

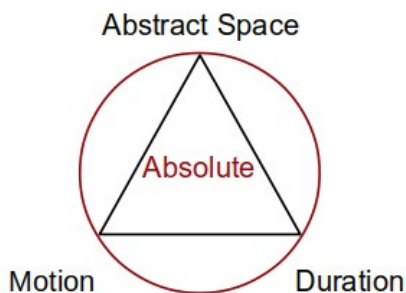
The Great Breath (v. 1.1)

Motion as an Aspect of the Absolute

In SD I, 43 we find the following statement on the **absolute**:

The appearance and disappearance of the Universe are pictured as an outbreathing and inbreathing of "the Great Breath," which is eternal, and which, being Motion, is one of the three aspects of the Absolute -- Abstract Space and Duration being the other two.

We could represent the information given here on the absolute in a diagram like this:



Defining the standard circular order as "clockwise", this diagram becomes an unambiguous representation of the three aspects of the Absolute.

In *The Mahatma Letters to A.P. Sinnet* (ML) we also find remarks to the effect that the Great Breath, or Motion is eternal for example in ML No. XXII (Barker):

Motion is eternal because spirit is eternal. But no modes of motion can ever be conceived unless they be in connection with matter.

It may be interesting to see that Aristotle formulated thoughts similar to the one in SD I, 43, for example in paragraph 12.1071b of his *Metaphysica* (translation from W.D. Ross' 1924 edition):

But motion cannot be either generated or destroyed, for it always existed; nor can time, because there can be no priority or posteriority if there is no time. Hence as time is continuous, so too is motion; for time is either identical with motion or an affection of it. But there is no continuous motion except that which is spatial, of spatial motion only that which is circular.

Now in the diagram and the quotation from the SD, the term **abstract space** is mentioned. As a preparation for a deeper analysis of the concept of **motion**, or **great breath** in the SD, we could start by investigating the concept of **abstraction**.

Abstract Space, Noumenon and Phenomenon

The terms **noumenon** (Gr. νοούμενον) and **phenomenon** (Gr. φαινόμενον) were typically used by Plato to distinguish between the world of ideas (noumenal) and the sensory world (phenomenal). Another typical location where can find a discussion of these two terms is in Immanuel Kant's *Kritik der Reinen Vernunft*. (1781) He uses the terms in relation to the different types of knowledge he distinguishes, a priori knowledge (before perception, pure, "rein") and a posteriori knowledge (after perceiving, empirical). In the HPB's *Theosophical Glossary* (TG) the term noumenon is defined as: "The true essential nature of being as distinguished from the illusive objects of sense", confirming we are on the right track.

Throughout the SD, these two terms are used in a specific way, in line with Plato, where the abstract unmanifested idea of any manifested phenomenon is its noumenon. The unmanifested stage of the origination of the universe is usually called pralaya and the manifested stage is called manvantara. Other terms for these stages we may encounter are the nirvṛtti and pravṛtti stage. These two stages are also indicated by the terms noumenal and phenomenal respectively. An example of this may be found in SD I, 62:

[Esoteric philosophy] divides boundless duration into unconditionally eternal and universal Time and a conditioned one (Khandakala). One is the abstraction or noumenon of infinite time (Kala); the other its phenomenon appearing periodically, as the effect of Mahat (the Universal Intelligence limited by Manvantaric duration).

In the SD, infinite time (kāla) is called **duration**, as opposed to "broken time" (khandakāla) which is simply called **time**. In stanza I śloka 2 "Time was not, for it lay asleep in the infinite bosom of duration." These two, duration and time, relate as a noumenon and its phenomenon. The entire genesis of the universe described in the Book of Dzyan may be seen as the process (if we may call it that) of noumena turning into their respective phenomena. This process is often referred to by the term **ideation**.

Another example of specific use of word may be seen in this fragment, in the word abstraction. If something is called the noumenon of a certain phenomenon, then is called **its abstraction**. The word abstract is used quite often in the SD, and it is used in this way in defining several of its central concepts. In the explanation of the first fundamental proposition for example, is spoken of absolute abstract **space** (SD I, 14):

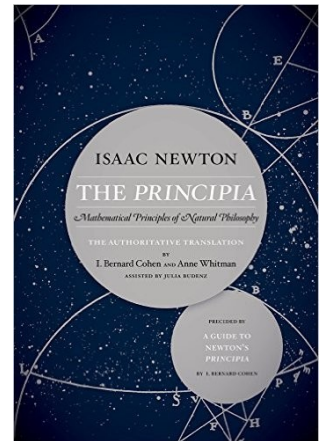
This "Be-ness" is symbolised in the Secret Doctrine under two aspects. On the one hand, absolute abstract Space, representing bare subjectivity, the one thing which no human mind can either exclude from any conception, or conceive of by itself. On the other, absolute Abstract Motion representing Unconditioned Consciousness.

In the term absolute abstract Space, the word **abstract** refers to the noumenon, that is the unmanifested abstraction of our manifested space (including its different "levels"). Abstract Space extends infinitely to every possible dimension, while its phenomenal counterpart is limited to the portion which we can perceive through our senses or imagine within the limitations of our mind.

Absolute Time

Realising that the word abstract indicates that we are speaking about the noumenal counterparts of our worldly space, time and motion, as they are in the nirvṛtti stage of evolution, the cosmic night, we can ask ourselves why does HPB use this term **absolute** (the adjective) in relation to space, time and motion, where does it come from, and is it referring to any area of study which could help clarify these fundamental terms in the SD? If we are to trace the origin of the use of the word absolute in this sense, we may see that Isaac Newton in his Principia was the first who used it, applying it to space, place, time and motion, in his first Scholium. Also the term **duration** is used in the Scholium, which may be seen as another indication that HPB, in using these terms, was most probably referring to this text implicitly.

Newton's *Philosophiae Naturalis Principia Mathematica* consists of three separate Books preceded by a Preface, Definitions and Axioms (the Laws of Motion), and followed by a General Scholium. In the three books, applications of the Laws of Motion are demonstrated. At the end of Definitions and Axioms respectively, there are again Scholia where more specific information and discussion on the subject matter is given.

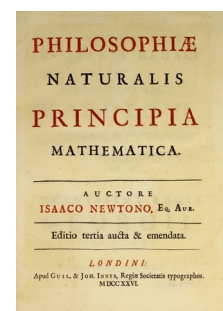


In the Scholium to the Definitions, in the 1999 edition by I. Bernhard Cohen and Anne Whitman, "assisted by Julia Budenz" found on pages 54-61, it is specified what is understood by the basic terms time (1), space (2), place (3) and motion (4). Newton distinguishes absolute and relative time, true and apparent time, mathematical and common time, absolute and relative space, absolute and relative place and absolute and relative motion. Based on the third Latin edition of 1726, first we can set up a table to show the meaning of the attributes of time:

Tempus absolutum, verum, & mathematicum, in se & natura sua sine relatione ad externum quodvis, aequabiliter fluit, alioque nomine dicitur duratio: Relativum, apparens, & vulgare est sensibilis & externa quaevis durationis per motum mensura (seu accurata seu inaequabilis) qua vulgus vice veri temporis utitur; ut hora, dies, mensis, annus.

<i>Tempus absolutum,</i>	<i>Relativum,</i>	absolute or relative
<i>verum,</i>	<i>apparens,</i>	true or apparent
<i>& mathematicum,</i>	<i>& vulgare</i>	mathematical or common
<i>in se</i>	<i>est sensibilis</i>	in itself or perceived
<i>& natura sua sine relatione ad externum quodvis,</i>	<i>& externa quaevis durationis per motum mensura</i>	without relation to anything external or measured by external movement
<i>aequabiliter fluit,</i>	<i>(seu accurata seu inaequabilis)</i>	flowing evenly or accurate/inaccurate
<i>alioque nomine dicitur duratio</i>		otherwise called duration

So in the Scholium, duration is described as time which is absolute, true and mathematical, that is, 1. it is "in itself" (noumenal), 2. without relation to anything external and 3. flowing evenly. Modern physics may suggest (for example in the early 20th century through Ernst Mach) that this sort of time does not exist, but apparently this idea is one of the corner stones of Newton's work. On closer observation however, it will be clear that without this basic idea, the edifice of modern physics would collapse as well.



We could ask ourselves now, if Newton's concept of duration is the same as the one used in the SD, or are they perhaps mutually exclusive. (There is no direct reference to the Principia in the SD on this.) We can now return to SD I, 37 where we find one of the most well-known lines from the Book of Dzyan, describing the state of time in the cosmic night of the universe, and the first line of HPB's commentary on it:

2. TIME WAS NOT, FOR IT LAY ASLEEP IN THE INFINITE BOSOM OF DURATION (a).

(a) Time is only an illusion produced by the succession of our states of consciousness as we travel through eternal duration, and it does not exist where no consciousness exists in which the illusion can be produced; but "lies asleep."

The succession of states of consciousness is of course khandakāla, "broken time", the phenomenon, while eternal duration is kāla, its noumenon. The noumenon is here the true essential nature of time, as opposed to "broken time", the illusive object of the senses (or limited mind). (TG) HPB's duration is therefore without relation to anything external or measured by external movement, while "broken time" is perceptual, and therefore dependent on the consciousness of the observer. In this respect this polarity is certainly equal to Newton's distinguishment of "in itself" and "perceived", and perhaps also equal to "true" and "apparent". If we take the terms absolute and relative in their strongest sense they also express unconditional (kāla) and conditional (khandakāla) time.

Speaking of duration however, Newton speaks of "mathematical" time, "flowing evenly" and "accurately", and later in the Scholium, he states that the difference between absolute and relative time is the "equation of time" (aequatio temporis). This is an astronomical term and method (which the modern translators were not clear enough about in their translation), determining the arithmetic difference between apparent and mean solar time, determining of which was one of the main problems of reckoning time in his days. Newton refers to the "experiment of the pendulum clock", which was described in Christiaan Huygens' 1673 work *Horologium Oscillatorium* (The Pendulum Clock: or geometrical demonstrations concerning the motion of pendula as applied to clocks). Newton uses the same terms "absolute time" and "duration" for the time measured by the pendulum clock and the eclipses of the satellites of Jupiter as for the absolute time which is "in se", or without relation to anything external or measured by external movement. In his time he had no reason to suspect that many similar differences would be found in the centuries ahead. In this respect HPB's and Newton's absolute time are not the same. We may, however, suppose that Newton intended absolute time to be "in se", in which case he had the same intention as HPB.

If we approach the idea of Newton's noumenal time in a meditative way, it shows itself as HPB's primordial aspect of the universe. Vice versa, if we read HPB's proem to the SD with Newton's view of duration in mind, as time "flowing equally", the text becomes much clearer. Another clue may be found in the well-known diagram of meditation which HPB dictated to E.T. Sturdy in 1887 for the benefit of some of her pupils. The first line of this meditative exercise is "First conceive of Unity by expansion in Space and infinite in Time Either with or without self-identification at first". Further down in the diagram it is said: "Acquisition is completed by conception 'I am all Space & Time.'" (Spelling and grammar for the two lines are conform the original document.) The exercise is apparently designed to bring our consciousness from the plane of phenomenal space and time, to the state of noumenal, absolute space and time, to enable us to look at ourselves and our actions from this universal perspective.

Absolute Space, Place and Motion

The second point in the Scholium is about Space, where Newton distinguishes again between Absolute and Relative Space. Absolute Space is defined as 1. "natura sua sine relatione ad externum quodvis", the nature of which is without relation to anything external, and 2. "semper manet similare & immobile", always remains the same and unmoving. Again the word Absolute is used in the same way as in the SD, it is "in se", without reference to anything else. Place is the part of space that a body occupies, and the definition of Absolute Place is derived from that of Absolute Space. The third point in the Scholium states (paraphrase): if a Place is described with reference to Absolute Space it is Absolute, otherwise it is Relative. The definition of Absolute Motion is again derived from that of Absolute Place. The fourth point in the Scholium states: Absolute Motion is the change of position of a body from one Absolute Place to another; Relative Motion is change of position from one Relative Place to another.

We may try to compare the terms Motion as they are used in the Principia and the SD. In (another location in) the Principia, Motion is defined as displacement, "translatio corporis". In the Definitions, "Quantity of Motion" is defined as "a measure of motion that arises from the velocity and the quantity of matter jointly", which is what we would now call momentum. Newton uses the term "vis insita" ("inherent force"), for the "force of inertia", which could now be called potential energy. The terms vis viva and vis insita were first used by his contemporary Gottfried Wilhelm von Leibniz who in his ideas on motion was primarily focussed on energy rather than momentum. As we will see later, the term energy is not used in its modern sense until the first half of the nineteenth century.

In the SD, the ideas of motion, force, momentum and energy are not distinguished as strictly as they are in physics today. For example, the debate on "Modes of *Motion*", which we will discuss in our next paragraph, is all about mechanical work, or *energy*. Later in the SD, the *forces* of nature are discussed, among which are light, heat, electricity, magnetism, etc. However, from the fact that Motion is preserved during the cosmic night, it may be inferred that HPB's Motion cannot be Newton's motion (displacement) or force (cause of change of motion). That leaves us with momentum and energy, since they are both "conserved", or time-invariant. For the time being we can leave this question undecided, but it may be clear

that in the case of Motion, as opposed to Space and Time, the term Absolute Motion in the SD is different from Absolute Motion in Newton's Principia. Perhaps it is necessary to find out more on the concept of Motion in the SD.

Motion in Late Nineteenth-Century Physics

In a series of lectures in 1842 and 1843 and his book of 1846, *The Correlation of Physical Forces*, Sir William Robert Grove argued that thinking of for example electricity and magnetism as immaterial "fluids" or imponderabilia as they were called then, was incorrect. An example of such a fluid was "phlogiston", the hypothetical fluid supposedly responsible for the carrying heat, for example from fire to different objects. Grove proposed that these fluids were actually "affections of matter" and not separate physical entities, and presented the idea that these different affections were quantitatively related, or as he defined it, "correlated". The fluids, imponderabilia and *correlations of forces* are mentioned many times in the SD. This idea may be considered an early formulation of the first law of thermodynamics, which states that the energy in a closed thermodynamical system is *conserved*. The concept of energy as a measure of mechanical work was not generally in use until William Thomson (later Lord Kelvin) in 1851 published his article *On the dynamical theory of heat*, where he was able to combine and adapt existing ideas to establish the foundations of thermodynamics. In 1884-1888 however, when HPB was working on the SD, the discussion on the nature of several other phenomena as **forces of nature**, differentiated from one source was far from being over.

Since the publication in 1868 of John Tyndall's book *Heat Considered as a Mode of Motion*, where he showed that heat is in relation to matter "a motion of its ultimate particles", the idea grew that, besides heat, other phenomena like electricity, magnetism or sound, could perhaps also be considered forms or *modes of motion*. The term motion indicates here again, that heat may be measured in terms of the quantity of mechanical work which could be produced by it, for example in an ideal heat engine. In many places in the SD, HPB argues against the modes of motion, in favour of the occultist view of intelligent life as the cause behind every manifested physical force. In SD I, 147 we find an illustration of this:

The Occultists [...] assert that all the so-called Forces of Nature, Electricity, Magnetism, Light, Heat, etc., etc., far from being modes of motion of material particles, are in esse [...] the differentiated aspects of that Universal Motion which is discussed and explained in the first pages of this volume (See Proem).

The Universal Motion HPB speaks of here, is one of the three aspects of the Absolute which we have seen in our earlier quote from SD I, 43. How exactly we should interpret this concept of Motion is perhaps not immediately clear from this, but still this fragment provides us with some interesting directions. Apparently HPB agrees with the idea of many of the scholars of her time that electricity, magnetism, light, heat, etc. may be unified under a larger concept. In our time this is not thought to be completely evident, as a theory unifying all different types of force, or interactions, is yet to be found. The representation of electricity, magnetism etc. primarily as forces of nature, that is, describing them only in terms of mechanical work, could now be seen as an oversimplification of these complex phenomena. In the modes of

motion discussion, the central concept is mechanical work, energy, but it is still unclear if with motion in the SD is meant energy, or perhaps momentum. Important is however that because Motion is seen as an aspect of the Absolute, it is preserved in pralaya. Like Abstract Space, Motion exists in both the nivṛtti and pravṛtti stages of the universe. In more modern terms we could say that this Motion is subject to a conservation law, or is invariant with time.

Six Primary Forces in Nature

To be able to connect the "modes of motion" to other key concepts in the SD, further down the analytical tree, we have to return to stanza IV from the Book of Dzyan, and its commentary (SD I, 86-87), where the term Sons of Fire is explained.

These are all names of various deities which preside over the Cosmo-psychic Powers. [...] They are:-- "The Sons of Fire" -- because they are the first beings [...] evolved from Primordial Fire.

In SD I, 88, stanza IV continues:

(2) LEARN WHAT WE, WHO DESCEND FROM THE PRIMORDIAL SEVEN, WE, WHO ARE BORN FROM THE PRIMORDIAL FLAME, HAVE LEARNED FROM OUR FATHERS (α).

[...]

The distinction between the "Primordial" and the subsequent seven Builders is this: The former are the Ray and direct emanation of the first "Sacred Four," the Tetraktis, that is, the eternally Self-Existent One (Eternal in Essence note well, not in manifestation, and distinct from the universal ONE). Latent, during Pralaya, and active, during Manvantara, the "Primordial" proceed from "Father-Mother" (Spirit-Hyle, or Ilus); whereas the other manifested Quaternary and the Seven proceed from the Mother alone. It is the latter who is the immaculate Virgin-Mother, [...]

Please note that in this article we are discussing the **second seven**, born from the primordial flame, the "Sons of Fire", and not the **primordial seven**. This second group is said to be born "from the Mother alone", which is the immaculate **virgin-mother**, about which many examples are given in the SD about the mystery of the immaculate birth in different religious and philosophical traditions. One of these examples we find in the Virgin-Mother as Kanya (Shakti), or Durga-Kanya, the sixth sign of the zodiac, which takes us to the passage in SD I, 292, quoted from T. Subba Row's article *The Twelve Signs of the Zodiac*, where the six "modes of motion", the **six primary forces** in nature, are described as the six shaktis (śakti), summarised in their seventh, which is fohat. In an earlier article, *Kāraṇa, the Causeless Cause*, we have found that Motion is identical with kāraṇa, and that the terms dzyu and fohat are used in the SD to indicate the nivṛtti and pravṛtti aspects of **motion** respectively. To not complicate things unnecessarily here, we can refrain from elaborating upon the Virgin-Mother, the six primary forces, the shaktis and fohat.

Now our consciously naive analytical method, of starting out with only the SD volumes I & II and works referred to, then in second place consulting other works by HPB and writings directly connected to the masters of wisdom, and then perhaps in third place other theosophical works, may sometimes surprise us with new information in later stages of our investigation. In this case, in CW XII, 620, the *Esoteric Instructions*, we find the following:

In The Secret Doctrine it is almost revealed that the "Sons of Fohat" are the personified forces known, in a general way as Motion, Sound, Heat, Light, Cohesion, Electricity (or Electric) Fluid, and Nerve Force (or Magnetism). This truth, however, cannot teach the student to attune and moderate the Kundalini of the Cosmic plane with the vital Kundalini, the Electric Fluid with the Nerve Forces, and unless he does so, he is sure to kill himself; for the one travels at the rate of about 90 feet, and the other at the rate of 115,000 leagues a second. The seven Śaktis respectively called Para Śakti, Jñāna-Śakti, etc., etc., are synonymous with the "Sons of Fohat," for they are their female aspects. At the present stage, however, as their names would only be confusing to the Western student, it is better to remember the English equivalents as translated above.

This fragment suggests that the seven forces of nature are the ones mentioned, but of course we still do not know for certain their correct relations with the six shakti's. What we do know, or may derive from it, is that HPB has made our task more difficult than necessary in the first two volumes of the SD because she, and perhaps her guides, thought that giving out the complete knowledge on this subject might have been too dangerous and confusing at that time. As we know, the *Esoteric Instructions* were written for circulation among a small group of her pupils, but were in 1897 posthumously published in SD volume III. For our purpose though, with this, we will have enough information to try to connect our findings to the field of contemporary physics in a later stage. We may conclude our analysis with a summary of the six or seven "forces" in the form of a still fragmentary table:

T. Subba Row in "The Twelve Signs of the Zodiac" (cp. SD I, 292)			CW XII, 620 matched to SD I, 292
1	Parāśakti	"the powers of light and heat"	Light?
2	Jñānaśakti	"clairvoyance, psychometry", "association", "memory"	
3	Icchāśakti	"the generation of certain nerve currents"	Nerve Force (or Magnetism)
4	Kriyāśakti	"the mysterious power of thought"	
5	Kuṇḍaliniśakti	"electricity and magnetism are but manifestations of it"	Electricity (or Electric) Fluid
6	Mātrkāśakti	"literally the force or power of letters or speech or music"	Sound
7			