

Dialectic Thinking in Education...

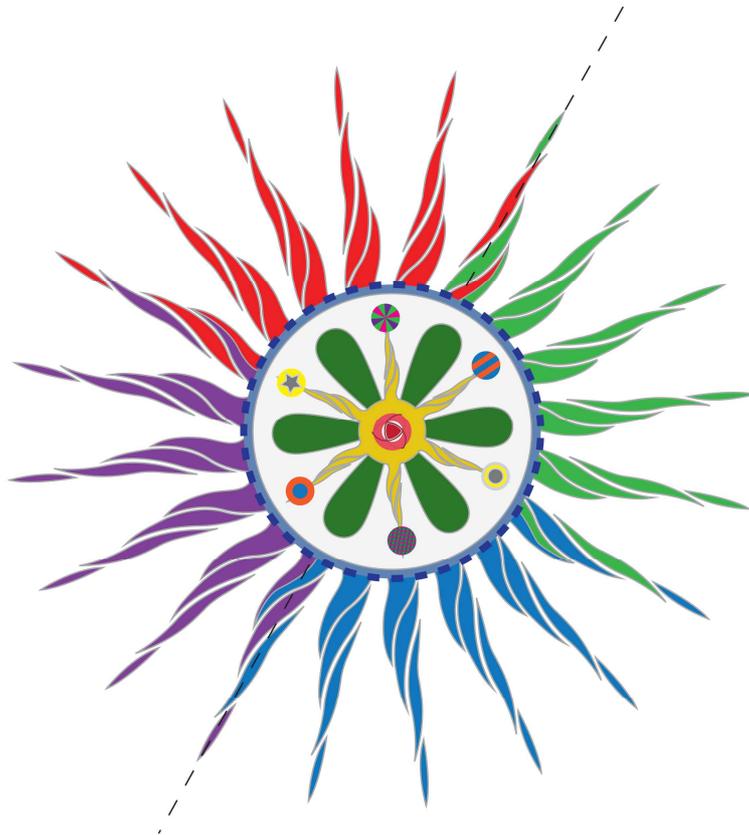
Dialectic thinking is a process of thought by which contradictions, opposites, are seen to merge themselves in a *unifying principle* that comprehends them.

Two different entities, *Mutually Interactive Reciprocities*, emanating from a single generative principle to attain a coherent whole where argument is the *quantifiable* aspect, and counter-argument the *qualifiable* aspect, both of which

are represented in the equation $1/n \times n = 1$

An effective strategy for collaborative, interactive learning

applying Naturalist Intelligence



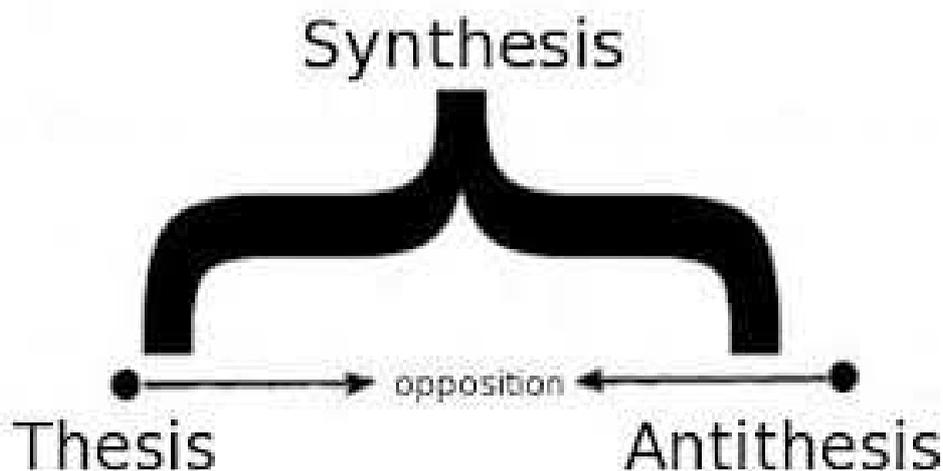
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Dialectics may be characterised as a science which concerns the general relations of things in nature, history, and in *thought*. Dialectics considers all things in their most general relations, in their *mutual relations of dependency*, in their *development*.¹ The opposite of dialectics is the isolated consideration of things, and the consideration of things only in their *fixity*.

In relation to human development, learning, teaching and thinking, a dialectic perspective is nowhere evident in education today notwithstanding it is **elemental** to learning, thinking, and human development.

Why, when dialectics is *in accord with Nature's Principles* and with *one of the eight eligibility criteria supporting Professor Howard Gardner's widely accepted Multiple Intelligences' theory?*
(Evolutionary History and Plausibility)



Professor Howard Gardner suggests that in order for an Intelligence to qualify to the list of intelligences he compiled, there must be evidence for it in prehistoric life of humanity, even in earlier phases of evolution before civilizations sent roots into the nucleus of living systems...

Is it possible that this *vital* element of dialectic thinking in education has simply escaped our notice?

OR

Is it a case of Policy Makers in education believing that learning and teaching today is beyond and above Nature's Principles?

¹ *Introduction to Dialectical Materialism* – DR. August Thalheimer, *Dialectics I*, Page 159, Covici Friede Publishers, New York, USA, 1936.

In clarification of the above conundrum, it is appropriate to first examine Richard Roest's interpretation of Howard Gardner's Multiple Intelligences theory, as featured in his Master of Arts in TESOL thesis.

How the individual is Intelligent, portrayed as *Essential Learning Styles* and *Learning Style Dimensions*, is an adaptation of Howard Gardner's Multiple Intelligences theory. In application, it is centrally featured in :-

An Integrated School Tutorial Programme in *Dialectic Unity*.



Richard Roest's interpretation is inspired by phenomena in our natural world, and the insights of Johann W. Von Goethe, Dr. Rudolf Steiner's Bio-dynamics, Bill Mollison's Permaculture Keyhole Circle Garden concept, the thinking of Professor Georg Hegel, Dr. August Thalheimer's thoughts in Dialectics, and Viktor Schauberger's theories of Mutually Interactive Reciprocities - the attainment of a cohesive whole, where all factors are relevant, and where each manifestation is on a unique phenomenal level.

With creativity of mind one may reach some intuit to interpret these forms and creations of Nature, so to identify ideas that properly belong to phenomena, in accordance with the philosophy of Goethean methodologies and Dr. Rudolf Steiner's Bio-dynamics.

The latter is explained as a science of life-forces, a recognition of basic principles at work in Nature - a science that integrates precise observation of natural phenomena, an approach which takes into account clear thinking, and knowledge of Matter and Spirit. It brings about in a real way an ongoing path of knowledge, rather than a focus on assembly of methods and techniques alone; the system of Bio-dynamics is harmonious with the framework of Permaculture design principles.

Bio-dynamics is rooted in Goethean Science;² both schools of thought hold the view that every empirical object / situation is incomplete, that it is only half there, and that it should be completed by its other half, by the idea *proper to it*.

² Goethean Science - Schumacher College, Darlington, Devon, UK.

One should, in observing, not merely observe an external world available to one's senses; one should observe the internal world of ideas also, in order to enable one to apprehend the *totality of the phenomenon*.

Every empirical thing has its ideational aspect which is perceived only by the human mind as the inner form, another way of knowing the world, through awareness as a by-product of brain and body processes.

Awareness of how people perceive, how they interpret and direct their attention and intentions toward their environment and each other. Whereas external perception may describe and explain natural phenomena, internal perception gives one *wider connections and underlying ideas*.

This awareness of external and internal ideas, opposites, more enables comprehension of *phenomenon totality* and this orientation is embodied in Richard Roest's interpretation of *How the individual is Intelligent*.

The imagery concept represents an attempt to graphically illustrate, elucidate this thinking. It must be understood, however, that in Nature all things have their opposite and that opposites are never equal, but rather constitute 'a balanced imbalance'. For example, today's philosophy in modern science has adopted external awareness only - Descartes; Von Goethe's outlook has been largely ignored. These philosophies are opposites and very much *belong* to each other - one without the other is unlikely to lead to totality.

Likewise in education, there is a tendency to view things in isolation, to separate; separate *what* is learnt from *how* it is learnt and *used*. The learning task in which knowledge and skills are developed is neither separable from nor ancillary to learning, nor is it neutral; *the task is an integral part of what and how it is learnt*.

Applying the internal world of ideas, as described above to the educational arena - specifically to the scenario of a day in the life of a practitioner trying to 'energise' a class by him / herself, one is inclined to believe that in teaching too, *only half the solution is in evidence*. 'The other half', collective-learner-dynamics, is not in evidence - **it would seem that a critical component to learning and teaching has gone unnoticed**.

From the above, it is clear that the Goethean Approach differs from today's conventional Scientific Approach; the latter tends to separate matter into the external - real and objective. It holds that the internal world of concepts, thought and symbols are arbitrary, and therefore subjective. In contrast, Goethean Methodology views Scientific Approach hypotheses as subjective, but also of diminished value. It holds that the proper idea belonging to a phenomenon is 'objective', as is the phenomenon itself.

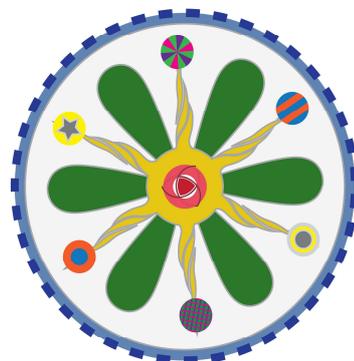
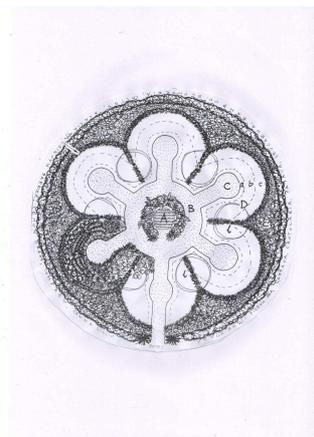
The Goethean Approach holds that the correct idea is not normally derived from hypothesising or postulating only, but is derived by staying with the phenomenon, seeing it in one light and then in another, continually observing the coincidental aspects that make up the whole. The mind can then make the proper connections without straying into fantasy; eventually concepts will materialise to satisfy the mind's need for an explanation.³

In regard to the Essential Learning Styles and Learning Style Dimensions, all human beings possess at least eight relatively autonomous cognitive abilities, each as a separate intelligence, but connected. People differ in their profile as to how they are intelligent and this holds significant impact for grouping of learners in a learning environment, for learning, teaching, and pathways.

In relation to the second part of Professor Howard Gardner's threefold cornerstone search for making a case in support of his Multiple Intelligences theory, he suggests that it should be possible to draw up an individual's intellectual profile, proclivities, and draw upon this knowledge to enhance a person's educational opportunities.⁴

Richard Roest's interpretation of the individual's intellectual profile features *Essential Learning Styles* and *Learning Style Dimensions* and is configured as a Permaculture Keyhole Circle Garden concept,⁵ with the Essential Learning Styles at 'Zone 0', and the positioning of the six Learning Style Dimensions as dichotomies - arranged in a Polar-Unity-of-Opposites' arrangement.

Two discrete entities emanating from a single generative principle to attain a cohesive whole - a 'balanced-imbalance', as in Nature.



³ *Culture and Horticulture: A Philosophy of Gardening* – Dr. Wolf D. Storl, Page 93/94/95, Biodynamic Literature, Wyoming, Rhode Island 02898, 1979.

⁴ *Frames of Mind* (tenth addition) – Professor Howard Gardner, Page 9, Basic Books, New York, 1993.

⁵ *PERMACULTURE: A Designer's Manual* – Bill Mollison, Pages 274/275, Fig. 10.26, *Keyhole Gardens*, Tagari, Publications, Tyalgum, Australia, 1988.

Keyhole Circle Gardens are found in Taiwan and the Philippines, where these small intensively planted gardens are planned to feed a family of five all year round. The design owes much to the work of East-West Institute in Hawaii and the Samaka Gardens of the Philippines, but the layout is distinctly Permaculture. It embraces the concepts of Nature patterns and guilds, and in design represents a 'least-path' layout to give a succinct and productive model of a sustenance garden.

It relies on companion planting, patterning and edge cropping theory -eco-tones- an overlapping of mediums for greater soil life activity, for an enhanced yield.

At the centre of a hundred square metre garden area, a circle of approximately two / three metres across and a depth of some three / four feet from hollow to rim, usually contains a circle-garden of banana, sweet potato, and papaya irrigated by all household wastewater.

However, for the purposes of this writing the inner circle garden features the Essential Learning Styles ~ Visual / Audio / Kinaesthetic ~ autonomous, but connected as **One**.

Nature Patterns





The Learning Style Dimensions ~ **Social, Logical-Mathematical, and Psychological-Physical**, six elements in all, are located at the keyhole path ends. Naturalist intelligence, Howard Gardner's eighth intelligence, is portrayed as a large green "asterisk" in the background and as yet only a probable but likely ninth intelligence, Existential intelligence, is featured as a blue interrupted circle surrounding the Keyhole Circle Garden image. This surrounding circle represents the Permaculture Keyhole Garden hedge-row concept, normally made up of Pigeon-pea, Cassava, Crotolaria, Papaya, Leukaemia, Eupitoretta and Acacia as a barrier to resist invasive grasses and feral animals.

All learners possess the three Essential Learning Styles, unless an individual is sight, hearing or is physically impaired, when the unimpaired proclivities tend to compensate for the handicap. It is important that all three be developed to the maximum ~ the eye, ear, and body are the *foundational elements* in the development of personal performance potential.

The Essential Learning Styles are relatively autonomous and the image is mirrored on the DNA signature in the Robinson congruence.⁶

In relation to the Learning Style Dimensions, pair-mix is important in order to gauge and connect motivation with interests for the purposes of learners reaching their goals.

The arrangement of pairing learners as *opposites* is likely to complement and contrast potentials; the arrangement of opposites is likely to differentiate individual focus and orientation in terms of learner direct or indirect involvement, learners tending to work with or work through others to achieve goals. In this regard, one may recognise similar and parallel lines between different ways of learning and personality traits, looking closely.

Provision, however, must be made to cater for the individual in the group who may be overbearing, who finds difficulty in maintaining a 'neutrality pact', and who may need to be replaced in the group or be paired with another learner.

This mix-and-match skill is not infrequently applied in finding the most suitable guild of plants, particularly concerning Natural Pest Control in natural farming by inter-planting herbs; some herbs may be too strong, or may be antagonistic to productive plants nearby, within the guild.

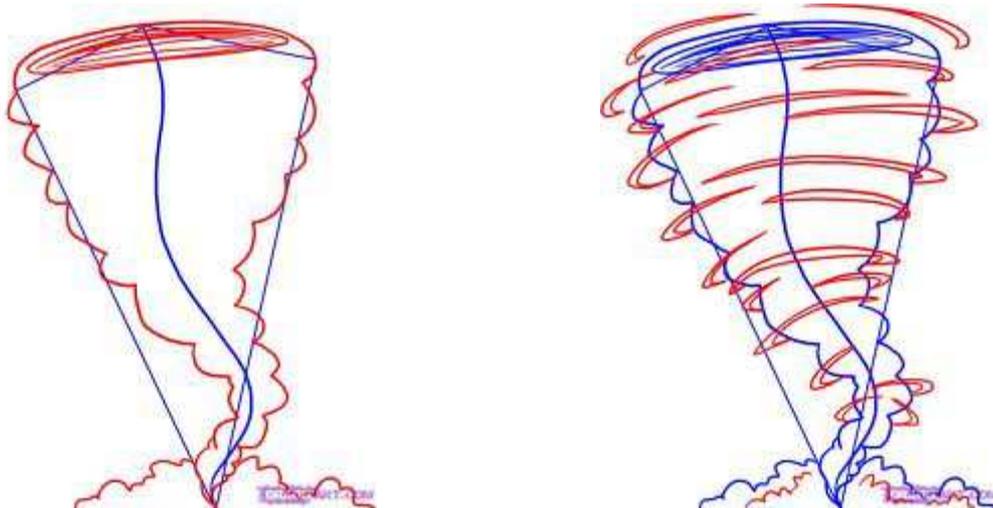
The six different dimensions provide the practitioner with scope in this regard, as well as being able to draw on those who show promise in Naturalist and Existential intelligence for a different perspective on tasks set.

The Learning Style Dimensions *define* the learner; learners paired within a group of six positioned in such proposed arrangement produce synergy, a process of thought, negations, by which such contradictions are seen to merge themselves and positively so, in a higher truth that comprehends them⁷.

This phenomenon, *the foundational dialectic proposition*, is explained by appraising the elements of argument, counter argument and unity in the dynamics of a tornado, according to Viktor Schaubergger.

⁶ *PERMACULTURE: A Designer's Manual* – Bill Mollison, Page 81, Fig. 4.11, DNA, Tagari, Publications, Tyalgum, Australia, 1988.

⁷ German philosopher Professor Georg W. F. Hegel, 1770-1831.



A tornado descends from a lower to a higher atmospheric density and normally takes the form of a hyperbolic funnel. The smaller the radius, the higher the rotational velocity ~ Radial, axial motion, moving from the outside inwards.⁸ In the eye of the tornado there is an upward movement ~ suction.

Suction and pressure are the two forces interacting in this analogy, each being the counterpart of the other, and taken together represent the undivided phenomenon. These forces could be viewed as two discrete entities emanating from a single generative principle. In terms of dialectic thinking, logical thought, these forces could also be interpreted as two counter concepts of argument. According to German philosopher Professor Georg W.F. Hegel, dialectic thinking refers to the process of thought by which such contradictions are seen to merge themselves in a unifying principle, that comprehends them. There are various examples of reciprocities, in which, generally, argument is the quantifiable aspect and counter argument the qualifiable aspect, both of which are represented in the equation formulated by Dr. Walter Schauburger, mathematician.

$$1/n \times n = 1$$

$1/n$ stands for the quantitative component, and n for the qualitative component and n itself is equal to any integer from naught to infinity.

The answer is **always one (1)**, and echoes Albert Einstein's observation that Nature is the embodiment of the simplest conceivable mathematics.

⁸ Doctorate of Education / Minor Thesis One / *Globalism and Trends in Education* / Chapter IV – St. Clements University Somalia, Richard Roest, 2010.

Viktor Schauberger maintained that any given phenomenon always has its counterpart, its counter aspect, and *both components* should *always* be taken into account.

He further believed that certain antitheses whilst similar in provenances of energy, are separated by octaves. He believed that these dimensions of energy are the agencies or self-organising, intermediate matrices of immaterial energies by which the gap between Spirit and Matter, Idea and Manifestation, is bridged. These dimensions of energy, these antitheses, are comprised in the concept of *Fohat*.

It is the three main principles in dialectics and these subtle other 'bridging energies', that have resulted in *synthesis of interactions* producing a designed visual imagery concept such as depicted on the cover page of this writing.

The process is not unlike designing a kitchen - a kitchen is not merely an assembly of various elements; if viewed purely theoretically, when all the elements of sink, stove, refrigerator etc. are merely placed in one space then the *material* parameters of a kitchen might be fulfilled, but the kitchen might not be functional. If by accident the elements were disposed in a certain configuration, then the space as a kitchen might actually *work*.

The manifestation of all natural energies is the result of the *interaction* between two opposites. However, never does either reach totality in the lower realms of duality, the physical world, because they can only become total, work as *one*, when they unite within their unifying governing principle - a higher realm that comprehends them.

In the physical world each component of a pair of dichotomous forces can only attain 96% of its boundary, or its extreme condition. Once this point is reached, then its opposite force gradually begins to take strength.

It is always the *qualities* which are the defining factors - in itself, quantity is relatively unimportant. Quantity, in its simplest form is just weight.

It is this quantitative inclination that has led mankind into a mass production mentality. It has led mankind into a mode of reducing diversity and increasing uniformity, in the main, for economic and control purposes - so too is it with education, where this inclination has manifested itself in conformity, standardisation, and rote learning in the Factory Model of education.

As Montesquieu stated in the 18th century - "The inner corruption of liberty shows itself *first* in uniformity".

Perhaps mankind should consider putting greater emphasis on the qualitative side, rather than quantitative - the former is the differentiator and animator of life, of new beginnings.

The interaction process between two opposites and Dialectic Unity, the fundamental principle and the first main proposition of dialectics, in terms of dynamics is perhaps best elucidated by the argument and counterargument of Yin and Yang, as in the two spiral systems, the female and male forces of the pine cone, according to Callum Coats.⁹

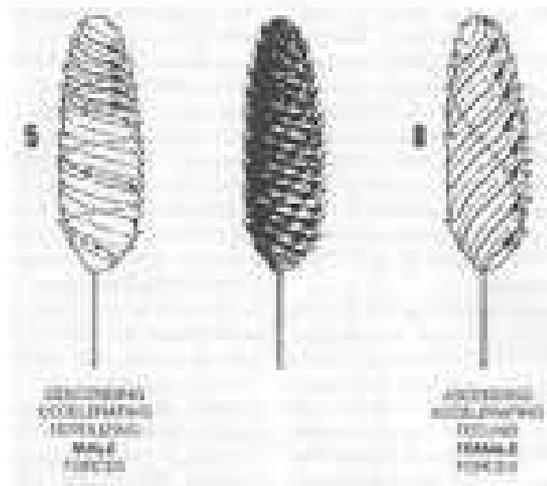


Fig. 1.7 The Pine Cone

The symmetry of the pine cone demonstrates the condition of "balanced imbalance" which arises out of the harmonic interaction of two antithetical, complementary, but oppositely charged forces. The 5 positive male spirals of energy descend towards the 8 rising negative female spirals of energy. Within these cross each other a union of both forces occurs and there the seed of the new life is to be found. The male forces decelerate and the female forces accelerate to arrive at a mutual state of resonance.

They demonstrate, he contends, that the condition of 'balanced-imbalance' arises out of the harmonic interaction between two antithetical, complementary, but oppositely charged forces. The five positive male spirals of energy descend toward the eight rising negative female spirals of energy; where these cross each other, a fusion of both forces occurs, and there the seed of new life is to be found. The male forces decelerate, whereas the female forces accelerate to arrive at a mutual state of resonance; they have a common wavelength, dynamically viewed as cycloid-spiral-space curves. As they curve out from their common axis, they eventually return to it over the full length of the cone, the eight female spirals having a slower rotational period than the five male spirals. Within the wavelength, there are points where the spirals interconnect 'creatively'.

⁹ *Living Energies: Viktor Schauberg's brilliant work with natural Energy Explained, What is Motion?* — Callum Coats, Gateway Books, Bath, UK, 1996.

Such a point is referred to as 'Zero-point' by Callum Coats.

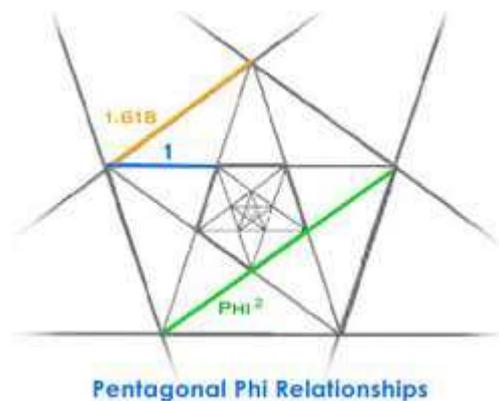
It is this point where both male and female negate, where energetic attributes die, or are temporarily suspended in order that new life may be created.

The Zero-point is where all motion ceases and where all motion begins; it is a point of extremely high potential in the same fashion that a string of a musical instrument is still in a state of tension, of sound-creating potential, even though it is not vibrating.

In this circumstance, there are two systems of opposing, complimentary energies creating symmetry, notwithstanding unequal forces. In the function of dialectic magnitudes, it is the antitheses that prevail over theses to proceed productively. That is to say, the effect and function of the antithesis of each Dialectic Unity should predominate.

Viktor Schauberger estimated the correct proportion between argument and counter-argument to be 1/3rd and 2/3rds. The Chinese also consider an unequal relation to be the one most propitious for the harmonious unfoldment of life, their ratio being 2/5ths to Yin, and 3/5ths to Yang.

Φ
phi



The manifestation of *Phi* in so many of Nature's creations, the 'Golden Section', is the transcendental number (1 : 1.618033988) It describes the circumference of the circle, the proportion of 1 : *Phi* is probably the more correct, since a proportion of slightly more than 1 : 16/10 lies between the two ratios of 2/5ths and 3/5ths = (1 : 1 1/2) and 1/3 : 2/3 = (1 : 2).



Using weights and a pivoting weighing scale, the relative magnitudes of these forces are perhaps more clearly revealed ~ a 1 kg weight (B) for thesis, and weight (A) of 1.618033988 kg for antithesis.

The antithesis weight is at a distance of $1/\Phi \times m$, or 0.618033988 cm from the pivot of the scale, whereas the other is 1 metre distant.

Weight (B) exerts a moment about the pivot calculated as $1 \times 1m = 1 \text{ kg/m}$.

Weight (A) exerts the same moment, however, $1.618033988 \text{ kg} \times 0.618033988 \text{ m} = 1 \text{ kg/m}$. The seesaw of life is in a state of 'balance', even though the absolute force of one magnitude is greater than the other.

The resultant downward force is the sum of these two weights and equals 2.618033988 kg, which equals (2.618033988) or Φ^2 .

Through the interaction of two proportions, the unstable dynamic balance, the 'balanced-imbalance' in Nature and her energetic processes is achieved. Were it not for this tentative balance, *no forward progress would be possible*, according to Viktor Schauberger.

It should be noted, that it is the *second* main proposition of dialectics, the principle of Negation of the Negation, that constitutes *the principle of development* through opposites, the principle of the process of thought, according to theoretician and philosopher Dr. August Thalheimer (1884 - 1948)¹⁰

It is closely related to the first principle of the Permeation of Opposites as featured above - the second main proposition of dialectics is a presentiment in the oldest of Chinese philosophy, in Book of Transformations, Lao-tse and his disciples, and likewise in the oldest of Greek philosophy ~ Heraclitus.

However, not until Professor Georg W. Hegel were the principles of dialectics properly developed. Disregarding the beginnings of dialectics in Indian and Chinese philosophy, dialectics itself has undergone a dialectical development. Heraclitus represented the first stage, 'One-after-the-Other', Plato and Aristotle represented the second stage, 'One-beside-the-Other', the latter in opposition to the dialectics of the first stage, being its negation.

¹⁰ <http://www.marxists.org/archive/thalheimer/works/diamat/11.htm>

The third stage was developed by Professor Georg F. Hegel of Berlin University, who embraced variation of natural processes, as the first source.

The second source was his observation of human history, of changes which occur from one historical period to another, changes in the mode of production, in the forms of society, and in social ideologies associated with them.

The third source was his examination of human thought itself.

It begs the question what proof is there to be found, that the principles of dialectic thought are in accord with the principles of reality?

Are they in keeping with the principles of change in Nature?

Correlation is not remarkable or difficult to find, since man is part of Nature, and human thought is in the last analysis a natural process, the same kind as any other process in Nature, according to Dr. August Thalheimer.¹¹

Any other notion would be inconceivable.

The most general and the most inclusive fundamental principle of dialectics from which all others are deduced, is the principle of *Permeation of Opposites*.

This principle has a two-fold meaning: first, that all things, all processes, all concepts merge in the last analysis into unity. Secondly, and just as valid, that all things are at the same time different and opposed ~ this principle may also be referred to as the Principle of Opposites, and applies to every single thing, to every single phenomenon, and to the world as a whole.

In relation to thought it may be put this way; on the one hand the human mind is capable of infinite condensation of things into unities, even the sharpest contradictions.

On the other hand, it is capable of infinite differentiation and analysis of things into opposites.

The human mind can establish this unlimited unity and differentiation because they are present *in reality*.

If one takes night and day as an example, there is the twelve-hour day and the twelve-hour night, a period of light and a period of darkness.

Day and night are opposites; they are mutually exclusive.

This, however, does not prevent their being, at the same time, parts of a twenty-four hour day.

Where only simple objects of direct perception are involved, where social interests are not involved, the conception which asserts the identity of opposites will usually meet with no difficulties.

¹¹ *Introduction to Dialectical Materialism* – Dr. Augustus Thalheimer, Covici Friede Publishers, *Dialectics I*, Page 160, New York, USA, 1936 (first edition)

Obstacles to this conception present themselves when social interests oppose it, or when it is no longer a question of ideas.

For instance, the question of social distinction by some, between white and coloured people.

To comprehend that these are not absolute opposites, but that they are united in the concept of mankind shared equally by white and coloured requires not only a dialectically trained mind, but also a definite social viewpoint, as espoused in Progressivism and Social-Reconstructionism.

The untrained mind, therefore, may be confronted with peculiar difficulties when general concepts are in question, difficulties that increase as the more abstract, the further removed these kind of concepts become from sense-perception.

It is much more difficult with such opposites as True / False, and still more difficult with the concepts of Being / Non-Being, which are perhaps the most general of all, the most inclusive, yet the poorest in content.

One could argue, how is it possible to unite such absolute opposites as being and non-being?

Either a thing is, or it is not, and surely there cannot be common ground between them.

The following example may clarify this question; a boy developing into a man is a child and at the same time not a boy any longer.

So far as the individual is becoming a man, the individual ceases to be a boy.

But he is not yet a man, because he has not yet developed into a man.

The concept of 'becoming' contains concepts of being and non-being.

In this concept example they permeate each other.

The obverse side of the coin, another aspect of the proposition of the Permeation of Opposites ~ there are no opposites which cannot be united, no opposites between which there is no identity, whilst at the same time there are no things between which there is not some difference, some opposition ~ e.g. the opposition of things is just as unlimited as their identity, according to Dr. August Thalheimer.

It is in the nature of things as well as the nature of the mind, that no two things exist which do not differ.

The capacity of the mind to infinitely equate things as well as to differentiate and oppose, corresponds to the infinite identity and the difference of things in Nature.

This principle of the Permeation of Opposites may be deduced from the examination of thought itself; in thought this principle is inherent in the basis of consciousness, and this basis consists in the fact that one knows that one is part of the Universe, a part of being, and on the other hand, in the fact that one knows oneself to be distinct from the external world, distinct from other things.

The basic structure of thought is, from the very beginning, a Polar Unity of Opposites ~ from this all other principles of thought are derived and corresponds to the nature of all things.

This principle applies to all motion and changes of entities ~ to real entities, as well as to those in one's mind, e.g. imagery and mental concepts.

It states that entities and concepts move, change and develop. All fixity of individual entities is merely relative and limited; their motion, change, or development is potentially unlimited ~ the principle of Negation of Negation has a sense beyond the mere proposition that all entities are processes; they involve change, and also state something about the most general form of these changes, motions, developments.

All the aforementioned factors take place through opposites, or contradictions, or through the *negation* of an identity. Conceptually, the actual movement of entities appears as a negation, which represents the most general way motion or change is imaged in the mind.

This is the first stage of this process; the negation of a thing from which the change proceeds, however, is in turn subject to the principle of transformation of things into their opposites.

The negation is itself negated and thus the reference 'Negation of the Negation'. This phenomenon logically results in something positive, in thought as well as in reality. Negation and affirmation are polar concepts; negation of the affirmation results in negation, whereas negation of the negation equals affirmation ~ if one negates *Yes*, the outcome is *No* - the first negation. If one negates *No*, the outcome is *Yes*, the second negation. The result is something ***positive***.

Even in everyday speech, an affirmation results from a double negation; however, and this is the definitive aspect, the old and the original are not *re-established* by the double negation in dialectics.

It is not a matter of *a return* to a starting point, but of something *new* arising. The identity, or the condition with which the process started is re-established on a higher plane.

It is through the process of double negation that new qualities and new forms emerge, forms in which the original qualities are not only retained, but *enhanced*. To understand the principle of the Negation of the Negation correctly, one must guard against two misinterpretations. Thesis and antithesis are dialectically united in the final proposition; the dialectical union must not be mistaken for the mere summation of those qualities of two opposite things which remain after mutually exclusive qualities are cancelled ~ dialectical development does not occur in this fashion.

This would constitute a mixture or effacement of opposites, a hindrance to dialectic development. It is a necessary characteristic of dialectical development that it fulfil itself through negations.

In language learning, negations are only possible through the recognition of affordances, and learners being interactively engaged ~ CLT prescribed methodology, and a teacher-centred environment do not occasion openings for this phenomenon to occur ~ without negation there is *no process, no development, no emergence of the 'New', no emergence of original language*.

In society, negation is expressed as struggle which abolishes the old ~ pseudo-dialectics says that a mutual understanding, a compromise is attempted between the old and the new, that an attempt is made to unite the old and the new, without rejecting the old.

This misunderstanding of the dialectics of development is due to the fact that the role of negation as an essential factor in unification is ignored.

There is also an opposite misunderstanding that arises from a disregard of the fact that the new which emerges from the process of development not only negates or neutralises the old, but also retains the old ~ if this is ignored, the dialectics of development is distorted.

There is only one kind of negation in which the thing negated has nothing more to do with that from which the development proceeded ~ this is complete negation or destruction, development forced beyond its limits, transformed into its opposite, into fixity, or lack of development.

It should be understood that negation in the dialectic process is not absolute, is unconditioned, nor complete; it is relative, conditioned and is partial.

The first distortion of dialectics, the distortion which disregards negation, may be called the opportunistic distortion.

The second, in which the retention of the old in the new is disregarded may be called the anarchistic distortion.

These two opposed distortions are alike in that both put an end to development - the first because it puts an end to negation as the moving force of development, the second because it puts an end to the connection between opposites. The relationship between the first main proposition, the proposition of Permeation of Opposites, and the second proposition, the Negation of the Negation, is the Permeation of Opposites as a process in time, and in sequence.

It represents the general relations of things from the point of view of structure, whereas the second principle represents the relation of things as a process. These two propositions are so related that they hold true *ad infinitum* ~ a process for everything at the same time and to the same extent. They permeate each other, they form a coherent whole.

The third main proposition of dialectics, the principle of Transformation of quality into quantity and of quantity into quality, states that the mere augmentation of an entity or entities produces a change of quality, of characteristics and conversely, that a qualitative change produces a quantitative one. To elucidate the relation between the third main proposition of dialectics and the first two, the substance of water is a clear example.

Water has a definite temperature, an optimum health temperature, and if the temperature is raised one will not achieve an ever hotter temperature of water, but instead, at a certain point steam will occur.

Likewise, if temperature is lowered, water does not become colder indefinitely ~ at a certain point it becomes ice. It freezes because of the decreased quantity of molecular motion. Temperature is merely an expression of the motion of the smallest particles, the molecules.

If one changes the molecular motion or the speed with which the molecules move about, the characteristics will change at certain points from gas to liquid, liquid to solid.

Conversely, ice can only be changed to water, or water to steam if the quantity of molecular motion is changed. The relation of the third proposition to the first two is that the principle of the Transformation, of quantity into quality and vice versa merely represents a special application of the first proposition, the principle of the Permeation of Opposites.

Quality and quantity are polar opposites; quality is quantity analysed ~ quantity is quality analysed. For instance, an apple, a pear and a plum all have different qualities and can only be counted together if their different qualities are abstracted from them or negated. One cannot add an apple, a pear and a plum together ~ one can only say 'three pieces of fruit'.

In other words, negated quality is quantity; negated quantity is quality ~ these opposites are contained in each thing.

The finest example of the Transition / Transmutation process is arguably Bio-dynamics' "**Preparation 500**". It represents a process based on Polar Opposites, on dialectics - all three main propositions, and if applied to the soil every year, one's garden, farm is linked into the wider and deeper processes of Nature, according to Dr. Rodney Blackhurst.¹²

The mid-to-longer term effect in applying this Preparation, is to significantly increase the humus levels of the soil and improve its structure, with decidedly positive effects on plants. It enhances the processes of exchange and transmutation in the realm between plant and mineral ~ it is said that plants become more fully macrocosmic, become more sensitive to their environment, including the stellar environment and select their nutrients more 'intelligently'. Preparation 500 is made with fresh, pasture-fed cow manure, which is put into a cow horns and buried in the soil for the winter under strict conditions.¹³



The preparation process involves such opposites as the Earth's Warmth and Cold, Chaos and Order, stirring Clockwise and Anti-Clockwise for an hour exactly, for a transmutation from Quantity to Quality in the end product. The distribution of Preparation 500 must be in homeopathic quantities and applied directly upon the soil, during the right lunar position, and season for it to be effective.

¹² Dr. Rodney Blackhurst – Philosophy, La Trobe University, Melbourne, Australia. <http://www.blackhurst.com/halfacre/prep500.html> (Demeter - Bio-Dynamic Produce)

¹³ *Geisteswissenschaftliche Grundlagen zum Gedeihen der Landwirtschaft, Verlag* – Dr. Rudolf Steiner, Dornach, Switzerland, 1925. (translated by Biodynamic Literature, Kimberton PA.)

According to Dr. Wolf Storl, it was during Dr. Rudolf Steiner's fifth lecture, that the possibility of the transmutation of elements within the realm of living chemistry was suggested, and the implication was made that the chemistry of living organisms transcends that which can be asserted in the test tube.¹⁴

Preparation 500 is a soil microbe activator, a soil humus builder, and very beneficial to plants and soil microbes ~ a 'Technology of the Four Elements' according to Dr. Rodney Blackhirst.

Laboratory tests in relation to Preparation 500 have revealed that significant internal changes take place in the manure during overwintering in the cow horns:¹⁵ principal changes are a significant drop in pH, increases in aerobic status, and production of nitrate. An important aspect is that the process results in little evident loss of organic matter ~ these are *most unusual* findings when analysing manures and composts.

Dr. Rudolf Steiner's Bio-dynamic Preparation 500 is in tune with the much earlier the three delineated principles of living organisms by von Goethe, plants in particular.¹⁶ His first principle, The Principle of Polarity is noteworthy, since it was Johann W. von Goethe's first characterisation of the 'Ur-Plant', or 'Primal Plant', which took place 1786 - 1788 on a journey through the Swiss Alps into Italy. Noteworthy also, because Georg Wilhelm Friedrich Hegel was only sixteen years of age at the time, and Rudolf Steiner was not born until 1861 . . .

Von Goethe asserted, that one of the major characteristics of plants is their dualistic nature; from the seed the plant grows geocentrically into the soil *and* into the air. Nowhere is something similar to be found in inorganic Nature. Another example of polarity, of antitheses, not considered by science, are Gravitation and Levitation; the latter is not taken into account at all, consideration being given to gravitation, although a levitational force is basic to Nature.

What else if not levitation enables a tree to grow upwards against the action of gravity ~ were there no levity, the tree would merely spread out horizontally over the ground in a green amorphous mass. However, it thrusts skywards and does so in response to another force operating in the opposite direction; this is Life-Force, a quickening, uplifting energy and when extinguished the living

¹⁴ *Culture and Horticulture: A Philosophy of Gardening* – Dr. Wolf D. Storl, *The Primal Plant*, Page 154 , Bio-Dynamic Literature, Wyoming, Rhode Island, USA, 1979.

¹⁵ *Dynamic Chemical Processes Underlying BD Horn Manure (500) Preparation* – Wm. F. Brinton Jr., Woods End Research Laboratory, Journal of Bio-Dynamics Vol. 214.

¹⁶ *Culture and Horticulture: A Philosophy of Gardening* – Dr. Wolf D. Storl, *The Primal Plant*, Page 100/101/102/103 , Bio-Dynamic Literature, Wyoming, Rhode Island, USA, 1979.

organism will die. Plants respond to the polarities of day and night, winter and summer, waxing and waning moon. Polarity is found in the male and female flowers, in the round cosmic bud and the extended terrestrial leaf, in the green chlorophyll molecules and the red haemoglobin molecules, which are perfect mirror images of each other except that the haemoglobin has an iron radical where the chlorophyll has a magnesium radical attached.

The Bio-dynamic practitioner looks for harmonies and symmetries, thinking of the roots when looking at the leaves and flowers, thinking of the opposites that make up the complete picture.¹⁷

It should be realised, that each thing, entity has a definite size, quantity, or degree and at the same time definite characteristics. All things have, at the same time, quality and quantity ~ as opposites they permeate each other and are transformed into each other. Therefore, it is important to be conscious of the dialectical nature of things in teaching and learning; it is not magic, neither is it part of anyone's natural equipment.

This is a skill that must be practised and learned by practitioners and learners alike, hence the creation of a Comprehensive Learner Profile in Dialectic Unity, a schema for the realisation of learner self-efficacy beliefs.

It should be realised that dialectics and its fundamental laws can only be understood through repeated study and practice; however, ultimately anyone can grasp them because one has the proof of dialectics in one's daily experience as well as in one's own mind. In this respect human thought is exactly the same in all minds.

The most general characteristic of dialectical thought is the study of things in their interrelations, in both 'One-Beside-the-Other' and 'One-After-the-Other' relations ~ that is, in their changes, their transformations.¹⁸

¹⁷ *Culture and Horticulture: A Philosophy of Gardening* – Dr. Wolf D. Storl, *The Primal Plant*, Page 101, Bio-Dynamic Literature, Wyoming, Rhode Island, USA, 1979.

¹⁸ *Introduction to Dialectical Materialism* – Dr. August Thalheimer, Covici Friede Publishers, New York, USA, 1936.

There appears to be no agreement among philosophers or cultures about 'self-evident' ideas in rationalism. Not infrequently such ideas have been rejected at later times - take, for example, the many CLT methodologies tried since the 1960s.

Though sense experience may not be 'certain', it can provide information which is as reliable as we need it to be - take this writing as a case in point. The fact that a belief is not 'absolutely certain' should not disqualify it for knowledge.

**Why not take the position that something is 'known'
as long as there is no good reason to doubt it?**

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