

Why the Universe is Neither Controllable Nor Observable. The Solution of the State-Space Matrix Can Answer Everything about the Universe

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Abstract: *The Universe is neither controllable nor observable by human psychology. Space-time is highly non-linear. We are yet to find the solution of non-linear time varying equations. What we achieved is hypothetical idealistic models of the real world. If the error is the minimum within specific range between idealistic model and real world, we can conclude to have a good model that describes the real world. We authenticate the idealistic model with observed experimental test data to validate the model. The signals found in the real world are of very low energy – noises, random signals. It indicates that we live in a very low energy local area of the Universe. We do not have proper mathematical tools to describe the real world signals. What we analyze, are the idealistic deterministic models of real random signals. That is where science differs from the reality is that we analyze the reality as model based realism which itself is never reality, at best, it is a good model-based realism of actual reality. The state variables of the Universe must include space, time, energy and mass, if not more. The solution of the state-space matrix can answer every mystery of the Universe. In this paper, I will present the state-space matrix to analyze it and will show why the Universe is neither controllable nor observable by us. I will also show that why future is preordained, predefined, totally fixed very much like past.*

Keywords: Controllable and observable, Non-linear time varying equations, Hypothetical idealistic model, Model based realism of actual reality, Idealistic deterministic model

1. Introduction and the Theory

There are at least four state variables – space, time, energy and mass [1, 2]. The state-space matrix is the matrix of transformation constants among all four state variables [2]. One state variable can be completely transformed to the other state variables and vice versa. The ratio of any two state variables is nothing but a transformation constant. So, there are 16 transformation constants for 4 state variables to form a state-space matrix of 4 X 4 dimensions.

$$\begin{bmatrix} K_{11} & K_{12} & K_{13} & K_{14} \\ K_{21} & K_{22} & K_{23} & K_{24} \\ K_{31} & K_{32} & K_{33} & K_{34} \\ K_{41} & K_{42} & K_{43} & K_{44} \end{bmatrix} \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix} = 4 \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix}$$

According to Einstein's famous mass-energy equivalence equation we can relate two state variables – mass and energy [3, 4],

$$E = mC^2 \text{ or, } m = \frac{E}{C^2}$$

If we put mass-energy equivalence equation in the state-space matrix, we get,

$$\begin{bmatrix} 1 & K_{12} & K_{13} & K_{14} \\ K_{21} & 1 & \frac{1}{C^2} & K_{24} \\ K_{31} & C^2 & 1 & K_{34} \\ K_{41} & K_{42} & K_{43} & 1 \end{bmatrix} \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix} = 4 \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix}$$

With

$$K_{11} = K_{22} = K_{33} = K_{44} = 1 \text{ and } K_{32} = C^2, K_{23} = \frac{1}{C^2},$$

we get all four states in matrix form with a state-space matrix S_M 4x4 dimensions.

$$\text{Again, } K_{12} = \frac{1}{K_{21}}, K_{13} = \frac{1}{K_{31}}, K_{14} = \frac{1}{K_{41}}, K_{24} = \frac{1}{K_{42}}$$

$$, K_{34} = \frac{1}{K_{43}}$$

Then, state-space matrix reduced to 5 unknown transformation constants,

$$\begin{bmatrix} 1 & K_{12} & K_{13} & K_{14} \\ \frac{1}{K_{12}} & 1 & \frac{1}{C^2} & K_{24} \\ \frac{1}{K_{13}} & C^2 & 1 & K_{34} \\ \frac{1}{K_{14}} & \frac{1}{K_{24}} & \frac{1}{K_{34}} & 1 \end{bmatrix} \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix} = 4 \begin{bmatrix} S \\ m \\ E \\ T \end{bmatrix}$$

All we need to find five transformation constants, $K_{12}, K_{13}, K_{14}, K_{24}, K_{34}$ to solve state-space matrix, and hence the total solution of the Universe.

2. Is The Universe "Timeless"?

According to Newton, time is an absolute quantity that flows on its own [5, 6]. According Einstein, time is a relative quantity; everything has its own measure of time which raises questions about simultaneity itself [7, 8]. In this paper,

according to state-space matrix, time is one of the state variables of the universe, which can be transformed into other three state variables like space, mass and energy and vice-versa. But we do not know how to transform time into other three state variables; that is the reason why the Universe is neither controllable nor observable by human psychology. If we can solve all five state-space transformation constants, $K_{12}, K_{13}, K_{14}, K_{24}, K_{34}$, then, we will be fully aware of state-space matrix. It implies that the states of the Universe can be completely specified by its input, hence, by definition, the Universe is controllable. It also implies that the output of the Universe can be completely specified by the states of the Universe, hence, by definition, the Universe is observable. All we need to find all five state-space transformation constants, $K_{12}, K_{13}, K_{14}, K_{24}, K_{34}$ to make the Universe controllable as well as observable by human psychology. Generally, we use time as an absolute quantity that plays the role of independent variable (time, t , is often in the x-axis on graph paper, that shows the evolution of any physical system) [9, 10]. But do we really measure t ? What we measure is object's frequency of change, speed and acceleration / deceleration and by doing that t is just a mathematical value and really no primary physical existence. Even Minkowski's space-time is not 3D+T, it is rather 4D, i.e. a 3D space is moving unidirectional in another space dimension. A more convenient way to represent time is a numerical order of material change. And that has more exploratory power in describing physical phenomena like gravity, electrostatic interaction etc.

3. The Conscious, Subconscious And Unconscious Mind – How Does It All Work? Why Future Is Preordained And Predefined?

How does the conscious, subconscious and unconscious mind work? And what are the differences among them? All three minds – conscious, subconscious and unconscious minds work together to create your own reality [11, 12]. All three minds use the experiences gathered to change your habits and create a happier, more peaceful and confident you [13]. The concept of three levels of mind is nothing new. Sigmund Freud, the famous Austrian psychologist was probably the first to popularize it into mainstream society as we know it today. A good model of human minds is that the whole life information is stored in the human mind from past to future through present. The present mind is the conscious mind that interacts with the outer world as well as inner self at present. All future interactions with the outer world are stored in the human mind, but because it is stored in the unconscious mind, we cannot interact with the information unless it becomes information of conscious mind at present. The human mind decides what interactions we want to have easy access anytime we want to; these will be stored in the subconscious mind so that they can be recalled anytime. The interactions that we do not want easy access are forgotten by human mind to go back to the unconscious mind.

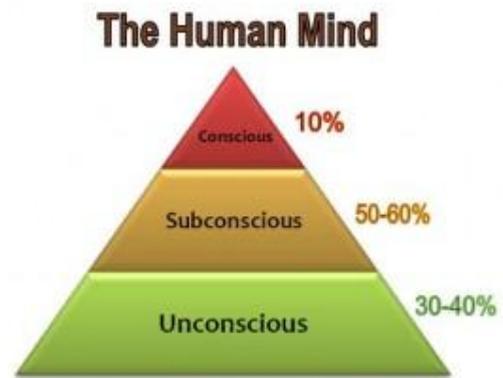


Figure: Human mind's divisions – a walk through the human mind

Even we forgot a lot of interactions of past, still they have very indirect effect on our personality to make us more and more experienced which is responsible for habit change, we call it trained by past. Then, what is the difference between a child and an old person – both have all information stored of whole life, if not more; but one is trained by huge interactions of future information through present to change habits and thus very experienced (the old man) but the other one have very little interactions at present although he has all future information stored in mind, but because of minimum interactions with present, all future information cannot be used to be trained or to be experienced enough to change habits (of the child). Because all future information stored in the brain, it implies that all future interactions are predefined and preordained, makes life totally predefined and preordained. If anyone can make future interactions to load in the subconscious mind, can be able to be a future teller of that much information of future that is loaded in the subconscious mind. Thus, future is not completely dark and irretrievable at present. In a nutshell, future is fixed, predefined, preordained and not probabilistic at all. Future is totally definite, thus, what will happen, that is the only way it can happen. What is the difference between past and future, both are exactly same (fixed, definite, predefined, preordained) with only difference is past is interacted with present while future is yet to be interacted with present; past can be responsible to be trained to be experienced while future is not.

4. Conclusion

The complete solution of the state-space matrix can make the Universe both controllable and observable. Only five state variables need to be specified to make the state-space matrix completely solved. Time can be treated as another spatial dimension because we never measure time. What we measure is object's frequency of change, speed and acceleration / deceleration and by doing that time, t is just a mathematical value and really no primary physical existence. Thus, time is just a sequential numerical order that is strictly followed by space for evolution and change states of matter. The human mind has all past and future information of life stored in their minds. The information of past can be used to be trained self to change habits while future info cannot be used to be trained. The past contribute to the experience while future does not. But both are fixed,

defined, predefined and preordained – cannot be manipulated or altered. Probabilistic future is a wrong interpretation by psychology. Randomness is vague concept of life. Life is totally fixed, so is the whole future of the life, if not more than that.

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References

- [1] http://www.dailygalaxy.com/my_weblog/2012/07/the-universe-is-timeless-a-radical-theory-weekend-feature.html
- [2] Debnath, Prasenjit “A Unique Similarity Is There Among Space, Mass, Energy, And Time. All Move in One Direction on Average with an Aim to Attain a State of Absolute Balance or State Of Perfect Equilibrium. Why Time Slows Down Under the Influence of Mass?”, International Journal of Science and Research (IJSR), Volume - 6, Issue – 4, ISSN (online)2319 – 7064, April, 2017. .
- [3] <http://www.themindunleashed.com/2014/03/conscious-subconscious-unconscious-mind-work.html>
- [4] <http://www.collectivelyconscious.net/wp-content/>
- [5] Roger Penrose, “Cycles of Time”, Vintage Books, London, pp. 50-56.
- [6] Stephen Hawking, “A Briefer History of Time”, Bantam Books, London, pp. 1-49.
- [7] Stephen Hawking, “Black holes and Baby Universes and other essays”, Bantam Press, London 2013, ISBN 978-0-553-40663-4
- [8] Stephen Hawking, “The Grand Design”, Bantam Books, London 2011
- [9] Stephen Hawking, “A Brief History of Time”, Bantam Books, London 2011, pp. 156-157. ISBN-978-0-553-10953-5
- [10] Stephen Hawking, “The Universe in a Nutshell”, Bantam Press, London 2013, pp. 58-61, 63, 82-85, 90-94, 99, 196. ISBN 0-553-80202-X
- [11] Stephen Hawking, “The Beginning of Time”, A Lecture.
- [12] Stephen Hawking, “Stephen Hawking’s Universe: Strange Stuff Explained”, PBS site on imaginary time.
- [13] Stephen Hawking, “A stubbornly persistent illusion- The essential scientific works of Albert Einstein”, Running Press Book Publishers, Philadelphia, London 2011.

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