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A Time-Based Model of Universal Causation

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Introduction

The purpose of this inquiry is to arrive at a more concrete understanding of the nature of time. Mathematical and philosophical approaches have all been used with some degree of success, but the very nature of time itself remains elusive.

The difficulty in gaining insight into the workings of time stems from the fact that it is a fundamentally irreducible component of the universe. It is both profoundly basic and ethereal at the same time. Understanding time may therefore be predicated on synthesizing theoretical constructs and experimental findings at a level that currently eludes scientific investigation.

Nevertheless, it may be possible to initiate an exploration of the workings of time by finding appropriate analogies in other physical systems. The recapitulation of fundamental mechanisms in a variety of phenomena suggests that this approach is fertile ground for gaining a better understanding of time.

Given the pitfalls associated with any investigation of time, it is perhaps best to choose a well-understood phenomenon as a starting point for our analysis. Consequently, we have chosen to model time as a multidimensional electrical current, with mass modeled as resistance to the flow of time. This model requires an open universe into which time flows from the present to the past. The flow of time is generated by the existence of an electrical potential involving quantum electrostatic charge. This model provides a simplified framework for investigating the possible relationship of time to a number of physical phenomena, including the release of energy, the forces of attraction, entropy, and the increasing complexity of matter.

Our Model of Time

The system proposed to model time is based on electrodynamics. The model is an extension of direct electrical current to a multidirectional universe. Timeflow (T) in this system is equivalent to multidirectional electrical flow and results from a potential energy difference across an open

universe. This potential is generated by a vast quantum electrostatic charge at one end and the equivalent of a power ground at the other. The flow of time is omnidirectional from present to past, with no internal point of reference for its origin. Mass acts as resistance to the flow of time.

In terms of electrical potential (V = RI), this relationship may be expressed as follows:

$$V_u = MT$$

where V_u is the electromotive force of the universe, M is mass, and T is the rate of timeflow.

It is now possible to construct a formula for energy, time, and mass based on the established relationship of electrical power to current and resistance (P = VI):

$$P = V_u T$$

Or:

$$P = MT^2$$

Substituting E (per unit time) for P:

$$E = MT^2$$

Since it is assumed that the above equation is consistent with the relativistic relationship between energy, mass, and velocity of light (C), the flow of time in our model system is equivalent to C.

The Consequences of Our Model

Overview:

What follows is an attempt to reconcile our model of time with certain conditions of the physical universe. It will be shown that the release of energy, the forces of attraction, entropy, and the increasing complexity of matter can all be explained by our postulated relationship between time, energy, and matter. This model is not meant to replace our current conception of the universe. Rather, it is example of how a change in our thinking about time can lead to a radically altered view of physical phenomena.

Timeflow and the Speed of Light:

In our model universe, time is a function of mass and energy, and therefore its rate of flow is relative. Increasing the electromotive force of the universe will cause timeflow to speed up, while interaction with mass will slow it down. In the absence of mass, time will flow at its maximum rate. Photons, which are essentially devoid of mass, will move at the speed of time. Thus, the speed of light in our model of the universe is not a constant.

Reciprocity of Time:

The flow of time is omnidirectional and, therefore, peculiar to the individual observer. For example, a beam of light moving toward me will be traveling from the past to the present, whereas a beam of light moving away from me will be traveling in the opposite direction, from the present to the past. However, another person will experience the same movement of light away from me as coming from the past to the present. Over short distances, this reciprocal effect is negligible. Nevertheless, it can produce some interesting outcomes.

Suppose a person is traveling at the speed of time directly toward an oncoming beam of light. That person will be standing still in time since he is moving in the direction of timeflow. The net effect is that the oncoming beam of light is stationary with respect to him and will appear to be moving only at the speed of time. This is consistent with relativity theory.

Nevertheless, at velocities greater than the speed of time, our model diverges from the tenets of this theory. Since timeflow is relative to velocity, the speed of light decreases when moving in the direction of timeflow. Momentum in its relativistic form is not applicable to these conditions, and therefore the speed of light is not an impenetrable barrier.

A person traveling beyond the velocity of time itself would encounter a timeflow reversal. Time would begin flowing in the opposite direction, and the person would begin traveling from the past to the present. Paradoxically, a continued increase in velocity produces a loss of kinetic energy until the rate of timeflow is equivalent to that of a person at rest.

At that point, any further increase in velocity results in another reversal in timeflow. This cycling phenomenon permits travel across vast distances of the universe in a relatively short period of time.

The Release of Nuclear Energy:

Timeflow in our model is governed by the energy potential of the universe. A slowdown in timeflow therefore requires expenditure of energy (work) while an increase in timeflow will release energy.

The energy produced during nuclear fission may be explained by the sudden increase in the rate of timeflow as mass disintegrates. The quantity of energy released is a function of the formula, E

$= MT^2$, and is relative to the rate of timeflow through the mass. This is in contrast to relativity theory, which states that the amount of energy released from a mass at rest is only determined by the quantity of mass.

The Forces of Gravity and Magnetism:

In our model, it is unnecessary to postulate the existence of a distinct gravitational force. The resistance of an object to the flow of time produces a field effect such that a second object moving through the field will encounter less resistance to motion as it approaches the first object (and vice versa). The two objects will thus accelerate toward one another, producing the same action as a gravitational field.

The attractive force of a magnet is a variation of the same phenomenon. The arrangement of electrons in a magnet preferentially reduces resistance to timeflow in one particular dimension. The resulting increase in timeflow in this dimension produces a complementary decrease in timeflow in the other two dimensions, generating an attractive force. More massive magnets produce greater attraction due to an increased timeflow differential.
Electromagnetism involves a similar process. The application of an electrical potential to a conductor results in an increase in unidirectional timeflow. This reduces timeflow in the other two dimensions, generating a force of attraction around the conductor. The induction of a magnetic field in a second conductor is due to an increase in unidirectional flow of its electrons in response to the force of attraction of the original conductor.

Entropy and Increasing Complexity of Matter Over Time:

Since a loss of mass is associated with less resistance to timeflow, there is a tendency for mass to disperse (entropy). Nevertheless, the ability of matter to resist the flow of time exerts an attractive force that can counteract entropy. As small fragments of mass randomly come together, the resulting decrease in timeflow causes them to coalesce and attract additional matter. This process will lead to the increasing density of matter.

However, the energy required for continued accumulation of matter will eventually limit the density of atomic mass. The further attraction of matter will therefore take the form of less densely packed aggregations of atoms into molecules. This balance between mass and timeflow will result in the formation of matter with increasing complexity. Fractal geometry may reflect the recapitulation of this process on an ever increasing scale.

The Fate of Our Model Universe:

The conversion of potential energy to time will lead to a slowing of the rate of timeflow. This differential in time flow between the present and past will produce the same redshift in light traveling from the past as that of an expanding universe. However, our model universe neither expands nor contracts. It simply runs out of available energy.

Nevertheless, this may not spell the end of time. Time may be stored as energy in very massive objects (black holes) in the same way as a capacitor stores electrical energy. As time continues to flow through the universe, the size and number of these storage sites will increase and eventually coalesce into a single massive black hole. The enormous amount of energy stored in this giant black hole could eventually lead to a "dielectric breakdown" (a secondary "Big Bang"), resulting in the release of energy and the consequent renewal of time.

Conclusions

Our model universe represents an attempt to transform time into a more concrete entity. By likening time to an electrical current, we have given it a more familiar identity and simplified its relation to mass and energy. The relative nature of time in our model fundamentally rearranges our concepts of the physical universe. The speed of light is no longer an impenetrable barrier and distance appears more illusory than real. Forces of attraction have more in common than previously suspected and matter itself may be the residue of time.

The fact that none of these hypothetical outcomes are currently amenable to testing does not diminish the usefulness of this model. Its ultimate value may depend less on the validity of its assumptions than on its ability to expand the limits of our thinking about the universe. The process of analogy used in the formulation of this model may itself be a fundamental force of nature and therefore provide a potent tool for understanding the workings of the universe.