \text{ ya } \Rightarrow \text{ Cooking} \]

\[E=1/10,000=0.0001 \]

\[12\% \Rightarrow \text{ smell } \Rightarrow \sqrt{3} \]

\[E=1/\sqrt{3} \times 1/12\%=20.78 \]

\[E=1/t=1/481 \]

\[E=(1-Ln 0.481)^2 \]

\[=146-150=1/G \]

Cooking 150,000 ya

So, the equations for Consciousness are Cusack’s Consciousness Equations:

1. \[E=1/t=1 \text{ freq}=1/\pi \text{ Sight} \]
2. \[\sin^2 0+\cos^2 0=1 \]
3. \[\theta=\pi/4 \text{ Hearing/Touch} \]
4. \[t=K.E.=1/2Mv^2=1 \]
5. \[t=E=(1/t \cdot 1/x)=(1+Ln t)^2=1/G \text{ Taste} \]
6. \[\Sigma\text{ Senses}=1=0.8275+0.1t \text{ Smell} \]
7. \[\text{Lim } x\to\infty \pi(x)/[x/Ln x]=1 \text{ Consciousness} \]
8. \[\Pi\text{ Senses}=1=(1-Ln t)^2/(1-\pi(x) Ln t) \]
9. \[\Pi\text{ Senses}/\Sigma\text{ Senses}=MG \]

There are 9 simultaneous equations and 9 unknowns.

Dennett writes on evolution. He cites the third principle of evolution: Differential fitness**: the number of copies of an element [HUMANS] that are created In a given time varies \[T=0.418\] , depending on interactions between the features of that element [CONSCIOUSNESS] (whatever it is that makes it different from other elements) and features of the environment [THE UNIVERSE] in which it persist. [MY ADDITIONS]

The equation of consciousness in part is:

\[E=(1-Ln t) \]

\[1/t=(1-Ln t) \]

\[t^2=(1-Ln t) \]

The derivative of the golden mean parabola at the minimum. Everything beautiful is the product of the Golden Mean Parabola, from architecture to cooking aroma.

\[\sqrt{3}^2-\sqrt{3}^2=2.67=\text{SF.}=\Pi\text{ Senses.} \]

Now, for the multiple drafts concept of Dennett:
E^2=(1-Ln t)^7
(1/t)^7=(1-Ln t)^7
(1+1/2)^7=(0-7/t)^6
7/6(-t^2/2)^6=(0-7/t)^6
7/6(1/2)^6=1^6
M(2t)^6=1^6
2Mt-1=0
t=1.618; t cannot be negative. So, t=1.618
2(7/6)-1=0
E=(1-Ln 1.618)^7
E^2=[(1-Ln 0.418)]^7
~√3
This is the inverse of the Universal Signal =1/√3.

Figure 6. Circuit showing plasticity of the brain with the rightmost capacitor.

Note: The current 1/c^2 is the signal going into the ACT* Model above crossing the Inductor (Mind L=2) \( y=y' =2 \)
\( \Sigma \) Plasticity +\( \Sigma \) Senses=1 + 1=2=L=Mind =y \( \Rightarrow y=y' \)
\( 1/c^2=E/c^2=M \ E=Mc^2 \)
\( 1/c^2=1/9=0.11111111. \) These are the nine equations with nine unknowns all equal to one.

**Conclusion**

We have seen that mathematics applied to Dennett’s theory is helpful. The numbers all work to end in the evolution of the sense and consciousness.

**References**