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Illusions, and the world as I see it

If we were only what we seem to be to our normal consciousness, there would be no mystery; if the world were only what it can be made out to be by the perceptions of the senses and the strict analysis of the reason, there would be no riddle. Or at best there would be a shallow mystery, an easily solved riddle. But there is more, and that more is the hidden head of the Infinite and the secret heart of the Eternal, what western metaphysics chooses to call the Absolute. In the language of Hindu philosophy, the Brahman alone **is**, and because of It all **are**, for all are Brahman. Call Brahman any way you wish, He won't mind.

Do you think this to be metaphysical nonsense? Can spirituality even be asked to give physical proof of its truths? I do not think so. All I know is that there is much to be known, call it the "Quest for a Theory of Everything" or "The Search for Spiritual Truth". I believe they are the one and same.

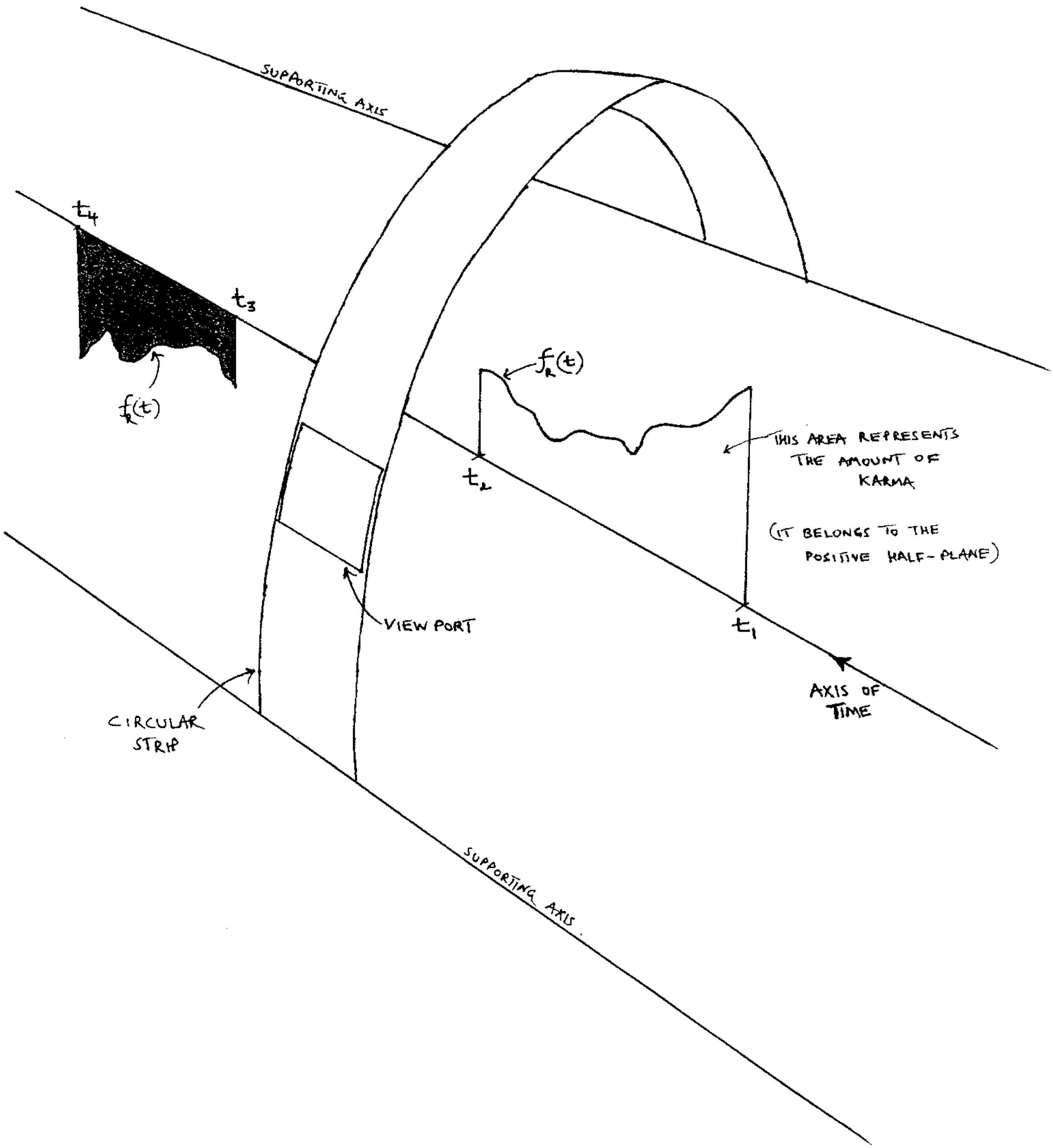
Each of us, at some point of time, has felt the need for an intelligent description of the world around us. It is natural to think that a universal law of nature must exist, and we, as individuals, ought to search for it. Still, I realize that such a quest is steered by the faculty of reason, and the ultimate Truth lies in the realm where reason cannot reach. To perceive the immaterial spirit from a materialistic or rationalistic viewpoint is then bound to be proved futile. This is the limitation of the human intellect.

Its genius is an expression of pregnant finalities, an expression of an illusory perfection. It cannot arrive at the Truth because It can neither get to the truth of things, nor embrace the totality of their secrets; it deals with the finite and has no measure of the infinite. I think that the illusion, is in believing in the intellect alone, and regarding it as the supreme instrument that is all-perceiving.

Despite my conviction of the above, I am trying to reason out my little understanding of life in mathematical terms. I use this Math to sketch an (hopefully!) intelligible picture of Karmic philosophy, and a few elementary ideas that follow from it.

The doctrine of reincarnation and Karma speaks of an entity that has a past whose actions shaped its present birth and existence, and has a present whose actions is shaping its future. Karma is the fruit of our action, and determines the whole nature and eventuality of these repeated existences. Karma has a cumulative property in that all results of actions performed in this life and any residual Karma from the previous existences will have to be together accounted for in the next life. Unless, in any particular existence, the entity takes steps to nullify all residual Karma, it will remain bonded to the cycle of rebirth. This can be illustrated using some mathematical model. Using this model as a basis, I argue that our perceptions of people must be distortions of the Truth. They can only be 'reasonable' approximations of his reality, for the Individual is Brahman, and it is for the entity alone to realize the soul within. In other words, what we call an appraisal of another person is vastly different from reality, for that Being is God.

FIG. 1


SUPPORTING AXIS
t_4
t_3
$f_R(t)$
$f_R(t)$
t_2
THIS AREA REPRESENTS THE AMOUNT OF KARMA
(IT BELONGS TO THE POSITIVE HALF-PLANE)
VIEW PORT
t_1
AXIS OF TIME
CIRCULAR STRIP
SUPPORTING AXIS.

(*Please refer to Fig.1*)

Think of three parallel, coplanar and equidistant straight lines. The one in the middle is taken to be the axis of time. The starting point of the time-axis represents the moment an individual starts a material existence, and the axis ends when he ceases to exist in the physical sense. Consider any action of the entity to be a curve in the plane of Karma. The axis of time separates this plane into half-planes. We make a distinction here between "good" and "bad" actions. One of these half-planes is associated with good work, or positive Karma. All good actions would be sections of curves lying on the positive half of the plane, and the area between this curve and the time axis represents the amount of Karma associated with that action. Any function f_R could describe the curves drawn. What is of relevance to the argument is only the area under each of these curves.

This area is taken to be $W_k = \int_{t_i}^{t_f} f_k(t)\,dt$.

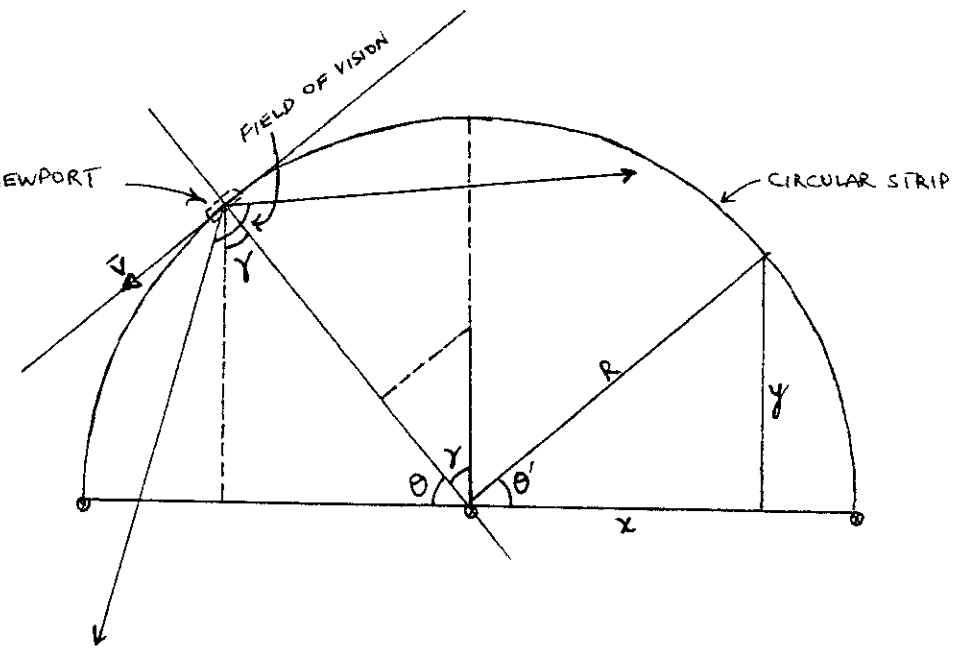
Yet, it is important to note that a positive Karma cannot cancel a negative one.
They exist independently.
If $\mathbf{W}_k$ is taken to be a two-dimensional array variable that keeps track of the positive and negative Karma of previous lives.
Then $\mathbf{W}_k$**(positive , negative)** = $(\Sigma \mathbf{w}_i, \Sigma \mathbf{w}_j)$; here $\mathbf{w}_i$ is the $\mathbf{i}^{\text{th}}$ positive Karma
This is when there are '*i*' positive and '*j*' negative Karmas;
$\mathbf{W}_k$ represents the cumulative Karma of the $\mathbf{k}^{\text{th}}$ life.
This expresses the basic idea of Karmic philosophy

(*Please refer to Fig.2*)

When we reflect on somebody else's life, we think of whatever we remember of them. In our model that would be "looking" at the work-equivalents from some point in space. In Fig.1, what looks like a hair-band or circular strip functions as the support of the viewport which is free to slide along it. It is from here that other people "see" your Karma or deeds in their way. The whole strip moves along the rails that are the outside lines in Fig.1. At the very beginning, the viewport is at the top-most position of the circular strip. A small energy sets it into motion, after which it slides down the strip and rebounds elastically from its lowest position. It is this infinitesimally small energy that constitutes the proverbial "limiting zero". The force imparted to the viewport, here considered as a point-mass, is only sufficient to disturb it from its equilibrium position. Only because of this force, the viewport is able to climb across the potential barrier on its return journey. To continue, it must first be established that the position of the viewport **can** be expressed as a function of time.

FIG. 2

FRONT VIEW



at some arbitary angle θ, then by the principle of conservation of energy

$$\Delta E + mgR = mgR\sin\theta + \frac{1}{2}mv^2 \quad \left(\times \frac{2}{m}\right) \Rightarrow v^2 = \frac{2\Delta E}{m} + 2gR(1-\sin\theta)$$

$$\text{But } v = \frac{ds}{dt} = \frac{d}{dt}(R\theta) \Rightarrow \frac{v}{R} = \frac{d\theta}{dt} = \left(\frac{2\Delta E}{mR^2} + \frac{2g}{R}(1-\sin\theta)\right)^{1/2} = \left(k_1 + k_2(1-\sin\theta)\right)^{1/2}$$

On separating the variables to find θ as a function of time,

$$\int \frac{d\theta}{\sqrt{k_1+k_2(1-\sin\theta)}} = \int dt = \int \frac{d\theta}{\sqrt{k_1+k_2-k_2\sin\theta}} = \int \frac{d\theta}{\sqrt{a-b\sin\theta}} \; ; a > b \qquad \begin{array}{l} a = k_1+k_2 \\ b = k_2 \end{array}$$

The last integral is elliptic, with $f(\theta) = (a-b\sin\theta)^{-\frac{1}{2}}$

This function can be expanded out using McLaurin's series.

Now, it is evident that $f(\theta)$ can be integrated and θ can be expressed as a function of time t. The argument θ determines the position of the viewport.

The view from any point along the path varies as the sine of the angle that specifies that point. Also, the viewport has a definite size, so its center of mass will always lie above either of the supporting lines. The angle γ can only vary from $-\pi/2$ to $+\pi/2$, non-inclusive. Thus, the object area is never seen in its entirety. Since the object area is nothing but a representation of the work, or Karma of the individual, it follows that all that is seen must be a fraction of the truth, since $\sin\gamma \nless 1$

$\mathbf{A_o = A_r \sin\gamma}$, and since $\mathbf{A \propto w}$, $\mathbf{w_o = w_r \sin\gamma}$

(Where the subscript 'o' refers to 'observed' and 'r' to 'real')

A stands for the area being observed.

But, $\boldsymbol{\gamma \in (-\pi/2, \pi/2)}$

Therefore, $\mathbf{w_o \nless w_r}$

Also,

$$\langle\sin\gamma\rangle, \gamma \in (0,\pi/4) = \frac{\int_0^{\pi/4} \sin\gamma \cdot d\gamma}{\pi/4 - 0} = \frac{4}{\pi} \cdot -\cos\gamma\Big|_0^{\pi/4} = \frac{4}{\pi}\left(1-\cos\frac{\pi}{4}\right) = \frac{4}{\sqrt{2}\cdot\pi}(\sqrt{2}-1)$$

$$\langle\sin\gamma\rangle, \gamma \in (\pi/4,\pi/2) = \frac{\int_{\pi/4}^{\pi/2} \sin\gamma \cdot d\gamma}{\frac{\pi}{2}-\frac{\pi}{4}} = \frac{4}{\pi} \cdot -\cos\gamma\Big|_{\pi/4}^{\pi/2} = \frac{4}{\pi}\cdot\cos\frac{\pi}{4} = \frac{4}{\sqrt{2}\cdot\pi}$$

Thus, the average value of $\mathbf{\sin\gamma}$, γ varying from **o** to $\pi/4$, is **0.373**;

And if γ varies from $\pi/4$ to $\pi/2$, is **0.900**.

The mean value of $\mathbf{A_o}$, given a range of γ, is denoted by $\langle\mathbf{A_o}\rangle$, and is nothing but the average value of $\mathbf{\sin\gamma}$ over that interval, multiplied by the real area $\mathbf{A_r}$

So, $\langle A_o \rangle$ is greater for the first half ($\gamma \varepsilon \pi/2, \pi/4$) than it is for the second ($\gamma \varepsilon$ o, $\pi/4$) However, the ratio of the time that the viewport spends in these halves is different from the ratio of the mean values of the observed areas.

It is probable that an external observer spends much of his time in an ignorance or relative darkness when he evaluates some individual or tries to quantify his work.

To look at this possibility,

$$f(\theta) = (a - b\sin\theta)^{-\frac{1}{2}}$$

$$= f(0) + \frac{\theta}{\lfloor 1}.f'(0) + \frac{\theta^2}{\lfloor 2}.f''(0) + \cdots$$

$$f(0) = \frac{1}{\sqrt{a}}$$

$$f'(\theta) = -\frac{1}{2}(a - b\sin\theta)^{-3/2}.(-b\cos\theta) = \frac{b\cos\theta}{2(a - b\sin\theta)^{3/2}} \; ; \; f'(0) = \frac{b}{2a\sqrt{a}}$$

$$f''(\theta) = \frac{1}{2}\left(\frac{(a - b\sin\theta)^{3/2}.(-b\sin\theta) - b\cos\theta.\frac{3}{2}.(a - b\sin\theta)^{1/2}(-b\cos\theta)}{(a - b\sin\theta)^3}\right).$$

$$f''(0) = \frac{3}{4}.\frac{b^2}{a^2\sqrt{a}}$$

$$\text{Now } f(\theta) = \frac{1}{\sqrt{a}} + \theta.\frac{b}{2a\sqrt{a}} + \frac{\theta^2}{2}.\frac{3}{4}.\frac{b^2}{a^2\sqrt{a}}$$

$$= \frac{1}{\sqrt{a}}\left(1 + \theta.\frac{b}{2a} + \theta^2.\frac{3}{8}.\frac{b^2}{a^2}\right).$$

$$\frac{b}{a} = \frac{K_2}{K_1 + K_2} = \frac{1}{1 + K_1/K_2}, \quad K_1 = \frac{2\Delta E}{mR^2}, \quad K_2 = \frac{2g}{R} \rightarrow \frac{K_1}{K_2} = \frac{2\Delta E}{mR^2} \times \frac{R}{2g} = \frac{\Delta E}{mgR}$$

$$\frac{b}{a} = \frac{1}{1 + \Delta E/mgR} = \left(1 + \frac{\Delta E}{mgR}\right)^{-1} \simeq 1 - \frac{\Delta E}{mgR} = 1 - f \quad \left(f = \frac{\Delta E}{mgR} \text{ say}\right)$$

$$\frac{b^2}{a^2} = \frac{K_2^2}{(K_1 + K_2)^2} = \frac{1}{(1 + K_1/K_2)^2} = \frac{1}{(1+f)^2} = (1+f)^{-2} \simeq 1 - 2f.$$

$$a = K_1 + K_2 = \frac{2\Delta E}{mR^2} + \frac{2g}{R} = \frac{2g}{R}\left(1 + \frac{\Delta E}{mgR}\right)$$

$$\frac{1}{\sqrt{a}} = \sqrt{\frac{R}{2g}}\left(1 - \frac{f}{2}\right).$$

$$f(\theta) = \sqrt{\frac{R}{2g}}\left(1 - \frac{f}{2}\right)\left[1 + \theta\frac{1}{2}(1-f) + \frac{3}{8}.\theta^2.(1-2f)\right]$$

I'm quite happy with 3 places of decimal accuracy because I only want to compare the times taken by the viewport to complete the first and second halves of it's cycle

$$T\left(\theta : 0 \to \frac{\pi}{4}\right) = \int_0^{\pi/4} \left(\sqrt{\frac{R}{2g}}\left(1-\frac{f}{2}\right)\left[1 + \frac{\theta}{2}(1-f) + \frac{3}{8}\theta^2(1-2f)\right]\right) d\theta$$

$$= \sqrt{\frac{R}{2g}}\left(1-\frac{f}{2}\right)\left[\theta + \frac{\theta^2}{4}(1-f) + \frac{\theta^3}{8}(1-2f)\right]\Bigg|_0^{\pi/4}$$

$$T\left(\theta : 0 \to \frac{\pi}{4}\right) = \sqrt{\frac{R}{2g}}\left(1-\frac{f}{2}\right)\left[\frac{\pi}{4} + \frac{\pi^2}{64}(1-f) + \frac{\pi^3}{512}(1-2f)\right]$$

$$T\left(\theta : \frac{\pi}{4} \to \frac{\pi}{2}\right) = \sqrt{\frac{R}{2g}}\left(1-\frac{f}{2}\right)\left[\frac{\pi}{4} + \frac{3\pi^2}{64}(1-f) + \frac{7\pi^3}{512}(1-2f)\right]$$

Taking $\frac{\Delta E}{mgR} = f = 0.01$ (say)

$T(\theta : 0 \to \frac{\pi}{4})$ works out to about $0.9974K$ (K being a constant factor)

and $T(\theta : \frac{\pi}{4} \to \frac{\pi}{2})$ is about $1.6588K$.

$\therefore$ The % of time spent in a relative darkness is

$$\frac{T\left(\theta : \frac{\pi}{4} \to \frac{\pi}{2}\right)}{T\left(\theta : \frac{\pi}{4} \to \frac{\pi}{2}\right) + T\left(\theta : 0 \to \frac{\pi}{4}\right)} \times 100 \simeq 62.45\%.$$

This was an expected result.

An accumulation of great quantities of positive or negative Karma is not the ultimate goal or ambition of life on Earth. The quintessence of Indian philosophy is action without any attachments whatsoever to the result of that action. If this is the case, no Karma is associated with that action. However, any other person performing the same action but desiring its results will acquire a corresponding Karma. The aim is to be free from the workings of Karma itself. Man is chained to the cycle of rebirth until his Karma reaches zero. If the Karma were zero, then in this model it would be equivalent to a point moving along the axis of time, belonging intrinsically to it. At the end of this physical existence, that entity becomes Brahman. Every point in a given volume of space has a unique inverse outside this volume. The singularity that is Brahman is independent of time and has Infinity for its inverse. We are cross-sections of that Infinity, or at least, so I think. Tomorrow may reveal today's ignorance. Yet, today, right now, I begin my search.

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