5 Eighth-dimensional differentiation

5.1 The tetrakaidecahedron

During this episode of 4D expansion, each spherical event would also be undergoing a differentiation or phase change. As stated in the last chapter, this energy would be stored as an *energy potential* that would play a major part in what was to happen next.

As the pore spaces increase in volume (still keeping step with the increasing size of the 4D bubbles), the elastic tension of the single-dimensional vectors would also increase as their energy was diminished still further which would in turn, cause them to shorten even more. Eventually, the only energy left would be those string remains that lie directly at the spherical boundaries and as this too would inevitably be depleted. Inflation would necessarily have to cease.

This depletion of single-dimensional string energy, together with the increasing volume of the null-universe pore spaces, would provide the impetus that would ultimately pull boundaries out of shape. Each adjacent spherical bubble (the result of an individual 4D expansive event) would effectively increase its volume by approximately twenty percent, as its boundary snapped outwards to fill its share of the adjacent pore space vacuum that lay between it and its neighbours. In so doing, these spheres (or bubbles) would dramatically change their shape accordingly, as boundaries at last made perfect contact with other boundaries; destroying all the pore space volume between them.

Due to this dramatic closure of pore-space vacuum, each of these spherical bubbles would now transfigure itself into a unique kind of polyhedron called a ***tetrakaidecahedron*** (see *Figure 5.1.01* opposite). The tetrakaidecahedron; (tetra [four]; kai [and]; deca [ten]), is to us a fourteen sided, three-dimensional solid, consisting of eight hexagonal and six square faces (also sometimes referred to as 'Kelvin's Cell'). Several of these will cluster easily in space because of their angles of incidence and it is the best shape to use other than a cube, if you want to completely fill a volume with as little free space left as possible (i.e. no pore spaces or gaps). These objects are rounder than a cube, but squarer than a sphere and have been chosen for this model *NOT* simply because they appear to be the best polyhedron to fit the purpose, but because they happen to be the *ONLY* ones that can possibly result from such a pore space collapse as the boundaries of these expanding mini big-bang concede to the power of the null-dimensional vacuum.

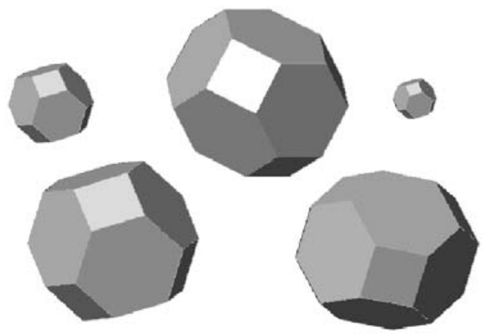

Figure 5.1.01 *The tetrakaidecahedron (or teddy); a fourteen sided polyhedron made up from hexagonal and square faces.*

This phenomenon is not a new observation and it has been known for decades at least, that under certain conditions, tetrakaidecahedral structures will very often result from the 'pressure' modification of spherical bodies[1]. For example, if one were to cluster together a series of spheres that are all of the same size – like one would picture a cluster of grapes for instance; (although, small balloons all inflated to the same pressure are the best examples to use here) and subject them to a steady and equal pressure increase (like submersing them lower and lower into a deep tank of water); the little pressure areas, or pore spaces already described above, begin to build-up between the balloons. If the pressure is allowed to increase steadily (sink them deeper and deeper into the tank of water), at some point, the balloons will collapse into their most stable (collective) shape, which happens to be a cluster of tetrakaidecahedra. This assumes of course that these spheres are first contained within an enveloping boundary, such as within the confines of a suitable net. This resulting structure is also the ‘idealised’ shape of the human fat cell, as well as forming many other basic cellular structures in nature. It is also well known within the plastics and foam industries. A similar effect can also be produced by plunging a drinking straw into a bowl of ‘detergenty’ water at the kitchen sink and blowing with all your might (a game that many a child still stumbles upon from time to time). The result will be a monstrous dome of soapy bubbles that rises up and over the washing-up bowl and if one peers carefully within, the misshapen hexagonal and square faces of the tetrakaidecahedron can usually be spotted. Mother Nature then, would seem to be no stranger to this three-dimensional form and, as far as its context within *this* model is concerned, she seems to have invented this structure some time before our three-dimensional universe made its later appearance felt.

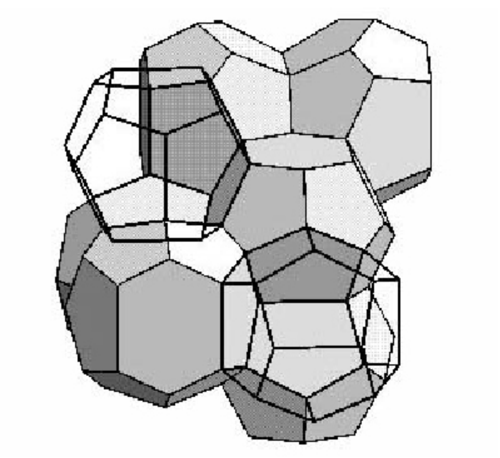

Figure 5.1.02 *A Weaire and Phelan ‘translational unit’ utilising both tetrakaidecahedra AND dodecahedra to achieve a packing more ‘cubic’ than tetrakaidecahedra can manage on their own. This does rather complicate matters however.*

There are one or two other combinations of polygons that in recent years have toppled the tetrakaidecahedron off its perch as being the best way of filling a volume other than by using a collection of cubes. These however (like Weaire and Phelan bubbles[2]), use what are called *translational units* to build a volume as close in shape to that of the original cube as possible (see *Figure 5.1.02* above). These tend to result in better cubic volumes, but use a combination of tetrakaidecahedra and *dodecahedra* to achieve it. This does however complicate matters and in the context of this model, it is difficult to see how such a combination would occur naturally.

5.2 The vacuum collapse

In this evolving four-dimensional world, such a transfiguration of spherical boundaries would occur simultaneously and would involve *ALL* of these spherically inflating, individual mini big-bang events, right across the entire volume of 4D space. It would be a ***vacuum collapse*** in very real terms, as boundaries *SNAPPED* to their new tetrakaidecahedral configuration. Those previously existing pore spaces, originally located between the 4D expansion events, would now be closed permanently (see *Figure 5.2.01* below).

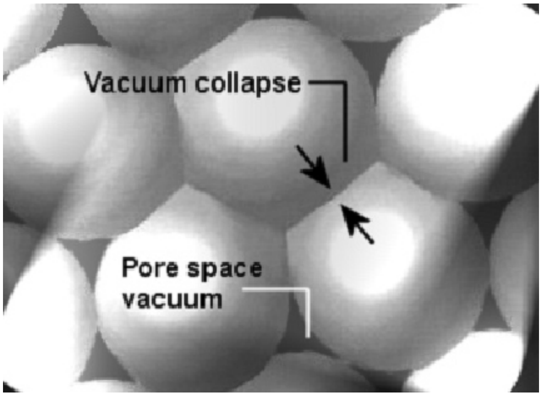

Figure 5.2.01 *The ‘vacuum collapse’ occurs when the strength of the pore space vacuum over comes the resistance of the inflating spherical boundaries and they are violently pulled out of shape.*

Considering the characteristics of the original structure – and the chain of events described in the previous few pages - it is the only geometric shape that can be produced from such a violent, dimensional collapse. What were originally a myriad of individual 4D expansion events, would now take the form of a singularly continuous, homogeneous tetrakaidecahedral lattice that because of the *vacuum collapse*, would now have taken on almost ‘cellular-like’ characteristics. Each of these individuals (or ***teddies*** in this model), would also have simultaneously increased its volume accordingly and this would produce a massive release of previously stored (differentiated) potential energy, right across this entire new homogeneous teddy-lattice. This would herald the next dimensional stage in the evolutionary processes of this young, embryonic universe.

As the *vacuum collapse* occurs, what we are actually witnessing is a series of multiple, fairly violent collisions between four-dimensional objects (previously adjacent 4D expansion events). With such 4D to 4D contact, we have the perfect scenario for the evolution of an even higher dimensional plane – this time, one that would involve the sum of *ALL* these 4D to 4D boundary contact points. The ***teddy-lattice*** configuration mentioned earlier would actually form the basis of what would be an eight-dimensional world and this would relate to a fifth evolutionary stage of our universe. This too, would comprise a teddy-lattice, but this time, it would be one that had been fuelled by the release of potential energy and the vacuum collapse below it in the 4D world. It would therefore comprise just inter-connected planes inherited from the teddies back in their fourth-dimensional state.

These planes, now eight-dimensional in nature, would be made up *ONLY* of those areas where 4D to 4D contact was made and they would consequently be of two distinct shapes, namely ***square*** and ***hexagonal*** – the planes that make up the tetrakaidecahedron in the first place. Inflation, back in the fourth-dimensional state, would now have been slowed, as the vacuum collapse acted like a brake and this would give way to a more sedate rate of expansion. Fuelled by the original momentum of the *mini big-bang* events, this expansional effect would also be carried over to the newly created eighth-dimensional level.

Not only would the original four-dimensional ‘scalar’ expansional environment be devoid of the individuality that was the characterised by the countless and separate *mini big-bang* events from which it was composed, but the expansive characteristic would not really work. It should be realised that there is *still* four-dimensional material within the teddy-lattice, but for the time being, this expansional component has no where to go. The individual boundaries that once marked the outer extent of each bubble’s scalar expansion would have metamorphosed upwards (dimensionally speaking) into the eight-dimensional lattice and this would now *keep pace* with what remaining expansion there was. The 4D world (now devoid of these boundaries) would find itself exhibiting a completely *homogeneous* type of expansion, more akin to the kind of effect we seem to witness in the universe today and this of course, is no coincidence. Remembering back to Chapter 2, evolved dimensions are linked and this provides a connection here between the fourth and eighth dimension.

The expansion of the eight-dimensional teddy-lattice (the fourth and eighth are now marching to the same tune), would cause a further *condensation* of the energy from which it is now comprised, as once again; the relationship between expansion and cooling shows its hand. There would be a further phase change, although this is now occurring to newly evolved eight-dimensional energy and continuing our attempt to keep track of all this - it can be labelled $\boldsymbol{Ø_8}$ within our set description and this would thus be equivalent to:

$$\boldsymbol{Ø_8 = \{ Ø_4, Ø_4 \}.}$$

where once again, we have a doubling up of lower dimensional terms because of 4D to 4D boundary contact in this case. A ***cellular condensate*** would result as once again, phase transitions occurred.

The potential energy released during what has been dubbed the *vacuum collapse*, would be both cooler and somewhat less energetic than the original, which propagated at the moment of 2D-to-2D membrane contact - or at the very birth of the inflating fourth-evolutionary stage. This eight-dimensional world would also be very different structurally, from that of the 4D level below it. If we could perceive such a concept, the 8D lattice would consist of an almost infinite number of *hollow* connected teddies, but would be made up *ONLY* of their *hexagonal* and *square* planes (see *Figure 5.2.02* below).

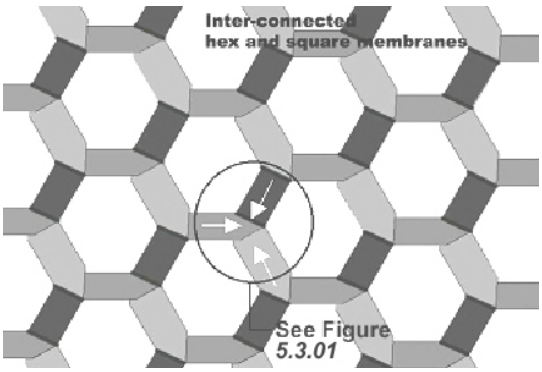

Figure 5.2.02 *A sectional view through the 8D lattice, showing its hexagonal and square planar construction. A secondary condensation would occur, which would have a profound effect on the future evolution of the universe as a whole.*

It should be noted at this stage, that these square and hexagonal faces (which will be referred to and used in illustrations many times within this and subsequent chapters), are *idealised* and are represented here as perfectly geometric in their shape. In reality, not only will their structure change when our own part of the universe is discussed, but apart from their tiny size, their description as perfectly square or hexagonal, should be considered as simply being the best way of illustrating them for the purposes of this model. Their true appearance would be more likely to be as distorted, wispy membrane like surfaces that are themselves far from this idealised description. As will be seen in coming sections, it will be the relationship exhibited by their geometries that is more important than their imagined physical appearance.

These membranes were originally the location of the pore spaces that were simply ***null-dimensional vacuum*** in the 4D world. This energy, (now in the eighth dimension), would be seeking equilibrium in its own right and would still be undergoing expansion, *parallel* to that of the fourth. With its new configuration as a tetrakaidecahedral lattice (instead of being comprised of the original spheres or bubbles), this 8D world would take on a cellular appearance *AND* would consequently result in the formation of the *TWO* distinct kinds of membranes described above – namely square and hexagonal – where each of these cells met another; (bearing in mind the contents of the previous paragraph). Each of the four sides of the square – and each of the six sides of the hexagonal membranes would be the same length, but the overall area of these geometric shapes would be different. The hexagonal would have an area that is just under 2.6 times larger than that of the square and this would actually result in two different power signatures for what will be the next stage in this evolutionary process.

5.3 The tri-planar coordinate

As mentioned earlier, what may have been an initial four-dimensional *inflationary* phase of the universe would have ceased because of the braking effect of the *vacuum collapse* and this would have given way to a more sedate rate of expansion. Although far from the break-neck speed of the earlier, explosive 4D event, this expansion would *still* produce a cooling effect and this would affect the eighth-dimension too. This time though, the energy prone to such cooling or (condensation) would be the secondary potential energy that now makes up the square and hexagonal membranes within the 8D teddy-lattice itself. As this too begins to differentiate, it would tend to collect as a ***secondary condensate*** along what are effectively the edges or natural boundaries located between the membranes – and this re-distribution of material along and between these geometric edges will collect as - and result in *STRINGS*.

With a multi-dimensional collection of teddies in the form of a cellular lattice, the edge (or boundary) of each and every two-dimensional plane (hexagonal or square), also becomes the junction of two hexagonal and a single square plane in this teddy-lattice, all separated by angles close to 120° - or what in this model will be called a ***tri-planar coordinate*** (see *Figure 5.3.01* below).

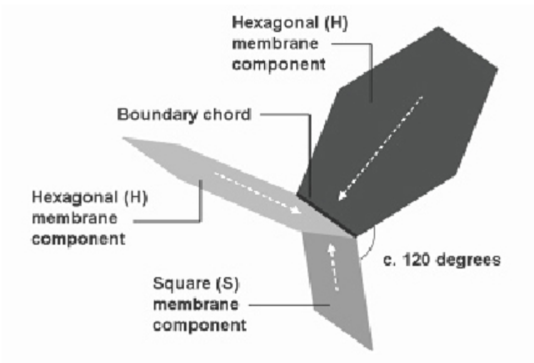

Figure 5.3.01 *The 'tri-planar coordinate' is the source of the boundary chord and results from the reduction of the three associated boundary membrane energies produced by the vacuum collapse.*

As the condensate strives for equilibrium, this material will be reduced to a string and this material will collect around the edges or boundary of each type of membrane (a boundary string if you like). This could occur in one of two specific ways; either as a regular, uniform reduction, or as a ***membrane rupture event*** and in this environment, the most plausible would seem to be the latter.

It is probably fairly obvious that I like using analogies, but they do have the ability to illustrate and clarify. This *membrane rupture event* can be likened to the rupturing of a soap film stretched across a circular hoop or ring – such as those connected to the inside of the lid of the children's' 'bottle of bubbles'. After you plunge the open hoop into the bottle, you usually withdraw it, purse your lips and blow a string of bubbles up into the air. If instead of blowing, you simply withdraw the hoop from the bottle and study the soap film; you will see its surface swirling and shimmering in the light until its surface tension gives way and the little membrane ruptures (see *Figure 5.3.02* below).

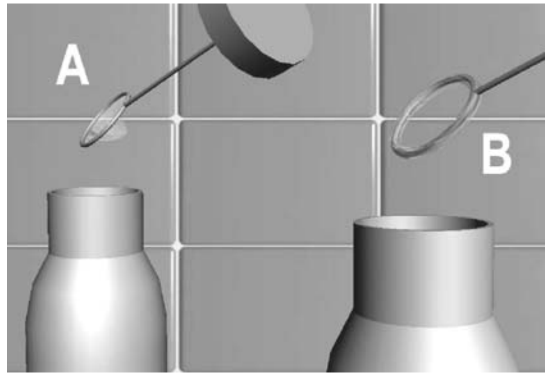

Figure 5.3.02 *A membrane rupture event can be likened to the soap film stretched across the blow ring in a children's' bottle of bubbles (A). If you don't blow straight away, the film will rupture, depositing most of its material around the ring itself (B).*

Although some of this soapy material splatters into the air, the majority seems to spring backwards away from the centre and collects (and usually drips from) around the body of the hoop itself. Back in our model, as these membranes now form a *cellular-lattice*, each one of the edges or boundaries is actually a *tri-planar coordinate*, where a total of three boundary membranes meet (two hexagonal planes and one from a single square). The strings that ultimately condense and form at these locations will therefore each be made from these *THREE* independent boundary energies and because of this tri-part characteristic, they have thus been renamed ***dimensional boundary chords*** within this model.

Whilst these components do not appear to be the same kind of pre-existing (Planck-scale) strings usually described or associated with 'string' or 'superstring' theory[3], they are perhaps their alternative. We are looking at similar described phenomena but simply from a different view point; although those entities usually associated with ‘string theory’ would seem to belong in the realms of the ultra-dimensional branes and are more akin to this model’s original de-gassed single-dimensional varieties.

5.4 Dimensional boundary chords

These strings would form at the boundary edges of the condensing membranes as closed, circular varieties. The geometry of these surfaces would of course (loosely) take the form of square and hexagonal loops. Due to the nature of their creation from the reduction of *THREE* individual membranes (or percentages thereof), although acting as single entities, they would in actual fact, be a combination of *THREE* string energies. This property will become a very important one in their later description, as this independence will also determine their character in our world.

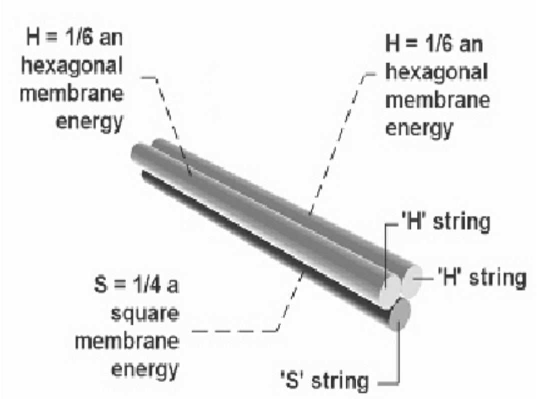

Figure 5.4.01 *Each boundary chord is made up from a percentage of three independent membrane energies; two hexagonal and one square. They can be considered as comprising three separate strings.*

These string combinations will each possess a ***string value***. These will be inherited from the secondary membranes prior to their reduction and as such; they must be carried over or passed-on to these resultant strings. Considering the (idealised) geometry of these membranes, each boundary chord will therefore be made up from *ONE-SIXTH* of each of the hexagonal membranes at its tri-planar coordinate and *ONE-QUARTER* from its single square membrane. The newly formed *dimensional boundary chord* lies at the junction where sides of these hexagon and square faces meet. This all results in boundary chords of equal string value and each is therefore made up from the three parts that have been labelled 'HSH' where the 'H' is from one-sixth a hex membrane and the ‘S’ results from one- quarter a square membrane (see *Figure 5.4.01*). At this stage in the game, there are not yet any *THIRD* dimensional concepts such as depth or indeed volume because the third-dimension itself has not yet evolved within this model. Within this strange, lattice-like 8D world, such parameters and measurements would be meaningless any way (as would their recognisable relationship to one another). As a consequence, any 3D concepts such as the familiar measurements of *volume*, *mass*, *area* and *density* could be considered as all possessing the same value of *‘VAMP = 1’*; or:

V (volume) = A (area) = M (mass) = P (density)

Relative 'HSH' string values will be determined by the area of each hex and square component (as indicated in *Figure 5.4.02* on the following page), but as each one-sixth hex and one-quarter square are resulting in *SINGLE* dimensional string values, they will eventually need to be converted into a ***dimensional boundary chord volume*** (V^{dbc}), once our own three-dimensional world is taken into consideration. This occurs because the boundary chords are the product of their *tri-planar coordinates*, which in terms of our world, can be considered as being equivalent to the three-dimensional ‘xyz’ axes that define 3D form. The (3D) *dimensional boundary chord volume* will therefore comprise the components:

$$V^{dbc} = HSH$$

$$\text{or: } 0.4330 \times 0.2500 \times 0.4330$$

and this will produce an individual *dimensional boundary chord volume* that can be expressed as:

$$V^{dbc} = 0.04687$$

This figure can thus provide what will be a *quantative* description of the dimensional boundary chords (or more correctly, the dimensional boundary chord energies) that will be explored more fully in a subsequent chapter. It will also allow this model the means to evolve further and this value will be seen to be intimately linked to processes and events that occur in our own world.

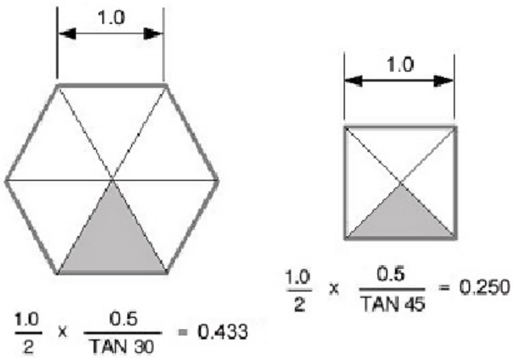

Figure 5.4.02 *Relative areas of hexagonal and square membrane components.*

During the condensation of these dimensional boundary chords, the expansion of the universe would of course be continuing and this would also result in the expansion of the teddy-lattice that in the eighth-dimension, is now exclusively made-up of these condensed-out dimensional boundary chords *AND* what will now become a residual percentage of uncondensed or semi-condensed *secondary energy*. This continuing expansion would have the effect of *stretching* this lattice.

This dimensional boundary chord lattice would not comprise individual or connected strings, but *ONE* complete, continuous, eight-dimensional network (see *Figure 5.4.03* opposite) and there must have been a moment when this stretching or elongation had to come to an abrupt end. The chords (made up from condensed secondary energy) would no longer be able to resist the forces of this expansion and something would have to give. Did they simply snap and fly off into a myriad of individual parts, or was the response to stretching more of a random separation, as the lattice broke up into smaller chord segments? With boundary chords giving way randomly, this may have produced areas where isolated, *intact* tetrakaidecahedral shaped portions of the lattice became separated as entities in their own right, snapping back to the size they had originally configured to the moment after their condensation into dimensional boundary chords proper. There would occur what will in this model, will be called a ***big-snap***.

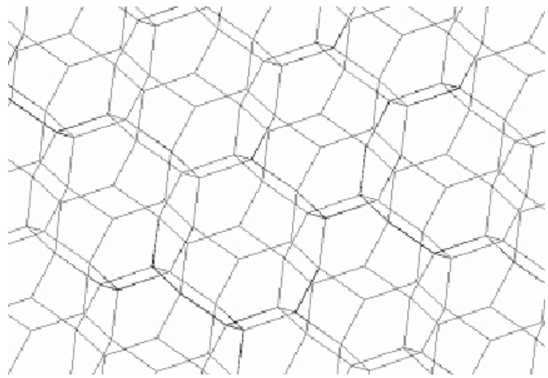

Figure 5.4.03 *The eighth-dimensional teddy lattice will condense down to a net-like structure of one continuous, tri-planar dimensional boundary chord that grows in line with 4D expansion.*

Individual boundary chords and whole tetra-kaidecahedra (*teddies*), would separate and be thrown free of the cellular lattice in which they formed as secondary condensate. These chords and teddies would however, have been formed from their tri-planar coordinates that would by definition, have evolved into three-dimensional boundary chords. They would become *THREE*-dimensional individuals in an *EIGHT*-dimensional universe, which was expanding as an inter-connected single, homogeneous lattice. They are effectively separated from this world because of the *big-snap* and, because of their new, lower dimensional nature, *cannot* now exist at this eighth-dimensional level.

Not unlike the behaviour of orbital electrons in our world, these dimensional states may only be able to retain their positions of increasing complexity because of their (dimensional) energy levels. Uni-dimensional string segments may comprise less dimensional energy than 2D objects, while in turn, these may be less energetic than the four-dimensional lattice, two rungs up the dimensional ladder from them. Likewise, the energy levels of the string combinations that now make-up the dimensional boundary chords, are comprised of much less dimensional energy than either the eight-dimensional lattice – or even fourth-dimensional expansive space from whence they came. They would also have been the product of a less energetic *rarefied* environment, coming into being as they did, some time *AFTER* the 4D universe had expanded considerably. This secondary condensate would consequently be of a much lower *energy signature* and would have to *FALL* to a level that was comparable to their own dimensional energy signature. The free, now independent dimensional boundary chords and the whole surviving teddies would find their relative position on the ladder of hierarchy because of these diminished energy levels.

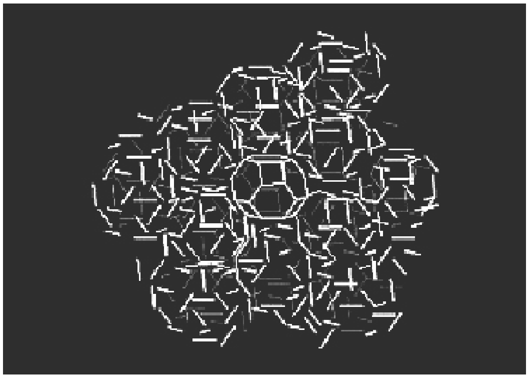

Figure 5.4.04 *Independent boundary chords and whole surviving teddies 'ping' into the supporting structure of four-dimensional space, creating the universe we recognise today.*

This last statement may actually be a little misleading however, because at this stage in the evolution of this model, although there exists a dimensional energy *GAP* between the 2D loops or membranes and the now homogeneous 4D expansion event, this drop of 3D material doesn't create a whole new three-dimensional universe. The 3D teddies and what are now *independent* boundary chords, would indeed drop to their own equivalent energy level, but they would actually be suspended within what is effectively the expansive envelope that is the fourth dimension. It may be this relationship that allowed the boundary chords to migrate downwards in the first place, because of their tri-planar origin. 4D expansion simply provides the 'space' in which this dimensional energy-drop is now able to occur. They are truly three-dimensional objects and therefore, find their place by naturally inserting themselves into this (vacant) dimensional gap.

5.5 The big ping

After what has now been dubbed the *big-snap*, (that effectively separates out the components of this secondary condensate), there would occur a ***big-ping*** and this results in the appearance of these three-dimensional objects into what we would now consider as being our own part of the universe, or within what we appear to witness as the fourth- dimensional expansion of a universe still fuelled by the remnant component of scale.

The sixth-evolutionary stage of the universe has thus been created, but still within the envelope of the eighth and the fourth dimensional levels from whence it came. It is almost a devolutionary process as this dimensional drop occurs, but one founded right at the top of the dimensional ladder. It is the energy levels (or the energy requirements) that cause this drop (dimensionally speaking) and all these newly appeared *independent dimensional boundary chords* and *whole surviving teddies*, are comprised of 3D energies that will later make us what we are. This drop will actually occur into four-dimensional space as surmised above and this will now incorporate what remains of the lower dimensional levels. The *independent dimensional boundary chords* will make up the bulk of these new three-dimensional objects and these will display a characteristic that at the instant of the *big-ping* could be likened to tiny rods or *spicules*, each with a 3D *dimensional boundary chord volume* of ***0.04687*** (see again Section 5.4 above). The *whole surviving teddies* will also be comprised of these *SAME* dimensional boundary chord volumes, but will be held in an open tetrakaidecahedral form that will equate to a total of *thirty-six* independent boundary chord values.

This volume needs to be referenced to the scale of our own processes and events and will thus be dealt with further in a subsequent chapter. It will also be found that the characteristics of the dimensional boundary chords themselves, change fundamentally as they drop to their new 3D rung on the dimensional ladder, as new environmental conditions make their presence felt.

Returning for a moment to the eight-dimensional lattice, what would happen to its remaining material and the energy from which it was made?

Now devoid of its secondary three-dimensional condensate (the independent boundary chords and whole surviving teddies); the eighth dimension would now comprise a *dimensional energy signature* that is significantly less than that with which it originally started. This new energy level must now correspond to eight, minus three, or *FIVE* – and after the removal of the 3D boundary chord component that drops to form our world during what has been christened the *big-ping*; this remaining, dimensionally less energetic material *MUST* migrate downwards too. This resultant dimensional energy would possess its own characteristics and while it may be considered as *remnant* 8D material (especially because of the 3D removal event), it would actually have undergone rapid contraction as the teddies and boundary chords from which the lattice was made, snapped-back to their original size after their brief but stressful episode of stretching.

This new five-dimensional energy (formed almost by default); would consequently drop into its own new lower dimensional energy level, at the same time as the appearance of the boundary chords and teddies into our world. Its *contractive* characteristic, inherited from the *big-snap,* would have an important consequence on the future of the universe as a whole and its resultant position directly above the fourth-dimensional energy plane, would conveniently or even coincidentally, exactly mirror the original properties exhibited by fourth-dimensional expansion. For such an opposite (or negative) phenomenon, its natural position on the ladder of dimensional hierarchy could not be better placed and this logical drop next to this original 4D expansional event, seems to provide a fortuitous mechanism of equilibrium, that both connects - and also seems to provide the room for these two very oppositely behaving dimensional phenomena. In simple terms, this takes the form of the classic 'piston-effect' (see *Figure 5.5.01* below) and the link is thus established (almost by coincidence), between expansion and contraction – and one will now appear to fuel and support the other. This event cannot however, be considered as a separate evolutionary stage in its own right, but as a continuation and an effect of the physical processes and thus the consequences; caused by the differentiation of the eighth-dimensional level in the first place.

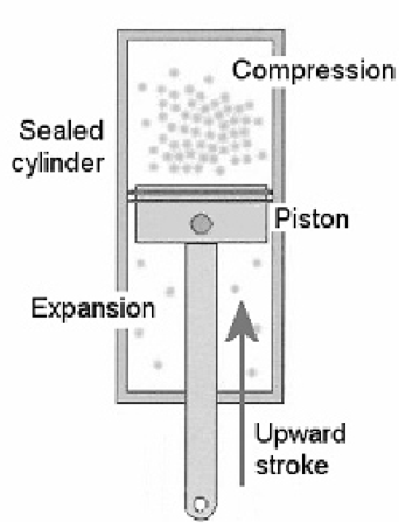

Figure 5.5.01 *The 'piston effect'. The material in the sealed cylinder ahead of the piston will be compressed as the volume decreases; whilst at the same time, the material behind the piston will expand as its volume increases.*

The necessary removal of this fifth-dimensional energy – after the loss of the third, would now seem to leave the eighth-dimensional level vacant as *ALL* of its inherited material has *decayed* to lower dimensional positions. This infers the possibility of repetition or renewal and perhaps, leaves the doors open for further action from physical interactions below. This may not cause too many problems, if certain (major) processes in the universe as a whole, can be shown to involve this possibility of repetitive creation in their own right. This particular topic will be covered in much more detail in later chapters.

With the drop of this 5D (compressional) energy, the ladder of dimensional hierarchy will now be filled from its bottom rung (original, single-dimensional strings), right the way up to its fifth, but the placing of these energy levels would not have been achieved in the *ORDER* that one would have logically predicted. There would still appear to be a lot of gaps dimensionally speaking, especially now that the eighth-rung on this abstract dimensional ladder has become vacant because of this 3D and 5D energy drop. In this scenario, there would not seem to be any sign of a *sixth* or *seventh* dimensional level that would provide a logically connective sequence between the now vacant eighth-dimension and the newly formed contractive fifth. These two, dimensional gaps create a quandary, as this begins to beg the question “why are they empty - or indeed, do they *continue* to remain empty during any further evolutionary processes that may follow?”

One could easily be tempted to speculate and say that with *simple dimensionality*, 3D + 3D can equal 6D and perhaps 3D + 4D can equal 7D, but there appears at present, to be no logical reason (or cause) as to how or why such a combination would occur in the first place. This may simply be one of those very human traits that drives us to the assumption that six *MUST* follow five as seven must also follow six before we can start thinking about the application of the number eight. On the other hand, one could look at the 8D lattice (see again *Figure 5.2.02*) and say with some logic, that the 8D membranes from which it would seem to be constructed are themselves *two-dimensional* in nature and thus, this in itself must provide a resulting 8D - 2D environment in which these lattice members seem to be suspended. The *tri-planar condensation* of these membranes to boundary chords are also in a way, technically producing a combination of *single-dimensional strings*, which could lead us to the conclusion that there is also an 8D - 1D environment lurking somewhere within this scenario. This is all *still* very unsatisfactory in that one is assuming that such a logical sequence of 1-8 is a requirement in the first place and of course, this is all still highly speculative to begin with

It will become apparent in due course that these rungs (for want of a better description), do not mark out fixed, isolated dimensional entities, as this ladder of hierarchy measures not the dimensions themselves, but the dimensional energy from which they are made. It will be argued that energy will have the ability to flow beyond and between these rungs and thus the filling of some of these additional gaps will be seen to have every thing to do with the ***waves*** and their interaction with the material that now seems to make up what is evidently a multi-dimensional universe – and a universe which seems to have evolved at least one form of sentient observer.