

# BIG BREED THEORY RECUES THE BIG BANG

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*The collision breeding of opposed energies, from the void, provided all the big bang theory required. This happened long before that creative explosion of matter erupted. In this way the major false prediction invalidating the current big bang is resolved. As presently formulated the latter predicts a rate of expansion  $10^{120}$  times too great! A fundamental feature of this supplementary theory is its prediction of the accelerating nature of expanding space. Credibility was gained by publication of the theory before discovery by astronomers in 1998: that the expansion of the universe is speeding up.*

*Furthermore, worked out in detail, the theory provides a new way of interpreting red shift data from remote supernovae. This shows the true Hubble constant is less than half the currently accepted value. Furthermore the Hubble law appears from the big breed theoretically and shows the expansion is accelerating. A surprising result is the shape of the predicted curve of red shift plotted against distance. This shows a rapid increase when nearing the growing edge of the universe. This appears to explain the observation of astronomers and their interpretation by 'dark energy'. This explanation now has to be rejected.*

## 1 Introduction

The big bang theory posits the start of the universe by an 'inflation' that generated all the energy needed to build the universe of matter in a split second. Nothing existed before this event that created both time and space, as well as matter. This all happened at the same instant about 13.7 billion years ago. Then the creation had to switch off with expansion now proceeding under forces of inertia and with no more energy creation proceeding. Unfortunately theorists were unable to adequately switch off the creation, leading to the prediction of a rate of expansion  $10^{120}$  times greater than astronomers could possibly allow! This is known as the 'Problem of the Cosmological Constant': a name having nothing to do with one Einstein proposed in order to make general relativity fit in with the concept of a static universe.

The big breed theory, however, is based on the idea of a special kind of space called 'i-ther', of a sub-quantum nature. It is built from real particles called 'primaries' made from opposite forms of energy in balanced amounts. Such a mixture is able to emerge from the void of zero energy without violating the conservation laws of energy

and momentum: something the big bang theory as presently formulated is unable to provide. The mixture had to emerge many billions of years before the big bang created the origin of matter from the energies so provided. In this way, as will presently be explained, the major objections to the big bang theory are overcome. What will be shown is that primaries of opposite energies breed by collision - provided only one of each collides at any one time. They can also emerge spontaneously from the void in double pairs at a very low rate to provide the required initial seeds. When a sufficient concentration of primaries had appeared by accident, at some place, then collision breeding could take off. The rate of creation has been found  $10^{42}$  times too high when only two opposites at a time collide. Fortunately when large numbers collide from all directions, the same two laws of physics demand mutual annihilation. This cancels most of the creation still proceeding to provide the creation switch-off means the big bang theory lacks. In this way the energies needed for matter building could have pre-existed our universe of matter. An ever-accelerating expansion of space that is consistent with astronomical observation appears naturally from the theory.

Pearson (1994) published the principle in Russia and later in *Frontier Perspectives* in 1997 but mention of the accelerating feature was avoided since at the time it seemed an embarrassment. However, the astronomer Schwarzschild (1998) then published data on remote type 1A supernovae that showed the expansion of the universe is speeding up instead of slowing down as all cosmologists expected from big bang theory. To make the theory fit observation the concept of 'dark energy' was quickly postulated. This was attributed mysterious repulsive power that lay dormant for many billions of years but then became active in generating long-range repulsive forces able to overcome gravitational attraction. The big breed theory, however, had already shown the acceleration to be due to a minute net creation owing to incomplete cancellation of the creation still proceeding at a frighteningly high rate everywhere. No long-range forces of repulsion ever needed to be invoked!

## **2 Why does the i-ther need to be a sub-quantum entity?**

The reason i-ther had to be of a sub-quantum nature was because the quantum world is unimaginably weird. It has particles that spin in opposite directions simultaneously yet behave like waves under some conditions. This encapsulates the enigma known as 'wave-particle duality'. Indeed the 'Copenhagen interpretation' has it that these particles exist in an unreal state of 'superposition' and as waves, until observed. Then the 'wave-functions' collapse into reality. This meant a conscious intelligence is required to at

least participate in the creation of matter.

The next step may appear controversial but at least it has the support of quantum physicist, Stephen Adler (2005), who appears to have adapted the approach of Pearson (1997).

If consciousness can be only pure brain function then how could brains of matter exist before matter appeared? The answer to this question could be that true reality had to pre-exist matter. This needed to have the potential of evolving consciousness. Then it would be able to so mathematically organise its own energies that a semi-virtual reality could appear. This would seem to be totally real when viewed from a macroscopic perspective, since our bodies form part of the three dimensional picture. This view has also been expressed by at least one Astronomer.

The ether, however, could not operate on quantum mechanics as otherwise it would need an even deeper level for its organisation and an unsatisfactory infinite regression would be involved. It was decided to try a modified version of Newton's classical mechanics as one also applicable for i-ther. If this approach led to predictions matching observation then this choice would be justified.

Again Adler adopts a very similar approach in suggesting that a deeper level of reality than the quantum level must exist. He also follows Pearson in proposing this as based on an extension of "classical dynamics" to use his own words.

### **3 Opposed energies mean the existence of negative states**

According to Blanchard (1969) the engineer turned quantum physicist, Paul Dirac, was the first person to moot the concept of negative energy states. He noted that an energy equation from Einstein's special relativity had both positive and negative roots and suggested that both kinds could therefore exist. However, he went on to propose that space existed as a sea of electrons in negative energy states. This was found to be wrong and so the idea that negative states could exist was not pursued.

The big breed theory began by defining negative states as particles that respond to an impressed 'force of action' by accelerating in the opposite direction to this force. Then mechanical work, being force time distance moved, would be negative and the kinetic energy of the particles involved would also have to be negative. It followed from  $E = mc^2$  that the rest mass and rest energy of such objects would also be negative. Then an exact mirror image of positive states should exist. If two objects, each made from negative energy were to collide, the negatively directed impulses would cancel just as those do when objects of positive energy collide. In both cases identical responses would therefore be

observed. It follows that we cannot even say from which kind of energy our universe is built. So contrary to immediate impressions there is nothing strange about negative states.

This means that both kinds are equally likely to exist and must do so at the ultimate level of reality. This is necessary for any theory that attempts to show everything emerging from the void of nothing. Only positive and negative energies can emerge in balanced amounts from nothing if the law of conservation of energy is not to be violated. The law of conservation of momentum needs also to be satisfied. The momentum of negative mass can be imagined as an arrow of length proportional to mass multiplied by velocity, but this points in the opposite direction to that of motion.

#### **4 A brief explanation of Collision Breeding**

Full details are provided in the literature available – especially Pearson (2010). When two primaries of opposite energy collide head-on from exactly opposite directions, the momentum arrows of both point in the same direction. To conserve both energy and momentum neither can change in direction, mass or speed. Consequently they must pass through each other, first mutually annihilating and then re-constituting as they separate.

Most collisions are not head-on but produce scattering collisions. However, the same zero change in momentum in the incident direction of travel has to apply as in the case of head-on collisions. A detailed study has shown that extra momenta of equal but opposite amount must add to each primary before separation occurs. Although energy and momentum are totally different properties of primaries, just as they are for ordinary matter, an increase of energy is associated with any increase of momentum. The positive primary gains positive energy and the negative one must gain a balancing amount of negative energy.

These added momentum vectors appear perpendicular to the initial directions of relative motion when the colliding masses are numerically equal and even when this is not the case the direction is generally within 10 degrees of the perpendicular. These directions are dictated by the need to conserve energy – meaning balanced gains must result.

In this way primaries repeatedly gain in energy and size until a critical size is reached. Then on the next collision they split. In this way collision breeding occurs and primaries multiply at an alarming rate. Two opposed forms of energy have emerged from the void.

#### **5 Mutual Annihilation**

Collision breeding only occurs when opposites collide in twos

to produce a seething mass. The fluid produced, however, becomes unstable at some critical density since a far lower energy state can exist. This can arise when primaries converge in large numbers from every possible direction. Under these conditions the total incident imploding flow has zero net momentum. This is the condition favouring mutual annihilation. In consequence the entire i-theric field self organises into a myriad of tiny flow cells each containing a core of annihilation at its centre. Primaries of both kinds arrive at the surfaces of cores and squeeze each other out of existence as they move by inertia to the central point. In this way the creation cut-off mechanism is provided that the big bang theory lacks.

Densities and associated pressures have their highest values at the central point of an ever-growing i-theric ball and so cores start at the centre and develop rapidly in ever-growing spherical rings until they fill the whole. In FIG.1 this is illustrated in colour with positive primaries shown in magenta, negative ones in cyan and cores in white. What was not realised until this computation was developed is illustrated. Random motion is never described by a uniform distribution but shows bunching effects. What was not realised is that the bunching of opposites would nearly always occur in different places as this figure, part of a video sequence, amply demonstrates. This means each phase of the mixture is not strongly coupled to the other as far as motion on a scale involving many cells is concerned. With total coupling momenta would cancel so allowing acceleration to occur without any force, produced by pressure differential, being required. However, with weak coupling each phase has to be accelerated by pressure differentials associated with its own kinetic energy density.

The cut-off cannot be complete, however, since total annihilation can only occur at an upper critical i-theric density beyond which a net annihilation would result. At lower than this critical density a small but finite net creation will remain. An exponential and therefore accelerating growth will be driven by this net creation. In consequence pressures will maximise at the central origin point and fall off progressively toward the outer growing edge. Then the spherical blob comprising the whole ether can be imagined as existing in layers like an onion. Each layer needs a higher pressure on its inside than on its outside in order to drive the acceleration.

Now the higher the acceleration produced and the thicker the layer being accelerated the greater must be the required pressure differential across that layer. However, the higher the pressure the smaller will be the net creation. In consequence a self-controlling mechanism has resulted that sets the net creation to a value that is

quite independent of the huge creation still continuing unabated within each cell. This is able to lead to an accelerating growth that is consistent with astronomical observation. Not only is a solution to the vexed question of the problem of the cosmological constant resolved: the nature of the accelerating expansion of the universe is explained without need to posit the existence of dark energy.

At this point some mathematical analysis can be presented.

## 6 Pressure versus Radius profile needed for Acceleration.

Initially it had been assumed that in order to accelerate each spherical layer or shell the force required would equal the rate of change of momentum in which mass as well as radial velocity was increasing. However, this took no account of the influence of the opposite energy phase. Positive and negative primaries both constantly gain mass in balanced amounts as they repeatedly collide. Also they arise with cancelling momentum gains regardless of any collective accelerating motion. This means that no pressure differential is required associated with mass increase. Only the existing mass within any given element of volume requires a pressure differential to provide acceleration. To allow for a weak coupling between the two phases for bulk motion a 'phase coupling factor'  $C_{PF}$  will be incorporated that appears to have a value of about 0.9. If  $\theta$  is the small solid angle forming a conical element distant  $r$  from the origin then the force  $dF$  is produced by a pressure, which is  $P$  on the inside at radius  $r$  and  $P + dP$  on the outside at radius  $r + dr$ . This force produces an acceleration  $dv/dt$  on mass  $dm$  of the element of mass density  $\rho$ . This relation is given by:

$$dF = -\pi(r\theta)^2 dP = C_{PF} dm dv/dt \quad [1]$$

And  $dm = \rho \pi (r\theta)^2 dr$  where  $\rho = 3P/v_p^2$

The latter shows that for the i-ther, treated as a perfect gas, the density  $\rho$  is related to pressure  $P$  and the average speed  $v_p$  of the primaries. Combining these two equations yields:

$$-\int_{P_0} \frac{dP}{P} = \frac{3C_{PF}}{v_p^2} \int_0 dr \frac{dv}{dt} \quad \& \quad \frac{dr}{dt} = v \quad [2]$$

$$\text{So } -\int_{P_0} \frac{dP}{P} = \frac{3C_{PF}}{v_p^2} \int_0 v dv \quad [3]$$

Integration of [3], noting that  $P_0$  is the pressure at origin, yields:

$$\ln\left(\frac{P_0}{P}\right) = \frac{3C_{PF}}{v_p^2} \frac{v^2}{2} = \frac{3}{2} \frac{C_{PF}}{v_p^2} (H_0 r)^2 \quad [4]$$

Here the Hubble law has been assumed in which  $H_0$  is the Hubble

constant. The justification for this is shortly to appear.

## 8.2 Pressure Development at the Origin Point as Time Proceeds

A start will be made from equation [7.5.1] p.183 but assuming the rate of creation to increase in direct proportion to pressure so that  $C_{AN}$ , the net rate of energy creation, only affects volume increase. The term  $dP/P$  can then be ignored to yield:

$$3 \int_{r_1} \frac{dr}{r} = \int_{V_1} \frac{dV}{V} = C_{NA} \int_0^t dt \quad [8.2.1] \quad \text{Then integrating:}$$

$$\therefore r = r_1 \exp\left(\frac{C_{NA}}{3} t\right)$$

Differentiating with respect to time yields the velocity, hence:

$$v = \frac{dr}{dt} = r_1 \frac{C_{NA}}{3} \exp\left(\frac{C_{NA}}{3} t\right) = \frac{C_{NA}}{3} r = H_0 r \quad [8.2.2]$$

Which means that the Hubble constant  $H_0$  has been changed from the value deduced of  $C_{NA}/4$  in §7.5.1 p.184 to  $C_{NA}/3$ .

Combining [8.2.1] and [8.2.2] applied to the shock-fronted edge of the i-ther, starting from  $r_{SH1}$  at time zero to radius  $r_{SH}$  at time  $t$ , where the pressure jumps from zero to  $P_{SH}$ , yields:

$$H_0 r_{SH} = H_0 r_{SH1} \exp(H_0 t)$$

This can then be substituted in [8.1.4] to yield:

$$\frac{P_0}{P_{SH}} = \exp\left[\frac{3}{2} \frac{C_{PF}}{v_P^2} (H_0 r_{SH1} \exp(H_0 t))^2\right] \quad [8.2.3]$$

Now the shock front is caused by sudden creation followed almost immediately by a rapidly evolving and almost balancing annihilation as cores develop. It is quite unlike shock waves in air that increase in pressure with speed increase. In that case it is the speed relative to the air in front that causes the shock pressure rise. There is only void, meaning nothing, in front of the i-theric shock. Relative speed cannot relate to nothing and the latter cannot have a flow. The speed of the growing edge has to be measured from the origin point of i-ther because that is the only place stationary as compared to the average velocity of all primaries in the whole i-ther. In consequence  $P_{SH}$  will have a constant value for all values of time. This will apply despite the accelerating speed relative to the origin.

It follows that pressure at the origin point can be calculated from [8.2.3] in units of  $P_{SH}$ , since the latter will be an unchanging constant. The following table shows how the i-ther can be expected to grow from an assumed radius of about one meter at time zero based on Hubble's constants of 71 km/s/MPC and 29 km/s /MPC,

which convert to  $2.3 \times 10^{-18} \text{ s}^{-1}$  and  $9.4 \times 10^{-19} \text{ s}^{-1}$  respectively.

It is first necessary to point out that only growth of i-ther: not the universe of matter, is considered. In this theory, unlike the big bang, everything including space, time and matter, do not appear at the same instant. In the big breed theory matter only emerges from i-ther after an adequate time has elapsed to allow for the evolution of the intelligence needed to organise the creation of matter.

**TABLE 8I ORIGIN PRESSURE RISE WITH TIME**

$H_0 = 71 \text{ km/s/MPC: } R_{SH} \text{ in BLY}$				$H_0 = 29 \text{ km/s/MPC}$			
$t \text{ BY}$	$R_{SH}$	$P_0/P_{SH}$	$v/c$	$t \text{ BY}$	$R_{SH}$	$P_0/P_{SH}$	$v/c$
0	1E-16	1	7E-18	0	1E-16	1	3E-18
100	1.3E-13	1	1E-14	1000	7E-4	1	2.2E-5
200	1.9E-10	1	1E-11	1200	.283	1.00004	8.4E-3
300	2.7E-7	1	2E-8	1240	.926	1.00048	.0275
400	3.9E-4	1	28E-6	1260	1.68	1.0156	.0498
500	.554	1.001	.0403	1280	3.04	1.0051	.0901
520	2.37	1.019	.172	1290	4.08	1.0093	.1212
530	4.90	1.083	.356	1300	5.49	1.0169	.163
535	7.05	1.180	.512	1310	7.39	1.0308	.219
540	10.13	1.407	.736	1320	9.95	1.0564	.295
545	14.57	2.025	1.058	1330	13.38	1.1044	.397
550	20.95	4.301	1.522	1340	18.0	1.197	.534
555	30.12	20.42	2.188	1350	24.2	1.385	.719
560	43.32	511	3.15	1360	32.6	1.802	.967

The calculations use SI units so distances had to be converted from MPC to metres. There are  $3.26 \times 10^6$  light years per MPC and  $3.156 \times 10^{16} \times c$  metres per light year. However, the radial distance of the shock front from the origin point is given in billions ( $10^9$ ) of light years (BLY) and time is given in billions of years (BY).

The starting shock front radius at time zero corresponds to about one metre but will have grown to about 1 km at  $t = 100$  billion years for  $H_0 = 71 \text{ km/s/MPC}$  but takes about 280 BY to reach this size when  $H_0 = 29 \text{ km/s/MPC}$ . The age of i-ther depends on the choice of starting radius that cannot yet be calculated but could be anywhere between a few centimetres and a kilometre.

What is most important, however, is the many billions of years that need to elapse before a significant pressure increment from shock to origin point appears – about 500 BY and 1253 BY respectively for the same 0.1% pressure elevation. Then  $P_0$  grows rapidly being an exponential as function of an exponential according to equation [8.2.3].

It is interesting to compare the two cases at 535 BY and 1338.7

BY respectively since  $P_0/P_{SH}$  are 1.18 in both cases. For the higher value of  $H_0$ , however,  $R_{SH} = 7.05$  billion light years as compared to 17.3 BLY for the lower  $H_0$  value. Furthermore the shock speed ratios  $v/c$  are .512 and .514 respectively – in other words identical.

The creation rate at the origin point would need to be higher than at the shock front by about 1/3 of the pressure elevation for the analysis to be mathematically consistent (as indicated by [7.5.2] p.183) and so for these cases this would mean about a 6% increase in creation rate above that at the shock front. Since the logic in Chapter 9 suggests creation rate must fall as pressure increases, it follows that this analysis needs further refinement to achieve adequately convincing prediction.

***On a first reading a bypassing of most of the rest of this chapter is advised with a jump to §8.4. There an important new way of interpreting red shift data is considered. Existing methods based on special relativity do not take account of any background medium through which light must travel and so are argued to be invalid.***

***The remaining sections of this chapter are included only for the record and to show how false concepts can lead the pioneer astray. It may be of interest to see the magnitude of errors involved by comparison with the finally derived theory given in Chapter 9.***