

# The 'Computational Unified Field Theory' (CUFT): Time Reversal May be Possible

**Jehonathan Bentwich\***

Claremont University, Israel

**\*Corresponding author:** Jehonathan Bentwich, Brain Perfection LTD, Jerusalem, Israel, Tel: +972-52-664-6240; E-mail: drbentwich@gmail.com

## Review Article

Volume 1 Special Issue 2

**Received Date:** October 09, 2017

**Published Date:** December 18, 2017

## Abstract

The biggest unresolved enigma in modern Theoretical Physics is the principle contradiction that seems to exist between Quantum Mechanics (QM) and Relativity Theory (RT). Both QM and RT negate the possibility of "time-reversal". However, a new Computational Unified Field Theory (CUFT) shown capable of resolving this basic QM-RT theoretical contradiction and receiving initial empirical validation establishing it as a satisfactory "Theory of Everything" (TOE) is shown to enable the possibility of "time-reversal". This is due to the CUFT's new computational definitions of "space", "time", "energy" and "mass" are based on the operation of a singular higher-ordered Universal Computational Principle (UCP) which computes the degree of "consistency" or "inconsistency" of any given object across a series of UCP produced Universal Simultaneous Computational Frames (USCF's). Therefore, since the UCP computes "time" as the degree of "object-inconsistency" of any given object across a given series of USCF's frames, the CUFT predicts that it should be possible to "reverse time" for a particular object based on a precise recording of that object's minute spatial-electromagnetic values across a series of USCF's frames and an application of a particular electromagnetic stimulation that would reverse that objects' (recorded) spatial-electromagnetic values across the given series of USCF's frames. Another means for "reversing time" could be achieved through the CUFT's postulated 'Individual Human Consciousness Expansive Spectrum Hypothesis' (IHCESH) which postulates that it is possible for Individual Human Consciousness to expand in such a manner that it becomes identical with the Universal Computational Principle and hence "materialize" or "de-materialize" any exhaustive spatial pixel in the universe (comprising any single or multiple USCF's frame/s), thereby achieving the same "reversal of time" for any given object (e.g., through the reversal of any given object's sequential spatial-electromagnetic pixels values across a series of USCF's). The far-reaching theoretical implications of the CUFT's predicted "time-reversal" are discussed.

**Keywords:** Relativity; Quantum; Computational Unified Field Theory; Theory of Everything; Time-Reversal; Speed of Light; Einstein

## Introduction

One of the basic assumptions underlying modern Theoretical Physics, e.g., both Quantum Mechanics and Relativity Theory is that “time-reversal” is not possible. This is because according to Relativity Theory the speed of light represents a basic constraint imposed upon the transmission of any signal and therefore it is not possible to travel faster than the speed of light in order to perceive any “past” events. Similarly, in Quantum Mechanics, following the “collapse” of the subatomic ‘target’s’ “probability wave function” Giacosa, Francesco [1] due to its physical interaction with another subatomic ‘probe’ it is not possible to revert back to the “un-collapsed” potentiality of the target’s probability wave function, thereby negating the theoretical possibility to “reverse time”.

However, the recent discovery and initial empirical validation of the ‘Computational Unified Field Theory’ (CUFT) Bernauer & Pohl [2] assert that the “reversal of time” may indeed be possible. This is due to the fact that this newly discovered and empirically validated Bentwich [3-12]. Computational Unified Field Theory redefines the four basic physical features of ‘space’, ‘time’, ‘energy’ and ‘mass’ as secondary computational facets of a singular (higher-ordered) Universal Computational/Consciousness Principle, which computes every exhaustive spatial pixel in the physical universe simultaneously (e.g., at every minimal time-point ‘ $c^2/h$ ’, comprising an extremely rapid series of ‘Universal Simultaneous Computational Frames’, USCF’s). Indeed, according to the CUFT these four secondary computational features of “space”, “energy”, “mass” and “time” are computed by this Universal Computational Principle based upon its Three Computational Dimensions of “Framework”, “Consistency” (and “Locus”) wherein “time” is computed by this Universal Computational Principle at every exhaustive spatial pixel comprising the physical universe as a particular combination of the ‘Framework’ (“frame” or “object”) and ‘Consistency’ (‘consistent’ or ‘inconsistent’) Computational Dimensions, e.g., as the measure of “inconsistent-object” computation for a given spatial-pixel/s across a series of USCF’s frames.

Indeed, a useful “Cinematic-Metaphor” has been presented Bentwich [3-22] which can give us a sense of this Universal Computational Principle’s computation of “time” (as well as of the three other “physical” features of “space”, “energy” and “mass”): Imagine yourself sitting in a cinema-hall and watching a regular (cinematic) film: what would happen if the “rate of projection” of the film were to be “slowed-down”, what would happen to our

sense of “time” in the film? It would be in “slow-motion”, which would give us a sense that ‘time’ has “slowed down”. Moreover, imagine a situation in which while we’re sitting and watching the film we are presented with the same exact frame for (say) one minute. Within the film occurrences (themselves) we would feel “no passage of time” (at all).

In other words, the passage of “time” is associated with the number of “local changes” taking place (or occurring) within a given object. Now, let’s pose the challenging question: is it possible, within the Cinematic-Film Metaphor, to “reverse the flow of time”? Obviously, it *is* possible to “reverse time” within the film i.e., simply by “rolling the film backwards”! That is, projecting the film in the reversed order, i.e., such that a “broken glass vase” becomes “whole again” and the mercury ball that shattered it is “extracted back in time before it was thrown at the whole glass vase”. An old “amoeba” can be “brought back to its younger phase” of life (within the film) etc. Interestingly, within this Cinematic-Film Metaphor, we can see (very clearly) that “past” refers to “past frames” presented, “present” refers to the “present frame” being presented and the “future” refers to those frames that “have not yet been presented”. Moreover, even after certain film-frames have been presented and are considered (as explained above) as “past frames” there is no “technical problem” to “reverse the sequence of the film-frames” so that these “past-frames” re-appear in such manner that the “broken-vase” becomes “whole again”, the “old amoeba” becomes “young” again etc.

So then, the emerging question is: is it possible to undertake such “time-reversal” in the “physical reality” based on the Computational Unified Field Theory’s depiction of the entire physical universe (e.g., including any exhaustive spatial pixel within it and its four associated physical features of “space”, “time”, “energy” and “mass”) as an extremely rapid ( $c^2/h$ ) series of USCF’s frames singularly produced by the Universal Computational Principle? In other words, based on the initial empirical proof for the Computational Unified Field Theory’s theoretical model evincing that the entire physical universe may be produced as an extremely rapid series of Universal Simultaneous Computational Frames (USCF’s) produced by the singular Universal Computational Principle Bentwich [3-22], e.g., somewhat akin to this Cinematic Film Metaphor, would it be possible to “reverse the sequence” of these extremely rapid USCF’s frames, thereby “reversing the flow of time”? Indeed, the goal and purpose of this article is to demonstrate that it may be possible, according to the Computational Unified Field Theory (CUFT) to “reverse the flow of time”, thereby

challenging- revising- and transcending- the current “Material-Causal” Paradigm of both Quantum Mechanics and Relativity Theory towards the CUFT’s new singular (higher-ordered) Universal Computational Principle’s “A-Causal Computation” Paradigm in Theoretical Physics (and throughout Science more generally).

### The CUFT Revises Quantum and Relativistic Models

The starting point for our quest towards finding a satisfactory answer to the principle question posed in this article, e.g., is “time-reversal possible?” (According to the CUFT) is to examine closely some of the basic Theoretical Postulates of this new (empirically validated) CUFT and their fundamental revision of both Quantum Mechanical Born [23] and Relativistic Models of the physical reality. One of the basic theoretical postulates of the Computational Unified Field Theory (CUFT) is the computational ‘Duality Principle’, which was shown to negate, revise, (and ultimately transcend) the current QM and RT basic description of the physical reality. According to this computational ‘Duality Principle’, underlying both Quantum Mechanics (QM) Heisenberg [24] and Relativity Theory (RT) is a fundamental ‘Self-Referential Ontological System’ (SROCS) which assumes that it is possible to determine the “existence” or “non-existence” of any hypothetical relativistic (space-time or energy-mass) “phenomenon” or of any hypothetical quantum subatomic ‘target’ element solely based on its direct (or indirect) physical interactions with an exhaustive set of relativistic observers, or an exhaustive set of quantum subatomic probe elements (respectively) [3-22].

However, the discovery made by the Duality Principle is that such basic ‘Self-Referential Ontological Computational System’ (SROCS) inevitably leads to both “logical inconsistency” and ensuing “computational indeterminacy” that are contradicted by robust empirical findings (in both QM and RT), thereby pointing at the existence of a (singular) higher-ordered Universal Computational Principle (represented by the Hebrew letter “Yud”: “י”) which simultaneously computes all exhaustive relativistic ‘observer-Phenomenon’ or quantum subatomic ‘probe-target’ pairs.

Indeed, according to this computational ‘Duality Principle’, there cannot exist any “material-causal” physical relationship/s between any exhaustive hypothetical subatomic ‘probe’ and ‘target’ or relativistic ‘observer’ and ‘Phenomenon’ elements since this singular higher-ordered ‘Universal Computational Principle’ simultaneously computes all of those exhaustive

hypothetical subatomic ‘probe-target’ and relativistic ‘observer-Phenomenon’ pairs ( e.g., at every minimal time-point ‘ $c^2/h$ ’ comprising an exhaustive ‘Universal Simultaneous Computational Frame/s’, USCF’s, series which constitutes the physical universe).

Indeed, the Duality Principle’s challenging of the basic SROCS computational structure underlying both QM and RT has led to the discovery of the Universal Computational Principle and its associated ‘A-Causal Computation’, e.g., referring to its simultaneous computation of all exhaustive spatial pixels in the physical universe which precludes the possibility of the existence of any “material-causal” physical relationships between either the relativistic observer and any exhaustive hypothetical (space-time or energy-mass) ‘phenomenon’ or the subatomic ‘probe’ and any exhaustive hypothetical subatomic ‘target’ element. Instead, the CUFT advocates that all exhaustive hypothetical subatomic ‘probe-target’ and relativistic ‘observer-Phenomenon’ pairs (e.g., at any minimal time-point “ $c^2/h$ ” comprising any single or multiple ‘Universal Simultaneous Computational Frame’, USCF/s frame/s) are computed simultaneously by the singular ‘Universal Computational Principle’ giving rise to the entirety of the physical universe, i.e., at both the microscopic (quantum) and macroscopic (relativistic) levels.

Indeed, this new ‘A-Causal Computation’ Paradigm discovered and empirically validated by the Computational Unified Field Theory (CUFT) Bentwich [3-22], shown to comprise a satisfactory “Theory of Everything” (TOE) Brumfiel [25] Ellis [26] Greene [27] forces us to revise our basic theoretical conception of both Quantum Mechanics and Relativity Theory. In the case of QM, instead of the currently assumed subatomic ‘target’s’ “probability wave function”, which is assumed to “collapse” into a single (e.g., complimentary energy-space, temporal-mass) measured ‘particle’ value upon its direct physical interaction with another subatomic ‘probe’ element (as part of the subatomic measurement process), the CUFT posits that there cannot exist any such “material-causal” physical interaction between the subatomic ‘probe’ and ‘target’ elements, i.e., once again due to the fact that the singular Universal Computational Principle simultaneously computes all exhaustive subatomic ‘probe’ and ‘target’ spatial pixels (at any minimal time-point “ $c^2/h$ ” USCF’s frame/s).

Hence, according to the CUFT’s new ‘A-Causal Computation’ Paradigm, there cannot exist any direct physical interaction between the target’s assumed “probability wave function” and any other subatomic

'probe' element. Instead, both subatomic 'probe' and 'target' "particles" comprise 'single spatial-temporal' measuring points along a 'multi spatial-temporal' "wave" measurement, which is (itself) embedded within the exhaustive USCF's spectrum of all exhaustive spatial pixels in the physical universe at any such minimal time-point ' $c^2/h$ '. Therefore, the CUFT's (alternative) theoretical account of all Quantum Mechanical events, phenomena and laws replaces the currently assumed "material-casual" direct physical interactions between an assumed subatomic "target" and "probe" elements (which is assumed to "collapse" the target's "probability wave function" as mentioned above) with the singularity of the Universal Computational Principle's 'A-Causal Computation' of all exhaustive (subatomic and relativistic) spatial pixels in the physical universe, i.e., comprising the series of USCF's frame/s.

Interestingly, this singularity of the Universal Computational Principle in computing (simultaneously) all such exhaustive quantum and relativistic spatial pixels in the universe also "discards" the basic "probabilistic" aspect of current QM modeling; This is due to the more exhaustive computational perspective of the CUFT, e.g., which embeds within the Universal Computational Principle's exhaustive simultaneous computation of all (quantum and relativistic) spatial pixels in the universe at any minimal time-point USCF's frame/s which includes both the 'single spatial-temporal' "particle" (i.e., subatomic "probe" and "target" elements) and the relatively more 'expansive' 'multi spatial-temporal' "wave" measurement.

Thus, the new (more expansive) theoretical understanding of the CUFT which embeds within its exhaustive USCF's frame/s series both the 'single spatial-temporal' "particle" ( e.g., subatomic "probe" and "target" elements) and the 'multi spatial-temporal' "wave" measurement 'discards' the current "probabilistic interpretation" of QM which assumes that the subatomic 'target' is initially dispersed all-along the (hypothetical) "probability wave function" and then "collapses" upon its direct physical interaction with another subatomic 'probe' element. This is because from the (higher-ordered) perspective of the singular Universal Computational Principle's exhaustive computation of all spatial pixels (e.g., quantum and relativistic) comprising any single or multiple USCF's frame/s all 'single spatial-temporal' "particle" ( i.e., subatomic 'probe' and 'target' elements), and 'multiple spatial-temporal wave' measurements (i.e., corresponding to the hypothetical "probability wave function") are simultaneously computed as being embedded within the exhaustive USCF's frame/s spatial

pixels comprising all spatial pixels in the physical universe at any minimal time-point (' $c^2/h$ ).

The important point to be emphasize, however, is that there does can exist any "material-causal" physical interaction between the subatomic 'probe' and 'target' elements but instead the Universal Computational Principle computes simultaneously all spatial pixels, e.g., including all exhaustive subatomic spatial 'probe' and 'target' pixels comprising any single or multiple USCF's frame/s.

Indeed, in much the same manner, the CUFT posits that the singular simultaneous 'A-Causal Computation' of the Universal Computational Principle of all exhaustive relativistic 'observer' and (space-time or energy-mass) 'phenomenon' spatial pixels in the physical universe at any minimal time-point ( $c^2/h$ ) comprising any single or multiple USCF's frame/s negates General Relativity Theory's current conception of the existence of a "material-causal" relationship between massive object's curvature of 'space-time' and its dynamic "material-causal" effect on the movement pathways of these massive objects , e.g., which is hypothesized by General Relativity to determine the dynamic evolution of the universe. This is because, if indeed the singular Universal Computational Principle simultaneously computes all exhaustive spatial-pixels in the physical universe (e.g., at any minimal time point,  $c^2/h$ , comprising any single or multiple USCF's frame/s and including each exhaustive spatial pixel's associated four physical features of 'space', 'time', 'energy' and 'mass'), then there cannot exist any such "material-causal" relationship/s between any "massive object/s" and their "curvature of space-time", or vice versa, between the "curvature of space-time" and the determination of the "movement pathways of these massive objects".

This is simply because at any minimal time-point single USCF's frame both the "curvature of space-time" and the "location of any massive object/s" is computed and produced simultaneously comprising any single USCF frame. Moreover, as shown previously, the CUFT's additional "Computational Invariance Principle" asserts that since only the Universal Computational Principle exists both "during" the USCF's frame/s (e.g., as solely and singularly computing the four physical features of 'space', 'time', 'energy' and 'mass') and solely exists "in-between" any two subsequent USCF's frames; Whereas those four physical features of 'space', 'time', 'energy' and 'mass' only exist "during" the USCF's frame/s (as solely produced by the Universal Computational Principle) but not "in-between" USCF's frames, then the 'Computational

Invariance Principle' asserts that only this Universal Computational Principle may be regarded as "computationally invariant" (i.e., exists invariantly and permanently) - whereas these four physical features may only be regarded as "computationally variant" (e.g., only "phenomenal" and "transient").

Therefore, in reality, these four basic physical features of 'space', 'time', 'energy' and 'mass' are solely being produced- sustained- and evolved- by the 'computationally invariant' Universal Computational Principle. Hence, since it is only this 'computationally invariant' Universal Computational Principle which exists both during- and in-between- any two USCF's and is the sole source for the production- sustenance- and evolution- of any spatial pixel in the physical universe, then the sole "A-Causal" computational source for the "evolution" of the physical universe is the singularity of this UCP's simultaneous production of any single or multiple USCF's frame/s. This negates General Relativity's (current) assumption wherein it is the direct physical interaction/s between those "massive objects" and the "curvature of space-time" and vice versa the "curvature of space time" effect upon the "movement pathways of the massive objects".

### 'A-Causal Physics': The 'Universal Computational Formula'

So, we can see that the new 'A-Causal Paradigm' of the CUFT's singular Universal Computational Principle's simultaneous computation of all exhaustive (quantum and relativistic) spatial pixels in the physical universe (at any minimal time point comprising the series of USCF's frame/s) forces us to revise our basic conception of the physical universe; No longer can we conceive of any quantum 'target' associated phenomenon or of any relativistic (space-time or energy-mass) Phenomenon as "caused" by their direct physical interaction with any exhaustive set of subatomic 'probe/s' or relativistic 'observer/s', but rather as solely produced- sustained- and evolved- by the singularity of the Universal Computational Principle which computes simultaneously all exhaustive spatial pixels in the physical universe at any minimal time-point ( $c^2/h$ ) comprising any single or multiple USCF's frame/s.

Hence, the CUFT's emerging "picture" of the physical universe is such that at both the microscopic quantum level as well as at the macroscopic relativistic level the entire universe and every exhaustive spatial pixel within it is constantly being (simultaneously) produced-

sustained- and evolved- by the singularity of this Universal Computational Principle/ Indeed, this profound new conception of the physical universe is embodied within the Computational Unified Field Theory's 'Universal Computational Formula' (UCF) which completely integrates both Quantum and Relativistic Models (and transcends them):

Universal Computational Formula:

$$\left\{ \frac{c^2}{h} \right\} = \frac{s}{t} \times \frac{e}{m}$$

Indeed, as previously shown Bentwich [5-22] two derived Quantum and Relativistic Formats of this UCF indicate that all currently known quantum and relativistic relationships and laws are embedded within these two Quantum and Relativistic Formats of the singular UCF but which transcend the current Quantum and Relativistic knowledge, e.g., by indicating the complete integration of quantum and relativistic aspects of the physical reality as solely computed by the singular Universal Computational Principle. Thus, for instance, the rate at which this singular Universal Computational Principle computes the extremely rapid series of USCF's frames is given through a complete integration of Relativity's square of the speed of light divided by Quantum's basic Planck's constant: " $c^2/h$ ".

Likewise, one of the fundamental characteristics of QM delineating Heisenberg's Uncertainty Principle's simultaneous subatomic measurement constraint represented by the complimentary pairs of "space and energy" or "mass and time" emerge as the Universal Computational Formula's numerator's and denominator's multiplication elements. Equally intriguing is the embedding of Relativity's "Mass-Energy Equivalence": " $E = Mc^2$ " within the Relativistic Format of the Universal Computational Formula as an integral element within its quantum and relativistic elements comprising this UCF. Indeed, as noted previously, further mathematical and empirical research is called for to delineate the specific conditions under which the currently known quantum and relativistic formulated laws, e.g., such as the abovementioned 'Mass-Energy Equivalence' and Quantum's Uncertainty Principle's complimentary pairs exist and even more significantly the ensuing discovery of the transcendence of this "special case" of QM and RT under conditions other than these (Quantum Mechanical and Relativity Theory) "special cases". (It is perhaps poignant and befitting to quote, at this point, Einstein's visionary conception of such a "Unified Field Theory" as a "broader generalization in which Relativity Theory becomes as a 'special case'.")

The key point to be noted is that due to the singular simultaneous computation of all four (secondary computational) physical features of 'space', 'time', 'energy' and 'mass' by the Universal Computational Principle's (e.g., A-Causal Computation) as represented by the Universal Computational Formula, the Computational Unified Field Theory brings about a (complete) fundamental revision of modern Theoretical Physics' understanding of the origin- dynamics- and evolution- of the physical universe [3-22].

Thus, for instance, if indeed every exhaustive spatial-pixel in the physical universe is produced- sustained- and evolved- solely and singularly based on the Universal Computational Principle's minimal time point ( $c^2/h$ ) simultaneous computation, then this 'A-Causal Computation' challenges General Relativity's currently accepted 'Big-Bang Theory'. This is because for any such given USCF's frame/s there cannot exist any "material-causal" physical relationship/s either within any single frame or (indeed) across any two hypothetical frames; This is due to the fact that such simultaneous computation of the Universal Computational Principle of all exhaustive spatial-pixels in the same single USCF frame negates the possibility of any such "material-causal" physical relationships within the same USCF frame.

Likewise, due to the abovementioned 'Computational Invariance Principle' theoretical postulate it was shown that the only 'computationally invariant' element that exists "in-between" any two subsequent USCF's frames (e.g., as well as "during" each USCF frame solely producing the four 'computationally variant' physical features of 'space', 'time', 'energy' and 'mass') is the Universal Computational Principle which implies that there cannot exist any "material-causal" relationship/s between any exhaustive hypothetical spatial pixel/s which exists in one of these USCF's frame/s and any exhaustive hypothetical spatial-pixel in any subsequent USCF frame/s. This is because based on this Computational Invariance Principle each of these four 'computationally variant' physical features does not exist "in-between" the USCF's frames and therefore there cannot exist any "material-causal" physical interaction between any physical feature associated with any exhaustive spatial pixel in a given USCF's frame and any spatial-pixel at any other (hypothetical) USCF frame/s.

Therefore, the surprising (yet profound) conclusion derived from the CUFT's new Universal Computational Principle's 'A-Causal Computation' Paradigm is that the "Big-Bang Theory" has to be rejected as an appropriate explanation for the origin- and evolution of our physical

universe in favor of the singularity of the Universal Computational Principle's singular production-sustenance- and evolution of any exhaustive spatial pixel in the physical universe, i.e., either at its "first" (hypothesized) "Big-Bang" USCF frame or indeed at any single or multiple USCF's frame/s subsequent to that "first" (hypothesized) USCF frame; Instead, the Universal Computational Principle evinces the sole "cause" for the "origin" of the physical universe (e.g., as well as for the "origin" of any single or multiple USCF's frame/s comprising the current state)- and evolution- of the physical universe is the ongoing extremely rapid ( $c^2/h$ ) Universal Computational Principle's production of all spatial pixels in the universe at any minimal time-point USCF's frame/s.

Indeed, this new Universal Computational Principle's A-Causal Computation Paradigm also brought about a fundamental "discarding" of the hypothetical concepts of "dark-matter" and "dark-energy" as the "cause" for the empirically observed accelerated expansion of the physical universe; In a nutshell, "dark-matter" and "dark-energy" are the hypothetical concepts assumed to explain the empirical gap that exists between the calculated amount of matter and energy that should exist in the physical universe (e.g., in order to account for its accelerated expansion of the universe) and the actual amount of 'mass' and 'energy' that is empirically observed. However, to date, no "dark-matter" and "dark-energy" have been empirically observed in the universe, e.g., likening its theoretical stance perhaps to that of the purely hypothetical "ether" concept which also could not be detected empirically, and has led to Einstein's Relativity Theory's "discarding" of the "ether" concept as "superfluous" (i.e., "non-existent").

Indeed, quite similarly, the CUFT proposes to discard the concepts of "dark-matter" and "dark-energy" as "superfluous" (e.g., non-existent) Bentwich [3-22], based precisely on the abovementioned Universal Computational Principle's A-Causal Computation simultaneous computation of all spatial-pixels in the physical universe (at any minimal time-point  $c^2/h$ ); This is due to the fact that the Universal Computational Principle's singular simultaneous computation of all spatial pixels in the physical universe (at any minimal time-point ' $c^2/h$  comprising any single or multiple USCF's frame/s) negates the possibility of the existence of any "material-causal" physical relationships between any two or more physical elements, i.e., such as between these (purely) hypothetical concepts of "dark-matter" and "dark-energy" and any accelerated expansion of the physical universe (either within the same USCF frame or

indeed across any two or more USCF's frames). Therefore, the CUFT's discovery of the Universal Computational Principle's singular A-Causal Computation explains the empirically observed accelerated expansion of the universe as "caused" by this Universal Computational Principle's accelerated increase of spatial pixels to each subsequent USCF frame [3-22].

Thus, the new emerging "picture" of the physical universe offered by the singularity of the Universal Computational Principle's A-Causal Computation is one which originated in the Universal Computational Principle's sole production of every (exhaustive) spatial pixel in the first "Big-Bang" USCF frame (e.g., even though due to the UCP's A-Causal Computation simultaneous computation of all of these spatial pixels in each USCF frame/s including this first assumed "Big-Bang" frame negate the possibility of any such "material-causal "Big-Bang" explosion); is sustained in each subsequent USCF frame through this Universal Computational Principle's sole retention- and re-production- of each such exhaustive spatial-pixel in the universe (at every minimal time-point ' $c^2/h$ ' USCF frame/s) and is being constantly and continuously "evolved" i.e., such as in the empirically observed accelerated expansion of the physical universe solely based on the UCP's accelerated increase of spatial pixels to each subsequent USCF frame.

### The 'Cinematic-Film Metaphor': 'A-Causal Computation'

Perhaps to best understand the Universal Computational Principle's A-Causal Computation, e.g., and its potentially far reaching theoretical implications regarding the possibility to "reverse the flow of time", the 'Cinematic-Film Metaphor' has been utilized which bears certain similarities to the Universal Computational Principle's (extremely rapid) production of the series of Universal Simultaneous Computational Frames comprising every spatial pixel in the physical universe. Indeed, it was previously demonstrated Bentwich [3-22] that in the same way that the four physical features of 'space', 'time', 'energy' and 'mass' can be computed in the Cinematic-Film instance based on a calculation of the degree of displacement (or lack of displacement) of any given object relative to the whole frame (e.g., yielding that object's "energy" or "space" measures) or based on the calculation of a given *object's* spatial-pixels' consistent vs. inconsistent presentations across a series of frames (e.g., giving rise to that object's "mass" vs. "time" measures) so the Universal Computational Principle computes these four secondary computational physical features based on

its three 'Computational Dimensions' of 'Framework', 'Consistency' (and 'Locus').

More recently, this 'Cinematic-Film Metaphor' has been used (once again) in order to specifically illustrate the Universal Computational Principle's 'A-Causal Computation': Imagine a "glass jar" being shattered due to the impact of a "mercury ball" seen in the Cinematic Film. The important point to be emphasized when we closely analyze the apparent "cause and effect" relationship between the "impact" of the 'mercury ball' and the "shattering" of the 'glass jar' (within this Film scenario) is that upon closer analysis of each of the Cinematic Film frames we inevitably find that there cannot exist any such "cause and effect" relationships between the 'mercury ball' and the 'shattering' of the 'glass jar'. This is simply due to the fact that in every single Cinematic-Film frame all of the spatial pixels comprising each such frame are presented simultaneously thereby precluding- and indeed negating- the possibility of any such "material-causal" relationships from existing! Indeed, upon closer examination of each of these Cinematic-Film Frames we realize that all that existed is a series of 'film-frames' in which the "distance" between the presentation of the 'mercury ball' and the 'glass jar' "decreased" and eventually a frame in which both images "coincided", and a subsequent frame in which the glass jar was presented as "shattered" and mercury ball passed "further away" from this shattered jar".

In other words, the appearance of a "cause and effect" relationship between the 'mercury ball' and the 'shattering of the glass jar' simply arises from a certain ordering of the relative positioning of the 'mercury ball' and the 'glass jar' across a series of Cinematic-Film frames rather than the existence of any (real) "material-causal" relationship/s between these two objects, which (we see) is strictly negated by the fact that in each cinematic frame these two objects (as well as all other spatial pixels) are simultaneously presented. Hence, the Cinematic-Film Metaphor assists us in realizing that we can have a situation in which there does not exist any "real" 'cause and effect' relationship between any to (or more) given objects, but yet there is the "appearance" of such "material-causal" relationship/s due to the serial ordering of an apparent physical relationship between these objects (e.g., such as in the case of the shattering of the glass jar by the mercury ball as delineated above).

Interestingly, this Cinematic Film Metaphor can be utilized quite accurately to describe the Universal Computational Principle's 'A-Causal Computation' and

indeed the possibility of “time reversal” through the manipulation of the ordering of the USCF’s frames, i.e., either through an expanded Individual Human Consciousness or through localized electromagnetic manipulation of the particular spatial pixels comprising the particular object or phenomenon (as shown below). This is because much in the same manner that the Cinematic-Film Metaphor negates the possibility of the existence of any “cause and effect” physical relationships within any single or multiple cinematic frames, e.g., due to the fact that all of the spatial pixels in any single frame/s are presented simultaneously, and due the impossibility of any “transference” of any “physical” effect between any two (or more) subsequent frames. So does the Universal Computational Principle simultaneous computation of all exhaustive spatial pixels in the physical universe (at any minimal time-point: “ $c^2/h$ ”) preclude the possibility of the existence of any “material-causal” relationship/s between any two (or more) quantum and relativistic elements.

Moreover, due to the fact that none of the four physical features of “space”, “time”, “energy” and “mass” exist “in-between” any two USCF’s frames, e.g., according to the ‘Computational Invariance Principle’ (as mentioned above and demonstrated previously) only the singular ‘computationally invariant’ Universal Computational Principle which exists both “during” the USCF’s frames and also solely exists “in-between” them, while those four ‘computationally variant’ physical features only exist “during” the USCF’s frames (e.g., as solely produced by the Universal Computational Principle) therefore this ‘Computational Invariance Principle’ also negates the possibility of the existence of any such “material-causal” physical relationships between any given USCF’s frame/s and any other subsequent USCF frame.

Finally, this (singular) Universal Computational Principle is also found to be analogous to the Cinematic Film Metaphor in terms of its theoretical account for any apparently “material-causal” relationship (e.g., at either the quantum or relativistic levels) as representing only the singularity of the Universal Computational ‘A-Causal Computation’. Thus, equivalent to the (above mentioned) Cinematic Film Metaphor’s apparent “shattering of the glass vase by the impact of the mercury ball” in which we’ve seen that due to the impossibility of the existence of any “causal” physical relationship/s either within- or across- any two (or more) cinematic film-frames (as explained above) this apparent “cause and effect” relationship arises only due to the specific “sequential pattern” of the positioning of the (“approaching”) mercury ball towards the glass vase and the subsequent

“shattering” of the glass vase and the passage of the mercury ball further on.

So, it is suggested that it is the Universal Computational Principle’s ‘A-Causal Computation’ of all exhaustive spatial pixels in the physical universe (at any minimal time-point USCF’s frame/s) which negates the possibility of the existence of any quantum or relativistic “material-causal” relationships (either in the same- or different-USCF’s frame/s) and hence that the appearance of any such “material-causal” physical relationship/s (e.g., at either the quantum or relativistic domains) must be the result of the singular Universal Computational Principle’s “sequential-ordering” of a certain pattern of occurrences between certain (quantum or relativistic) elements or phenomena.

Indeed, two striking examples of this “apparent material-causal” (quantum and relativistic) phenomena which are shown by the CUFT to arise solely from the Universal Computational Principle’s ‘A-Causal Computation’ ‘sequential-ordering’ of these phenomena are: the “collapse” of the target’s “probability wave-function” as “caused” by its direct physical relationship with the subatomic “probe” element, and General Relativity Theory’s Einstein’s Equations which seem to describe the “causal” relationships that exist between “massive objects” and their “curvature of space-time” and the converse “causing” of the “travelling pathways” of these “massive-objects” by this “curvature of time-space”: As indicated (previously and above, Bentwich [5-22]), the current probabilistic interpretation of Quantum Mechanics wherein it is assumed that there exists a direct physical interaction between the subatomic “target’s probability wave function” and the subatomic “probe” and indeed that it is this direct physical relationship that “causes” the “collapse” of the ‘probability wave function’ into a single (complimentary) ‘spatial-energetic’ or ‘temporal-mass’ value was shown to be negated by the Universal Computational Principle’s ‘A-Causal Computation’ simultaneous computation of all exhaustive spatial pixels in the physical universe (e.g., including those of the subatomic ‘probe’ and ‘target’ elements at any minimal time-point USCF’s frame/s).

Instead, the singularity of the Universal Computational Principle’s simultaneous computation of all exhaustive spatial pixels at any minimal time-point USCF’s frame/s embeds within it the apparent “single spatial-temporal particle” elements such as the localized subatomic “probe” and “target” elements, as well as the “multi spatial-temporal” measurements of a subatomic

“probability wave function”. But, since (as explained above) there cannot exist any “material-causal” relationships either within the same USCF frame (comprising all exhaustive spatial subatomic and relativistic pixels that are being computed simultaneously by the Universal Computational Principle) or indeed across- different USCF’s frames (e.g., as there cannot be any “transference” of any the four physical features or their associated effects “in-between” any two subsequent USCF’s frames because these four basic physical features do not exist “in-between” any two USCF’s frames) then we are forced to accept the Computational Unified Field Theory’s ‘A-Causal Computation’ theoretical account wherein the apparent “physical interaction” between the “single spatial-temporal target particle” and the “multi spatial-temporal subatomic probe’s probability wave function” represent (in truth) only a particular series of USCF’s patterns that are solely produced by the singular Universal Computational Principle which embeds within each exhaustive USCF’s frame/s both the ‘single spatial-temporal’ subatomic ‘probe’ and (“collapsed”) ‘target’ “particles” as well as the broader ‘multi spatial-temporal’ “probability wave function”.

In other words, the singularity of the Universal Computational Principle’s A-Causal Computation simultaneous exhaustive computation of all (QM assumed) ‘single spatial-temporal’ subatomic “probe” and “collapsed target” ‘particles’ as well as of the ‘multi spatial-temporal probability wave function’ as embedded within the exhaustive pool of all (subatomic and relativistic) spatial pixel in the physical universe at any minimal time-point USCF’s frame/s, gives rise to the appearance of such “material-causal” relationship between the subatomic “probe” element and the “probability wave function” (e.g., seeming to “cause” the “collapse” of this ‘probe’s probability wave function’ into a localized single complimentary target’s value); In truth, however, there is only the Universal Computational Principle’s (singular) exhaustive computation of all subatomic and relativistic spatial pixels at every minimal time-point USCF’s frames, e.g., which includes the apparent existence of these ‘single spatial-temporal’ subatomic “probe” and “collapsed target” elements and the ‘multi spatial temporal probability wave function’ (and their apparent “material-causal” physical interaction).

In much the same manner, the Universal Computational Principle’s ‘A-Causal Computation’ also negates General Relativity Theory’s ‘Einstein’s Equations’ “material-causal” relationships between the “curvature of

space-time” as “caused” by “massive objects” and vice versa: This is due to the fact that according to Einstein’s Equations there exists a “material-causal” relationship between the “massive objects” which “causes” the “curvature of space-time”, and vice versa, wherein this “curvature of space-time” “causes” the determination of the movement pathways of these “massive objects”. However, as stated above, the Universal Computational Principle’s (UCP) ‘A-Causal Computation’ negates the possibility of the existence of any such “material-causal” relationships due to its simultaneous computation of all exhaustive spatial-pixels in the physical universe at any minimal time-point ( $c^2/h$ ) comprising any single or multiple USCF’s frame/s.

Hence, based on the UCP’s A-Causal Computation simultaneous computation of all exhaustive spatial pixels in the universe there cannot exist any such “material-causal” relationships between “massive objects” and their “curvature of space-time”, or between this “curvature of space-time” and the “determination of the movement pathways of these massive objects” (e.g., as suggested by Einstein’s Equations). Instead, as suggested through the (abovementioned) ‘Cinematic-Film Metaphor’ analogy, the UCP’s ‘A-Causal Computation’ produces a series of USCF’s frames which “appear” to produce a “sequential ordering” of certain patterns related to a “curved space-time” around massive objects and simultaneously also the apparent “movement pathways of objects” along this “curved space-time”.

To use the (above) ‘A-Causal Film Metaphor’: in much the same manner that the “mercury ball” appears to “shatter the glass vase” but is found to merely represent a particular “sequential pattern” in which the localization of this ‘mercury ball’ is presented increasingly proximal to the ‘glass vase’ until their spatial convergence which is coupled with the presentation of the ‘shattered vase’ etc.; So, it is suggested that the UCP’s asserted simultaneous presentation of “massive objects” as the ‘object-related’ spatially more consistent across a series of USCF frames (e.g., see previous Bentwich [6,7] CUFT’s previously defined computation of “mass”) than “less massive objects” (even such a light beam) produce the appearance of a “curved space-time”, since ‘space’ was defined as the measurement of ‘whole-frame’ consistent pixels across a series of USCF’s frames (see Bentwich [5-22]) for a complete analysis of General Relativity’s derivation from the CUFT’s computational definitions of the four physical features of ‘space’, ‘time’, ‘energy’ and ‘mass’ as different combinations of the UCP’s Three Computational Dimensions of ‘Framework’, ‘Consistency’ and ‘Locus’).

Essentially, it was explained (there) that the UCP's simultaneous computation of all exhaustive spatial pixels in the universe (at any minimal time-point USCF's frame/s) necessarily produces the appearance of certain regions across these USCF's series of frames of "high-mass"- "low-energy" (e.g., which correlate to "massive objects") and around them regions of "low-mass" "high-energy" of "low-massive" objects (such as light), which possess a high-degree of spatial-displacement across frames, thereby producing the "appearance" of the "curvature of space-time" around such "massive objects", as well as of the "travelling pathways" of (relatively) "less massive objects" (such as light) along these "curved space-time" pathways.

In any event, the key point to be noted with regards to the UCP's A-Causal Computation delineation of the appearance of "material-causal" quantum relationships between the subatomic probe's impacting of the subatomic target's "probability wave function" as "causing" it "collapse"; or of General Relativity's Einstein's Equations appearance of a "material-causal" physical relationships between 'massive objects' "causing" the "curvature of space-time" or the 'curved space-time' "causing" the 'movement pathways of less massive objects' is that the UCP A-Causal Computation asserts the impossibility of the existence of any such "material-causal" quantum or relativistic relationships; Instead advocating the UCP's production of a certain "sequential-ordering" of these subatomic 'probe-target' proximal (single- vs. multi- spatial-temporal) presentations or of the 'massive-objects' vs. 'less-massive' "sequential-ordered" presentations which gives the appearance of the existence of "material-causal" physical relationships which truly cannot exist (e.g., due to the UCP's simultaneous presentation of all quantum and relativistic spatial pixels at any single or multiple USCF's frame/s).

### **'Computational Invariance, Universal Consciousness and Individual Human Consciousness'**

Indeed, this UCP's A-Causal Computation higher-ordered understanding whereby "material-causality" cannot exist, e.g., giving way to the singularity of the UCP's simultaneous computation of all (quantum and relativistic) spatial-pixels in the universe (at any minimal time-point USCF's frame/s) not only revises the theoretical frameworks of Quantum Mechanics and Relativity Theory (e.g., completely integrating and transcending- both within the singularity of the UCP's Universal Computational Formula). But also lead to the discovery of the 'Computational Invariance Principle' and

ensuing 'Universal Consciousness Principle' theoretical postulates of the CUFT: This is because closely associated with the singularity of the Universal Computational Principle (e.g., which solely produces the four physical features of 'space, 'time, 'energy' and 'mass') is the 'Computational Invariance Principle's realization that since it is only this singular Universal Computational Principle which both solely produces these four physical features "during" the USCF's frames, and also singularly exists "in-between" any two subsequent frames, whereas these four physical features (of 'space, 'time, 'energy' and 'mass') exist only "during" the USCF's frames (as solely produced by the UCP) but do not exist "in-between" any two subsequent USCF's frames, then according to this 'Computational Invariance Principle' only the UCP may be regarded as "computationally invariant" (e.g., consistent and permanent) whereas those four physical features may only be regarded as "computationally variant" (e.g., inconsistent and merely "phenomenal").

This 'Computational Invariance Principle' indeed brings about a fundamental shift in our regard for the "material-reality" of these four physical features of 'space, 'time, 'energy' and 'mass' transforming our current "material-causal" basic assumption underlying both Quantum Mechanics and Relativity Theory, i.e., wherein the physical reality of the subatomic 'probe' and 'target's probability wave function' or of the relativistic 'observer' and 'space-time' or energy-mass' Phenomenon which it observes is seen as merely "computationally variant" or "phenomenal" and "transient", as opposed to the singular "computationally invariant" reality of the Universal Computational Principle ( e.g., which is recognized as constituting the only consistent and permanent reality giving rise to the phenomenal appearance of those four physical features).

Indeed, the identification of this singular Universal Computational Principle as the sole reality underlying any of the four physical features associated with any exhaustive spatial pixel in the universe across the series of USCF's frames, in turn, lead to the discovery of the Universal Consciousness Principle: Since it is seen that the four physical features are merely "computationally variant", e.g., exist "phenomenally" and "transiently" during the USCF's frame/s (as solely produced by the UCP) but not "in-between" any two subsequent USCF's frame/s, this means that the production sustenance and evolution of any exhaustive spatial-pixel in the physical universe, e.g., and its four associated 'computationally variant' physical features is carried out by a (singular)'Universal Computational Principle', i.e., which possesses all of the necessary "Universal Consciousness"

properties of producing- sustaining and evolving- every exhaustive spatial pixel in the entire physical universe (at every minimal time-point).

Hence, the Universal Consciousness Principle asserts that every exhaustive spatial-pixel in the physical universe is being solely produced- sustained- and evolved- by the Universal Consciousness Principle (e.g., which is equivalent to the Universal Computational Principle but is realized to possess a Universal Consciousness Principle properties of computing- sustaining- and evolving- any spatial pixel in the physical universe).

### **'A-Computational Physics': A New Definition of "Time"**

Thus, the emerging (incontrovertible) conclusion is that the physical reality comprised of the four physical features (of 'space', 'time', 'energy' and 'mass') is transformed from the current "material-causal" assumption of Modern Physics (e.g., of Quantum Mechanics and Relativity Theory), e.g., wherein the measurement of any hypothetical quantum subatomic ("probability wave function") 'target' or relativistic (space-time or energy-mass) 'Phenomenon' is assumed to depend on a direct physical interaction with another corresponding subatomic 'probe' or relativistic 'observer' (negated by the CUFT's Universal Computational/Consciousness Principle's 'A-Causal Computation'); into the CUFT's Universal Consciousness Principle's new realization that these four 'computationally variant' physical features are merely 'phenomenal' and 'transient' being continuously computed- sustained- and evolved- by the singularity of the Universal Consciousness Principle, e.g., which solely produces them "during" the USCF's frames and solely exists without these four physical features "in-between" any two USCF's frames.

Indeed, combined with the 'Computational Invariance Principle' which points at the "phenomenal" and "transient" nature of these four physical features of 'space', 'time', 'energy' and 'mass' which are only manifestations of- and solely produced sustained and evolved by this singular Universal Computational/Consciousness Principle, we arrive at the recognition that 'space', 'time', 'energy' and 'mass' do not exist "in and of themselves", but rather exist only "transiently" (e.g., "during" the USCF's frame/s but not "in-between" them), and in truth only represent this singular Universal Computational/Consciousness

Principle's computation of the degree of "Consistency" (e.g., Computational Dimension: "consistent" vs. "inconsistent") of either an "object" or a "frame" (e.g., comprising the Universal Computational Principle's second Computational Dimension of "Framework") "during" the Universal Computational Principle's computation of the USCF's frames.

In order to further evince the only "phenomenal" and "transient" nature of these four physical features it should be made clear that they do not exist in any every interval "between the USCF's frames", i.e., the temporal interval that exists between every  $c^2/h = 1.3582^{44}$ , i.e., in which the only thing that exists in the singularity of this Universal Computational/Consciousness Principle. If we are to focus on the single physical property of "time" (e.g., within the context of this article which aims to prove that it may be possible to "reverse the flow of time"), then we find that "time" therefore represents the degree of "inconsistency" measured for any given "object" across a series of USCF's frames [6,7].

Moreover, we find that the "flow of time" represents this degree of change (inconsistency) measured for a particular object across a series of given USCF's frames. Indeed, one of the three "differential-critical predictions" that were postulated Bentwich [5-22] as differentiating empirically the predictions of the CUFT from those of both QM and RT was indeed the hypothetical capacity to "reverse the flow of time" for a given object across a given number of recorded USCF's frames i.e., through a precise measurement of that object's electromagnetic spatial-pixels composition recorded across a series of given USCF's frames, and a subsequent application of a particular electromagnetic stimulation which would re-produce the same composition of the object's recorded spatial-electromagnetic pixels, but in the reverse ordered sequence (e.g., across the number of recorded USCF's frames).

A simple example was given wherein the electromagnetic-spatial pixels of a given "amoeba" was recorded across a given number of USCF's frames' sequence (e.g., say from USCF{x}through USCF{x+n}) then a specific electromagnetic stimulation was applied to each of the spatial-electromagnetic pixels comprising that 'ameba' at each of these recorded USCF{x...x+n}) frames such that the same precise electromagnetic-spatial pixels' composition of the amoeba at each of these USCF{x...x+n}) frames was re-produced except in the reverse order: i.e., USCF{x+n, x+(n-1)...x+(n-2)...x})! The claim is that for this amoeba the "flow of time was reversed".

It is perhaps noteworthy (at this point) to mention the fact that one of the other (three) 'differential-critical predictions' of the CUFT, i.e., regarding the appearance of relatively "more massive" particles more consistently across a series of USCF's frame then the appearance of "less-massive" particles was already empirically validated through the findings associated with the "Proton-Radius Puzzle" [2]. Note, however, that beyond the technological challenge of recording- and re-producing the precise spatial-electromagnetic pixels values comprising this amoeba at any of these USCF{x...x+n} frames, e.g., in the reversed order. The principle claim made through this particular CUFT's 'differential-prediction' regarding the possibility to "reverse time", e.g., for a particular object (like a given 'amoeba'), truly represents an instance wherein the "flow of time is reversed".

This is because, unlike the current "material-causal" basic assumption underlying for instance Quantum Mechanics' assumption that it is the direct physical interaction between the subatomic 'probe' and the subatomic 'target's probability wave function' which "causes" this 'target's probability wave function' to "collapse", thereby making it "impossible" to "reverse time" (e.g., since it is impossible to "un-collapse" this already "collapsed" probability wave function into a singular complimentary 'space-energy', 'time-mass' target's value) The Computational Unified Field Theory defines "time" as the degree of "object-inconsistent" changes being measured in any given object or phenomenon. Likewise, contrary to Relativity's assertion that it is impossible to "reverse time" since that would mean that we would have to travel faster than the speed of light in order to "catch hold" of a light signal emanating from an object or even that has already occurred the CUFT's computational definition of "time" as the degree of "object-inconsistent" changes across a series of USCF's frames, allows the CUFT to arrive at this 'differential-critical' prediction wherein it is possible to reverse the 'flow of time' (e.g., for a particular object) by recording and reversing the sequenced composition of electromagnetic spatial-pixels of a given object across a series of USCF's frames.

Perhaps the key conceptual difference (delineated above and previously) between the CUFT's new singular (higher-ordered) Universal Computational/Consciousness Principle's computational definition of "time", i.e., as the degree of 'object-inconsistent' measures of changes across a series of USCF's frames, and Quantum Mechanics (QM) and Relativity Theory (RT) measurement of "time" based on the direct physical interaction between a subatomic

'probe' and 'target' elements or between a relativistic 'observer' and (space-time or energy-mass) Phenomenon is that whereas QM and RT "material-causal" assumption assumes that "time" exists as a "real" entity, which is measured through the direct (subatomic 'probe-target' or relativistic 'observer-Phenomenon') physical interaction, the CUFT discovered that "time" (e.g., as well as the other three physical features of 'space', 'energy' and 'mass') may only be considered as "phenomenal" and "transient" being computed- and sustained- by the Universal Computational/Consciousness Principle (through its singular production of every exhaustive spatial pixel in the physical universe at every minimal time-point USCF's frame/s, and based on its singular computation of the degree of 'object-inconsistency' across a series of USCF's frames).

In other words, whereas both QM's and RT's measurements of "time" are based on the "material-causal" assumption wherein the measurement of "time" (e.g., as well as of "space", "energy" and "mass") is derived from the direct physical interaction between the subatomic 'probe' and 'target' or between the relativistic 'observer' and (space-time, energy-mass) 'phenomenon' i.e., as representing a "real physical property" embedded- and derived- from these direct "material-causal" (subatomic 'probe-target' or relativistic 'observer-phenomenon'). The CUFT's Universal Computational/Consciousness Principle (and 'Computational Invariance Principle) postulates point at the only "phenomenal" and "transient" 'computationally variant' nature of "time" which is, in reality, solely- and singularly- produced- sustained- and evolved- by the Universal Computational/Consciousness Principle.

Indeed, this principle difference between RT's and QM's "material-causal" measurement of "time" and the CUFT's (singular higher-ordered) Universal Computational/Consciousness Principle's computational "phenomenal" definition of "time", e.g., as the UCP's computation of the degree of "object-inconsistency" across a series of USCF's frames (which truly exists only "during" the UCP's computation of the USCF's frames but not "in-between" any two subsequent USCF's frames) points at the possibility of "time-reversal" i.e., either through a reversal of the spatial-electromagnetic configuration of any given object (or phenomenon) across a given series of USCF's frames (as outlined above and delineated previously: Bentwich [6]), or based on one of the CUFT's other theoretical postulates namely: the Human Consciousness Expansive Spectrum Hypothesis (HCESSH) postulate.

## The 'Individual Human Consciousness Expansive Spectrum Hypothesis' (IHCESH) Postulate

Another (potentially far-reaching) means for “reversing time” is the utilization of one of the latter CUFT’s theoretical postulates named: the “Individual Human Consciousness Expansive Spectrum Hypothesis” (IHCESH). In a nutshell, the recent articles Bentwich [5-22] further delineating the theoretical development of the ‘Computational Unified Field Theory’ (CUFT) pointed at the fact that based on the ‘Computational Invariance Principle’ and ‘Universal Consciousness Principle’ theoretical postulates we reached the inevitable conclusion wherein the sole ‘computationally invariant’ reality (which exists both “during” the USCF’s frame/s and “in-between” them) is the Universal Computational/Consciousness Principle, e.g., whereas the four physical features (of ‘space’, ‘time’, ‘energy’ and ‘mass’) may only be regarded as “phenomenal” and “transient”.

A natural extension of this “dramatic” theoretical conclusion was indeed the discovery of the ‘Ontological Relativism’ theoretical postulate, which postulated that since only this singular Universal Computational/Consciousness Principle is permanent and represents the sole and singular reality, and since our own Individual Human Consciousness perceives this singular Universal Computational/Consciousness Principle through three distinct, yet “ontologically equivalent” states of Individual Human Consciousness, i.e., there is no “objective” means for determining that one of the three states of Individual Human Consciousness of “waking”, “dream” or “deep-sleep” therefore the ‘Ontological Relativism’ theoretical postulate asserts that these three states of Individual Human Consciousness possess the same degree of “ontological validity”, e.g., as merely representing operation- and production- by the singular Universal Computational/Consciousness Principle.

Indeed, based on this ‘ontological relativism’ of the three states of Individual Human Consciousness (of ‘waking’, ‘dream’ and ‘deep-sleep’) as representing merely different facets of the same singular Universal Computational/Consciousness Principle, and based on the fact that in the deep sleep state there is no “separation” between this singular Universal Consciousness Principle and Individual Human Consciousness (e.g., as our phenomenological experience and recollection of this state indicates) therefore, the IHCESH postulate asserts that it follows that this Individual Human Consciousness

possesses the potential to expand even in the waking state to include all of the spatial-pixels produced by the singular Universal Consciousness Principle. This is because once it is established (e.g., based on the above mentioned ‘Ontological Relativism’ theoretical postulate) that the three states of Individual Human Consciousness (waking, dream and deep-sleep) are completely equivalent, i.e., as different manifestations of the same singular Universal Consciousness Principle and based on our direct phenomenological experience pertaining to the ‘deep-sleep’ state of Individual Human Consciousness i.e., indicating that there is no “separation” between this singular Universal Consciousness Principle and the Individual Consciousness within this deep-sleep state: as our direct experience indicates that there did not exist any other “entity” (e.g., “I”, the “world”, any “emotions”, “physical body” etc.) apart from the Universal Consciousness within this (apparent) ‘Individual Consciousness State’, then it follows that at least within this (unique) ‘deep-sleep’ state there does not exist any “difference” or “separation” between the “Individual Human Consciousness” and the singular reality of the ‘Universal Consciousness Principle’.

But, since according to the (above mentioned) ‘Ontological Relativism’ theoretical postulate all three states of Individual Human Consciousness are equivalent, i.e., in terms of their complete production- sustenance- and evolution- by the singularity of the Universal Consciousness Principle, then the IHCESH postulate infers that in the same way that in the ‘deep-sleep’ state there is no separation between the Individual Human Consciousness and the Universal Consciousness Principle so it should be possible for the Individual Human Consciousness to “expand” its identification from the particular spatial pixels occupying the physical body of a given person to greater segments of- (and potentially even to include the entirety of-) the Universal Consciousness sole production- sustenance- and evolution- of all exhaustive spatial pixels comprising any single or multiple USCF’s frame/s (in the waking state of Individual Human Consciousness).

Indeed, previously this IHCESH postulate was shown to allow for the potential of Individual Human Consciousness, e.g., when expanded to include greater regions of any given (single or multiple) USCF’s exhaustive spatial pixels to modulate any given region (object or phenomenon) of spatial pixels within a single or multiple USCF’s frame/s, including the possibility of “materializing” or “de-materializing” any given object or phenomenon (thereby challenging the basic Laws of Conservation!) Now, viewed from the perspective of the

CUFT's unique (abovementioned 'differential-critical') prediction regarding the possibility of "reversing-time", the IHCESH theoretical postulate indeed points at the possibility of Individual Human Consciousness, i.e., when expanded to include greater regions of the USCF's spatial pixels (object/s or phenomena) to reverse the "flow of time" since it can allow this Individual Human Consciousness to also modulate the particular sequence of "electromagnetic-spatial pixels" comprising any given object or phenomenon (across a given series of USCF's frames), thereby reversing the flow of time for that particular object or phenomenon.

## Discussion

This article presented the Computational Unified Field Theory's (CUFT) new 'A-Causal Computation' Paradigm which advanced a new approach relating to the concept of "time" and its unique perspective on the theoretical possibility to "reverse-time". Contrary to both RT's and QM, which assert that it is not possible to "reverse time", e.g., due to the principle inability to travel faster than the speed of light (and hence get a hold of a light signal emanating from an "older event"), or due to the principle inability to "un-collapse" the subatomic target's "collapsed" 'probability wave function' following its (assumed) direct physical interaction with another subatomic 'probe' element the CUFT revises our basic theoretical understanding of these four basic physical features of 'space', 'time', 'energy' and 'mass', e.g., as "computationally variant" ('phenomenal' and 'transient') products solely produced- sustained- and evolved- by the singular (higher-ordered) Universal Consciousness Principle which exists both "during" the USCF's frames (e.g., as solely producing these four physical features) and also singularly exists "in-between" any two consecutive USCF's frame/s; Specifically, this Universal Consciousness Principle's (UCP) computation of "time" was shown to be derived based on its two Computational Dimensions of 'Framework' (e.g., 'frame' vs. 'object'), e.g., as the UCP's measure of the degree of 'object-inconsistency' across a given series of USCF's frame/s.

Hence, the "flow of time" is produced through this singular Universal Consciousness Principle's computation of any given object's 'object-inconsistent' changes across a series of USCF's frames. Therefore, the CUFT's asserted that it should be possible to "reverse the flow of time" based on a precise recording of that given object's spatial-electromagnetic pixels across a series of USCF's and a subsequent application of a particular electromagnetic stimulation of each of these object's electromagnetic-spatial pixels in such a manner that would reverse the

sequential order of those electromagnetic spatial pixels across the given series of USCF's frames.

Indeed, a second possible pathway for reversing the "flow of time" could be offered through a manipulation of Individual Human Consciousness in the waking state: This was shown to result from the identity of the content of Individual Human Consciousness with the content of the Universal Consciousness Principle as evinced in the "deep-sleep" state of Individual Human Consciousness and from the 'Ontological Relativism' theoretical postulate of the Computational Unified Field Theory (CUFT) (e.g., evincing that all three states of Individual Human Consciousness are equivalent in terms of their ontological validity as stemming solely and singularly from the Universal Consciousness Principle).

Hence, as shown above, Individual Human Consciousness seen to be identical with the Universal Consciousness Principle in the 'deep-sleep' state and therefore potentially identical also in the 'waking state' of Individual Human Consciousness (based on the 'Ontological Relativism' postulate) presents us with the potential for Individual Human Consciousness to manipulate: "materialize", "de-materialize", produce-sustain- and evolve' any electromagnetic spatial pixel in the physical universe (e.g., just as the Universal Consciousness Principle produces- sustains- evolves- 'materializes'- and 'de-materializes' every spatial pixel throughout the entire physical cosmos at every such minimal time-point,  $c^2/h$ , comprising any single or multiple USCF's frame/s).

Thus, in the same manner that it is possible to "reverse the flow of time", e.g., for any given 'object' or 'phenomenon' through the recording of that object's precise electromagnetic-spatial pixels across a series of USCF's frames and a subsequent application of a specific electromagnetic stimulation which re-produces the same precise sequential presentation of that object's electromagnetic spatial pixels in the reversed order (across the series of USCF's frames) so, it may be possible for the Individual Human Consciousness in its "expanded format" as identical to the Universal Consciousness Principle (e.g., based on the Individual Human Consciousness Expanded Spectrum Hypothesis) to manipulate the spatial electromagnetic pixels of any given object or phenomenon across a given series of USCF's frames.

We thus reach the (inevitable) theoretical conclusion wherein "time"(as well as "space", "energy" and "mass") are shown to comprise only secondary 'computationally

variant' physical features which are solely produced-sustained- and evolved- based on the singular operation of the ('computationally invariant') Universal Consciousness Principle which solely exists both "during" the USCF's (singularly producing- sustaining- and evolving- every electromagnetic spatial pixel in the universe) and also "in-between" any two subsequent USCF's frames. It therefore follows that the "flow of time" can be reversed, e.g., either through the (abovementioned) recording and "reversed" electromagnetic stimulation manipulation of any given object's or phenomenon's precise electromagnetic spatial pixels' composition across a given series of USCF's frames', or through a parallel manipulation of that object's particular reversed electromagnetic spatial pixels sequential composition - based on utilization of the Individual Human Consciousness' expanded format's capacity to produce- sustain- and evolve- any spatial pixel in the universe across a series of USCF's frames.

Indeed, the Computational Unified Field Theory's new theoretical understanding of the physical reality as merely a secondary 'phenomenal' and 'transient' ('computationally variant) by-product of the singular reality of the 'Universal Consciousness Principle' which produces- sustains- and evolves- any spatial electromagnetic pixel in the universe (at any minimal time-point comprising any single or multiple USCF's frame/s) and the discovery of the potentiality of Individual Human Consciousness to equivalently produce-sustain- and evolve- any such spatial pixel in the universe points at the possibility of this expanded Individual Human Consciousness to "materialize"- or "dematerialize" any physical phenomenon, thereby challenging the basic Laws of Conservation Bentwich [5-22], "reverse time" (as shown above), and opens the door for further exploration of the central role that this Individual Human Consciousness may play in manipulating the physical reality and transcending its currently assumed limitations (e.g., including the possibility of travelling at a speed greater than the speed of light).

## Conclusion

We've begun this article with posing the important question: is "time-reversal" possible? Indeed, it was pointed out that the very possibility of "time-reversal" can be regarded as one of the (three) "differential-critical predictions" that differentiates the predictions of the CUFT from those of both Relativity Theory and Quantum Mechanics: This is because mutual to both RT and QM is an implicit "material-causal" assumption which assumes

that the determination of the temporal value of any given relativistic phenomenon or quantum subatomic target is made possible through the direct physical interaction between a given relativistic observer and the given phenomenon or between that subatomic target's (probability wave function) and a corresponding subatomic 'probe' element.

It was shown that according to both RT and QM "time-reversal" may not be possible due to the impossibility of any relativistic observer to travel at a velocity greater than the speed of light (e.g., in order to "catch" a light signal emanating from a "past" event or phenomenon) and due to the principle inability to "un-collapse" an already "collapsed" target's probability wave-function (e.g., following the assumed direct physical interaction between the subatomic probe and target elements). In contrast, the CUFT's new 'A-Causal Computation' Paradigm posits that there exists a singular (higher-ordered) Universal Consciousness Reality which simultaneously computes all exhaustive spatial pixels in the physical universe at any minimal time-point USCF's frame/s, including its computation of the four associated basic physical features of 'space', 'time', 'energy' and 'mass' for each of these exhaustive spatial-pixels.

Indeed, according to this new CUFT's 'A-Causal Computation' Paradigm, "time" is computed by this singular Universal Consciousness Reality as the degree of "change" computed any given pixel ("object"). Since the "temporal-value" for each given (exhaustive) spatial-pixel/s object is given by this singular Universal Consciousness Reality's computation of the degree of change in that given object's spatial-electromagnetic pixels' values across a series of USCF's frames then one of the (three) 'differential-critical predictions' of the CUFT posits that it should be possible to "reverse-time" through a precise recording of that given object's spatial-electromagnetic pixels values across a given series of USCF's frame/s, with a subsequent application of particular electromagnetic stimulation to each of that object's spatial-pixels in such a manner that it would produce a "reversed-sequence" of that object's recorded series of sequential spatial-electromagnetic pixels' values, hence de-facto "reversing-time" for that specific object.

Another equivalent way for "reversing-time" was given through the CUFT's Individual Human Consciousness Expanded Spectrum Hypothesis (IHCESSH) postulate that stipulated that Individual Human Consciousness is not (really) "separate" from the Universal Consciousness Reality (e.g., "Universal Consciousness Reality Inseparability Principle") and also possesses the potential

to "expand" such that it can function in an equivalent manner to the Universal Consciousness Reality, in the waking-state of Consciousness; This means that in the same manner that the Universal Consciousness Reality computes- "dissolves"- re-produces- and evolves- every exhaustive spatial pixel in the physical universe (e.g., for each minimal time-point USCF's frame) so can the "expanded" Individual Human Consciousness do! Therefore, it may be possible for such an 'expanded' Individual Human Consciousness to compute- "dissolve"- re-created- and evolve- every exhaustive spatial pixel in the physical universe at any minimal time-point USCF's frame/s.

Specifically, with regards to the possibility to "reverse-time" by such an "expanded" Individual Human Consciousness, it is suggested that equivalently to the technological capacity to record the particular spatial-electromagnetic pixels comprising any given object (or phenomenon) across a given series of USCF's frames and then apply a specific electromagnetic stimulation to each of that object's constituting spatial-pixels across a given equivalent series of USCF's frames to produce a "reversed-sequence" of that object's spatial-electromagnetic pixels, e.g., effectively "Reversing-time". So can the "Expanded Individual Human Consciousness" similarly produce the "reversed-sequence" of that object's comprising series of USCF's frames electromagnetic spatial pixels values.

Some of the important theoretical ramifications of CUFT's new 'A-Causal Computation' Paradigm's new conception of "time" (e.g., as well as of the other three basic physical features of "space", "energy" and "mass") are: "time" is seen as existing independently of any 'material-causal' interaction between a relativistic observer or a quantum probe element and corresponding relativistic phenomenon or quantum subatomic target element, but rather as being solely computed by the singular higher-ordered Universal Consciousness Reality which computes the degree of "change" at any given object's (comprising spatial pixels) across a series of USCF's frames. In fact, this "time" value (e.g., as well as 'space', 'mass' and 'energy' values) computed for each exhaustive spatial pixel in the universe (at any minimal time-point USCF's frame/s) is "stored" and exists within the Universal Consciousness Reality's Supra-Spatial-Temporal Reservoir. It brings about a fundamental change in our basic understanding of the concept of "time" (as well as of 'space', 'energy' and 'mass') including the possibility to "reverse time" e.g., either technologically or through the "expanded" Individual Human

Consciousness potentiality to function equivalently to the capacities of the singular Universal Consciousness Reality.

### Acknowledgements

This article is dedicated to my lifelong Mentor, Mr. Brian Fisher whose open-mindedness, encouragement and great wisdom have allowed these progressive ideas underlying the development of the Computational Unified Field Theory to come to fruition; to my dear mother, Dr. Tirza Bentwich whose great openness and nurturance have enkindled in me my sense of wonderment and curiosity, to my beloved father Prof. Zvi Bentwich, to my two wonderful boys, Shoham and Nethanel may you always seek Truth and have the great courage and openness necessary to not compromise until you find it! And dedicated with love to my brothers Issac, David, Daniel, and my dear sister Miri.

### References

1. Giacosa Francesco (2014) On unitary evolution and collapse in quantum mechanics. *Quanta* 3(1): 156-170.
2. Bernauer JC, Pohl R (2014) The Proton Radius Puzzle. *Scientific American* 310(2): 20-24.
3. Bentwich J (2006a) The 'Duality Principle': Irreducibility of sub-threshold psychophysical computation to neuronal brain activation. *Synthese* 153(3): 451-455.
4. Bentwich J (2006b) Universal Consciousness: From Materialistic Science to the Mental Projection Unified Theory. Universe Inc.
5. Bentwich J (2012a) Harmonizing Quantum Mechanics and Relativity Theory. *Theoretical Concepts of Quantum Mechanics Intech Chapter 22*: 515-550.
6. Bentwich J (2012b) "Theoretical Validation of the Computational Unified Field Theory". *Theoretical Concepts of Quantum Mechanics Chapter 23*: 551-598.
7. Bentwich J (2013a) The Theoretical Ramifications of the Computational Unified Field Theory. *Advances in Quantum Mechanics Chapter 28*: 671-882.
8. Bentwich J (2013b) The Computational Unified Field Theory (CUFT): A Candidate Theory of Everything. *Advances in Quantum Mechanics Chapter 18*: 395-436.

9. Bentwich J (2014a) What if Einstein was Right? Amazon Kindle Book Store.
10. Bentwich J (2014b) On the Geometry of Space, Time, Energy, and Mass: Empirical Validation of the Computational Unified Field Theory. Proceedings of VIGIER IX Conference – Unified Mechanics: Natural Science beyond the Veil of Space time, Baltimore, Maryland.
11. Bentwich J (2015) On the Geometry of Space, Time, Energy & Mass: Empirical Validation of the Computational Unified Field Theory. Proceedings of Vigier IX – Unified Mechanics: Natural Science beyond the Veil of Space time Baltimore, Maryland.
12. Bentwich J (2016) The ‘Computational Unified Field Theory’: A Paradigmatic Shift. Research & Reviews. Journal of Pure & Applied Physics.
13. Bentwich J (2017a) The Computational Unified Field Theory: Could ‘Dark Matter’ & ‘Dark Energy’ be “Superfluous”? Research & Reviews: Journal of Pure & Applied Physics, Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
14. Bentwich J (2017b) The Computational Unified Field Theory: Explaining the Universe from “Without”. Research & Reviews: Journal of Pure & Applied Physics, Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
15. Bentwich J (2017c) The Computational Unified Field Theory: A New ‘A-Causal Computation’ Physics. Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
16. Bentwich J (2017d) The ‘Computational Unified Field Theory’ (CUFT) May Challenge the ‘Big-Bang Theory’. Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
17. Bentwich J (2017e) Can the ‘Computational Unified Field Theory’ (CUFT) Challenge the Basic Laws of Conservation? Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
18. Bentwich J (2017f) The Computational Unified Field Theory (CUFT) Transcends Relativity’s Speed of Light Constraint. Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
19. Bentwich J (2017g) The Computational Unified Field Theory’s New Physics: Transcending Space, Time and Causality. Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
20. Bentwich J (2017h) A “Supra-Spatial-Temporal Universal Consciousness Reality’. Research & Reviews: Journal of Pure & Applied Physics, Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
21. Bentwich J (2017i) A New Science: An Infinite Omniscient Dynamic-Equilibrium Universal Consciousness Reality. Research & Reviews: Journal of Pure & Applied Physics, Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
22. Bentwich J (2017j) The Computational Unified Field Theory (CUFT) Challenges the Second Law of Thermodynamics. Research & Reviews: Journal of Pure & Applied Physics Special Issue: The Computational Unified Field Theory (CUFT) - A Paradigmatic Shift in 21<sup>st</sup> Century Physics.
23. Born M (1954) The statistical interpretation of quantum mechanics. Nobel Lecture.
24. Heisenberg W (1927) Über den anschaulichen Inhalt der quantentheoretischen Kinematik und Mechanik. Zeitschrift für Physik 43(3-4): 172-198.
25. Brumfiel G (2006) Our Universe: Outrageous fortune. Nature 439: 10-12.
26. Ellis J (1986) The Superstring: Theory of Everything, or of Nothing? Nature 323: 595-598.
27. Greene B (2003) The Elegant Universe, Vintage Books, New York.