



PART XVI

1. A Cosmological Conundrum

Jun 1st 2022)

2. “Abode of the Dead”

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Introduction

In the course of an examination of the properties of the new basic energy field ($p = \pm v$) **which seems to be the long – sought- for universal field needed for gravitation.** [1.2] and as well, to be the quantum wave function field, we have encountered a fundamental problem: Namely, the field goes to a physical zero value for its variables p and v where the curves pass through the origin so that it is not *physically* universal (that is to say is not physically and continuously connected through the origin from one Quadrant to another as required for gravitation.) It is geometrically and mathematically universal and continuous at the origin but fails **physically** at that point where p and v become zero.

This is what we shall call our **cosmological conundrum**: What seems basic and universal and physically insightful is physically discontinuous. We shall examine the problem and propose an unusual solution which retains the basic energy equation.

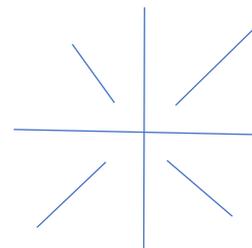
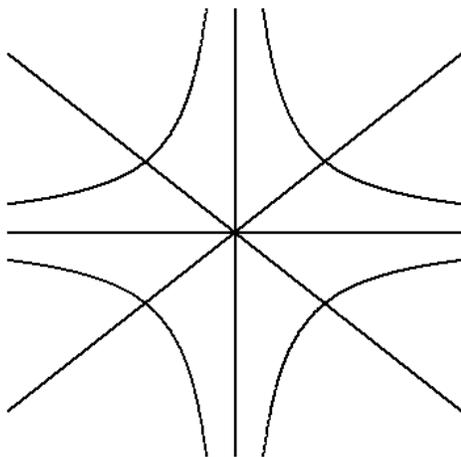


Fig.1 Showing universality of basic energy equation ($p = \pm v$) with respect to the hyperbolic equation of state ($pv = \text{const.}$) for the visible cosmos

A Solution

In the present cosmological case only two solutions appear possible : one, reject the basic energy equation [$p = \pm v$] or two, retain the basic equation and position some Primal Spirit i.e. a Central Spirit/Presence at the equation's origin to bridge the gap and make it universal as required by the facts of gravitation.

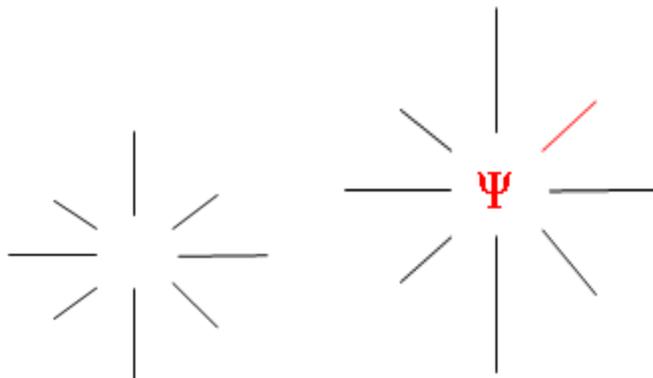


Fig. 3 Depicting the Solution to the Cosmic Conundrum: Namely a Central Spirit Presence to Bridge the Physical

Discontinuity at the Point of Origin

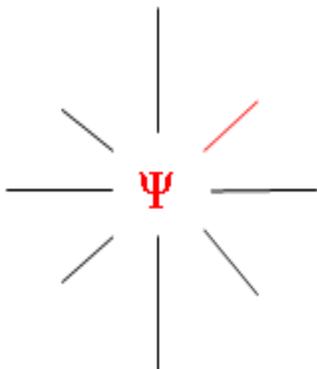
The Problem:

So we now ask: Does a **geometrically** universal, gravitational field ($p = \pm v$) require a Spiritual Bridging Presence at the Origin in order for the equation to be **physically** universal?

Our answer now is, yes . Apparently so.

A Look Back at The Ideal Gas Law Problem in Human Neurology Wiith its Need for an Infinity of Energy Microstates

In the course of a study of five cosmological fields [1] namely: ordinary compressed matter of the visible universe, the dark matter, dark energy, quantum and electromagnetic fields, and gravity, a review was made of their respective thermodynamic equations of state. The most familiar of these state equations is the



hyperbolic equation $p v = \text{constant}$ which describes the matter of the visible cosmos. This equation is the familiar Ideal Gas Law which has such wide application in compressible fluid physics, gas dynamics, meteorology and cosmology .

We find that this Ideal Gas Law arises sequentially from the adiabatic gas equation series, $p v^k = \text{constant}$, since

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where the adiabatic index k becomes equal to $+1$ [i.e. $pv^k = pv = \text{const.}$] and the equation becomes simply $pv = \text{constant}$. Also we, find that n , the degrees of freedom, or number of energy 'microstates', n must then become **an infinity** [$n = 2/(k-1) = 2 / (+1 -1) = 2 / 0 = \infty$],and so for $RT = pv^k = \text{const}$ and corresponding $n = \infty$ then **the exact gas law is not physically possible**; it evidently must exist only theoretically or as a useful approximation.

It seemed , however, at the time odd that such a fundamental scientific relationship as the ideal gas law must, strictly speaking, exist only theoretically, and so the matter was studied in some depth.

A solution, to the problem then arose from a stated need in neuroscience, [3] for a scientific theory to explain observations of human brain temperature patterns and variations which point to a need for a thermodynamic Human Equation of State. The classic Equation of State is this Ideal Gas Law [$pv = \text{constant}$]. This, however, has that requirement for an infinity for its variable n , the number of equal energy states, and so it is always used in physics as a close approximation only.

However, if applied **to humans** ,under the classical ,philosophic 'body and soul' theory of human nature, then the equation could fit exactly, because **spirit in rational philosophy is intrinsically unquantified and can assume any value required, including zero or infinity.**

This is rather startling, as is the fact that the predictions of such a Human State Equation should be verified or falsified by brain observation. or experimentation [2] **Thus, a canonical scientific (testable)** Parts [6] To sum up: the ideal gas law can be exact in human neurology where a proper equation of state [$pv = \text{const}$] **can only exist where the human soul is also Spirit.**

The Conundrum Problem and Its Solution

Returning to the energy state[$p = \pm v$] and the conundrum of a physical gap at the origin, we have, first, the adiabatic law

$$pv^k = \text{constant} , \text{ then}$$

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$$pv^{-1} = p/v = \text{const. and}$$

$$p = \pm v \quad \text{which is the energy equation}$$

and so we have related the energy equation $p = \pm v$ to the Ideal Gas Law [$pv = \text{constant}$] by their common derivation from the adiabatic series $pv^k = \text{constant}$

The demonstration [in Ref 6] was to the effect that human **Spirit** can convert the approximate Ideal gas law into an exact Human Equation of State.

It was a scientific proof since it since it can be experimentally either validated or disprove. However, In the present case of the universal energy law which needs a zero supported at its origin to be valid, it does not appear to be

scientific.c Both laws are related, since both derive from the **adiabatic series** as shown show above. The human state equation requires a capacity for a physical infinity, and there also is in this case an experimental verification possibility (Ref 6)The cosmological basic equation it seems can also only be universal as required **if a spiritual dynamism exists at the point of coordinate origin**. This can rationally be proposed as shown but it is not experimental and thus not scientific so far as can be discerned at present.

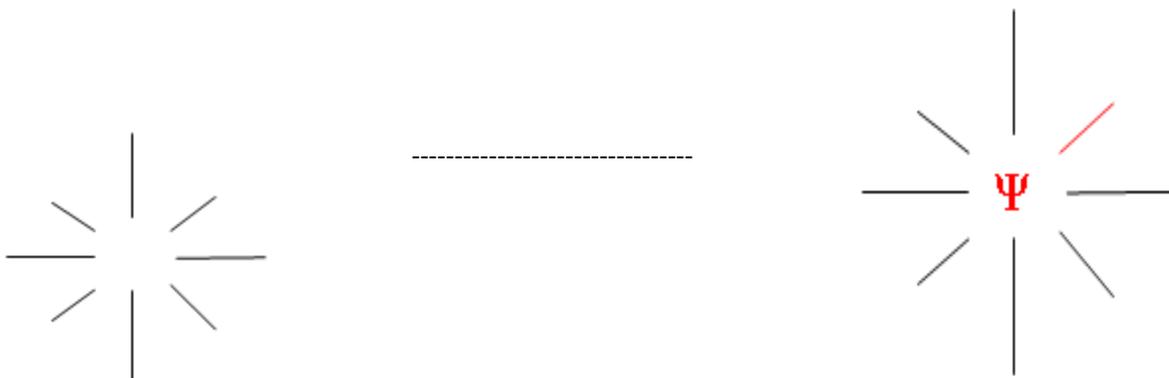
Speaking of reason and philosophy, the logic and rational evidence of the classical and pre-modern philosophical position on supporting the nature of man as a spiritual/rational animal has always been overwhelming. The rise of our scientific and technological way of life, however, has routinely excluded spirit from discussion because of its requirement for scientific proof, which requires experimental proof as well as logical, physical theory.

In this cosmological case, with its basic universal cosmological equation, it would seem appropriate that we might pose this necessary spiritual presence at the origin point to be a Creation Presence. We note however that this proposal, while reasonable, does not appear to offer an experimental or observational proof so that then it, unlike the Human Equation of State case, is philosophical / theological only and not scientific. Now to meet this requirement for an infinity, so that the ideal equation of state can actually exist, we note that philosophically, a **spiritual dynamism** has the property of being **intrinsically unquantified**. That is, spirit can

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accommodate any numerical value, including zero or infinity. Now, over millennia, in classical and pre-modern times, we humans have been, on the **rational** evidence, considered to be ‘**body and spirit**’ animals. Today, that logical rationality and its conclusion are still valid. [5, 5a]. Science, however, in addition to its rational theory, requires experimental verification as a prerequisite to acceptance of its postulates and apparently this is not available. for cosmology
Now we can conclude that, once again, this time with cosmology that Spirit must exist if we wish to accept a certain fundamental basic cosmological equation of state. In fact if we want to use a certain basic equation we must position Primal Spirit at the centre of the whole Universe;

If we do so, calculations will now go well, but the extraordinary theory of a Spirit at the centre of the cosmos will be this time philosophically and not scientifically based. That is how things stand at the moment; the conundrum is solved philosophically but so far as we now know ,is not based scientifically. Time may change that, although any experiments must surely be indirect in this cosmic case.



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References

1. . Power, Bernard A., www.energycompressibility.info: Part VIII. *Equations of State for Cosmic Fields*. 2017.
 2. Power, Bernard A., www.energycompressibility.info Part XV *Equation of State for Dark Energy and Solutions to Two Major Problems*. Posted 2021
 3. . Carhart-Harris, Robin L., R. Leech, P.J. Hellyer, M. Shanahan, A. Feilding, E. Tagliazucchi, D.R. Chivalo, D. Nutt “ The entropic brain: A Theory of conscious states informed by neuroimaging research data with psychedelic drugs”. *Frontiers in Human Neuroscience*. 03 Feb 2014.
 4. -----*Part XIII: Gravitons and a Centered Linear Equation of State*. Posted August 2021
 - 5 -----*Part XIV Dark Energy and a Centered Linear Equation of State*. Page posted October 2021
 - 6-----*Part IX: A Human Equation of State at A Thermodynamic Limit*. Page Posted February 2019.
 7. . Lonergan, S.J., Bernard. *Insight: A Study of Human Understanding*. Philosophical Library Inc., New York, 1957.
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Part B”

“The Abode of the Dead”

General

For those who believe that the human soul is spiritual, the matter of the nature and meaning of death is important. One of the questions which arises naturally is Q, Where and what is the “Abode of the Dead” or, in other words, Q . Where does the Human soul go after human death?

Up until now, the answers to this matter have been the sole province of Theology and/or philosophy. Now however , with the puzzle or cosmological conundrum of the nature of the basic universal equation of state [$p = \pm v$] at its origin point answered as in Part A above; we have a basic *spiritual presence* introduced into cosmology and so the new question seems to now be more natural and valid.

Succinctly, we may also now logically reason as follows:

1. After death the human body separates from the spiritual soul and decays to dead matter. The soul remains **but now has zero pv energy**

$pv = 0$

2. But, the zero point pv energy on the basic equation of state lies uniquely at the $p = v$ basic universal equation’s origin point i.e. where material values are zero and which now on one theory is occupied by a Creator Spirit /Presence .(Part A)

3. Therefore, the “Abode of the Dead” lies at the cosmological Origin Point occupied by the Spirit/ Creator – in short the Human soul after death abides with or near the Spirit /Creator at the origin point of the universal equation of state (Fig 2.)

This form of the reasoning is emotionally satisfying and seems reasonable, but introducing the $p_v = 0$ argument, while pleasingly concise, seems to possibly require further thought.

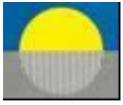
‘To attain any assured knowledge about the soul is one of the most difficult things

in the world’Aristotle

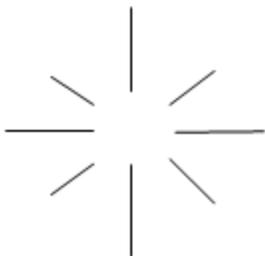
‘Man, the Rational Animal’ Aristotle

“What is real is that which can be intellectually grasped and reasonably affirmed.” ...Bernard Lonergan, S.J.

“ Insight is Joyous” Richard Feynman



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