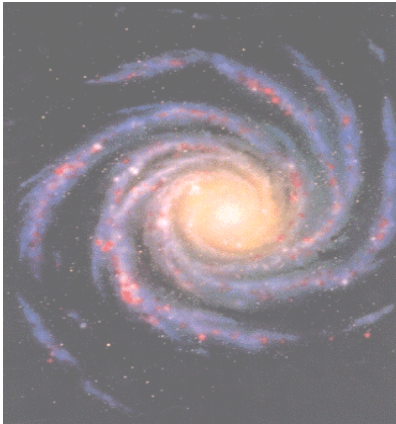
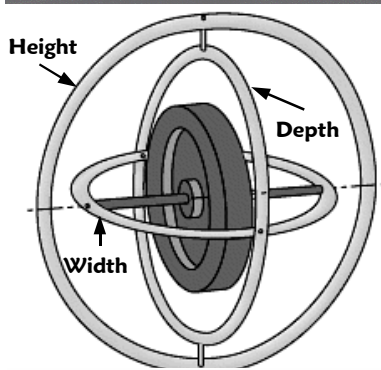


The Three Dimensions of Space.

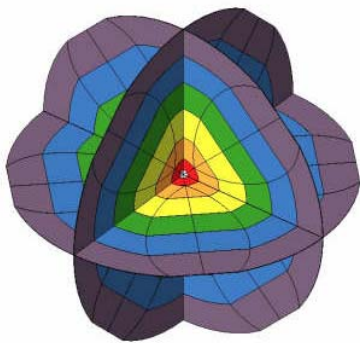
It is not very often in modern life that we consciously have to think in three dimensions. Naturally we 'live' in three dimensions, always making judgments based on distance, speed and our relationship to things, but when it comes to our thinking, we so easily take a lot of things for granted as being flat. When we look at a picture of our Galaxy, how often do we see the flat stationary spiral plane. How many of us add to this, that this is spinning at 64,000mph or that this flat plane we see, is just one part of a gigantic spherical ball.?



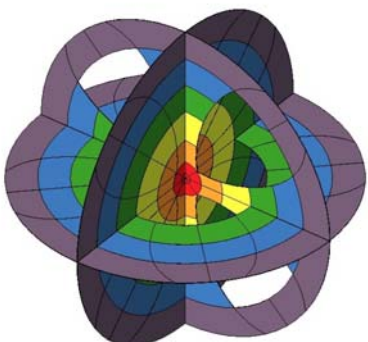
While attempting to co-ordinate all the various pieces of information we find in Biodynamics, I began with a flat piece of paper, upon which I eventually came to the form of a flat vortex, as the best form for the organisation of the multi layered picture, given to us by Dr Steiner. With some more 'perceiving' it became clear that vortexes only exist within gyroscopic spheres. Thus I moved with my flat piece of paper, to the 8 segmented, six ring diagram I have used for the "Agriculture Course Glossary". This sufficed for some time until my investigations into the Periodic Table led me to seeing the atomic structure of any chemical element was a 3 dimensional sphere. This led to the question as to how to make the Periodic Table into a 3 dimensional form. At this point I moved from the flat planes, with no depth, to a significantly more complex 'being' with all sorts of new relationships to consider. I initially made paper and cardboard 3D models, before moving to laser cut plastic models, which have allowed for some sturdiness, with colour elements being included, as well as allowing for the impact of wind, to add the necessary element of movement.



The main features of a 3 dimensional model are three planes. One indicating height, one for depth and one for width. However this is not a stationary being. It is a being created out of movement. Spinning gyroscopes, initially form vortexes on the vertical axis, through which they draw in substance to their centre, before squirting this out again along the horizontal plane, where it often accumulates, as the substance we see as planets or even the flat spiral form of the galaxy.



This identifies that there are two vertical axis and one horizontal plane. So we can see that the vertical axis do represent 'upwards', however it is probably more appropriate to talk of north and south or positive pole and negative pole, based upon the electro magnetic fields these 'beings' live within and organise accordingly. A further distinction to this form came, when this form was drawn according to the arrangement of the chemical elements, and how I allotted a particular group of elements to each plane. (see Biodynamic Chemistry). This identified the primary vertical with the major elements, the secondary vertical with the Rare Earth elements, which only manifest on the outer ring of this plane, and the transition elements on the horizontal plane. These only begin to manifest at the fourth ring of elements, presenting a horizontal ring similar to that seen around the planet, Saturn. These differences help to see each plane as having quite different qualities.



The exact nature of the difference - other than their relationship to the different groups of chemical elements and their 4th, 5th, & 7th 'tones' - did not concern me much until I noticed the significance of the difference of orientation, between our cultural focus on the Sun and Zodiac, and that derived from orientating on the north magnetic pole of

the Earth. I had in some way taken these to be the same. This 'smudging' is made easier as I live in the southern hemisphere, and so I naturally orientate to the north, when I look towards the Sun and the Zodiac. In 'Two Orientations' I explore this question further.

The key point for this discussion is that the planets all exist on the horizontal plane of the Sun gyroscope. When we look from the Earth, at the Sun, we see it amongst the other planets, along the line we call the ecliptic. Depending where we are (what latitude) on the planet, this arc across the sky will be either higher or lower in the sky. However if we are in the northern hemisphere we will look towards the South to see the Sun's path, which means the east is on our left hand and the west is on our right hand.

The Zodiac is defined as those groups of stars, standing behind the path of the Sun. Therefore the zodiac is also a being of the horizontal plane. This orientation to the Zodiac / Sun is a very old practice within our culture, and we can see that Dr Steiner naturally used the Zodiac and planets as major references in his work.

As juxtaposition to this orientation, we need to consider the possibility of orientating off the north magnetic pole. Many ancient cultures used this Earth reference, to place their temples and cathedrals. Considering we are electro magnetic beings, there is something to be said for us to align our north south poles, more consciously to the north south poles of the Earth.....

So it becomes apparent that in early times the Earth's north south poles were an important orientation and then at a latter time humanity began to orientate off the Sun and the Zodiac. Thus we changed from a vertical orientation to the horizontal. In my wanderings as to what this might mean I came across a few passages by Dr Steiner in his 1920 lecture series " Man—Hieroglyph of the Universe" One of Steiner's central tenets was that if we are ever to understand ourselves we must first appreciate the order of the Universe about us, and then see how we are imaged upon this 'master plan'. Alternatively of course we can find things in ourselves and see how these are reflected outside ourselves.

In lectures 1 and 3 of this series of lectures he talks of the importance of living into the three dimensional planes. He says "Astronomy observes the courses of the stars and calculates; but it notices only those forces which show the Universe, in so far as the Earth is enclosed in it, as a great machine, a great mechanism. It is true to say that this mechanical-mathematical method of observation has come to be regarded simply and solely as the only one that can actually lead to knowledge.

Now with what does the mentality which finds expression in this mathematical-mechanical construction of the Universe reckon? It reckons with something that is founded to some extent in the nature of Man, but only in a very small part of him. It reckons first with the abstract *three dimensions of space*. Astronomy reckons with the abstract three dimensions of space; it distinguishes *one* dimension, *a second* (drawing on blackboard) and *a third*, at right angles. It fixes attention on a star in movement, or on the position of a star, by looking at these three dimensions of space. Now man would be unable to speak of three dimensional space if he had not experienced it in his own being. Man *experiences* three-dimensional space. In the course of his life he experiences first the vertical dimension. As a child he crawls, and then he raises himself upright and experiences thereby the vertical dimension. It would not be possible for man to speak of the vertical dimension if he did not experience it. To think that he could find anything in the Universe other than he finds in himself would be an illusion. Man finds this vertical dimension only by experiencing it himself. By stretching out our hands and arms at right angles to the vertical we obtain the second dimension. In what we experience when breathing or speaking, in the inhaling and exhaling of the air, or in what we experience when we eat, when the food in the body moves from front to back, we experience the third dimension. Only because man experiences these three dimensions within him does he project them into external space. Man can find absolutely nothing in the Universe unless he finds it first in himself. The strange thing is that in this age of abstractions which began in the middle of the

fifteenth century, Man has made these three dimensions homogeneous. That is, he has simply left out of his thought the concrete distinction between them. He has left out what makes the three dimensions different to him. If he were to give his real human *experience*, he would say : My perpendicular line, my operative line, my extensive or extending line. He would have to assume a difference in *quality* between the three spatial dimensions. Were he to do this, he would no longer be able to conceive of an astronomical cosmogony in the present abstract way. He would obtain a less purely intellectual cosmic picture. For this however he would have to experience in a more concrete way his own relationship to the three dimensions. To-day he has no such experience. He does not experience for instance the assuming of the upright position, the being in the vertical; and so he is not aware that he is in a vertical position for the simple reason that he *moves together with the Earth* in a certain direction which adheres to the vertical. Neither does he know that he makes his breathing movements, his digestive and eating movements as well as other movements, in a direction through which the Earth also moves in a certain line. All this adherence to certain directions of movement implies an adaptation, a fitting into the movements of the Universe. To-day man takes no account whatever of this concrete understanding of the dimensions; hence he cannot define his position in the great cosmic process. He does not know how he stands in it, nor that he is as it were a part and member of it. Steps will have now to be taken whereby man can obtain a knowledge of Man, a self knowledge, and so a knowledge of how he is placed in the Universe.

The three dimensions have really become so abstract for man that he would find it extremely difficult to train himself to feel, that by living in them, he is taking part in certain movements of the Earth and the planetary system. A spiritual-scientific method of thought however can be applied to our knowledge of Man. Let us therefore begin by seeking for a right understanding of the three dimensions. It is difficult to attain; but we shall more easily raise ourselves to this spatial knowledge of Man if we consider, not the three lines of space standing at right angles, but three level (equal) *planes*. Consider for a moment the following. We shall readily perceive that our *symmetry* has something to do with our *thinking*. If we observe, we shall discover an elementary natural gesture that we make if we wish to express decisive thinking in dumb show. When we place the finger on the nose and move through this plane here (a drawing is made), we are moving through the vertical symmetry plane which divides us into a left and a right Man. This plane passing through the nose and through the whole body, is the plane of symmetry, and is that of which one can become conscious as having to do with all the discriminating that goes on within us, all the thinking and judging that discriminates and divides. Starting from this elementary gesture, it is actually possible to become aware of how in all one's functions as Man one has to do with this plane.

Consider the function of seeing. We see with two eyes, in such a way that the lines of vision intersect. We see a point with two eyes; but we see it as one point because the lines of sight cross each other, they cut as shown in the drawing. Our human activity is from many aspects so regulated that we can only understand its regulation by reference to this plane.

We can then turn to another plane which would pass through the heart and divide man back from front. In front, man is physiognomically organised, behind he is an expression of his organic being. This physiognomical-psychic structure is divided off by a plane which stands at right angles to the first. As our right and left man are divided by a plane, so too are our front and back man. We need only stretch out our arms, our hands, directing the physiognomical part of the hand (in contrast to the merely organic part) forwards and the organic part of the hands backwards, and then imagine a plane through the principal lines which thus arise, and we obtain the plane I mean.

In like manner we can place a third plane which would mark off all that is contained in head and countenance from what is organised below into body and limbs. Thus we should obtain a third plane which again is at right angles to the other two.

One can acquire a feeling for these three planes. How the feeling for the **first** (vertical) is obtained has already been shown; it is to be felt as the plane of discriminative **Thinking**. The **second (vertical)** plane, which divides man into front and back (anterior and posterior) would be precisely that whereby man is shown to be *Man*, for this plane cannot be delineated in the same way in the animal. The symmetry plane can be drawn in the animal but not the vertical plane. This second (vertical) plane would be connected with everything pertaining to human **Will**. The third, the horizontal, would be connected with everything pertaining to human *Feeling*. Let us try once more to get an elementary idea of these things and we shall see that we can arrive at something by this line of thought.

Everything wherein man brings his feeling to expression, whether it be a feeling of greeting or one of thankfulness or any other form of **sympathetic feeling**, is in a way connected with the **horizontal plane**. So too we can see that in a sense the will must be brought into connection with the vertical plane mentioned. It is possible to acquire a feeling for these three planes. If a man has done this, he will be obliged to form his conception of the Universe in the sense of these three planes -just as he would, if he only regarded the three dimensions of space in an abstract way, be obliged to calculate in the mechanical-mathematical way in which Galileo or Copernicus calculated the movements and regulations in the Universe. Concrete relations will now appear to him in this Universe. He will no longer merely calculate according to the ,three dimensions of space; but when he has learnt to feel these three planes, he will notice that there is a difference between right and left, over and under, back and front. In mathematics it is a matter of indifference whether some object is a little further right or left, or before or behind. If we *simply measure*, we measure below or above, we measure right or left or we measure forward or backward. In whatever position three meters is set, it remains three meters. At most we distinguish, in order to pass from position to movement, the dimensions at right angles to one another. This we do, however, only because we cannot remain at simple measurement, for then our world would shrink to no more than a straight line. If however, we learn to describe Thinking, Feeling and Willing concretely in these three planes, and to place ourselves thus in space as psychic-spiritual beings, with our Thinking, Feeling and Willing then just as we learn to apply to Astronomy the three dimensions of space as found in man, so do we learn to apply to Astronomy the threefold division of man as a being of soul and spirit"

In lecture 3 the plans are further clarified

"When we are aware of ourselves as Man standing on the Earth, surrounded by the planets and fixed stars, we begin to feel ourselves as part of all these; it is not a matter merely of drawing three dimensions at right angles, but of thinking concretely about the Cosmos and penetrating into the concrete reality of the dimensions.

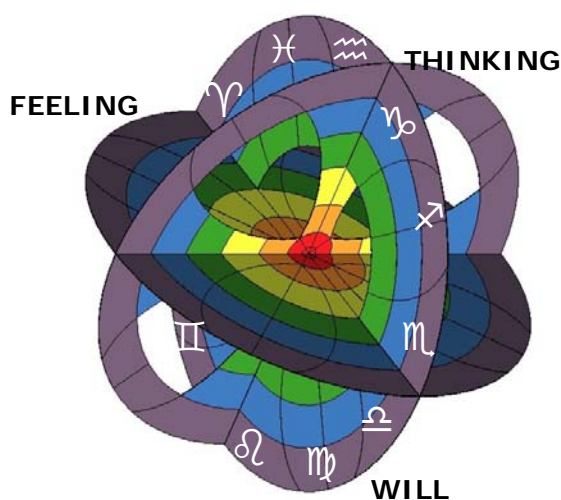
Now there is a series of constellations that is immediately evident to those who study the outer Universe at night-time, and has indeed always been seen when men have studied the stars. It is what we call the *Zodiac*. It is immaterial whether we believe in the Ptolemaic or the Copernican system; if we follow the apparent course of the Sun it always seems to pass through the Zodiac in its yearly round. Now if we imagine ourselves placed into the Universe in a living way, we find that the Zodiac is of very great significance. We cannot conceive of any other plane in celestial space as being of like value with the Zodiac, any more than we could conceive the plane which divides us in two and creates our symmetry, as being placed at random just anywhere. We then perceive the Zodiac as something through which a plane may be described. (Drawing.) Let us suppose this plane to be the plane of the blackboard, so that we have here the plane of the Zodiac; the plane of the Zodiac is just the plane of the blackboard. We shall then have one plane before us in Cosmic space, precisely as we

imagined the three planes sketched in Man. That is certainly a plane of which we can say that it is fixed there for us. We see the Sun run its course through the Zodiac; we relate all the phenomena of the heavens to this plane. And we have here an analogy of an extra-human kind for what we must perceive and experience as planes in Man himself. Now when we draw the Symmetry plane in Man, and have on one side of the Symmetry-axis the liver organised in one way, and on the other side the stomach organised in a different way, we cannot think of such a fact without feeling at the same time some inner concrete relation; we cannot imagine mere lines of space lying there, but what is in the space must manifest definite forces of activity; it will not be a matter of indifference whether something is on the right or on the left. In the same way we must imagine that in the organisation of the Universe it is a matter of consequence whether a thing is above or below the Zodiac. We shall begin to think of Cosmic space- as we see it there, sown with stars –we shall begin to think of it as having *form*.

Now just as we can think of this plane on the blackboard, so we can also think of another at right angles to it. Let us think of a plane extending from the constellation Leo to that of Aquarius on the other side. Then we can go further and imagine a third plane at right angles again to this one, running from Taurus to Scorpio. We have now three planes at right angles to one another in Cosmic space.

These three planes are analogous to the three we have imagined described in Man. If we think of the plane we have denoted as that of Will-the plane namely which separates us behind and before we have the plane of the Zodiac itself.

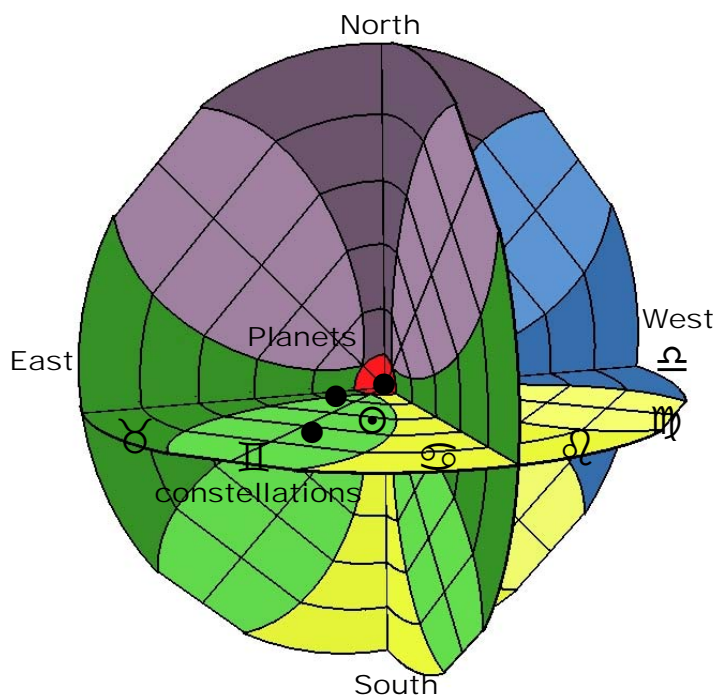
If we think of the plane running from Taurus to Scorpio, we have the plane of Thinking; that is, our Thought plane would be co-ordinated to this plane. And the third plane would be that of Feeling. Thus we have divided Cosmic space by means of three planes, just as we divided Man in our first lecture. What is primarily of importance is *not* simply to unlearn as quickly as possible the Copernican Cosmic system, but to enter into this concrete picture, to imagine Cosmic space itself so organised that one can distinguish in it three planes at right angles to one another, just as can be done in the case of Man."



While the allotting of the activities of Thinking, Feeling and Willing to the three planes of the Gyroscope are significant references, the most important reference RS makes here is that the Will plane is the plane of the Zodiac. He earlier described this as the second vertical plane. From this we can make up the three dimensional diagram of his vision.

However, with his picture comes some interesting 'difficulties'. If we just take RS words and have this nice picture and look no further we can rest in some degree of peace, however once we take his next suggest and look into the nature and activity of all these spaces created within this 3 dimensional sphere things become somewhat more complex.

The first issue that arises is, that RS image does not correspond with the Astronomical reality of the Sun's gyroscope—the Solar System, as the Zodiac is a being of the horizontal plane of the Sun gyroscope, and not a vertical axis. The Zodiac is identified as those star groups behind the Sun's path—the ecliptic. Remembering we are looking from the Earth, so the Sun takes the place of the Earth from our perspective, thus the Sun/Earth and the planets manifest on the Sun's



horizontal axis, thus the Zodiac also 'lives' on the Sun's horizontal plane. This is an image of the issue I raised at the beginning of this article. Here RS is taking the archetypal horizontal plane and 'making it' a vertical plane.

Many questions arise out of this: How do these two 'truth's relate to each other? Why would RS do this and what does it mean when it is done? There are also several issues of orientation of the gyroscope. Which side is Up and where is East and West.

My answers to these questions are given as an expression of the spirit of RS comments "When we are aware of ourselves as Man standing on the Earth, surrounded by the planets and fixed stars, we begin to feel ourselves as part of all these; it is not a matter

merely of drawing three dimensions at right angles, but of thinking concretely about the Cosmos and penetrating into the concrete reality of the dimensions."

See "Organising the Three Dimensions"