THE LANGUAGE OF WILL

an essay by two brains

in threefold unity

Anthony Blake

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Illustration: Abraham Entertains Three Strangers by Gustav Dore
LANGUAGE OF WILL

Man has in general two kinds of mentation: mentation by thought, in which words, always possessing a relative sense, are employed; and the other kind, which is proper to all animals as well as to man, mentation by form. All and Everything p. 15, G. I. Gurdjieff

This paper has been an attempt to develop a dialogue between the left and right sides of the brain/mind in order to express an idea of 'the language of will'. It is hoped that its use or misuse of certain formalisms will not cause offence and that it may actually give rise to some pleasure of contemplation.

THE MOTHER GODDESS

From women's eyes this doctrine I derive:
They sparkle still the right Promethean fire;
They are the books, the arts, the academes,
That show, contain, and nourish all the world. Loves Labours Lost, William Shakespeare

I start from myth, admitting right away that speaking of myth involves making a further order of myth because we take from what we know of past beliefs and images elements that we recombine in ourselves according to our own spirit of myth making. It is to weave a story about stories, to dream about dreams. I have to start with this proviso because I am going to speak of the evolution of human mind in terms of a struggle and mutuality of potentialities in our brains and portray this struggle and evolution through images that include the Great Mother. Palaeolithic art seems to abound in portrayals of this figure, so much so that it was thought that She was the primordial deity of early humanity only in historical times superseded by the God of male patriarchy and the hero. Very recently, as one would actually predict, the idea that there was a universal original cult of the Mother is under attack. But this may be part of the ongoing story.

The story is like this. First was the Mother, the Mother of all, but she gave birth to a son who then turned against her, usurped her position and, in some stories then killed or dismembered her. Instead of the Mother being the 'source of all' the male hero became the One Source, or God. In Egypt, after all, we have Atum masturbating on the primordial hill to inseminate himself with the gods (the other side to the virgin birth!). In Sumeria, in the great epic Enuma Elish ('when on high') the Mother as Tiamat (the bitter waters of the ocean, whose consort was Apsu, the sweet waters of the abyss) gets cut in two to form the upper and lower bounds of the cosmos by one her sons Ea (later Marduk) because She threatens to annihilate them. I mention this story because it vividly illustrates the idea that the 'son' cannot actually create anything only divide what is. In some African myths, the son
actually devours his own mother.

Modern science fiction myths build on Sumerian stories, in particular the story of the nam-shub of Enki from which the Jews obtained their story of the Tower of Babel. A nam-shub is similar to the magic words abracadabra, which translates as 'create as I say'. In science fiction writer Neal Stephenson's fantasy Snow Crash the nam-shub was an incantation by which men lost their capacity to speak in a universal language but, at the same time, created in them the capacity for individual conscious thought. The arising of individual thought marked the specialisation and divergence of languages - including the idea that each of us has our own idiolect - both making mutual understanding difficult and also leading to the creation of highly organized and conscious languages such as mathematics. The supposed original tongue of all mankind is said to be accessed by shamans in trance. It can be called the 'mother tongue' and the languages that replaced it the rebellious 'sons'. It is important to link with twentieth century phenomena such as the Viennese school which wanted to restrict language to what was 'logical' or meaningful in a very restricted sense - to 'kill the mother' in my mythic description..

The son of the mother becomes the hero. This leads to the cult of the individual as well as to many other things. The hero has to discover something and bring it back home. That is to say, he has to go into the unconscious and bring back an insight accessible to the conscious mind. We might think of it as a return to the womb, but the imagery agrees with the idea of going through some dismantling of the conscious mind and a submergence in deeper levels of pre-conscious thought which, nowadays at least, we associate with creativity. One of the most interesting images I know of the subtle relation between the aspect I am associating with the 'Mother' and the other aspect of the 'son' is a painting of St. George and the Dragon by Uccello 1397-1475). The great warrior is driving his spear into the dragon but the young maiden is holding the dragon by a silken thread.
WITH TWO BRAINS

Like any mother, the Goddess loves and indulges her son. The imagery goes through complex transformations and includes of course the Christian icons of Mary and the Christ child which many believe have their roots in the Egyptian depictions of Isis and Horus. These depict the relationship as of the deepest love. I want simply to suggest that the relation of the Great Mother and the Hero Son is not only a recapitulation of family life but a semi-historical account of changes in human consciousness, and in the structure of the functioning of the brain. Out of some primitive matrix came a separated off structure capable of what we call individual conscious thought. This had to draw on the 'food' of the original kind of mind but would come to repudiate its origins and regard itself as self-sufficient and sufficient cause of its own agency. The process brought us to having two kinds of mind: one where we see ourselves as in control and another in which we do not. Awareness of the old 'hidden' mind surfaced in the twentieth century through such people as Freud but it was often regarded as sub-rational and a threat to 'civilization'.

Since around 1850, when it was first noticed, brain research has discovered that our brains seem to exhibit two kinds of mind each associated with a hemisphere. The left side of the brain tends to be logical and linear while the right tends to be pictorial and holistic. But there are no simple distinctions of function between the two sides.

The picture shown here is typical of popular explanations of the idea. What it does not show is the corpus callosum which is between the two. This is a complex braid of connection which allows for both information exchange and inhibition. The two sides both co-operate and compete and in particular they compete for energy. The brain is said to use 20% of the body's energy and recent calculations suggest that it is unlikely that organisms like ours will ever be able to command significantly larger amounts, so our intelligence must be inherently limited in so far as it relies on information processing within single brains. The degree of synergy between the two sides is hence of great significance. It may be the case that 'technological' developments such as writing alternate in enhancing one or other of the two sides. Recent technology is paying attention to images and sound rather than words and notation.

It is interesting to reflect that Einstein was well aware that his 'thinking' was primarily in terms of feelings and images (right brain) that only subsequently involved words and mathematics (left brain); while he later went on to spend considerable energy trying to refute the non-locality inherent in quantum theory. The bitterness and savagery exhibited by some
scientists in defence of their beliefs is quite extraordinary especially when one realises that the resources of the right brain are purloined by the left brain in denial of the 'truth' of the right. Locality, causality, linearity and so on are all features of left brain mentation. It divides processes into steps, devises algorithms, works from axioms and produces the feeling of separation from the phenomenal world. One of the main features of the right hand brain is that it gives us new experiences, whereas all the left hand brain has is memories and representations. The left hand brain is alienated from the world while the right hand brain is in and of the world.

The right hand brain does not calculate; it patterns. For this mentation, everything 'resembles' everything else. There is no working things out from first principles because there are no first principles, only things as they are together. The left brain is abstract while the right is phenomenological in spirit. I say 'in spirit' because each side has its share of passion. The lateral distinction of the brain is not confined to humans. In birds, the right eye (linked to left brain) is involved in pecking for food whereas the left (linked to right brain) is generally aware of the environment and alert to dangers.

Now, when we have two elements or viewpoints that contrast with each other but are linked in some meaningful way the two sides regard or feel their situation also in a distinctive way. In such a dyad one side will tend to exclude and negate the other while this other side will tend to include and embrace the other. The idea here is that the two elements are not just like objects but also like subjects or minds and therefore capable of 'having an opinion' about their combination. There is a meaning space to be partitioned and the nature of each partition will depend on how many partitions there are, producing that number of kinds of meaning. It can also be said of ourselves that we are very much 'of two minds' and that this ambiguity of contradiction and complementarity is essential for our intelligence.

I do not want to lay out tables with lists of contrasting properties proposing to enumerate the differences between left and right brains because such tables obscure the mutual relevance of the two sides which weave together in extraordinary ways as well as inhibiting each other. I think one has to rather feel their difference. However, a strong contender for marking the difference is the property of conscious thought. I simply mean by this something like, 'Well here I am thinking about this problem' where the critical factor is 'I think'. This plays an enormous role in our lives not least giving the basis for the very concept that thoughts can be owned by people. In contrast there has long been discussed - at least in psychoanalysis - the idea of 'thoughts waiting to be thought'. Group Analyst David Armstrong proposed two kinds of thinking:

**Thinking 1**
Produced by a thinker and 'belonging' to her
They can be true or false
They are capable of being taught
Need to be explained, justified, etc.

**Thinking 2**
Precede any thinker
They just are
They can be learned from but not taught
Require nothing else but themselves
The occult philosopher Gurdjieff has a nice turn of phrase when he has one of his characters speak of thoughts 'a-thinking in me'. The contrast of thinking 1 and 2 has radical implications because thinking 1 has become by and large the very essence of our sense of and belief in our identity as free beings with will. Surely, we must in some sense 'be' the source of our own thoughts? Yet there is more and more evidence and discussion that points to the fact that the source of thoughts, including significant and creative ones, is in a part or kind of mind that is not accessible to what we identify as our conscious self. This was brought to a focus by experiments that showed that the conscious thought of having made a choice arises significantly later than neural events that presage it. In other words, decisions and choices are made before we are aware of 'making' them. This does not necessarily support the usual reductionist conclusion that we are just machines and our consciousness is just a 'user delusion'. I am talking about it here in terms of another kind of mind than that developed in our so-called conscious mentation. To put it in a crude but perhaps helpful way, on one side we have 'I think' while on the other we have 'think I'. Instead of some imaginary isolated spirit or 'I' on the left we have the 'world' on the right, often seen of course as imaginary from the left-hand perspective. What is pretty certain is that the unconscious mind is capable of the most extraordinary acts of construction which have a logic that transcends what the conscious mind is capable of. As for example Spencer Brown intimated when he remarked that Ramanujan had a perception beyond the scope of existing mathematics. We should remember here that Ramanujan explicitly stated that his insights came from a manifestation of the goddess Lakshmi. It is as if all the good ideas are generated on the right, and then passed over to the left. The left has the job of rendering the ideas useful in space and time and in performing this task it assumes ownership of them and 'forgets' where they came from. The consciousness of the left brain involves it in treating many things as unconscious. The right hand brain has to find ways of getting ideas across to the left through the barriers this side has put up to defend its identity. To speak like that is to be utterly anthropomorphic and I am reverting to a very mythical style of language. But, after all, these two minds I am speaking of are an essential feature of our humanity and intelligence. As an 'explanation' this view radically differs from any mechanistic one such as the naïve neurophysiology of a Crick or even from the Turing machine model of intelligence. The Turing machine represents every possible machine in terms of a one-dimensional tape that goes back and forth under a reading/writing head. This is actually, I would say, a model of the left brain and does not begin to address the nature of the right side (note that the 'reader/writer head' looks very much like a model of an 'I'). It is still fairly true to say that the right brain is better appreciated in the world of psychoanalysis which has long grappled with the practical difficulties of gaining conscious access to this
intelligence through, for example, dreams. In his book on the subject Matte-Blanco is forced to speak of the unconscious mind as consisting of 'infinite sets' which can never be fully translated into the finite sets and linear logic of the conscious mind. That is why material coming through as it were from the 'other side' can appear nonsensical.

It is speculated that the linear step by step sequential processing of the left hand brain developed from a function used in tracking animals, which makes some kind of sense. It became amplified with the invention of writing and later of the alphabet; later still of our modern number system and equations. It is extraordinary how much has been achieved through this linear skill. By eliminating the richness and spaciousness of our living experience we have created spells - like abracadabra! - the word 'spell' meaning both magic and the use of an alphabet.

But I want to draw back a little from describing the two minds of the sides of the brain and ask, what sort of mind is speaking and who the author of this discourse? Only one of the sides may be speaking which, by obvious implication, would mean a serious inadequacy. And which brain is best equipped to know both sides? If both are speaking then is there some third bringing them into unison or co-operation? Or is the co-operation itself the third, rather like 'the third' in psychoanalysis?

The two sides are not like things interacting, they are more akin to proto-persons, modes of mind (the simple two hemisphere division does not preclude yet more complex structure with several elements). I am reminded of the theology of Jesus as both God and man: two natures in one person. Most people these days regard Christian theology as arcane, archaic and irrelevant to them but I believe the theology managed to capture and reflect a new power of mind being born and leave us a message in its complexities and mysteries. If I map God onto the right brain and man on to the left, this is not an empirical claim but a matter of mythical or symbolic resemblance, to be seen within the context of the last two thousand years in which man has become God leading to the death of God as announced by Nietzsche.

One of the tortuous and anguished discussions of the period was around the question: how could Jesus know he was Christ, son of God and hence the same as God, if he did not know what was going to happen to him, as he could not have had if He were to die as a man? Our own dilemma resembles this. 'I' in my left brain does not have the kind of consciousness my right brain is supposed to have and so 'I' am not aware of what it sees. That is how we can surprise and deceive ourselves. Later I will talk about this 'I-ness' as distinct from any consciousness.

The theology of the early Church was developed after the emergence of modern mathematics that was distinctively marked by The Elements of Euclid (c. 300 BC) and flourished in Alexandria. The Elements is the next most widely read book after the Bible. The axiomatic method of Euclid marked a radical step away from earlier mathematics and its influence lasted for more than two millennia right into the nineteenth century. [When Euclid's fifth axiom was questioned God died!] It empowered abstraction. It released the possibility of modern mathematical physics and the astonishing concept of purely rational proof which allows a certainty entirely divorced from any particular actual experience.
The left brain was given an unparalleled way of advancing itself. It went on to transform the world out of all recognition. It was a magic to surpass all previous magic. I think of Dirac sitting in his room three years dreaming up the equation that would predict anti-matter. I am amazed at how few people are amazed at this logical, mathematical, abstract genius that has entered human life, while many are of course appalled at its consequences for the welfare or otherwise of human and indeed all life.

**DIMENSIONS OF REPRESENTATION**

One of the most striking things I heard from Spencer Brown was that mathematics consisted of making marks on a plane surface. It was the first time I had come across a reference to the physicality of mathematical notation. What struck me later was that, in addition, mathematical script was like any other and written in a strip. This is so embedded in our culture it is barely noticed. Its significance is that only events, processes, actions, operations, etc. that are linear can be notated. Non-linear relations can be derived from equations but usually require diagrams and images to depict them. Proponents of so-called 'visual mathematics' argue that images can show what equations cannot: we have to see what the equations might mean. The well-known example of the Mandelbrot set has become part of modern art. Such imagery restores us to the sensory world. A fascinating instance of the significance of representational media is that of the Hyperbolic Crochet Coral Reef in which philosopher of science Margaret Werthaim amongst others started crocheting coral reefs as part of an ecological project but then discovered that the forms they produced matched the needs of hyperbolic geometry.

Linear order allows us to very precise and to be able to check every particular step, because we actually go through the symbols one by one (as illustrated in this wonderful New Yorker cartoon). To allow for a writing/reading that operates in two dimensions must seem absurd. For one thing, we might not be able to say where the 'text' begins or ends. However, scholars have suggested that there are two kinds of reading, diachronic (historical) and synchronic (descriptive) which I relate to the sequential and the synoptic respectively. I made this diagram to attempt to depict what I had in mind as 'two-dimensional reading'. The vertical reading is not of the same kind as the horizontal as I crudely indicate by using double instead of single headed arrows; though such things as crosswords are an exception. Think of poetry where one comes to be aware of a meaning resonance between the lines. Alternatively, we might see a resemblance with
the complex plane of representation of complex numbers. Here are some of such ‘resemblances’.

**COMPLEX PLANE**

As shown with the crossword illustration, there could be a number of points of intersection of vertical and horizontal, places where the two forms of writing/reading coincide. In the

*Whoever hath her wish, thou hast thy Will,  
And Will to boot, and Will in over-plus;  
More than enough am I that vexed thee still,  
To thy sweet will making addition thus.  
Will thou, whose will is large and spacious,  
Not once vouchsafe to hide my will in thine?  
Shall will in others seem right gracious,  
And in my will no fair acceptance shine?

The sea, all water, yet receives rain still,  
And in abundance addeth to his store;  
So thou, being rich in Will, add to thy Will
One will of mine, to make thy large will more.

Let no unkind, no fair beseechers kill;  
Think all but one, and me in that one Will.

*Shakespeare Sonnet 135 - contains 7 meanings of the word ‘will’, the highest sense of ‘free will’ not included (which has an esoteric significance, 8 being the beginning of a ‘higher octave’)*
complex plane these are the (0,0) points in a constellation or order of zeroes. This reminds us of the well-known instance of Mendeleyev who worked for three days solid on arranging the elements in the combined orders of their chemical properties and atomic weights then had a dream that revealed a solution that became the basis for the Periodic table.

When I first met David Bohm he was searching for a new understanding of space that avoided or was the precursor to Euclidean-Cartesian representation. His approach was 'ontological', thuswise:

The regions or topoi are concrete and A is somewhat 'inside' B, and B is somewhat 'inside' C and so on such that A is somewhat 'slightly inside' E. Gradations of insideness - or participating in the being of - corresponded to proximity and thence to distance. Bohm's feeling for this 'inside' approach found expression in his appreciation for the paintings of Rouault. In a letter to Charles Bierderman he tells how his initial aversion to Rouault's painting gave way "to a remarkable new steady vision which I can best describe as seeing in a new dimension". He once explained to me that he saw the colours in the painting merge into or act on each other in such a way that space emerged from them. Thus the colours were not 'in' space at all but prior to space.

Colour was a prime example of the phenomenology of Goethe. The narrow left brain view is that colour is 'subjective' and exists 'only in the brain'. There is a remarkable book called Color Codes which makes it clear that the kind of order associated with the experience of colour is definitely non-linear and follows a multitude of 'logics'. To take one example, in Hegel's view of colour the combination or harmony of all the colours is not white but the 'flesh-tone' used by painters.

The right brain has a window into the world of living complexity and does not have to 'understand' it as the left brain tries to. An image of this complexity is called 'Indra's Net' and portrays an infinite set of jewels such that every jewel reflects the radiance of every other jewel. A more homely example is that of a room, once one becomes aware of the transfinite possibilities of the arrangements of what is in it. Arrangement is an extraordinary feature of the world and, if the continuum is aleph one then it belongs to aleph two.
What I call vertical reading, colour, arrangement and so on are all facets of the right hand brain. I once took a Jungian analyst friend of mine to see Stonehenge. While I was feebly waxing on about astronomical alignments, she drew my attention to the colour of the lichen on the stones. The contrast was startling and also comic (humour may be in fact the most interesting example of the meeting of the two sides of the brain!).

BEING IN THE WORLD

....there is no inner man, man is in the world, and only in the world does he know himself. Phenomenology of Perception p. xi, Merleau-Ponty

It is more than curious that the thinking of the classical age of physics assumed that there were primary properties of material objects, all others being subjective or derivative. The mass and volume of an object were primary and real while its smell and colour were not. The right brain appreciates how things taste, smell and look, all the sensory qualities or qualia of our experience. I would like to suggest that 'other kind of information' are located in or are part of the sensory richness of the world, the richness that has been steadfastly ignored or even disparaged in classical physics and recent philosophy. This is not to deny that another kind of richness has become available: just as the ascetic who denies his sensuality can release a possibly 'higher' range of sensations.

The right brain does not 'encode' the world as the left brain does or believes that it does. It does not make 'models of external reality'. It is part and parcel of the world it inhabits just as in Bohm's picture. Its mode of experience is participation while that of the left brain is observation. The left brain wears a white coat and goggles while the right dances in the meadow in bare feet.

It is more than a metaphor to say that the left brain looks while the right brain listens (or, as Heidegger would say, 'harkens'). In some cultures intelligence is located in the ears! My late friend Edward Matchett who studied and taught genius used a method he called 'neural education' in which music was used as a source of meaning-substance that could be assimilated directly into a problem and resolve it. Music in contrast with language gives us simultaneous streams of information. I am reminded that Elgar was reported to be able to hear whole symphonies on sight reading their scores.

I have used the term 'information' in a loose sense and not the now standard digital one. It is important to acknowledge the possibility that information in analogue form is richer than in digital (as some connoisseurs of music insist is true and value vinyl recordings over compact disks). The digital form of information belongs to the left brain and corresponds to its nature of treating everything as the same, as exemplified in Descartes' reduction of all materiality to extension alone. [I am surprised no one has observed that this was tantamount to adopting just the first rung of the form of the Scholastics. Matter in itself had no qualities and had to 'receive' them from the world of Form. The first of these was quantity but there were then many others reaching up through sentience and beyond.]

Something of the character of right brain information can be felt perhaps in contemplating Chinese painting, especially of the Taoist schools. This remarkable painting by Tao-chi brings the viewer inside it as the person in the hut enfolded by the mountains and he is not an observer.
It is easy to find resemblances in many fields to the contrast between left and right brains we have been discussing. Speaking of China, there is the contrast between Confucianism and Taoism. In modern philosophy there is as one example the contrast between logical positivism and phenomenology. In Peter Rowlands’ scheme the fermion is left and the structured vacuum is right - and *in combination are nothing*, which I will come back to later. We can even speak of the contrast between typical images of 'the west' and 'the east'. Interestingly enough - at least from the perspective of my metaphorical and mythical approach - history tells us of a shift of higher knowledge from the East to the West, from China and India, through the Middle East, to Europe and then North America.

**HISTORY OF WILL**

All other things have a portion of everything, but [WILL] is infinite and self-rulled, and is mixed with nothing but is all alone by itself. - Anaxagoras from *Commentary on Aristotle's Physics* by Simplicius [with the word 'mind' replaced by 'will'].

The duality of brain is essential for our creativity and I find it refreshing to contemplate that our very essence is rooted in contradiction. As I shall attempt to explain later, duality is the condition for will and without contradiction will can have no meaning. Also, will brings in
something new and, as such, it would not be surprising to find - or find ourselves inventing - an historical view of will as somehow progressing.

The meaning of words/concepts does not stay still and it is questionable to assume that the same word was given the same meaning in different periods. 'Will' has its roots in Indo-European languages as Greek *elpis* 'hope', Latin *velle* 'wish, desire', German *wollen*, including the Sanskrit *vṛnoti* 'chooses', the Avestan *verenav*, and the Old Saxon *willio*. It can designate both a verb and a noun. It has strong associations with desire and the term 'well' as in 'it goes well' means that things are going as one wishes. There is a more complex meaning to do with *freedom*. This meaning or complex of meaning has to do with the possibilities of freedom from desire (or oneself) and our relation to the Will of God. The rise of the monotheistic religions created the paradox of separate wills within one absolute single will. The aspect of desire finds its expression particularly in sex, as Schopenhauer was to aver, or will as a *blind urge*. But in the religious meaning it is allied with *conscience* or 'truly knowing' and *faith*. This might also be a kind of blindness, but in the sense of going beyond reason.

It is curious that Eastern religions such as Buddhism seem to have no equivalent for 'will' even though the phenomenological reality of it is evident in e.g. the Buddha's teachings. As a possible comparison we might think of the fact that the concept and term *energy* did not emerge in science until the nineteenth century.

It was St Augustine who first placed the issue of will firmly in the Christian vision. In a major departure from Greek tradition, he shifted the centre of gravity of the search for truth from Intellect to Will. In his psychology, man has a trinity of faculties: Memory, Intellect and Will and Will was free to ignore or choose otherwise than intellect dictated. These days we might associate his 'will' with our modern sense of 'feeling'. What has remained over the last almost two thousand years is the intuition of a human being as a trinity of some sort. Yet, as we shall see, thinking in threes is hardly logical - as was known from the early days of the Church.

Will appears in the paradox of being able to do what one wants but also being able to *not* do what one wants. This was expressed by St Augustine as: "The mind commands the body and it obeys. The mind orders itself and meets resistance." This is also sometimes expressed by using the two terms 'will' and 'nill'. Psychologically, the operation of *nill* is supremely important for intelligence since it is needed for the 'suspension' of automatic responses, allowing for more conscious or thoughtful ones. In the twentieth century this became enshrined in the foundations of phenomenology as *epoche* or 'putting into brackets', which we will come back to later.

St Augustine was an acute observer of his own psychological process and was a major pioneer in thinking of man as *divided against himself*: we can 'know' what to do but 'choose' not to do it. The common naive view of today that we have a single will is questionable at best. A man can find himself at variance with the world, with his fellow men (as Sartre was to dictate, "The Other first arises in my world as a Not"), with God (as in the Christian doctrine of sin and the pangs of conscience) and even with himself. The first and last of these taken together gives us the common contemporary picture of man as a neurological machine for whom freedom is an illusion. In Islam the greater *jihad* is in the war with oneself (or one's *nafs*) and the lesser in the war against the *kafir* or infidels.
The scholasticism of the Middle Ages was largely based on Aristotle's ideas and, in particular, his scheme of Form and Matter. Matter was just stuff, inherently inchoate, needing to be shaped and made intelligible by Form. This, to my mind, is eerily similar to the relation of the right to the left sides of the brain which the left believes.

The world of forms was hierarchical (even patriarchal, one might say); it largely disappeared from sight around the seventeenth century but is beginning to emerge again, centuries later, in such guises as Bohm's active information. There were different levels or classes of existence. What was problematic was the individual. An individual was a member, say, of a genus or species but where did its particularity come from? The usual answer was that this was entirely due to the particular matter involved. The forms were always seen in abstraction from diversity and hence could not be responsible for individuality.

In the eleventh century the Jewish scholar and poet Solomon Ibn Gabirol, known to the Christian community as Avecibron, proposed that the very binding of form and matter required will. The two streams of Greek and Jewish thought were and remained divided against each other and here surfaced their division with a vengeance. Will appears closely associated with the ideas of monotheism. We can point out a resemblance between Augustinian psychology and Avecibron's cosmology, with a reference to Duns Scotus also:

<table>
<thead>
<tr>
<th>Augustine</th>
<th>Avecibron</th>
<th>Scholastic</th>
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<tbody>
<tr>
<td>Will</td>
<td>Will</td>
<td>Haecceity</td>
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<tr>
<td>Intellect</td>
<td>Form</td>
<td>Quiddity</td>
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<tr>
<td>Memory</td>
<td>Matter</td>
<td>Hyle</td>
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Avecibron's position implied that every individual was an act of creation. Two centuries later, Duns Scotus became the champion of individuality in his doctrine of haecceity or 'thisness'. As Hannah Ardent claimed, Scotus was one of the first and greatest to explore the implications of the notion of will. He opposed Aquinas's view that freedom comes from 'intellectual appetite' as opposed to 'sensual appetite'. First of all he argued that freedom comes from having multiple options at one and the same time and, secondly, that there were two 'affections' of the will rather on the lines we discussed earlier - one for what is advantageous to us (desirable) and the other for what is right which may have nothing whatsoever to do with our happiness. Further, what was 'right' was entirely due to the Will of God.

The Will of God in monotheism maintained the element of 'caprice' or arbitrariness which we suppose was commonly ascribed to the gods in ancient times. It was strongly felt that God could not be restrained by reason. Remarks made by modern scientists such as Einstein and Hawkins refer to the mind of God and not His Will and come out of the stream of Greek thought, not the Jewish. It is important to note that in Islam natural laws are regarded as 'the habits of Allah'. The philosophical a priori is somehow haunted by the unknown Will of God.

The 'capriciousness' of will appears again much later in Schopenhauer's The World as Will and Idea as blind impulse. Will cannot be explained. Since it is always what is original, it can only be known after the fact of its operation. Will can only be equated to will and cannot be
derived from anything else. We are not even conscious of will: the intentionality of consciousness as 'consciousness of' in this case has no object. It is entirely subject.

The word 'subject' means 'thrown-under' or dominated but in the adjectival form 'subjective' became almost synonymous with illusory or opposed to the 'objective', derived from 'object' meaning 'thrown-against' or fact. At one time however 'subjective' meant real only gradually becoming its opposite. The nature and plight of the subject became a major issue in recent philosophy, starting perhaps with Soren Kierkegaard. A key issue was freedom to choose. No matter what the objective forces and evidence dictated, the subject was free to choose otherwise. Kierkegaard contrasted the aesthetic (intellectual) with the ethical (volitional) and called us to make the 'leap into faith'. Later, with the 'death of God', this was transposed down into for example the 'bad faith' and 'futile passion' of Sartre.

What is at stake with will is not merely difference or distinction but opposition and conflict. To summarise some of our earlier remarks, the will is involved in 'strife' with four elements:

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\begin{align*}
\text{GOD} & \\
\text{OTHERS} & \quad \text{SELF} \\
\text{WORLD} & 
\end{align*}
\]

Note that this form contains two complementary oppositions and can be read to imply that if they collapse into one (as below) we have the condition called egoism.

\[
\text{OTHERS-WORLD} \leftrightarrow \text{SELF-GOD}
\]

It is fairly clear that the concept or the possibility of will tends to throw a spanner in the works of reason. It may even be the case that it is finding another revelation in the discovery of the irrational, undecidable, unproveable, incomputable, etc. content in the heart of mathematics. In place of the simplistic classical view that truth has to be non-contradictory it is possible that something quite different is needed.

I have used the Heraclitean term 'strife' from his dike eris 'strife is justice': "We must know that war (polemos) is common to all and strife is justice, and that all things come into being through strife necessarily." But I also want to bring sex into the picture (though not quite in the same way as Schopenhauer does). Sex requires both opposition and union (as in the French vivre la différence) and is important because of its implications of generation because will may be understood as essentially dividing and uniting to create what is new. Understanding or enlightenment, according to Spencer Brown amounts to seeing the 'laws of creation'.

**FORMALISM**

To arrive at the simplest truth, as Newton knew and practiced, requires years of contemplation. Not activity. Not reasoning. Not calculating. Not busy behaviour of any kind. Not reading. Not talking. Not making an effort. Not thinking. Simply bearing in mind what it is one needs to know. And yet those with the courage to tread this path to real discovery are not only offered practically no guidance on how to do so, they are actively discouraged and have to set about it in secret, pretending meanwhile to be diligently engaged in the frantic diversions and to conform with the deadening personal opinions which are continually being thrust upon them. - G. Spencer- Brown
I want to play with some mathematical formalism you may be familiar with. I made much fuss about the linearity of language and mathematics. It is interesting that Spencer Brown actually violates this linearity though in a subtle way and not only in the way he expresses non-linear or second order equations by means of what is more or less a diagram:

He writes his two fundamental laws as

\[
\begin{align*}
\overline{\overline{a}} &= \overline{a} \\
\neg
\end{align*}
\]

I suggest that the second law of crossing should actually be written in a vertical way:

An interesting feature of the vertical is that it oscillates between two states while the horizontal can have only one. In this guise, it is akin to the treatment of the square root of minus one as an oscillation between +1 and -1.

My distinction of the two ways of combining two operators or marked states in the calculus is an example of the possible plurality of meaning of 'distinction'. This is to bring into play the spirit of the right brain with a vengeance. It is not without support. In T. J. McFarlane's paper Distinction and the Foundations of Arithmetic he defines no less than three kinds of distinction (to allow for the full range of commutativity and associativity). Spencer Brown himself introduced a second operator 'score' to deal with arithmetic and there is yet another reading in which there are four operators or kinds of distinction.

Thus distinction is fine as a starting point but turns out to be variable of sorts; not a continuous one but subject to or correlative with the number of distinct states allowed in the given calculus.

Now I turn to an eigen form of reflexivity that Louis Kaufmann has shown us exemplified by the proposition of Heinz von Foerester; 'I am the observer of I observing myself'. I write this in the following way:

\[
I = (I (I))
\]

'Moses equation'

Incidentally, this is the equation God gave to Moses when he said, 'I Am that I Am'. If we write this in a Spencer Brown way then the right hand side can be:

\[
\overline{\overline{I}}, \overline{I} = \overline{I}
\]

and just removing the I's comes to the same thing since

\[
\overline{I} = \overline{I}
\]
So the I on the left of the 'Moses equation' can be interpreted as *nothing*: the ultimate reductionist view of human identity as vacuous or illusory.

In the latest edition of *The Laws of Form* Spencer Brown writes:

Thus we cannot escape the fact that the world we know is constructed in order (and I thus in such a way as to be able) to see itself.

This is indeed amazing.

Not so much in view of what it sees, although this may appear fantastic enough, but in respect of the fact that it *can* see *at all*.

But in order to do so, evidently it must fist cut itself up into at least one state that sees, and at least one other state that is seen. In this severed and mutilated condition, Whatever it sees is *only partially* itself. We may take it that the world undoubtedly is itself (*i.e.* is indistinct from itself), but, in any attempt to see itself as an object, it must, equally undoubtedly, act* so as to make itself distinct from, and therefore false to, itself. In this condition it will always partially elude itself. [*He relates this word to the Greek for ‘actor’ and ‘antagonist’*]

To anticipate myself a little I point out at this juncture that the only possible result of a repetition of the severance or distinction in the dyadic calculus that produces an observation of myself is to render me ‘not-observing’ or *unconscious*. If there is some other result then something new must come in and the second act of distinction be non-identical with the first. In this context, the repetition of a distinction changes the distinction (one cannot step into the same river twice - Heraclitus again).

Let me represent the first act of distinction by a vertical stroke | and the second act by a horizontal stroke ---. Then I write this form:

\[
\begin{array}{c}
| \\
\hline
\end{array}
\]

The *Tau* form expresses the right hand brain view of how two elements can 'meet' and/or 'be together'. It detaches from the usual sense of direction in reading. If we have two elements such as A B we can look for what is *between* them and also for what *encompasses* them, which gives a different 'reading' from scanning in the sequence A first and then B. The more holistic kind of reading was exactly what the Kabbalist practised in his contemplation of the letters in words. We will need to look more deeply at the meaning of the blank page later.

The Tau symbol is pretty obviously related to the (later) form of the Taoist duality of Yin and Yang:

![Tao symbol]

But I could also use the *vertical* order of arrangement and write:
which suggests an hierarchical order or order of orders. The tripartite form exemplified above in the diagram is embedded in western theology and philosophy. In Hegel it became the 'negation of the negation' a phrase he used to express a triadic understanding in our basically dyadic language. Hegel drew on Christian mysticism and it is easy to find the recurrent idea of understanding the Unknown God by going beyond the negation of what is known or thought. I propose that there is an understanding of self-observation that is of the same form and implies an operation that goes beyond consciousness. The twentieth century mystic Gurdjieff made this remark:

“Not one of you has noticed the most important thing that I have pointed out to you,” he said. “That is to say, not one of you has noticed that you do not remember yourselves.” (He gave particular emphasis to these words.) “You do not feel yourselves; you are not conscious of yourselves. With you, ‘it observes’ just as ‘it speaks,’ ‘it thinks,’ ‘it laughs.’ You do not feel: I observe, I notice, I see. Everything still ‘is noticed,’ ‘is seen.’ ... In order really to observe oneself one must first of all remember oneself.” (He again emphasized these words.) “Try to remember yourselves when you observe yourselves and later on tell me the results. Only those results will have any value that are accompanied by self-remembering. Otherwise you yourselves do not exist in your observations. In which case what are all your observations worth?”

This passage exhibits an important ambiguity in its use of terms relating to awareness. Gurdjieff is implying that there is a usual kind of awareness - 'it observes' - and another kind where I ‘remember myself’. The phrase 'self-remembering' which became emblematic of Gurdjieff's teaching is quite precise in indicating a kind of repetition that is yet utterly new. In common usage we have the slightly sardonic phrase 'once more with feeling' but there is indeed a sense of entering into the same again in such a way as to really get it. It is interesting that people who attempt to follow such indications always insist that this second order awareness cannot come into operation without intention (yet is only possible from something given).

I am going to connect together the exploration of the meaning of will with self-remembering. This means that it is not enough to be aware of oneself but one has to realise that one is aware of oneself. The word 'realise' is used advisedly in that the act is just that of 'making real': of truly owning what is revealed, taking responsibility for it just as it is. Whereas ordinary observation produces a separation due to which one part of ourselves can criticise or react to another part the second order observation takes it all in. One might even say that to self-remember it is necessary to love oneself. The observer and observed of the first order of distinction are realised as not-different in the second order. This is of the same form as 'overcoming one's own will' in a spiritual path.

The second order observation is not observation in the sense of the first order. The result may feel like a Spencer Brownian 'cross-cross equals blank' precisely because will is unobservable and cannot be known. We do not know our own will so mistake who we are
because we revert into treating ourselves as things or observers of things.

Gurdjieff called the state of collapse into objects, thoughts, etc. identification. The next, second order of identity gives awareness but not freedom. The third - self-remembering - gives freedom but what this freedom means is only then accessible. Another way of putting it is to say that in the first level one is an object whereas in the third one is - rather enacts - a relationship with oneself, which I like to call the 'true subject' in that this 'I' is subject to itself. What is between the first and third condition is usually called 'consciousness' and many people desire 'more' consciousness; however, in an important sense, the third order is not more conscious at all and can even appear as unconsciousness.

The latter idea is found in Hinduism where it represents levels of identity in the order: Waking, Dreaming, Dreamless Sleep; which seems to totally contradict our usual evaluation of levels in terms of more and more consciousness. Dreamless sleep is actually akin to samadhi - the identity of object and subject. In practical terms it is often said that 'from the perspective of the ordinary mind the higher state is unconscious'. This is of course precisely what we have with a reduction to the law of crossing:

\[ \overline{I} = \]

The 'awareness of awareness' seems like non-awareness.

I want to distinguish the vertical from the horizontal ordering further by suggesting that it is in the horizontal that we see appear open-ended series such as:

\[ I \ (I(I(I(I(I)))))) \]

Which can expand or contract. Let us now make the jump to portray vertical and horizontal ordering together:

\[
(I)
\]
\[
(I(I))
\]
\[
(I(I(I)))
\]

and so on. This resembles the combinatorial hierarchy based on the empty set \( \emptyset \)

\[ \{ \emptyset \} \]
\[ \{ \emptyset \{ \emptyset \} \} \]
It is shown here in four levels to remind us of the Pythagorean *tetraektys*. The simplistic series shown is not of course the same as the series of levels in the actual hierarchy. It shows only that there is a *progression in depth* and does not take account of the detail of the combinations. The interesting thing here is that we can see on the left a repetition of the 'same' element while on the extreme right there is a movement into depth as shown by the number of brackets. This gives a series of elements horizontally corresponding to the vertical levels reached. The aesthetic principle of this might be illustrated by a remark made by Ezra Pound:

> Genius ... is the capacity to see ten things where the ordinary man sees one, and where the man of talent sees two or three, plus the ability to register that multiple perception in the material of his art.

**NUMBER AS AN ORDER OF ORDERS**

I can think of no better expression to characterize these similarities than "family resemblances"; for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way. And I shall say: "games" form a family. . . . for instance the kinds of number form a family in the same way. Why do we call something a "number"? Well, perhaps because it has a direct relationship with several things that have hitherto been called number; and this can be said to give it an indirect relationship to other things we call the same name. And we extend our concept of number as in spinning a thread we twist fibre on fibre. And the strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres. *Philosophical Investigations* (67) Wittgenstein

The diagram shows an arrangement of elements that increase in depth and complexity according to the simple sequence of the natural numbers. The arrangement has *not been strictly derived* from some axioms or out of a single concept such as that of distinction. Right
from the beginning it has presumed what it purports to show, which is intrinsic to this kind of understanding. The idea of a progressive sequence of number archetypes is ancient and can easily be dismissed as mythological. My suggestion is that, like the poor, it is always with us.

To focus a little more closely on what is involved in making a step from one level to another, we take the case of the movement from Two to Three or, as some interpret it, their ‘warfare’ or strife. A paradigmatic appearance of this transition is encountered in our visual perception of depth. This perception arises from the right side of the brain. The classical perspective of science will call this 'subjective' since what we actually receive as data consists of impacts (or 'marks') on the two-dimensional surfaces of the retinas. The sense and feeling of depth is something projected out of us. It then resembles what has been called 'quantum touching' (by Peter Marcer and others) that in fact our perceptions are not some kind of models constructed 'in here' inside the brain but really exist 'out there' just where objects 'are' (just as Plato proposed in his theory of vision). The impact of the third dimension can be keenly felt in playing with autostereograms - such as the one below which becomes three-dimensional if one looks at it in a certain way.

Holograms are also suggestive. I particularly remember one of a Victorian stereoscopic device that contained two photographs. The device existed in mid-air as it were and, by putting one's eyes to its lenses, one could not only see the photographs but also combine them into another order of three-dimensional image.

Depth is similar to colour in moving us away from a simple objective-subjective duality. A possibility by the way is that colour can count as a fourth level manifestation even though, again, what are presented to us, apparently, are only surfaces.
The 'war' or clash between Two and Three is expressed in what are called 'impossible objects' such as this triangular form.

Of course, the effect comes out of our automatic tendency to project into three dimensions. But it evokes the sense and feeling of relationships. If the viewer can somehow get inside the image the 'impossibility' dissolves. One has to go from looking at the image to being inside it. Such illustrations are but faint indications of a reality of Three that cannot be composed out of Two. This was something that Peirce was very keen on and he openly declared his allegiance to trichotomy. However, as he pointed out, people differ in their numerical allegiances. I want to suggest that any natural number can be taken as primary or as ultimate.

We can postulate meaning spaces resembling Hilbert space with N vectors or terms such that the 'direction' of any one of the N vectors is in the context of the others. The idea can be represented in the following diagram using the complex plane.

![Diagram](image)

The example shows a threefold structure. The three terms (vectors) are given by the cube roots of 1 and in general for any N will be the Nth roots of 1. In the case of N = 3, the roots are:

\[
1, \quad \frac{1}{2}(-1 + i\sqrt{3}), \quad \frac{1}{2}(-1 - i\sqrt{3})
\]

The even N have simpler roots of course such as when N = 4 they are 1, i, -1, -1. The N distribute themselves equitably through the meaning space. Some elements repeat such as the obvious +1. But the meaning space itself changes with N. If we say it does not then we are arguing that the deeper spaces or levels are simply combinations of the shallower ones. In the progressive view, each new space is the same as the one before but creatively different. Such a view resembles the view of our identity which is along similar lines. The novelist William Pensinger invented the term 'identity transparency' to refer to just this aspect of our possible experience.

From the vertical order we derive the progression of 'worlds' but it is as if each level then has its own democratic or even 'political' task of sorting itself out through negotiation. There is
the saying, 'Two's company but three's a crowd' which points out that even going from Two to Three is a challenge and the rules of the game must change. The worlds are so to say 'created' but are then left to sort themselves out as best they can. This means that the relationships of their terms are mutable. The number of the world, N, is set but the relationships, the mutualities, of the N terms have to be tweaked in every concrete instance. God is transcendent vertically but immanent horizontally.

It is also interesting that in this scheme we have a resemblance to Plato's account of the created world as an 'image' of the ideal world. The world of Ideas is vertical while the created world is horizontal.

**THE CARTESIAN GENIUS**

If you would be a real seeker after truth, it is necessary that at least once in your life you doubt, as far as possible, all things. Rene Descartes

The distinction Descartes made between res cogitans and res extensa - thinking substance and extended substance - arose from his *act of doubt*. More accurately he discovered that he could not doubt his doubt. As suggested earlier, his category of extension was a take up from the Scholastic doctrine of Forms, being the lowest form that matter could take while still being intelligible. At the other extreme, he has the Form of reason, the rational soul, one of the highest that matter could take. In essence then, his primary distinction can be seen as just the two ends of the scholastic spectrum of Form. He simply left out all that came between. This proved supremely important because what was mainly left out was *life*. This was beginning of a world view in which everything was emptied out and seen as a blank canvas with only isolated points of meaning or souls to animate the canvas.

His cogitas can be more intelligibly understood as *will*. Referring forward again to future developments we can see here the rudiments of Schopenhauer’s *World as Will and Idea*. The cogitas is revealed by the act of doubt. It is a kind of naked singularity. As such it had then to be sustained by a *higher act of will*, that of God.

In most combinatorial hierarchies, we have the primary substance or condition as some unknown at a zeroth level. The first level marks a beginning. In the case of our interpretation of Descartes, God is at the zeroth level while His Will is at level one. At level two this will divides into two contrasting modes.

Let us say that on the left hand side there is will as natural, mechanical law. As is well known, the laws of physics are largely negations. Now, how could we have will becoming unfreedom or determinism? The answer is strange: *only will is able to deny itself*. It then produces what are sometimes called 'framework conditions', including the conditions of time
and space. On the left hand side this denial is akin to Cartesian doubt and embraces what we now tend to call 'reflexivity'. On the right hand side we have the appearance of freedom with the idea that 'man is made in the image of God', i.e. that he is free to choose. A short hand way of talking about what happens at level two is to say that it is made of negation. A struggle ensues which echoes in mythology as the 'war in heaven'. Thus we begin to see an approach to understanding the intertwining of such elements as the will of God, natural law, individuality and so on.

What might open up between the two directions and appear at deeper or 'more evolved' levels? An immediate answer would be - life - or autonomous existence. Eventually we will end up with the 'selfish gene'! What might also manifest is that we humans are not so much over to the right hand side and there is a question of realising the possibilities of freedom that are not guaranteed under conditions of organic existence.

The overall picture is one of asymmetrical symmetry. All the elements on a given level are equally true but in distinctive ways. The elements of the different levels have a transitive relation of implicate and explicate, each element of a given level capable of unfolding new possibilities at a deeper one. So everything is just the Will of God but in an ever-unfolding distinctive number of ways. As has been increasingly noticed, what we encounter in our mathematics for example is not so much some Platonic world of Forms but the substance of our own acts. This is simply indicated by saying we set up some rules and follow through the consequences. It is to engage in a reality we make by participating in that reality.

In this regard, we would aver that the underlying substance or given unknown which is variously called 'nothingness' or 'process' and so forth can be identified with will. Will is the emptiness of the blank page. Of course, to say this is to indulge in the right hand brain. The left would say that it merely 'symbolises' will simply because unknown = unknown.

We mentioned that Descartes took over the first level of the Scholastic forms, i.e. quantity (extension). In general, the picture given by the kind of arrangement of levels and terms we have been playing with can be read as: towards the left, the quantitative; towards the right, the qualitative. Thus the numbers themselves can be seen as both numerical items and as archetypal qualities. However, like our two brains, the two views may be in opposition and even seek to suppress each other.
Returning to Descartes’ cogitas, we can remark that thinking begins from contradiction. In this it is possible to glimpse how it is that thinking can be linked to the will in a special way. Thinking aims to remove doubt by taking it so far it becomes a certainty. It is the will affirming itself.

A NEVER ENDING STORY

Beauty is the translucence, through the material phenomenon, of the eternal splendour of the ‘one’. - Plotinus cited by Heisenberg in his essay ‘Science and Beauty’.

The unfolding or progression of levels looks something like the following lattice, where we have inserted labels at various points by way of illustration of what these positions or topoi might mean in a general (therefore deceptive) sense:
the will-to-do in the case of technology, and so on. Alternatively, we can take any point within the nexus as a starting point. There is no absolute starting point. 'God's will' is ubiquitous. Every term is a new beginning.

In traditional schemes, such a hierarchy - called an emanation - represented a declension of power as it unfolded as if some primordial energy runs down. In modern cultures, infused with vistas of evolution, the opposite interpretation can be made. We can see how it is possible to regard the left hand side as entropic with everything running down while the right hand side is syntropic or 'running up'.

The key act is that of 'creating contradiction' which is almost to say that rebellion (or Cartesian doubt) is built into the fabric of the universe. Humans are perhaps just a nodal point of the field of contradictions and not the sole exemplars of it. Of course, a traditional view was that humankind was created just so as to bring the godly characteristics into the creation, on the shop floor as it were. This has led to the prospect of highly evolved creatures becoming 'cosmic individuals' that is, capable of shaping the evolution of the universe. This was the ancient view of shamans. It goes beyond the Neoplatonic worldview as expressed by Plotinus:

So from this, the One Intellectual Principle, and the Reason-Form emanating from it, our Universe rises and develops part, and inevitably are formed groups concordant and helpful in contrast with groups discordant and combative; sometimes of choice and sometimes incidentally, the parts maltreat each other; engendering proceeds by destruction. Yet: Amid all that they effect and accept, the divine Realm imposes the one harmonious act; each utters its own voice, but all is brought into accord, into an ordered system, for the universal purpose, by the ruling Reason-Principle. Ennead (3)

Another interpretation of the diagram is that it resembles generations and kinship. Every term derives from something and gives rise to something. The picture of the lattice suggests ripples of meaning being transmitted in all possible directions. Each term or logotopos - to coin a word from meaning and place - can be strong or weak but each has its role to play in a continuing mutual negotiation. Using the word 'system' for any particular level of the scheme - that is of a particular value of N, the order or number of terms - we can sketch out some provisional rules. These are some of them:

RULE 1: Consequence. Every operation generated at any stage functions in all succeeding stages.
RULE 2: Generation. Middle terms of a system level are the children of the previous level's terms.
RULE 3: Creativity. The co-operation of the first two rules leads to new rules.
RULE 4: Similarity. Terms appearing along any line that can be drawn in the lattice are similar in nature but differ progressively.
RULE 5: Structure. The terms of a system are not all equally connected.
RULE 6: Depth. Terms of a system are connected at different depths.
The term 'rule' is a translation of the Greek *nomos*, but this word originally meant a kind of melody in three, five or seven parts. It is useful to bear in mind that there are so-called *nomic games* in which the task is to generate new rules from a given set. Our lattice is not a candidate for Leibnitz's 'universal calculus' in that it does not have fixed rules and, instead of calculation, we have only the pull of creative interpretation in which rules are discovered *after* their emergence. Stabilisation of the meaning of terms is only possible through mutual agreement between people in shared circumstances.

**GREAT NATURE**

The Lattice form shows resemblances to many well-known forms such as:

- **Pythagorean Tetraktys**
- **Lambda of Overtones and Undertones**
- **Pascal's Triangle**

1
2 3
4 9
8

**MONAD**
**EVEN - ODD**
**SQUARES**
**CUBES**

**POINT**
**LINE**
**PLANE**
**SOLID**

**PLATO'S LAMBDA**

The lambda form of undertones and overtones, that is of fractions and multiples suggests an interesting interpretation of the two directions of the lattice (reversed from those of the lambda figure above) as *atomic* and *holistic*.

**WILL TO UNDERSTAND**

**ATOMISM** → **HOLISM**
The left side seeks after the fundamental least particle from which everything else can be constructed by combination. The right side seeks for what is most all-inclusive. Let us cite Anaxagoras again:

Neither is there a smallest part of what is small, but there is always a smaller (for it is impossible that what is should cease to be). Likewise there is always something larger than what is large.

The left has the attitude of separation and favours *locality* while the right has that attitude of togetherness and favours *non-locality*. [Perhaps in Peter Rowland's terms, the left side is the fermion and the right the vacuum.] This is strongly reminiscent of where we began with the theory of the divide of mind between the two hemispheres of the brain. One implication is that the left hand brain/mind identifies with its own will and separateness and *sees the world* just in these terms. People who are centred in the left cannot see any meaning in wholeness or seek to reduce it to some mechanism. Those centred on the right are usually inarticulate about what wholeness means and are unable to provide any practical guides to doing anything about it.

The essential duality of reality is not produced by the contingent structure of our brains. Or, at least, that would be only a left brain explanation; just as the right hemisphere would expect duality to arise because *it* sees it as in the nature of all things everywhere. The further depths beyond duality are also then not a simple product of duality but genuinely new creations. We can say in a colloquial way that these depths arise out of the dialogue between the two sides but that is to fix the two sides as 'objects' when their very meaning, including their structure in various forms, is being 're-calibrated' at every step. To repeat, this is like allowing for not only an iteration of operations according to a given rule or rules but to the operation of new rules. It is a little like playing music in different keys or modes or, rather, different scales.

So also for a presentation (not representation) of these ideas the very form of the lattice can be inverted and rotated, giving different perspectives, and we can go on to see it in three dimensions as a cone, which leads us into more new thoughts. But the 'lattice' or whatever this form really is, greets us in the wilderness as in this wondrous photograph of a cascading waterfall. The right brain will cry: 'There is no need for a model just 'eyes to see'' but the left will say: 'I cannot begin to understand unless I create it in my own terms.'

There is a progression of concreteness from equation to natural perception of the world, a higher order version of the sequence point, line, plane and solid that reaches into the
mystical perception of the world as the presence of God - or of Matter, as this quote from the 'Mother' who was companion to Sri Aurobindo says:

There is a continuous perception, rendered by the vision, of a multicoloured light, consisting of all colours -- of all colours not in layers, but as if it were an association by dots of all colours. Two years ago...when I met with the Tantrics and got in touch with them, I started seeing this light and I thought it was a "Tantric light", the Tantric way of perceiving the material world. But now I see it constantly, in connection with everything, and it seems to be something that one might call "a perception of real Matter". All possible colours are mutually associated without being mixed, associated in luminous dots. Everything consists of it. And it seems to be the true way of being. I am not sure yet, but it is anyway a much more conscious manner of being. (The Mother speaking to Satprem in 1967)

And since the portions of the great and the small are equal in number, so too all things would be in everything. Nor is it possible that they should exist apart, but all things have a portion of everything. Anaxagoras

All the results issuing from all the cosmic sources great and small, taken together, were also then named by the cherubim the common-cosmic Ansanbaluiazar; present day objective science also has the formula: Everything issuing from everything and again entering into everything. Gurdjieff

CLASSICAL AND CHRISTIAN IMAGES OF THE MOTHER

[Images of classical and Christian depictions of the Mother]
EPILOGUE

Greek mythology holds that our human capacity for geometric vision is a gift of the divine feminine - energetic sources of wisdom conceptualized as a lineage of goddesses. Born from primal Chaos is Gaia, from whose name comes "geometry" - geo (earth) + metr (measure, mother). She gives birth to Mnemosyne, goddess of Memory, from whose name comes "mnemonic." The daughters of Mnemosyne are the Muses - the arts and sciences. Memory is the legacy of the sacred Earth, and the arts enable humans to actively remember. The essence of this divine feminine lineage is sustainability of sacred place (Chora) through enduring values of order, proportion, a universal aesthetic, and connectivity. Bethe Hagen

In those days, the land Shubur-Hamazi,
Harmony-tongued Sumer, the great land of the me of princeship,
Uri, the land having all that is appropriate,
The land Martu, resting in security,
The whole universe, the people well cared for,
To Enlil in one tongue gave speech.

Then the lord defiant, the prince defiant, the king defiant,
Enki, the lord of abundance, whose commands are trustworthy,
The lord of wisdom, who scans the land,
The leader of the gods,
The lord of Eridu, endowed with wisdom,
Changed the speech in their mouths, put contention into it,
Into the speech of man that had been one.

The Nam-Shub of Enki (Kramer and Maier Myths of Enki, the Crafty God)
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