Let There Be—Levity!

By Hyatt Carter

Webster's dictionary gives one definition of the word "levity" as "lightness or gaiety of disposition, conduct, or speech." Another meaning is defined as "lightness in weight" or "buoyancy." This definition of *levity*, as lightness in weight, especially as the action of a counter-force that is the opposite of *gravity*, will be the main concern of this essay.

Gravity is a "down" force—a force that causes, when the time is ripe, the fall of such things as apples, and also keeps our feet planted firmly on the ground. Gravity is what makes a bushel of apples hard to lift. Gravity makes things *heavy*.

Blow on a dandelion puffball and watch the gossamer seed puffs sail away in the breeze. Inflate a yellow balloon with helium, release it, and behold as it floats up, up, and away. This is levity. Levity makes things *light*.

Frown, which rhymes with "down," is a word of obvious gravity, just as its opposite, a sunny smile, fairly shines with levity. Levity was once a scientific term and the *Oxford English Dictionary* define it thus: ". . . a positive property inherent in bodies in different degrees, in virtue of which they tend to rise, as bodies possessing gravity tend to sink."

In Scotland, at Glasgow University, there's a scientific experiment still up and running that was begun over a century ago by William Thomson, also known as Lord Kelvin. Imagine a large glass jar filled with water and, situated at the mid-point in the water, a thick slice of wax, equally dividing the upper and lowers regions of the jar. Small corks have been place underneath the wax and metal bullets above. Over the course of a year, the bullets will have sunk down through the wax to drop to the bottom of the jar, while the corks, buoyant with levity, will have migrated up through the wax to rise and float on the water's surface. Does this not beautifully illustrate the contrasts of gravity and levity?

So associated is his name with his discovery that the very mention of Newton brings to mind the Law of Gravity, suddenly intuited by Sir Isaac when he chanced to glimpse a falling apple, and saw in its fall the same force that impels the moon in its orbit round the earth. John Ruskin points out that Newton's law of gravity explains the fall of an apple from a tree, but doesn't even begin to explain the infinitely more complex process by which the apple got *up there* in the first place.

Natural examples of levity abound: water evaporating and rising up to form clouds, waterspouts at sea, dust devils, radioactive elements such as uranium, phosphorous, the fermentation of wine, the bubbly effervescence of champagne, flowers growing upward, heliotropic plants that follow the sun, the lusty spring sap rising in an apple tree, or all the way to the top of a giant redwood.

The same capillary action that moves sap up a tree is used by a burning candle to draw the melted wax up the wick where it vaporizes, mixes with air, and fuels the flame. And, as Arthur Zajonc points out in his book *Catching the Light*, "If this were all, as it is for some flames, a candle would shed little light. The bright yellow cone that spreads its gentle radiance, however, is due to tiny glowing embers of unburned carbon, the same that turn up as soot when the wick is too long. Cold, it is the blackest of substances, but when hot, soot becomes beautifully luminous."

Levity is centrifugal; gravity, centripetal. The centrifugal lure of levity can be seen in merry-go-rounds, carousels, Ferris wheels, and dancing round the maypole. All light-winged creatures—birds and bees and butterflies—beautifully express the self-surpassing spirit of levity. The "four elements"—earth, air, fire, and water—align with levity and gravity as follows: levity: fire (lightest) and air (lighter) . . . gravity: water (heavier) and earth (heaviest).

This "lightness" of levity also expresses as the lightheartedness of laughter, good humor, playfulness, frolic, and smiles on a summer night. This is light in both senses, for have you not seen the light that sparkles in her eyes when she, the apple of your eye, is aglow with laughter. Love songs, such as "On the Street Where You Live," from the musical *My Fair Lady*, lift you up with levity. Does not Freddy seem to walk on air when he sings?

> I have often walked down this street before,
> But the pavement always stayed beneath my feet before.
> All at once am I several stories high,
> Knowing I'm on the street where you live.

In fire we find one of the purest expressions of levity. What is lighter than a dancing flame of fire? Fire is "light" in both senses of the word. The nighttime sky is wonderfully aflame with billions of galaxies, each with its billions upon billions of stars, every star expressing beautifully the levity of flames of fire. The sun is exaltation, an exultation, of levity. When young children draw a picture of the sun, they put a smile on its face.

Children know all about levity. Think back. Remember the times as a young child when, with your playmates, you would hold out both arms and spin in circles so fast that you soon felt light-headed and dizzy and reeled round and round in peals of laughter? The Whirling Dervishes take this up at least one level to experience religious ecstasy.

David Tasker, an English architect, describes how both gravity and levity have found expression in the great cathedrals:

"In architecture there are clear examples of the dynamic between gravity and levity; an historical example would be the development of cathedral architecture from the heavy early Romanesque, characterized by gravity forms of thick pierced walls with small openings and horizontal timber roof tie-beams, to the light, slender fluted columns and delicate curved soaring vaulting giving the upward levity forms of the late Gothic."

Geometry plays a central role in Tasker's work as an architect and engineer. He argues that the polarity of levity and gravity can be found even in the beautiful abstractions of mathematics. Euclidean geometry, which he characterizes as point-centered with forms expanding outward from a center, is based on measure and is more connected to the material realm and thus with gravity.

By way of contrast, one of the newer geometries, projective geometry, "is formed from the outside in, with lines streaming from the plane at infinity, taking its form primarily from the plane and is not structured on measure but relationships." Projective geometry is thus more an expression of levity.

Hugh Kenner, one of the most influential literary critics of the twentieth century, writes of another, almost transcendental, expression of levity in architecture:

"In 1917 Buckminster Fuller was watching the bubbles boiled up in the wake of a Navy ship, and concluding from those millions of changing spheres that nature did not use pi. For pi will only describe a sphere once formed, and a sphere moreover idealized because static. But the generation of forms is

described by vectors ('Vectors represent energy events, and they are discrete'), and Fuller proposed to make it his business to find nature's energetic geometry. Just 50 years later the bubble behind the ship had become in Montreal a geodesic dome 20 stories high, enclosing seven million cubic feet of air, as free as a water bubble of internal supports, and weighing a hundredth of what former technology dictated that such a structure should weigh. The load on its foundations was less than the weight of its materials, and had it been a mile wide it would have floated away."

The word *levity* derives from a root "lev-" that is also found in words such as levitation, and in virtually all the world's religions there are stories not only about the levitation of saints, but also about feats of flying. And this brings to mind Superman, Mary Poppins, Peter Pan, and the flying escapades in the wildly popular Harry Potter novels and films. Jesus of Nazareth enjoyed some finesses with levity, for he certainly defied gravity when he walked on water and ascended into heaven.

Along these lines, we can state a basic polarity: for those people, such as atheists, who believe that human life ends in the grave (period!), this is the ultimate grab of gravity; whereas, for those who believe in the resurrection of the body, this is the ultimate lift of levity.

Indeed, levity is about "getting high," and one way to get high is simply to go high. Some astronauts who have soared up into orbit and, while there, experienced the weightlessness of space, have come back down to earth as mystics. Flotation tanks, which simulate the weightless state, produce similar results. Some ocean divers report "rapture of the deep." To such "psi" experiences as out-of-body and near-death, perhaps we should add another: the O.G.E, or out-of-gravity experience.

The force of levity is not directed solely up, but also outward. Whereas gravity has to do with contraction, cohesion, and density, Levity is the force that expresses as growth, extension, and expansion. Mix flour with water and leaven with yeast and, as the dough begins to rise, this is levity in action as is, later, the aroma of the freshly baked bread. In our own lives, we can sense levity as the innate urge to become more, the inner impulse to stretch, to move beyond boundaries.

Robert Sardello, in his book *Facing the World with Soul*, observes how levity "forms the basis for the preparation of medicinal substances in homeopathy. A homeopathic remedy is prepared by taking a substance from the world and successively diluting it more and more with water until not a single molecule of the original substance remains; at this point of dilution, what was substance becomes a healing remedy. In the practice of homeopathy the quality of levity belonging to substances is transferred to the medium of water. Homeopathy is a process of removing the levity of a substance from its gravity, and thus is curative because it produces a like movement within the body, the movement from the gravity of disease to the levity of soul. The point of learning to give attention to things is similarly homeopathic: to free them from the deadening force of gravity through the perception of their levity, that is to say, their qualities—to see things as qualities rather than quantities."

The quantum of gravitational energy, a hypothetical particle called the *graviton*, is said to carry the forces of gravity between bodies such as the earth and moon, or the apple that may or may not have fallen on Sir Isaac Newton's head. Levity figures in this hypothesis, and the particle of levity, known as the *leviton*, plays a counter, or balancing, role to that of the graviton. It is crucial that things, such as molecules, be held together, but equally important that the components be held apart—so that there is not a complete collapse or implosion. This suggests that specific gravity is balanced by specific levity; gravitational fields, by levitational fields.

A solid, such as lead, tends to be heavy with gravity whereas helium, a gas, is buoyant with levity. In the change from solid to liquid to gas, such as ice-water-steam, an increase in levity can be clearly observed. It is interesting to note that the radioactive metal radium disintegrates into two other elements: lead and

helium—one that sinks, such as the lead sinkers that fishermen use, and the other that spontaneously rises!

And the plot thickens—or does it lighten?—to learn that the word "helium" derives from the Greek word *helios*, meaning "sun," and was first discovered not on earth but in the atmosphere of the sun.

Light itself shines forth as the very paragon of levity. Like fire, light is "light" in both senses of the word. One of the paradoxes about light is that a photon, as a particle of light, has no mass and therefore no weight, thus making it the lightest thing there is. Black holes, I suppose, are the heaviest things there are; even light, moving at 186,000 miles per second cannot escape from a black hole.

As tiny, as diminutive, as micro-minute as it is, a photon has inexhaustible energy in that it can propagate everlastingly—witness the photons that make up the cosmic background radiation that has been around ever since the Big Bang, and is it not amazing that these particles of light wave to us all the way from the very birth of the universe: fifteen billion years ago.

Since to be a photon is to be never at rest but always on the move, at the speed of light, the universe has to keep expanding to make room for light, and in this expansion we see an expression of levity as vast as the universe itself.

During the initial moments of the Big Bang, the only elements present were light and the "light" elements—light in terms of weight, such as hydrogen and helium—so, in a very real sense, light itself, the light of the original incandescence, and levity were the precursors of all that evolved afterward. "Omnia quia sunt, lumina sunt," said the Irish philosopher John Scotus Erigena. "Everything that is, is light." In *both* senses of the word, I would add.

And so, to slightly retell Genesis 1:3-4, God said, Let there be light, yes, and let there be lightness. Let there be . . . levity! And God saw that it was good.

Addendum

In his book *Man or Matter*, Ernst Lehrs provides a comprehensive exploration of the concept of "levity" chiefly in terms of the thought of Rudolf Steiner. I did not come across this book until after I had written this essay and so I add here, as I understand Lehrs, the role that levity plays in Nature's creative process.

Levity presides, as a formative power, over a fourfold creative process that Rudolf Steiner names as, in descending order: life, chemical, light, and warmth. Allowing that Steiner equates *chemical* with *sound*, these four constitute the upper tier of a hierarchy with the traditional four elements:

Life
Sound
Light
Fire Warmth
Air
Water
Earth

Warmth

Just as fire brings about a melting of solids or the evaporation of liquids, so does warmth bring about *chaos*: a melting or divestiture of physical form that enables the physical level to become open and receptive to the workings of the higher levels.

This *chaos* brings to mind the creation story in Genesis where "the earth was without form, and void, and darkness was upon the face of the deep. And the spirit of God moved on the face of the waters."

It also accords well with the metamorphosis that takes place in the life cycle of the butterfly. Inside the chrysalis, the first step is a virtual liquefaction of the caterpillar's body whereupon the imaginal cells then fashion the butterfly's body from the *chaos* of cellular soup.

Warmth, therefore, works by way of *chaoticizing*.

Light

One clue as to the influence of light can be clearly seen by comparing two types of the same unicellular organism: green algae live in light and have highly differentiated forms whereas, by way of contrast, those algae that live in the dark are relatively formless.

The same contrast can be observed in the leaves of green plants. Those plants that favor low damp places, or that grow underwater, have less intricately structured leaves that do those that grow in the open air of higher regions.

The web of veins in the pattern of a green leaf suggests that the development of a leaf can be likened to the process of weaving. The wisdom of language supports this—the word for organic substance, "tissue," derives from the Latin word *texere*, meaning "to weave."

George Adams, in his book *Space and the Light of Creation*, shows how this weaving can be done in terms of projective geometry.

The work of light is, therefore, by way of *weaving*.

Sound

It is said of the *kiai*, the loud shout used in Japanese martial arts, that the vibration of the *kiai* carries so much power that it can paralyze an adversary for a brief instant. Is this not fascinating?

Equally fascinating is Hans Jenny, a Swiss engineer and doctor, and his work, which he named Cymatics: the study of the relationship between wave-forms and matter. Using sand, metal filings, powders, plastic particles, and various liquids, Jenny would scatter one of these on a metal plate, and then, using sound controlled by a oscillating crystal, vibrate the plate to various frequencies and pitches. Energized by the vibrations, the particles (or liquid) on the metal plate seemed to "come to life" as they began to move and undulate, and then to assume beautiful and symmetrical shapes, both static and in motion, some of the shapes those that Sacred Geometry sees as underlying the generation and preservation of all physical forms. With the right vibrations, the particles even assume organic shapes: the hexagonal cells of a honeycomb, concentric rings of tree growth, tortoise shell patterns, radiating wheel spokes, like in the canals of a jellyfish.

Dr. Jenny later built an instrument he called a "tonoscope" which transformed sound spoken into a microphone into a visual representation on a monitor screen. "Om," the sacred Hindu syllable, when spoken correctly, produces first a circle, then, within the circle, an array of interlocking triangles forming a "yantra," an archetypal pattern expressive of sacred vibration.

David Tame, in his book, *The Secret Power of Music*, in a chapter called "The Physics of Om," writes:

“Other photographs have been taken of liquids such as water, by means of a stroboscope. They capture intricate yet beautifully symmetrical interactions of various amplitudes of waves passing through the substances. The viewer has the impression of seeing the Creation itself as when the Word went forth into the Celestial Waters. The figures produced are in a constant state of flow. Rotary waves often emerge and set the pattern turning. One experiment resulted in the perfect and dynamic shape of the *T ‘ai chi*, which symbolizes the interplay of cosmic forces, or the *yang-yin* polarities underlying all manifestation.

“Complex and meaningful patterns are even more apparent in Jenny’s sound-affected substances when viewed at the *microscopic* level. Then are revealed beautiful and mathematically-precise mandala-structures looking like groupings of microscopically-viewed snowflakes. The stress-interactions created in substances by their exposure to sound frequencies always result in formations replete with meaningful numerological, proportional and symmetrical qualities.”

This is, therefore, the way of *sounding*.

Life

Musical tones, or a language with only vowels, make possible a wonderful fluidity and flow for the expression of emotion, but it is with the use consonants that the word arises as constructive units of thought.

As Lehrs writes:

“The emergence of the sense-bearing word from the merely ringing sound is an exact counterpart to what takes place in nature when the play of organic liquids, regulated by the sound-element, is caused by the life-element to solidify into outwardly perceptible form. By reading in this way the special function of the life-element among the other three, we are led to the term Word as an appropriate name.

“Chaoticising, Weaving, Sounding, and, lastly, Speaking the form-creative Word into the realm of Gravity—these are the four activities through which the dynamic realm which we first designated comprehensively as Levity brings forth nature’s manifold entities of which we finally become aware through our corporeal senses.”

The Life element works, therefore, by *Speaking* the form-creative Word.

We thus have the following correlation:

Earth	Life	Word
Water	Chemical	Sounding
Air	Light	Weaving
Fire	Warmth	Chaoticizing

* * *

For a new perspective on reality and maybe even an epiphany, I invite you to try the following Thought Experiment from Ernst Lehrs' book. Lehrs will also introduce you to an exhilarating conception of unity, or what it means *to become one*.

Thought Experiment:
Levity and Projective Geometry

Einstein owed the possibility of establishing his space-picture to a certain achievement of mathematical thinking in modern times. Because a peculiar characteristic of the onlooker-consciousness is to have no real communication with the external world, man's thinking gained a degree of freedom which did not exist in former ages. In consequence, mathematicians were enabled in the course of the nineteenth century to conceive the most varied space-systems which were mathematically consistent and yet lacked all relation to external existence. A considerable number of space-systems have thus become established, among them the system that enabled Einstein to derive his space-time concept. Some of them have been more or less fully worked out, while in certain instances all that has been done is to show that they are mathematically conceivable. Among these, however, there is one which in all its characteristics is polarically opposite to the Euclidean system, and is destined for this reason to become the space-system of levity. It is symptomatic of the remoteness from reality of mathematical thinking in the onlooker-age that precisely this system has so far received no special attention.

For the purpose of this book it is not necessary to expound in detail why modern mathematical thinking has been led to look for thought-forms other than those of classical geometry. It is enough to remark that for quite a long time there had been an awareness of the fact that the consistency of Euclid's definitions and proofs fails as soon as one has no longer to do with finite geometrical entities, but with figures which extend into infinity, as for instance when the properties of parallel straight lines come into question. For the concept of infinity was foreign to classical geometrical thinking. Problems of the kind which had defeated Euclidean thinking became soluble directly human thinking was able to handle the concept of infinity.

We shall now indicate some of the lines of geometrical thought which follow from this.

Let us consider a straight line extending without limits in either direction. Projective geometry is able to state that a point moving along this line in one direction will eventually return from the other. Consequently, an unlimited straight line has only one point at infinity. Seen as a whole, it is an entity returning into itself.

A simple consideration can convince us of this. Imagine two straight lines *a* and *b* intersecting at P (Fig. 7). Let *a* be fixed and let *b* rotate uniformly about a point C, not coincident with P, in the direction indicated by the arrow. As a result of the rotation of *b*, *P* moves along the line *a*, a few positions being shown in the figure. There is one position of *b*, namely when it is parallel to *a*, for which it is impossible to find a point P in finite space. The point has reached infinity. The slightest further rotation of *b*, however, will bring P back from the other side.

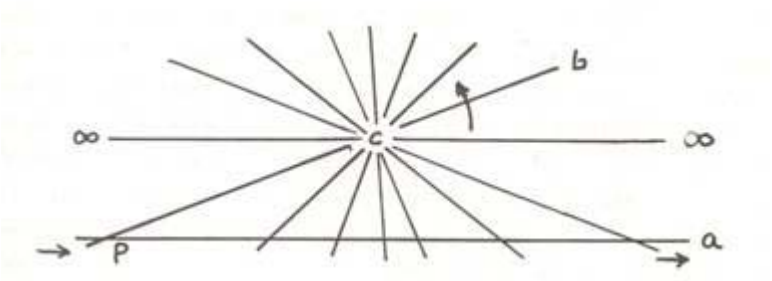

Fig. 7

We find here two forms of movement linked together - the rotational movement of a line (*b*) on a point (C), and the progressive movement of a point (P) along a line (*a*). The first movement is continuous, and observable throughout within finite space. Therefore the second movement must be continuous as well, even though it partly escapes our observation. Hence, when P disappears into infinity on one side of our own point of observation, it is at the same time in infinity on the other side.

It is clear that, in order to become familiar with this aspect of geometry, one must grow together in inward activity with the *happening* which is contained in the above description. This in itself suggests that the space-concept obtained in this way will be so flexible as to inflict no injury on the intrinsic character of time. The foregoing description is, in fact, meant to serve as a mental exercise in the sense of imparting fluidity to our geometrical thinking.

The following exercise will help us towards further clarity concerning the nature of geometrical infinity.

We imagine ourselves in the centre of a sphere which we allow to expand uniformly on all sides. Whilst the inner wall of this sphere withdraws from us into ever greater distances, it grows flatter and flatter until, on reaching infinite distance, it turns into a plane. We thus find ourselves surrounded everywhere by a surface which, in the strict mathematical sense, is a plane, and is yet one and the same surface on all sides. This leads us to the conception of the plane at infinity as a self-contained entity although it expands infinitely in all directions.

This property of a plane at infinity, however, is really a property of any plane. To realize this, we must widen our conception of infinity by freeing it from a certain one-sidedness still connected with it. This we do by transferring ourselves into the infinite plane and envisaging, not the plane from the point, but the point from the plane. This operation, however, implies something which is not obvious to a mind accustomed to the ordinary ways of mathematical reasoning. It therefore requires special explanation.

In the sense of Euclidean geometry, a plane is the sum-total of innumerable single points. To take up a position in a plane, therefore, means to imagine oneself at one point of the plane, with the latter extending around in all directions to infinity. Hence the journey from any point in space to a plane is along a straight line from one point to another. In the case of the plane being at infinity, it would be a journey along a radius of the infinitely large sphere from its centre to a point at its circumference.

In projective geometry the operation is of a different character. Just as we arrive at the infinitely large sphere by letting a finite sphere grow, so must we consider any finite sphere as having grown from a sphere with infinitely small extension; that is, from a point. To travel from the point to the infinitely distant plane in the sense of projective geometry, therefore, means that we have first to identify ourselves with the point and ‘become’ the plane by a process of uniform expansion in all directions.

As a result of this we do not arrive at one point in the plane, with the latter extending round us on all sides, but we are present in the plane as a whole everywhere. No point in it can be characterized as having any distance, whether finite or infinite, from us.

Now it is clear that we can establish ideally such a relationship with regard to *any* plane in space. The particular act of transformation we have here chosen was meant only as a help in our first endeavor to change over from the central relationship to space, familiar to our gravity-bound consciousness, to the peripheral one which corresponds with levity. Any such plane can then be given the character of a plane at infinity by relating it to a point infinitely far away from it (i.e. from us).

Once we have freed ourselves from the one-sided point-to-plane orientation, we feel at once stimulated to supplement the process of expansion, gone through above, by the polarically opposite one, and to examine where we are led by letting the plane, now conceived as an indivisible whole, contract until it

has become the point at infinity. Obviously, this leads us again across the stage of the finite sphere, which, however, is now of a quite different quality compared with the sphere in the former case. By properly picturing this difference we shall gain a first idea of the space which corresponds to levity just as the space spreading from point to plane corresponds to gravity.

Let us imagine two finite spheres, each of which we have caused to come about in one of these two ways. Let us further imagine that in both cases the region between the two stages, the initial one and the sphere, is occupied by some substance. In the first instance we shall find the sphere filled with the substance from the centre to its inner wall; in the second instance we shall find the substance occupying the region between the plane and the sphere's outer wall. Fig. 8 represents both instances, the left-hand figure symbolizing the sphere as bearing the substance internally, the right-hand figure showing it as bearing the substance externally.

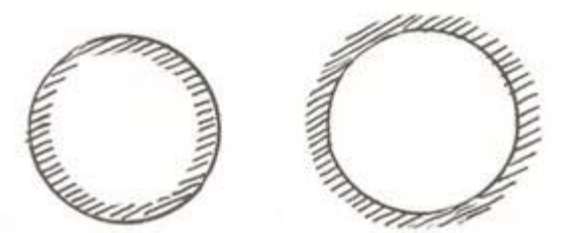

Fig. 8

To speak in this way, however, is to speak inaccurately. For once we start to conceive geometrical entities in their dual aspect; the terms 'internal' and 'external' lose their usual fixed meanings. Indeed, we think rightly only if we conceive, in the second instance, the whole region between the plane and the sphere as the sphere's interior, and the region between the sphere and the point as its exterior. We thus come to differentiate between spheres which are bent outwardly by being centered on a point, and spheres which are bent inwardly by being 'centered' on a plane. So also the quality of the point and the plane differs basically in the two instances.

We already see here how, by re-creating inwardly the different mutual relationships of the mathematical archetypes, we arrive at two polarically opposite space-concepts which correspond exactly to the two opposite field-types, the central one of gravity and the peripheral one of levity. Both spaces have in common the polarity of point and plane, the point standing for utmost contraction, the plane for utmost expansion.

By pursuing further the reversibility of the relation between point and plane, we arrive at the following picture of the qualitative difference between the two opposite space-systems.

Regarded in the Euclidean way, the point, and it alone, is an indivisible geometrical entity. Compared with it, the line is an assemblage of infinitely many points, and the plane one of infinitely many lines or points. Now, it has already become clear that from the polarically opposite aspect the plane is one and indivisible. Consequently, both line and point assume the character of composite entities. As regards the polar aspects of the relationship between point and line, we can picture them by studying Fig. 7 once again.

Let us first think of the line *a* in the Euclidean sense, as given by two of the points P. Then all other possible points P belong equally to this line. They are said to 'lie in' the line. The line thus appears as a

manifold of points. On the other hand, we can think of the point C as the intersecting point of two lines b. From the projective-geometrical aspect, these two, as well as all other lines passing through C, ‘belong’ to this point, or — as we can also say here with full justification — they ‘lie in’ C. Thus the point appears as a manifold of lines.

There are corresponding aspects for plane and line. Just as two points determine a line, so do two planes determine a line, namely their line of intersection. These planes, and also all the infinitely many planes which pass through this line, ‘belong’ to it - in fact, they lie in it - just as in the Euclidean sense there are infinitely many points which belong to a line and so lie in it.

The line thus appears here as a manifold of planes. We need only continue this argument to realize that from the polar-Euclidean aspect the point appears as a manifold of planes, just as from the Euclidean aspect the plane represents a manifold of points.

This leads us to the conclusion that in polar-Euclidean space the theorem that the whole is always greater than its parts ceases to be valid. For here the unit-entities are the largest, and the more parts there are that go to make up an entity, the smaller it is. This is indeed the case everywhere in outer nature, where levity is at work.

In view of the duality of the relation between point and plane, we feel prompted to look for the polar supplement to the act, described above, by which a point is transported from a sphere’s centre to its circumference. Then we had to picture a point disconnecting itself, as it were from our position at the central point, and moving away from us in a radial direction until it reaches the sphere’s surface from within. Correspondingly, we have now to imagine a plane disconnecting itself from the mother-plane and moving away from us radically until it reaches the sphere’s surface from without, where it then forms a tangential plane.

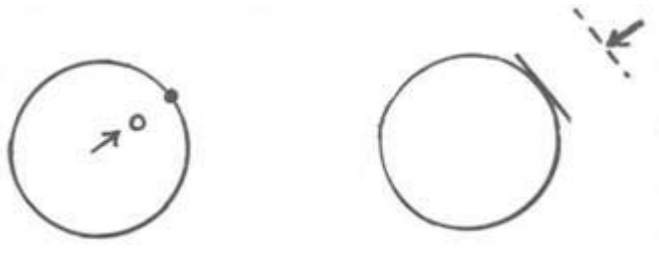

Fig. 9

Fig. 9 shows both processes. The small circle in the left-hand diagram and the dotted line in the right-hand diagram symbolize some intermediary position of point and plane respectively. (The reader familiar with geometry will be reminded of the relation between ‘pole’ and ‘polar’.)

What we have carried out here for a single direction, we can also imagine taking place in all directions simultaneously. The picture thus arises, on the one hand, of infinitely many points disconnecting themselves from the original point and moving away from it uniformly until they have reached a definite distance. There they form together the surface of a sphere. To make the sphere come into being in this way corresponds to its usual Euclidean definition as the ‘locus of all points with an equal distance from a given point’. From the peripheral aspect, on the other hand, we shall find infinitely many planes disconnecting themselves from the original plane and uniformly moving away from it until they come to a standstill at some definite distance. There they form together the tangential planes of a sphere by enveloping it. Fig. 10 shows both cases.

We arrive at a further conception of the possible qualitative difference between geometrical entities which look externally identical — in our case the two spheres — by imagining that we obtain the sphere by letting a single point, or a single plane, move successively to the places of all other points, or planes, which represent the end-points of the sphere's radii, or its tangential planes. The first we actually carry out when drawing the circle with a pair of compasses.

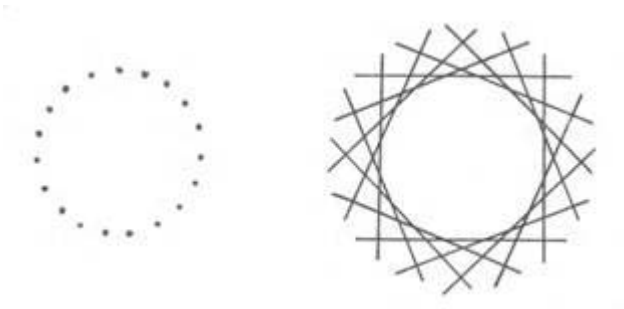

Fig. 10

Let us imagine that we have to carry out both movements with our own limbs. Then, in the first instance, we shall have to stretch out one arm and one of our fingers, say, the index, and to swing the arm in all directions while doing the same with the other arm in the opposite direction. In the second instance, we shall have to use the palms of our hands, moving them over the surface in all directions. Our experience of the two procedures may be described, in the first instance, as a 'pointing out', of the sphere; in the second instance, as a 'modeling' of it. As we shall see later, both activities correspond to real dynamic happenings in various fields of nature.

Let us now imagine that the discrete points and planes forming the sphere in one way or the other are endowed with a tendency to become one. There is no other way for the points to achieve this except by moving radically towards the sphere's centre. The sphere thereby contracts. The planes, on the other hand, can achieve this only by soaring away, as it were, from the centre to an ever-greater distance while remaining each parallel to itself. The sphere thereby expands.

Purely geometrical considerations thus lead us to the dynamic of systole and diastole which we first encountered when pursuing Goethe's way of studying the plant, and later found to be a characteristic of gravity and levity respectively. How much the geometrical conception represents outer reality becomes clear if we remember that it is a characteristic of centrally orientated force-fields to call forth effects working from point to point, whereas effects from peripherally orientated fields, as the *Solfatara* phenomenon immediately taught us, manifest in a planar way.

Here it becomes also particularly clear why the suction effect brought about by levity must not be confused with mechanical suction, caused by a partial vacuum, the latter remaining a point-to-point effect. Where levity sucks, we have to do always with planar action, and with the plane of action, as indicated above, not as an assembly of points but as an indivisible whole. Direct experience of this can again be obtained through the experiment with the rising arm.

It will be one of the tasks of the new science to learn to conceive natural happenings in this way.

From the book:

Man or Matter: Introduction to a Spiritual Understanding of Nature on the Basis of Goethe's Method of Training Observation and Thought, by Ernst Lehrs, pp. 204-12

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You ask me where I get my ideas. That I cannot tell you with certainty. They come unsummoned, directly, indirectly - I could seize them with my hands - out in the open air, in the woods, while walking in the silence of the nights, at dawn excited by moods which are translated by the poet into words, by me into tones that sound and roar and storm about me till I have set them down in notes.

Ludwig van Beethoven

A deadline is negative inspiration. Still, it's better than no inspiration at all.

Rita Mae Brown