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Connection between Brain Cycle and Laplace Transform

Abstract

Laplace transform concept is widely used in applied mathematics, is very useful for every branch of engineering as well as in astronomy also. Here we are try to merge it with the consciousness concept of psychology and we realize those are Hartley attached to each other. Using some basic mathematical and psychological information we are able to found a relation between them.

Keywords: Definition of Laplace transform, Laplace transform operator L , Inverse Laplace transform L^{-1} , 1st-shifting theorem, 2nd shifting theorem, Human brain cycle, and Conscious, Subconscious and Superconscious mind.

1. Introduction:

PIERRE SIMON MARQUIS DE LAPLACE (1749-1827), great French mathematician, was professor in Paris. He developed the foundation of potential theory and made important contribution to celestial mechanics, astronomy in general, special functions and probability theory.

Here we will try to find the relation between Laplace transform and psychology. We are main focus on conscious, subconscious and unconscious mind concept.

Now first we explain in brief the mathematical way of Laplace transform and later on about consciousness concept and after that we observe the relation between them.



2. Basic definitions and results of Laplace transform:

2.1 Definition:

Let $f(t)$ be a given function of t defined for all $t \geq 0$, then the Laplace transform of $f(t)$, denoted by $L[f(t)]$ or $\bar{f}(s)$ is defined as $L[f(t)] = \int_0^{\infty} e^{-st} f(t) dt$, provided the integral exists, where 's' is a parameter **real or complex**.

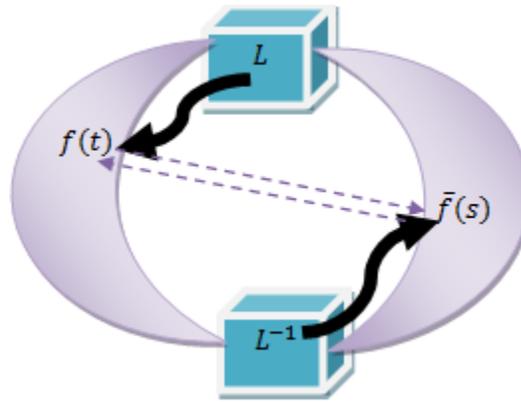
This function $\bar{f}(s)$ of the variable s is called Laplace transform of the original function $f(t)$.

2.2 Keynotes:

1. L Is called Laplace transform operator.

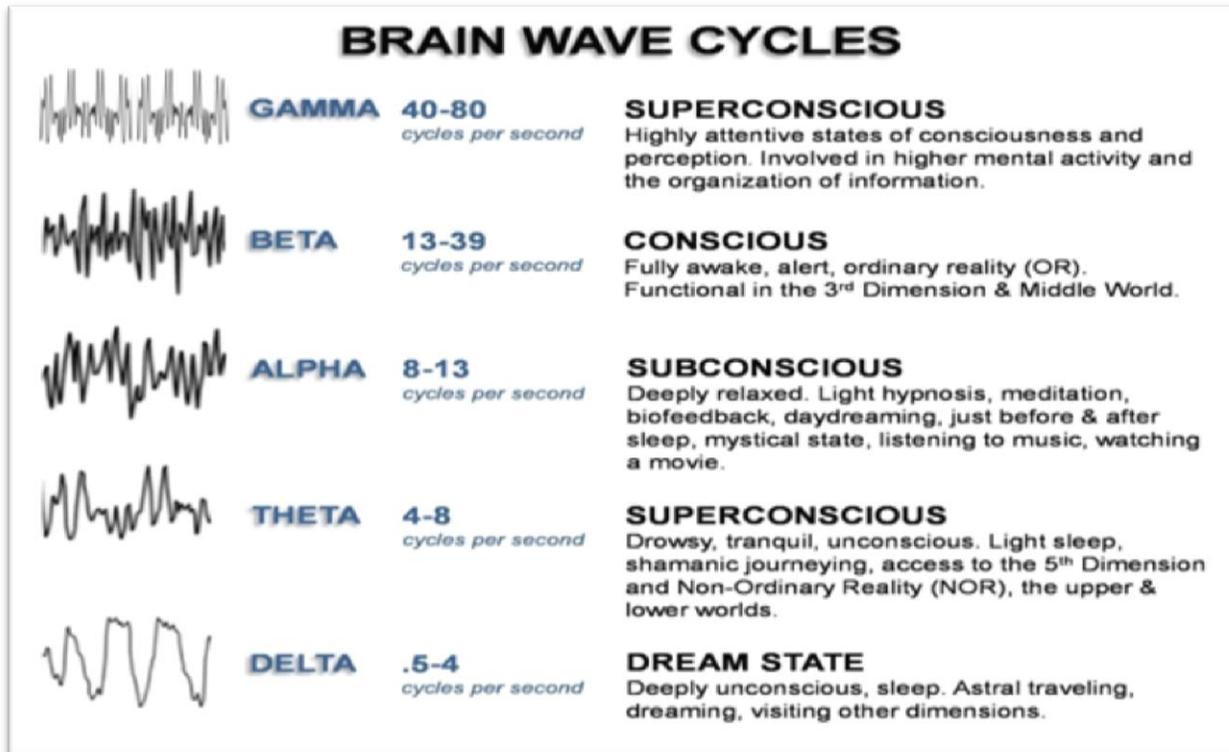
2. L^{-1} is called inverse Laplace transform operator
3. If $L[f(t)] = \bar{f}(s)$ then $f(t)$ is called inverse Laplace transform of $\bar{f}(s)$ and it is denoted by $L^{-1}[\bar{f}(s)] = f(t)$.

2.3 Graphical Interpretation:



Above figure indicates as if $L[f(t)] = \bar{f}(s)$ then $L^{-1}[\bar{f}(s)] = f(t)$.

As per above discussion we think that the Laplace transform is a two way process creates a cycle similar to the human brain cycle as follows:



In the human brain cycle there are 3 stages of mind as above, let we familiar with these and later on we focus on our main concept. The “identity theory” – mind equals brain – has led legions of scientists and philosophers to regard consciousness as an unnecessary, superfluous concept. Some go out of their way to deny the existence of consciousness altogether, almost as if they bear a grudge against it. Tufts University cognitive scientist Daniel Dennett says, “We’re all zombies. Nobody is conscious.” Dennett includes himself in this extraordinary claim, and he seems proud of it.

4. *Different stages of human brain cycle:*

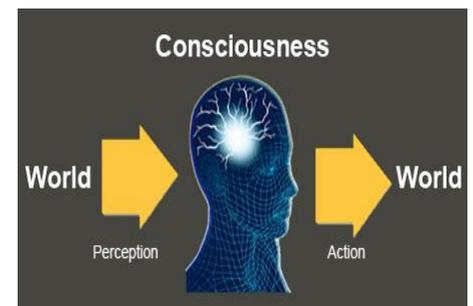
STAGE-1: Super conscious position

Super consciousness is a state of dynamic awareness. Many people have had glimpses of this state during moments of inner stillness, or during sleep. Meditation is a means of attuning the mind to super consciousness, and eventually entering that state. Perhaps that position is widely used to get outstanding knowledge from nature, aliens, god and etc.



STAGE-2: Conscious position

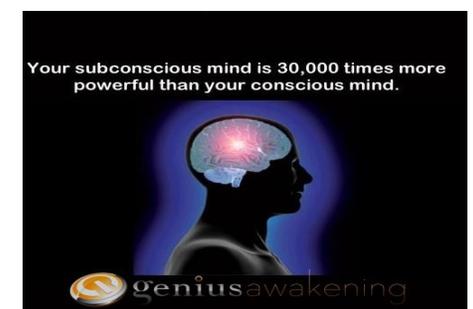
The **consciousness mind** is you awareness at the present moment. You are aware of something on the outside as well as some specific mental functions happening on the inside. For example, you are aware of your environment, your breathing, or the chair that you are sitting on.



STAGE-3: Subconscious position

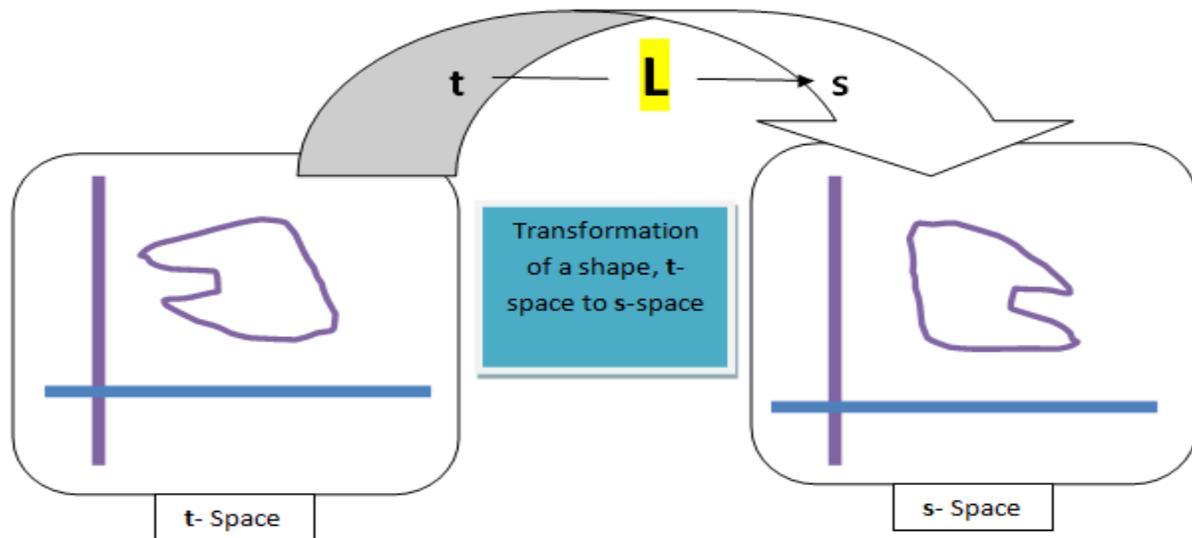
General comfort zone, conscious mind, conscious thinking, subconscious mind, subconscious thinking. Your subconscious mind is like a huge memory bank. Its capacity is virtually unlimited. It permanently stores everything that ever happens to you.

The word "subconscious" represents an anglicized version of the French subconscient as coined by the psychologist Pierre Janet (1859-1947), who argued that underneath the layers of critical-thought functions of the conscious mind lay a powerful awareness that he called the subconscious mind.



In the strict psychological sense, the adjective is defined as "operating or existing outside of consciousness". Locke and Kristof write that there is a limit to what can be held in conscious focal awareness, an alternative storehouse of one's knowledge and prior experience is needed, which they label the subconscious.

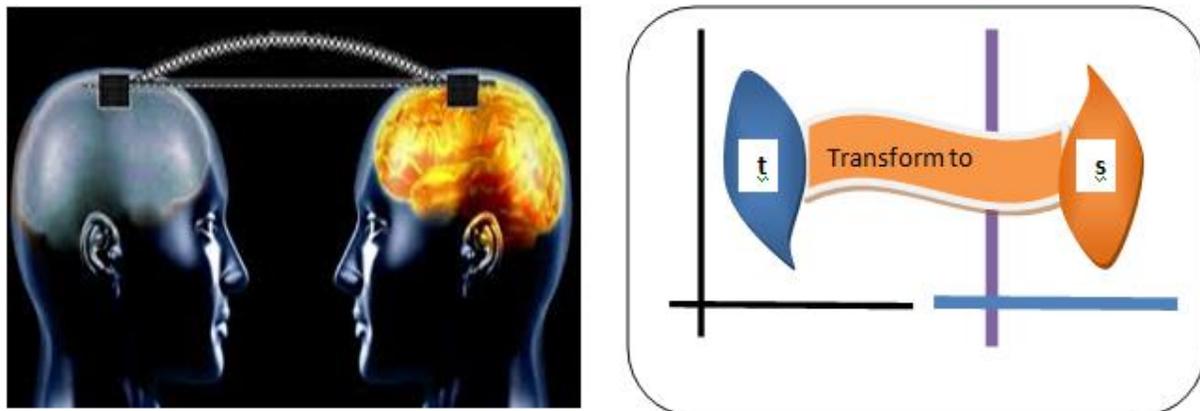
By above interesting discussion we want to start our main topic “The Psychological Approach of Laplace



transform”. Now seen that the following figure

Now first we differentiate the words “transformation” and “conversation”, it is necessary to us for further discussion. Transformation means any item will completely convert into particular destination and Conversation means an item will partially change not completely.

In the sense of consciousness is something like that the Laplace transformation because in the Laplace transform variable t is completely transformed to parameter s . In other sides in the human brain the stage-1(Consciousness) is completely transform to stage-2(Subconsciousness) and both sides vice-versa is possible.



For example, $L[1] = 1/s$, for some $s > 0$ it states that, consider 1 is conscious stage of mind using operator L it will transform to $1/s$ it means that using such operator like medicine, intoxicating drink, drugs and other treatments(yoga, meditation etc),we can able to transfer our position of mind conscious to subconscious that position give us courage, feel sleepy, feel peaceful and etc but that is imaginary unfortunately when by drugs

anybody can achieve this position that is very danger because that is one type of transformation and it is perpetual for this reason a person who can take a drugs so that becomes a habitual.

We can take another example for similarity, now we discussed about first and second shifting theorem of Laplace transform by these theorems we can try to prove “**lifting is impossible without shifting**”. Here we considered that shifting like a conscious mind and lifting like a subconscious mind.

Mathematical way as follows:

5. First shifting(*s*-shifting) theorem of Laplace transforms:

State: If $L[f(t)] = \bar{f}(s)$, then $L[e^{at}f(t)] = \bar{f}(s - a), s > a$.

5.1 Psychological Meaning of First Shifting Theorem:

It states about the super position of human mind. When mind is stand in super position it is filling very peaceful and lightness in front of being. Human being experiences that, body and self (soul) both are different from each other. That is possible after shifting.

Now shifting is a something related to deleting or forgetting the current situation or something differing from self that quit take a position is called shifting. When mind achieve that position and stand their then it will definitely get some knowledge and it is a final goal of human being and that’s called lifting. It is a procedure; Laplace states that by mathematically “If one function multiplying with some positive function like e^{at} (that always having a values either 0 or positive) then that is transform to $\bar{f}(s - a)$, it means that if we consider $f(t)$ is a first position of mind, attach with some positive thinking or meditation and etc, like a operator (Laplace transform operator L) it is transform to other stage (position), called super position at that stage something is deleting or forgotten from human being, Laplace denote that thing as a symbolically $\bar{f}(s - a)$. So whole Laplace transform related to Psychology.

6. Conclusion:

Laplace transform is a very huge scientific and mathematical concept, it is must related to human Psychology as well as philosophy also. That gives very beautiful results related to brain and mind. Now Laplace transform is same as the brain cycle and different stages of mind. By using mathematical concept of Laplace transform we try to understand super position of human mind.

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