

## An Outline of Generancy Philosophy

This book represents a revised and expanded edition of the author's previous work, 'Modeling of Generancy: A Logical Solution.' While primarily delving into Indian philosophy, it incorporates various aspects of Western philosophy as well. To streamline the content, the author has excluded certain topics from the previous book while adding new ones, ensuring that both volumes hold special importance for the readers. The writing style of the book adopts a textbook approach.

Generancy philosophy has emerged as a distinctive school of thought within Indian philosophy, grounded in the acceptance of the Vedas as authoritative. However, the book transcends the confines of Vedic discourse by introducing additional subjects. Mathematics plays a prominent role, enabling attempts to address humanity's incessant curiosity and existential inquiries. Thought-provoking discussions on topics such as the universe, life, and the concept of God are presented. Furthermore, the book extensively explores human happiness, sorrow, and the ultimate purpose of life. It is expected that readers' interest in philosophy will be heightened after engaging with this book.



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**Dedicated**

To

Dr. Mahanambrata Brahmachari whose books inspired me to write about Indian philosophy.

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## Preface

The book 'An Outline of Generancy Philosophy' is a research book on Indian philosophy. This book is a revised and elaborated version of my previous book 'Modelling of Generancy: A Logical Solution'. A lot of new topics have been added in this book. However, keeping in mind the volume of the book, many important topics of the earlier book have been left out. But both the books have their own individuality and I think both the books will be of considerable importance to the readers of philosophy.

Philosophy deals extensively with the universe and life. This book also discusses the universe and life in detail. What is the universe and why, the creation technique of the universe, the consequences of the universe etc. have been widely discussed. On the other hand, every effort has been made to answer the eternal questions and eternal curiosity of the people. Attempts have been made to make human life beautiful and worthwhile by uncovering the mystery of human life.

Generancy philosophy divides all objects in this universe into four parts. All the objects in this universe are collectively called padarthas or categories. The thing specified by term is called category. Anything that is a matter of knowledge is a category. There is nothing in this universe that does not have a name. All objects with names can be called categories. These padarthas or categories are of four types, namely- dravya (substance), guna (quality), karma (action) and samanwaya (adjustment). Four chapters have been introduced with these four types of categories. These four chapters are- dravyanomics, gunomatics, karmodynamics and samanwayatics. Apart from this, there are a total of seven chapters in this book, including three other chapters. The first and second chapters are introduction and main theory respectively. The seventh chapter is humanity.

In the introduction, the basic features and subject matter of the book are discussed. In the main theory, the fifty-five terms of knowledge are denoted by fifty-five Sanskrit letters. A generancy model is developed with dravya, guna, karma and samanwaya. Purusa, prakrti and jagat etc. are discussed in dravyanomics. Gunomatics discusses primary gunomatics and jnanastatics. Person, family, society, state and world are discussed in karmodynamics. Cause, relation, rule and operation are discussed in samanwayatics. In humanity, apart from the physical structure of human beings, an attempt has been made to highlight human life in terms of family, society, state and world.

The theories discussed in Generancy philosophy are arranged according to dravya, guna, karma and samanwaya. The theories discussed in dravyanomics are arranged according to Purusa, prakrti and jagat. Purusa theory mainly deals with Isvara theory. Isvara is one and unique. Isvara in the state before creation is called Purusa. He is also known as Karana Brahman. Isvara in the state after creation is called Brahman. He is also known as Karya Brahman or Nirguna Brahman. Brahman to the devotee is Saguna Brahman or Isvara. He is also known as God. He is infinite, eternal, omniscient, omnipresent and omnipotent. There is no question about His integrity. He is full.

Ordinary people see God from their own perspective. And this is normal too. But in doing so, people often make God fragment. In this book God is explained in terms of substance, quality and action. In this context four theories are introduced and these four theories are akatvavada, visistavada, vahutvavada and ansatvavada. In akatvavada God is one as substance, void as quality and static as action. In visistavada God is variety as substance, full as quality



and moving as action. In vahutvavada God is many as substance, large as quality and broad as action. In ansatvavada God is part as substance, small as quality and narrow as action.

Prakrti or nature consists of jada and jiva. In Generancy philosophy, prakrti is considered to be the effect of Purusa. That is Purusa is karana or cause and prakrti is karya or effect. Prakrti is made up of the gross substances and subtle substances. The gross substances are five, namely, ksiti, jala, agni, vayu and akasa. The subtle substances are three, namely, manas, buddhi and ahankara. The word prakrti means that which gives rise to various changes (vikaran prakrti iti). It refers to the primitive cosmic matter from which various evolutions such as mahat or buddhi ahankara or ego, etc. have arisen.

This universe is the development of God's illusion or maya. Under the influence of the power of maya, God first created prakrti and then the universe or jagat. This universe consists of prithvi, antariksa and svarga. Prithvi is in antariksa and antariksa is in svarga. Our antariksa is made up of a large number of planets like prithvi. And our svarga is made up of a large number of antariksa. Actually if antariksa is in place of the sun, then planets will be prithvi and galaxy will be svarga.

Guna or quality resides in dravya and has no karma or is different from karma. Jnana or knowledge is a kind of quality. This philosophy combines Indian and Western philosophies in the discussion of knowledge. Combining realism and idealism, this philosophy introduced relativism. On the other hand, this philosophy combines empiricism and rationalism to introduce cognitivism. This universe is developed by the illusion of Brahman. There is nothing wrong in this visible world, everything is true. But failing to prove the truth, people sometimes interpret it wrongly. No theory can be ruled out. All theories are true in their own context. Generancy philosophy considers all theories to be true. This philosophy respects all philosophical views. All theories are considered to be true in their own context.

All people in the world have their own opinion. He judges or sees all things, events, or objects in the world in his own context. There is nothing wrong if one judges or sees all the things, events or objects in the world in their own context. It is his right, it is also an expression of his ability. He judges everything according to his ability. A person interprets or sees an object or phenomenon according to his knowledge. It should not be a problem for anyone else. There should be no disagreement with anyone if everyone thinks that the matter is relative. Because the nature of knowledge is relative, there are different interpretations of different objects or events in the world. To put the matter more clearly, it can be said that different objects have different interpretations because of different knowers. There is nothing surprising about this. There is no reason to fight with anyone. If there is a fight, it should be understood as a sign of ignorance. There is a lack of knowledge here. It is because of this ignorance that people get involved in fights.

There are different ways to solve a problem. There are different ways or paths to solve an issue. Anyone can solve any problem in different ways. Just as a math problem can be solved through different formulas, so too can different problems in the world be solved in different ways. Just as different mathematicians have discovered different formulas for mathematical problems, so different philosophers have introduced different theories for different worldly problems. Just as there are alternative formulas for different mathematical problems, there are also alternative theories for different mundane problems. Anyone can solve mundane problems using these theories. So any problem has multiple options. If one option is not effective, another option can be used. However, it should be remembered that it does not harm anyone else in any

way. Therefore, it is necessary to be aware of using alternatives. It also depends on personal taste. There are some who are happy with the happiness of others and are sad in the sorrow of others. They keep the matter in mind by using alternatives. Again, there are others who make themselves happy in the sorrow of others and are sad for the happiness of others. Accordingly they use alternatives. So if one really wants peace and harmony and acts accordingly, then peace and harmony are bound to come.

Karma or action resides in dravya and the motion of object is karma. Karma is different from guna. Karma is one of the three inevitable facts of all living beings. The other two are janma and mrityu. There is a causal relationship between karma and the enjoyment of the fruits of karma. Everyone has to enjoy the fruits of action. The enjoyment of the fruits of the actions that a living being does in this life may not end in this life. That is why a living being has to be born again. As long as the living being is not liberated, the living being has to take birth again and again in the world.

The fruits of action are never destroyed. Good, evil, virtue, sin are all preserved through the fruits of karma. Therefore, karmavada is called the 'law of conservation of moral values'. People reap the rewards according to what they do. If one does good deeds one enjoys virtue and happiness and if one does bad deeds one suffers sins and sorrows. That is why karmavada is called the causality of the moral world. A living being does not have to be born for nishkam karma. Rebirth of the living being is necessary to enjoy the fruits of sakam karma only. Even in the same society enjoying equal benefits it is seen that the righteous person suffers and the sinful person enjoys happiness. Such explanation of the fruits of karma cannot be explained by the karma of his present life. That is why the previous birth has to be accepted. In this way, the past, present and future are united through karmavada. Thus the past has shaped the present and the present will control the future.

Action can be as personal as it can be in family, socially, stately and globally. Family, society, state and world will enjoy the results as they work. The person, family, society, state and world itself are in control of their destiny and by good deeds they can change their destiny for the better. So just as the person has free will, the family, society, state and world also have free will. They can also get good rewards for good work.

All the actions of the person, family, society, state and world can be expressed mathematically. A person's action can be expressed singularly and the result of his singular action can be expressed. The work of a family is the sum of the work of all members of the family. If some of the members of the family do good deeds and some do bad deeds, the promotion of good deeds and the decline of bad deeds are obtained. In this, the mathematical sum of the results of the actions of all members of the family can be calculated. If the good deeds are more and the bad deeds are less, the mathematical sum of the fruits of the family's actions will give rise. And if the good deeds are less and the bad deeds are more, the mathematical sum of the fruits of the family's actions will be degraded. In this way family's single action results can be found. In the same way single action results of society, state and world can be calculated. The single action results of the society are the sum of the single action results of each family belonging to the society. The single action results of the state are the sum of the single action results of each society within the state. And the single action results of the world indicate the sum of the single action results of each state in the world.

Apart from substance, quality and action there is another category in this universe. And that is adjustment. Adjustment can be of six types according to structure. For example,

substance with substance, quality with substance, action with substance, quality with quality, action with quality and action with action etc. Again, according to the nature of adjustment, there are three types of adjustment namely, cause, relation and rule. Operation is also a kind of adjustment. However, the inclusion and exclusion of the operation falls into the relation and the construction and destruction of the operation falls into the rule. The terms in the first column of the generancy model are adjusted by cause. That is, the five terms Purusa, prakti, jagat, jnana and karma are adjusted by cause. The terms in the second column are adjusted by relation. That is, Brahman, jada, jiva, prithvi, antariksa, svarga, category, assertion, dimension, quantity, person, family, society, state, world these fifteen terms are adjusted by relation. The terms in the third column are adjusted by rule. That is, Isvara, paramanu, deha, prana, ksiti, jala, agni, vayu, akasa, atma, name, positivity, negativity, north, east, up, force, mass, space, time, purusartha, reproduction, marriage, education, culture, cooperation, population, territory, power, sovereignty, life, environment, authority, development and peace these thirty five terms are adjusted by rule.

All the events in this world are just an adjustment. All the events can be expressed with the help of mathematical equations if tried. If it can be expressed as a mathematical equation, it will be possible to determine the good and bad of these events. By doing this, just as the conflicts between individuals will be reduced, the conflicts between states will also be reduced. However everyone's will plays an important role in this. Peace and harmony can only be maintained if peace and harmony are desired. And if one wants dispute and conflict, the environment will become disputed and conflicted.

All the composite objects around us are the result of adjustment. These objects are created through adjustment. These composite objects can be expressed through equations using symbols. Similarly, the events that take place around us are really just an adjustment of small events. Through adjustment, these small events become complex at one time. These complex events can be easily expressed in the form of equations using symbols. It gives an idea about the consequences of these complex events. By doing this we can become aware and control the consequences.

Humans are at the center of all events in this world. Humans control all the events of this world through action. Therefore, only the good will of humans can save this world from war, to make it a peaceful planet. The actions of individuals affect the actions of the entire world. Because, within the world there is the state, within the state there is the society, within the society there is the family and within the family there is the person. Therefore, a person's positive or negative actions can take the actions of the whole world in a positive or negative direction. So, everyone should be aware of his work.

Conflict between individuals is caused by differences of opinion between individuals. State-to-state war is caused by differences in the views of one state with another. In order to resolve these conflicts or wars, we need harmony among people and coexistence among states. To build a peaceful world, the unity of mankind is needed first. By attaining true knowledge man can realize the oneness of mankind. And because of ignorance people move away from each other. In the last chapter of this book some topics are discussed which are helpful in understanding the unity of mankind.

Atmodel is a topic that is helpful in realizing the unity of mankind. It explains the position of Paramatma and jivatma. Generancy philosophy thinks that Paramatma and jivatma co-exist in the body of every living being, not just human. Jivatma can be united with Paramatma

through nishkam karma. And through sakam karma, jivatma moves away from Paramatma. However, the oneness of the entire organism or the oneness of mankind can be understood from the fact that the soul is present in everyone's body. Just as the existence of one is accepted in the realization of the unity of different numbers (all numbers have one, such that one times seven equals seven), so the existence of the soul is accepted in the realization of the unity of the whole living being. With the help of oneness of atma, the unity of humanity can also be realized. In this topic, how jivatma merges into Paramatma is explained in a beautiful way. A highway road and some connecting roads are mentioned in oneness of atma. Here the highway road is compared to Paramatma and the connecting roads are compared to jiva and how jivatma meets Paramatma is beautifully explained with the help of a figure.

Another important thing is the theory of valuation. This issue can play a huge role in harmony among people. Here it is explained how to create a beautiful or suitable amalgamation through human valuation. Here it is described how to create a suitable amalgamation by finding out the appropriate value of an object or event. Let us explain this with the help of an example. Suppose that the Prime Minister of Bangladesh, the Prime Minister of India, the President of the United States, the President of the Russian Federation and a high-ranking official of another country have attended a conference. This may create unrest in the conference if their designations are not properly mentioned in their sitting area. This is an example of a suitable amalgamation and it maintains stability in the conference.

I think mathematics is a pure and universal language. Everything can be easily explained with the help of mathematics. If a topic is expressed with the help of mathematics, no one should disagree with it. Everyone will agree on that. Generancy philosophy believes that if tried, it is possible to express the events of the world with the help of mathematics. The events revealed in it will become comprehensible to everyone. The consequences of these events will also become clear to everyone. Then everyone will become aware of the creation of events.

Human behavior can also be expressed through mathematics. If expressed through mathematics, human behavior will overcome uncontrollability and be restrained. He will be aware of his own mistakes. Concerns about self-interest will go away. Let us take an example. Yadu and Madhu are two neighbors. Yadu went to eat at Madhu's house and enjoyed the meal very much. In return, Madhu went to eat at Yadu's house and enjoyed the meal very much. The matter can be easily explained with the help of the theory of relation of mathematics. That is to say that Yadu is related to Madhu and Madhu is related to Yadu. But many times it happened that Yadu went to eat at Madhu's house and enjoyed the meal very much. But Madhu did not go to Yadu's house to eat. This unexpected occurrence can be due to various reasons. This can happen either due to Yadu or Madhu or both. The matter can also be easily explained with the help of the theory of relation of mathematics. That is to say that Yadu is related to Madhu but Madhu is not related to Yadu. There are two mathematical equations and it is easy to find out which equation has more mathematical beauty. In this way, we can change our behavior and match our behavior with the equation that has the greatest mathematical beauty.

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## CHAPTER 1

### Introduction

#### 1.1 Nature of Philosophy

##### 1.2 Basic Features

##### 1.3 Subject Matter

### 1.1 Nature of Philosophy

#### 1.1.1 Meaning of Philosophy

Philosophy is an English word derived from two Greek words. These two Greek words are 'Philos' and 'Sophia'. The word 'philos' means 'love' and the word 'sophia' means 'knowledge'. So the etymological meaning of the word 'philosophy' is 'love for knowledge'. The word 'philosophy' also means 'affection for truth' or 'search for truth'. Philosophy searches knowledge or truth. Therefore, a person who is fond of truth or fond of knowledge can be called a philosopher.

#### 1.1.2 Significance of Darsana

What is philosophy in English, in Sanskrit it is darsana. The origin of the word 'darsana' is from the conjunction of sanskrit suffix 'ant' with the root 'drs'. The common meaning of the word 'darsana' is to see. However, in philosophy the word 'darsana' has not been accepted in the same way. Philosophy is to know a subject with experience, intelligence and intuition. Philosophy is to see things as a whole, not partially. Philosophy is an attempt to unravel the nature of categories (padarthas).

#### 1.1.3 Meaning of Indian Philosophy

The Indian philosophy refers to the thoughts of all the thinkers of India. In this sense, well-thought-out opinions about the universe and life of Indian thinkers Hindus, non-Hindus, theists, atheists, Vedic, non-Vedic are considered as Indian philosophy. Indian philosophers' views are liberal and extensive. Even if there is enough difference between different sects of the Indian philosophy, every philosophical community would give importance to the opinions of other philosophical communities. Before establishing one's own doctrine, he used to discuss the whole doctrine completely and later establish his own doctrine. The discussion and explanation of the opponent's doctrine is called purvapaksa or prejudice. Then, by refuting the doctrine of the preceding, he established his own doctrine with the help of arguments. That is why it is called uttarapaksa or decision. Endurance of others opinions is a significant feature of Indian philosophers. This feature has enriched every philosophical community of India. Indian philosophy discusses not only theoretical aspects but also practical aspects. Indian philosophers believe that there is an intimate relationship between philosophy and life. Controlling everyday life philosophy can help in proper living conditions.

#### 1.1.4 Different Systems of Indian Philosophy

Indian philosophical schools are divided into two parts namely: astika or orthodox and nastika or heterodox. According to belief or unbelief in the Vedas, the six schools that is, Nyaya, Vaisesika, Samkhya, Yoga, Mimamsa and Vedanta are called as astika or orthodox philosophy



or Vedic philosophy and Charvaka, Jaina and Bauddha, these three schools are called as nastika or heterodox philosophy or non-Vedic philosophy. All the schools of Indian philosophy have discussed the Vedas. The philosophical discussions of the schools that support the Vedas are called orthodox philosophy. And those schools of Indian philosophy that are opposed to the Vedas are called heterodox philosophy. In the case of any form of orthodox or heterodox philosophy, it has not been possible to reach a conclusion without discussing the Vedas.

### **1.1.5 Development of Indian Philosophy**

After reviewing the history of western philosophy, the main philosophical doctrines there appeared one after another. A doctrine after a few days of influence, a new doctrine has emerged and the impact of old doctrine has been decreased. But India's various philosophical schools did not even appearing at the same time they have long maintained their influence as well. This is possible because the Indian philosophy is life oriented.

Although it is not possible to accurately calculate the origin time of Indian philosophy, there is no doubt that Indian philosophy arises in relation to the Vedas. Only the Vedas are the oldest books of Indian philosophy and literature. Philosophers were unable to make any unanimous decision on the Veda's composition-time. However, the Indians believe that the Vedas are eternal and apauruseya (impersonal, authorless). How old is the Vedas the matter I want to mention on the basis of 'Veda-Vedanta Uttara Khanda' by Dr. Mahanambhrata Brahmachariji. There is a mention of Sarasvati river in a mantra of the Rigveda. Maharashtrian Pandit Ketkar has come through research that the Sarasvati river has disappeared in the desert in 7,500 BC. Balgangadhar Tilak collected evidence of Brahmanas books and in his famous book 'The Orion', there is a reference to roughly 4000 to 2500 BC many sources of the Rigveda have been revealed. Professor Jacobi of Germany, in a separate study, mentions that it is the period of time of the Samhitas and the Brahmanas is 4500 BC.

## **1.2 Basic Features**

### **1.2.1 Orthodox Philosophy**

Generancy philosophy is also an astika or orthodox philosophy. However, astika or orthodox usually mean those who believe in God, and nastika or heterodox are those who do not believe in God. But in Indian philosophy, the words astika and nastika are used in a special sense. In this case, astika or orthodox are said to be those who accept the authenticity of the Vedas and consider the decision of the Vedas to be infallible. It does not matter whether they believe in God or not. Generancy philosophy acknowledges the authenticity of the Vedas and accepts the decisions of the Vedas as infallible. On the other hand, nastika or heterodox are those who do not accept the authenticity of the Vedas and do not consider the decisions of the Vedas infallible. The heterodox schools have developed a distinct philosophical doctrine without relying on the Vedas.

### **1.2.2 Based on Independent Grounds**

Orthodox philosophy can be further divided into two parts, namely, based on Vedic texts and based on independent grounds. Mimamsa and Vedanta are based on Vedic texts. These two philosophical schools have been formed on the basis of the Vedas. They have no statement of their own except for a detailed explanation of the philosophical theories of the Vedas and

proof of their validity. On the other hand, Nyaya, Vaisesika, Samkhya and Yoga are based on independent grounds. These four philosophical schools, while acknowledging the authenticity of the Vedas, did not confine their discussion to the Vedic discourse. Their purpose is not to explain the decision of the Vedas, but to try to prove that the decision obtained with the help of independent reasoning is consistent with the decision of the Vedas. Generancy philosophy is based on independent grounds. Attempts have been made to show that the decision of the Vedas is similar to the decision obtained by following a completely independent method. This philosophy, following its own arguments, has accepted the Vedas as authentic and infallible.

### **1.2.3 Universal Philosophy**

Generancy philosophy is a universal philosophy. In this case, universal means that all people belong. So universal philosophy means the philosophy of all people. This philosophy has tried to speak for all irrespective of race, religion, caste. This philosophy has been formulated keeping in mind the people of all the countries of the East and the West. Mathematics is a language like any other language in the world. This language is universal. Therefore, this philosophy has tried to express all things through mathematics by thinking of people of all languages. This is why this philosophy is called universal.

### **1.2.4 Philosophy of Life and the Universe**

This philosophy discusses the universe and life. This philosophy thinks that there is a deep connection between philosophy and life. This universe and life is mysterious. People want to know what is this life, what is the meaning and purpose of this life. People want to know what the universe is, who created this universe. He or she does not stop until all these problems are solved. He or she constantly tries to solve all these questions. Since prehistoric times, people have always tried to live well. In order for man or woman to be good, he or she needs to have a proper knowledge of the universe and life. He or she always has to adapt to nature. In order to adapt to nature, it is very necessary to understand the nature of life. The nature and purpose of life are discussed in this philosophy. This philosophy discusses the real purpose of life. The question of real life finds a place in this philosophy. The universe is made up of planets, satellites, our solar system, and countless stars. The countless stars in the night sky are part of this universe. There is no end to people's interest in this universe. People want to know how this universe was created, who created it. This has been extensively discussed in this philosophy. This philosophy has tried hard enough to unravel the mystery of the creation of the universe.

### **1.2.5 Philosophy of Intuition and Reasoning**

Generancy Philosophy is based on reasoning. Although this philosophy is loyal to the Vedas, it has accepted the words of the Vedas through independent reasoning. This philosophy did not indiscriminately propagate the sayings of the Vedas. This philosophy has adopted four sources of knowledge as a way to gain knowledge. These four sources of knowledge are perception (pratyaksa), inference (anumana), comparison (upamana) and testimony (sabda). This philosophy did not make any decision based on blind faith. Intuition, on the other hand, have played an important role in this philosophy.

### **1.2.6 Philosophy of Spiritual Perspective**

This philosophy originated from a kind of spiritual dissatisfaction. The various sufferings of the people are one of the reasons for formulating this philosophy. So, this philosophy has tried for the liberation of the soul. Instead of limiting the practice of philosophy to the pursuit of knowledge alone, it has tried to find out how the soul can be liberated. This philosophy has taken the help of spirituality for the liberation of the soul. This philosophy assumes that the soul is distinct from body, mind, and senses. The soul is eternal, pure and free. Due to ignorance, the soul is bonded in the body and suffers various sufferings of the world. This philosophy thinks that the mundane life of man is not for the purpose of fulfilling the lust, it is for the pursuit of spiritual excellence.

### **1.2.7 Beginning with Sorrow but not Ending**

Although this philosophy started from sadness, in the end this philosophy is not pessimistic. Now the question is, what do we mean by pessimism? Pessimism refers to the doctrine that according to the doctrine there is sorrow and despair everywhere in life and the world, there is no place for joy and hope in life and the world. There is misery everywhere, in the beginning, in the middle and in the end of true pessimism. It is true that this philosophy says about sorrow, but it does not say that there is no way out of sorrow. Just as there is discussion of sorrow in this philosophy, there is also a way to get rid of sorrow in this philosophy. In this philosophy there is a discussion on how to get unlimited joy and happiness by being free from sorrow. Looking at real life, this philosophy could not deny the existence of sorrow. So say this philosophy did not even acknowledge sorrow as the ultimate consequence of life.

### **1.2.8 Philosophy of Practical Necessity**

This philosophy has appeared in the pursuit of necessity, to alleviate all the sorrows of the miserable world. The purpose of this philosophy is to live a noble and better life with the help of foresight and insight. One of the goals of this philosophy is how to control and manage life to gain the absolute meaning. It is not just the purpose of this philosophy to discuss the theory, but to lead life is one of the purposes of this philosophy. This philosophy is always trying to reveal the nature and theory of life.

### **1.2.9 Philosophy of Synthetic Outlook**

One of the features of this philosophy is the synthetic outlook. This philosophy discusses various philosophical issues in the context of all branches of philosophy without discussing them separately. Since the problems of epistemology, metaphysics, logic, ethics, etc., are related to each other, this philosophy discusses any philosophical issues in the light of epistemology, metaphysics, logic, ethics, etc. Generancy philosophy has judged all philosophical problems in the context of all aspects of philosophy. Therefore, this philosophy is the philosophy of life. Truth can be directly realized in this philosophy.

### **1.2.10 Believes in an Eternal Moral Order**

This philosophy believes in the existence of an eternal moral order throughout all time. The sages of the Rig Veda call this eternal moral order 'rta'. Rta is the principle of natural law that controls and coordinates the activities of the universe and everything inside it. This order is

both mundane and moral. This is the basis of karmavada. This philosophy thinks that life and the universe are subject to this eternal moral order.

### **1.2.11 Liberal and Comprehensive Philosophy**

Generancy philosophy is extremely liberal and comprehensive. This philosophy has tried to know and understand the doctrines of the philosophers from all schools of India and then decided. Even knowing and understanding western philosophy well, has made the decision. Dissent has also been widely discussed and later decided upon. The attitude of respect and tolerance towards dissent can be seen in the discussion of this philosophy.

### **1.2.12 Optimistic Philosophy**

Although pessimistic in the beginning, generancy philosophy is ultimately an optimistic philosophy. This philosophy thinks that ignorance is the cause of all suffering. As a result of ignorance, human beings are bound and when this ignorance is removed and proper knowledge is gained, man attains salvation. Salvation is the state of bliss and in this state the extreme cessation of sorrow takes place. Eternal peace comes down in life if one can realize the absolute truth through meditation.

### **1.2.13 Coordination on Theory and Application**

Generancy philosophy has imposed equivalence on theory and application. This philosophy has placed considerable emphasis on theory and its application. This philosophy did not stop at the theoretical discussion of any philosophical issues. It also discussed its application equally. This philosophy thinks that knowing the truth not only ends everything, it is also necessary to realize it. Therefore, this philosophy can be called both theoretical and practical.

### **1.2.14 The World as the Moral Stage**

This philosophy envisioned the vast world as a moral arena and the various creatures as actors and actresses. Just as actors and actresses participate in acting according to their merits, so do living beings perform their duties according to their merits in this world. Just as actors and actresses share praise and condemnation as a result of their performance, so do living beings share happiness and sorrow as a result of their actions. Living beings are born in a proper environment by possessing the body according to the results of karma of previous births and performing their duties in the world. This philosophy thinks that if a living being does good deeds in this life, it will rise in the next life and if it does bad deeds, it will decline in the next life.

### **1.2.15 Ignorance is the Cause of Bondage**

According to Generancy philosophy, ignorance is the cause of all bondage and sufferings of living beings. This ignorance is the cause of all suffering and the right knowledge about the nature of the soul is the only way to get rid of this bondage and suffering forever. Bondage usually refers to the rebirth and death of the organism and the consequent suffering. Salvation usually means freedom from the cycle of birth and death or cessation of suffering. Creatures can be liberated in this life by their own efforts.

### **1.2.16 Emphasis on Meditation and Moral Purity**

This philosophy emphasizes meditation and moral purity in order to gain right knowledge. Realization of truth is not possible without meditation. The misconceptions of many days are firmly rooted in the mind. In order to eliminate this misconception or ignorance, it is necessary to meditate on the truth. On the other hand, for meditation, one needs moral purity or self-control. Through self-control, the human biological instinct is subjected to intelligence. If the mind is scattered, always rushing towards the objects, then it is not possible to contain the truth with that scattered mind. Therefore, first of all, self-control is required. The mind cannot be focused on the truth unless the attachment of the mind to the sensory matter is removed. As a result, gaining true knowledge becomes impossible.

### **1.2.17 Everyone's philosophy**

Generancy philosophy has been formulated keeping in mind the needs of everyone. Like other systems of Indian philosophy this philosophy is also integrated with human life. This philosophy emerged out of necessity and was created to alleviate all the sorrows of the miserable world. One of the objectives of this philosophy is to lead a better and noble life with the help of foresight and insight. The main aim and objective of this philosophy is to determine how life can be conducted to attain the ultimate goal. Man's worldly life is not for the pursuit of pleasure, it is for the attainment of spiritual excellence. This philosophy believes in the liberation of the soul. So, everyone can follow this philosophy.

### **1.2.18 Mathematical philosophy**

Generancy philosophy can also be called Mathematical philosophy. Because this philosophy is discussed in the language of mathematics and logic. Attempts have been made to express the conclusions of this philosophy as much as possible with the help of mathematical formulas. The Generancy statue of this philosophy is actually based on a mathematical model. The name of this mathematical model is Generancy model. Every word in the Generancy model is expressed with the help of symbols. This philosophy thinks that mathematics is a language. Each branch of this philosophy is rich in applications of mathematics and logic. The main theory of this philosophy seems to be a pure mathematical discussion.

### **1.3 Subject Matter**

We know that the subject matter of philosophy is very broad. The content of philosophy is endless. There is no aspect of the universe that is not covered by philosophy. In a word, the whole universe is the subject of philosophy. The subject matter of philosophy is the discussion of the fundamental questions that arise in people's minds about the universe, life, and God. It is not possible to determine the scope of philosophy by prescribing a specific list.

However, all the issues that Generancy philosophy discusses are the subject matter of this philosophy. This philosophy treats all the objects of the universe as padartha or category. This philosophy considers padartha to be of four types, namely, (1) dravya, (2) guna, (3) karma and (4) samanwaya. The four branches consisting of these four padarthas are the subject matter of this philosophy. Apart from this, this philosophy discusses main theory at the first and humanity at the end. In addition to this, this philosophy deals with these four disciplines, preceded by main theory and later humanity. Therefore, the main topics of this philosophy are six. These are main theory, dravyanomics, gunomatics, karmodynamics, samanwayatics and

humanity. However, for the convenience of the reader, an introduction has been added as first chapter in this book.

### **1.3.1 Main Theory**

Main theory is the vital force of Generancy philosophy. Main theory is a combination of five theories (panchatattva). These five theories are Purusa, prakrti, jagat, jnana and karma. Each theory has a different form (akara) and different component (upakarana). Main theory consists of these forms and components. Main theory is discussed in three stages. These three stages are (1) main theory combinations, (2) main theory applications and (3) main theory foundations. The combination of panchatattva and its forms and components is shown in the main theory combinations. The application of panchatattva is shown in the main theory applications. In the main theory foundations, various shapes and structures of the generancy model are shown.

### **1.3.2 Dravyanomics**

The word dravyanomics is derived from the Sanskrit word 'dravya'. We know that padartha or category is of four types, namely, dravya, guna, karma and samanwaya. The branch of Generancy philosophy that deals with dravya is called dravyanomics. Main theory is divided into five parts. These five parts are collectively called panchatattva. The panchatattvas are Purusa, prakrti, jagat, jnana and karma. The discussion of the first three of panchatattva is dravyanomics. In fact, Purusa, prakrti and jagat are all dravya. With the first three theories, three branches are formed again. These three branches are purustattva, prakritology and jagatonomy. The word purustattva is derived from the Sanskrit word 'Purusa'. Purustattva deals with Purusa, Brahman, Isvara etc. The word prakritology is derived from the Sanskrit word 'prakrti'. Jada and jiva are discussed in prakritology. The word jagatonomy is derived from the Sanskrit word 'jagat'. Jagatonomy deals with prithvi, antariksa, swarga etc. Thus, dravyanomics is divided into three sub-disciplines: purustattva, prakritology and jagatonomy.

### **1.3.3 Gunometrics**

The word gunometrics is derived from the Sanskrit word 'guna'. The second division of padartha or category is guna or quality. The branch of Generancy philosophy that deals with quality is called gunometrics. The fourth theory of panchatattva is knowledge or jnana. Knowledge is a kind of quality. The branch of Generancy philosophy that deals with knowledge is called jnanastatics. Knowledge has four forms. These four forms are category, assertion, dimension and quantity. These four forms are discussed in detail in jnanastatics. Jnanastatics is again a sub-discipline of gunometrics.

### **1.3.4 Karmodynamics**

The word karmodynamics is derived from the Sanskrit word 'karma'. The third division of category is karma or action. The branch of Generancy philosophy that deals with karma is called karmodynamics. The fifth theory of panchatattva is karma. Karma or action has five forms. These five forms are person, family, society, state and world. These five forms are discussed in karmodynamics. Again, with these five forms, five sub-disciplines of karmodynamics are formed. The sub-discipline that deals with person is called personomics. The sub-discipline that deals with family is called familiomics. The sub-discipline that deals with society is called

socionomics. The sub-discipline that deals with states is called statonomics. The sub-discipline that deals with world is called worldiomics.

### **1.3.5 Samanwayatics**

Samanwaya means adjustment. Samanwaya may consist of two or more categories. For example, adjustment of substance with substance, adjustment of quality with substance, adjustment of action with substance, adjustment of quality with quality, adjustment of action with quality, adjustment of action with action, etc. Adjustment is of three types, namely: cause, relation and rule. The branch of Generancy philosophy which deals with these issues is called samanwayatics.

### **1.3.6 Humanity**

Explaining living beings on the basis of substance, quality, action and adjustment is the function of humanity. Humanity discusses the body of an organism and its qualities, and how actions change with changes in body and quality. The function of humanity is to discuss the value of living beings, the actions of living beings and the oneness of humanity.

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## CHAPTER 2

### Main Theory

#### 2.1 Main Theory Combinations

#### 2.2 Main Theory Applications

#### 2.3 Main Theory Foundations

### 2.1 Main Theory Combinations

Generancy philosophy discusses this universe with the help of panchatattva. Panchatattva is Purusa, prakrti, jagat, jnana and karma. Pancha means five and tattva means theory. Each theory again has akara (form) and upakarana (component). Main theory discusses these issues. Main theory is discussed in three stages. These three stages are (1) main theory combinations, (2) main theory applications and (3) main theory foundations. Now let us discuss the first i.e. main theory combinations. The main theory combinations are divided into five steps. These five steps are (1) number combination, (2) solid combination, (3) alphabetic combination, (4) word combination and (5) order combination.

#### 2.1.1 Number Combination

##### 2.1.1.1 First Dimensional Number Combination

Writing the components of a triangulum having degree 1 and width 5, we get the first dimensional number combination as

1  
1  
1  
1  
1

Fig. 2.1

##### 2.1.1.2 Second Dimensional Number Combination

Writing the components of a triangulum having degree 2 and width 5, we get the second dimensional number combination as

1  
1 2  
1 2 3  
1 2 3 4  
1 2 3 4 5

Fig.2.2



Arranging the components of figure 2.2 from up to down we get

1

1

2

1

2

3

1

2

3

4

1

2

3

4

5

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Fig.2.3

### 2.1.1.3 Third Dimensional Number Combination

Writing the components of a triangulum having degree 3 and width 5, we get the third dimensional number combination as

1  
1  
1 2  
1  
1 2  
1 2 3  
1  
1 2  
1 2 3  
1 2 3 4  
1  
1 2  
1 2 3  
1 2 3 4  
1 2 3 4 5

Fig. 2.4

### 2.1.1.4 Three Dimensional Number Combination

Combining the components of figures 2.1, 2.3 and 2.4 we get a model. This model is the three dimensional number combination.

1 1 1  
1 1 1  
2 1 2  
1 1 1  
2 1 2  
3 1 2 3  
1 1 1  
2 1 2  
3 1 2 3  
4 1 2 3 4  
1 1 1  
2 1 2  
3 1 2 3  
4 1 2 3 4  
5 1 2 3 4 5

Fig. 2.5

Rearrange the model of figure 2.5 as below:

1  
1  
1  
1  
1  
1  
1  
2  
1 2  
1  
1  
1  
2  
1 2  
3  
1 2 3  
1  
1  
1  
2  
1 2  
3  
1 2 3  
4  
1 2 3 4  
1  
1  
1  
2  
1 2  
3  
1 2 3  
4  
1 2 3 4  
5  
1 2 3 4 5

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Fig. 2.6

## 2.1.2 Solid Combination

### 2.1.2.1 First Dimensional Solid Combination

Arrange the figure 2.1 with cubes and get



Fig. 2.7

### 2.1.2.2 Second Dimensional Solid Combination

Arrange the figure 2.2 with cubes and get

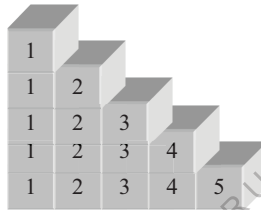


Fig. 2.8

Arrange the figure 2.3 with cubes and get



Fig. 2.9

### 2.1.2.3 Third Dimensional Solid Combination

Arrange the figure 2.4 with cubes and get

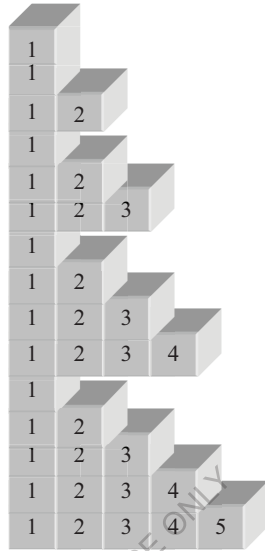


Fig. 2.10

### 2.1.2.4 Three Dimensional Solid Combination

Arrange the figure 2.5 with cubes and get

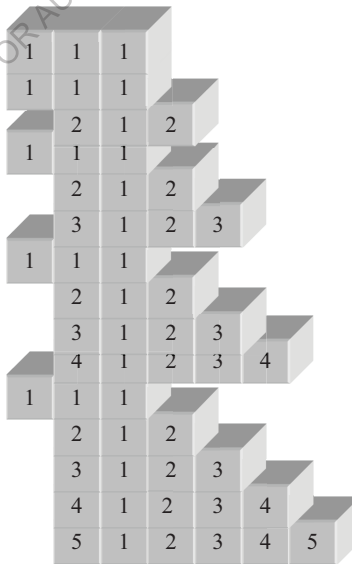


Fig. 2.11

Arrange the figure 2.6 with cubes and get

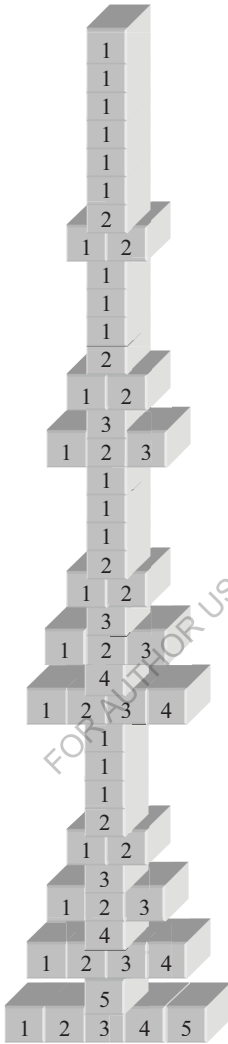


Fig. 2.12

The model of figure 2.12 may be arranged as another way.

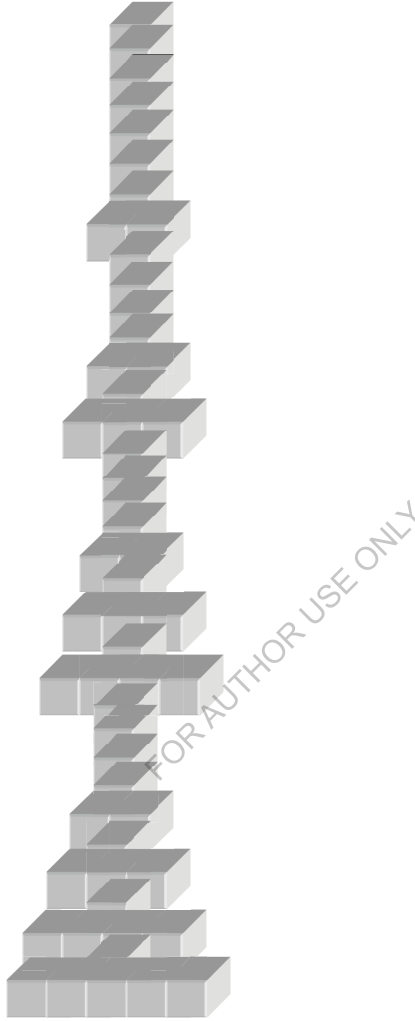


Fig. 2.13

### 2.1.3 Alphabetic Combination

#### 2.1.3.1 Sanskrit Alphabetic Introduction

The Sanskrit alphabet (Devanagari) is of two types, viz., vowels and consonants. The vowels are mainly fourteen. These are अ, आ, इ, ई, ऊ, औ, ए, ऐ, ओ, औ, ए, ऐ, ओ, औ. These letters again divided into three as short (hrasvah) vowels, long (dirghah) vowels and prolated (plutah) vowels. The short vowels are five. These are अ, इ, ए, ओ, ए. The long vowels are nine.



These are आ, ई, ऊ, ऋ, ॠ, ए, ऐ, ओ, औ. The prolated vowels are eight. These are आ°, ई°, ऊ°, ऋ°, ॠ°, ए°, ऐ°, ओ°, औ°. The total number of vowels is 22. The use of long vowel ॠ is not much at present. We will use 20 letters, excluding ॠ and ॡ in the alphabetic combination.

The consonants are thirty-five. These are क, ख, ग, घ, ङ, च, छ, ज, ब, ञ, ट, ठ, ड, ढ, ण, त, थ, द, ध, न, प, फ, व, भ, म, य, र, ल, श, ष, स, ह, ँ, ॠ. From क to म, these 25 letters are the bilabial consonants (sparsa varna). The letters are bilabial consonants as they are touched in five places of the mouth, namely, throat (kanthah), palate (taluh), alveolar ridge (murdhan), teeth (dantah) and lips (osthah). Again there are five generic sounds from the place of pronunciation, namely,

क- genus (varga) — क, ख, ग, घ, ङ

च- genus (varga) — च, छ, ज, ब, ञ

ट- genus (varga) — ट, ठ, ड, ढ, ण

त- genus (varga) — त, थ, द, ध, न

प- genus (varga) — प, फ, व, भ, म

On the other hand, य, र, ल, श- these four are called antastha (approximant) letters. श, ष, स, ह - these four are called usman (fricative) letters. ँ and ॠ- these two are called ayogavahah (dependent) varna. Thus the total number of consonants is 25 + 4 + 4 + 2 = 35. Now let us divide the letters according to the place of pronunciation.

(1) Guttural (kanthyah)--- अ, आ, क, ख, ग, घ, ङ, ह.

(2) Palatal (talavyah)--- ई, ई, च, छ, ज, ब, ञ, य, श.

(3) Retroflex (murdhanyah)--- ऋ, ॠ, ट, ठ, ड, ढ, ण, र, ष.

(4) Dental (dantyah)--- ॡ, ॢ, त, थ, द, ध, न, ल, स.

(5) Labial (osthyah)--- उ, ऊ, प, फ, व, भ, म.

(6) Palatoguttural (kanthatalavyah)--- ए, ऐ.

(7) Labioguttural (kanthosthyah)--- ओ, औ.

(8) Dentolabial antastha- व- diacritic.

(9) Velar nasal--- ँ.

(10) Nasals (anunasikah)--- ङ, ञ, ण, न, म.

(11) Asrayasthana bhagi (support vowel)--- ॠ.

ङ, ञ, ण, न, म these letters are also pronounced in the nose like tongue, palate etc. so their other name is nasals. Consonants have other types of differences, namely, the first and second letters of the genus (varga) and श, ष, स they are aghosa varna (Voiceless letters). Again, the third, fourth and fifth letters of the genus and य, र, ल, श are ghosa varna (Voiced letters). On the other hand, the first, third and fifth letters of the genus and य, र, ल, श are alpaprana (unaspirated) letters. The second and fourth letters of the genus and श, ष, स, ह are the mahaprana (aspirated) letters.

The letters of Sanskrit language are about ten thousand years old. For just a century, linguists have been studying the pronunciation of the alphabet. But it is surprising to think how the ancient Vedic sages knew the place of pronunciation of letters and arranged the letters accordingly. To write this paragraph 'Sanskrit Alphabetic Introduction', I have taken the help

of Dr. Mahanabrata Brahmachari's Veda-Vedanta: Uttar-Khanda: Veda-Bichintan (Bengali). I have used 20 vowels and 35 consonants in the Alphabetic Combination, a total of 55 letters.

### 2.1.3.2 First Dimensional Alphabetic Combination

Arrange the figure 2.7 with letters and get

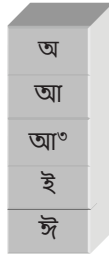


Fig. 2.14

### 2.1.3.3 Second Dimensional Alphabetic Combination

Arrange the figure 2.8 with letters and get

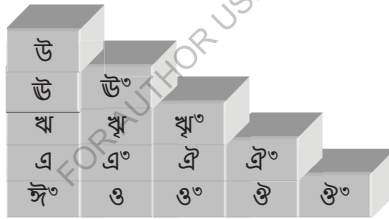


Fig. 2.15

Arrange the figure 2.9 with letters and get

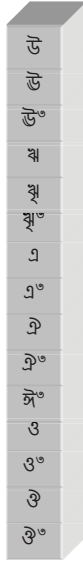


Fig. 2.16

**2.1.3.4 Third Dimensional Alphabetic Combination**

Arrange the figure 2.10 with letters and get

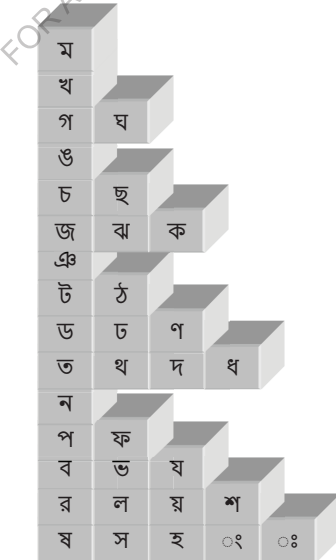


Fig. 2.17

### 2.1.3.5 Three Dimensional Alphabetic Combination

Arrange the figure 2.11 with letters and get

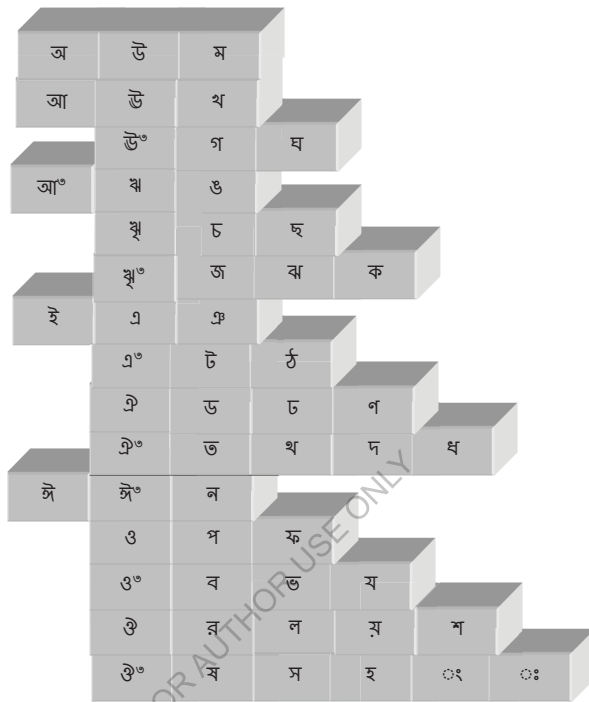


Fig. 2.18

Arrange the figure 2.12 with letters and get



Fig. 2.19

## 2.1.4 Word Combination

### 2.1.4.1 Necessary Word Introduction

In this world we have to gain knowledge of many things. There is a lot to know, to learn. As the object of knowledge grows in the world, so does the scope of knowledge. The world is always changing. People's thoughts and ideas are changing over time. In order to survive in this world, we have to keep pace with the changing world situation. Words are one of the ways to gain knowledge. One can embody a particular object or knowledge by a single word. In the present paragraph we have selected 55 essential words which can be used in alphabetic combination instead of letters. The words are as follows:

Purusa, Brahman, Isvara, prakrti, jada, jiva, paramanu, deha, prana, jagat, prithvi, antariksa, svarga, ksiti, jala, agni, vayu, akasa, atma, jnana, category, assertion, dimension, quantity, name, positivity, negativity, north, east, up, force, mass, space, time, karma, person, family, society, state, world, purusartha, reproduction, marriage, education, culture, cooperation, population, territory, power, sovereignty, life, environment, authority, development and peace.

### 2.1.4.2 First Dimensional Word Combination

Replacing letters with words in figure 2.14 we get



Fig. 2.20

### 2.1.4.3 Second Dimensional Word Combination

Replacing letters with words in figure 2.15 we get

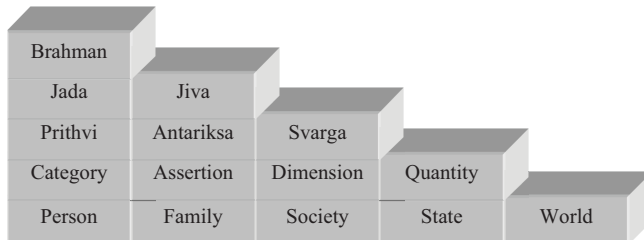


Fig. 2.21

Replacing letters with words in figure 2.16 we get



Fig. 2.22

### 2.1.4.4 Third Dimensional Word Combination

Replacing letters with words in figure 2.17 we get

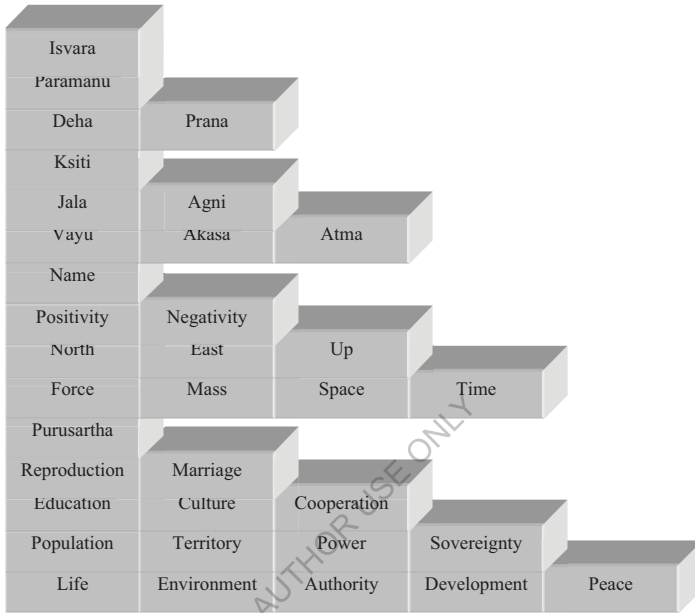


Fig. 2.23



### 2.1.4.5 Three Dimensional Word Combination

Replacing letters with words in model of figure 2.18 we get

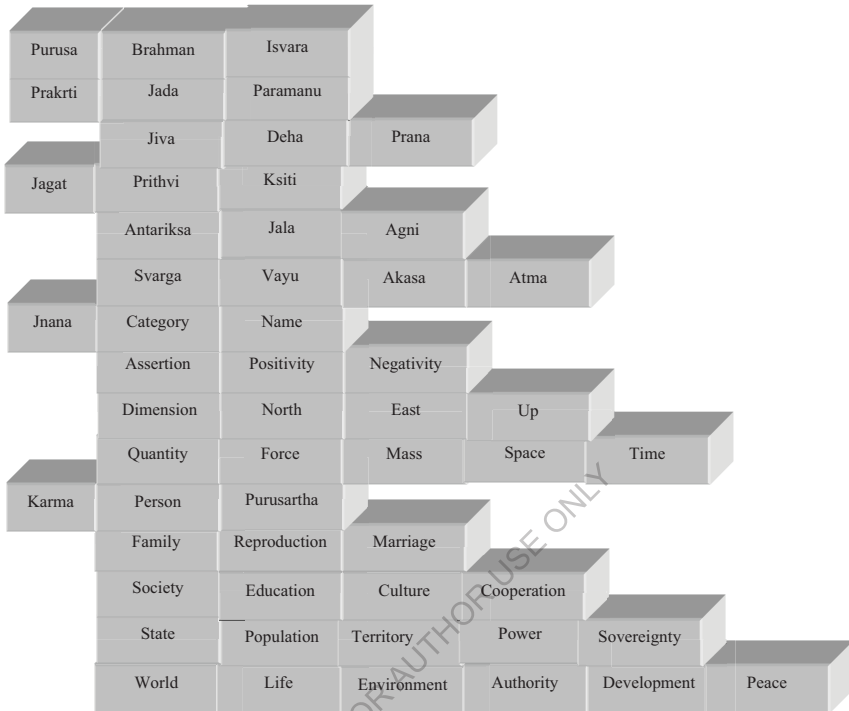


Fig. 2.24

Replacing letters with words in model of figure 2.19 we get

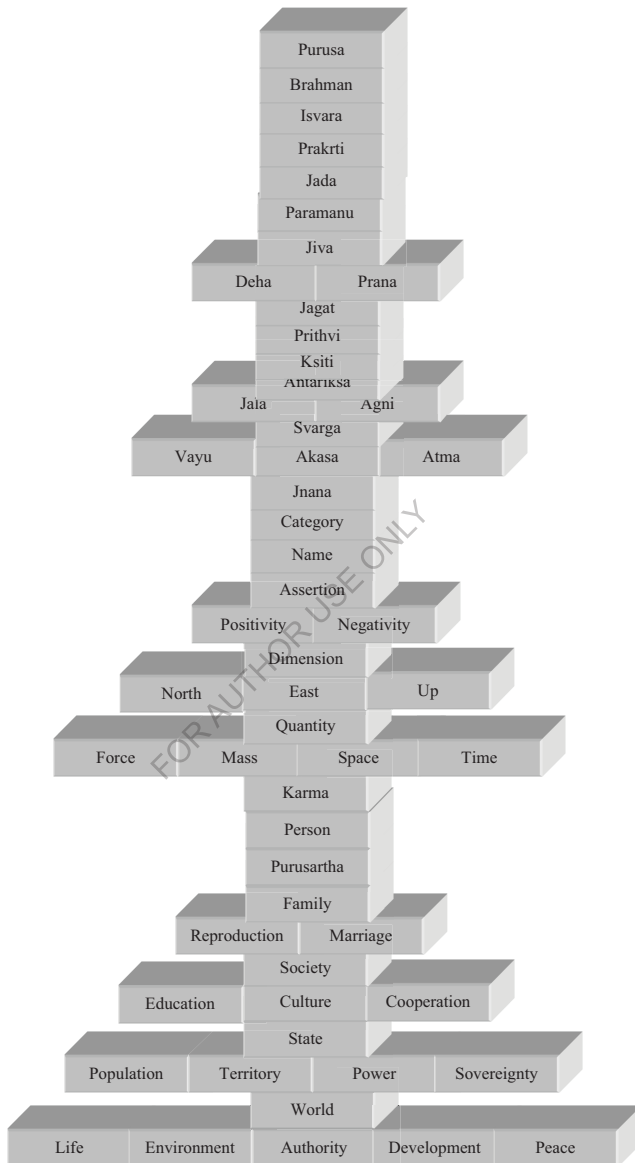


Fig. 2.25

**Table connecting words to letters.**

The corresponding words of each letter are given in the table below.

Letters	Words	Letters	Words	Letters	Words
অ	Purusa	ক	Atma	প	Reproduction
আ	Prakrti	খ	Paramanu	ফ	Marriage
আ°	Jagat	গ	Deha	ব	Education
ই	Jnana	ঘ	Prana	ভ	Culture
ঈ	Karma	ঙ	Ksiti	ম	Isvara
ঈ°	Person	চ	Jala	য	Cooperation
উ	Brahman	ছ	Agni	র	Population
ঊ	Jada	জ	Vayu	ল	Territory
ঊ°	Jiva	ঝ	Akasa	য়	Power
ঋ	Prithvi	ঞ	Name	শ	Sovereignty
ঋ°	Antariksa	ট	Positivity	ষ	Life
ঌ°	Svarga	ঠ	Negativity	স	Environment
এ	Category	ড	North	হ	Authority
এ°	Assertion	ঢ	East	ং	Development
ঐ	Dimension	ণ	Up	ঃ	Peace
ঐ°	Quantity	ত	Force		
ও	Family	থ	Mass		
ও°	Society	দ	Space		
ঔ	State	ধ	Time		
ঔ°	World	ন	Purusartha		

Tab. 2.1

## 2.1.5 Order Combination

### 2.1.5.1 First Dimensional Order Combination

Replacing numbers with letters, words and applying orders in figure 2.1 we get two figures as

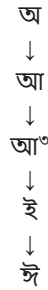


Fig. 2.26

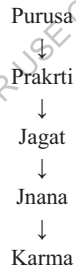


Fig. 2.27

### 2.1.5.2 Second Dimensional Order Combination

Replacing numbers with letters, words and applying orders in figure 2.2 we get two figures as

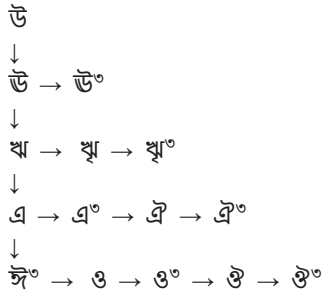


Fig. 2.28

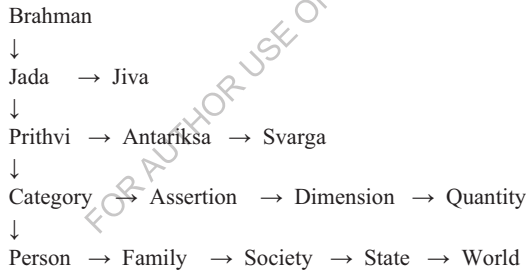


Fig. 2.29



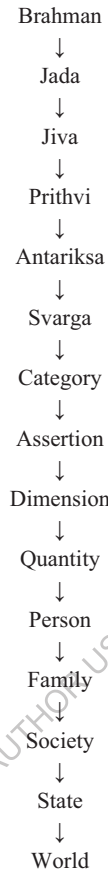


Fig. 2.31

### 2.1.5.3 Third Dimensional Order Combination

Replacing numbers with letters, words and applying orders in figure 2.4 we get two figures as

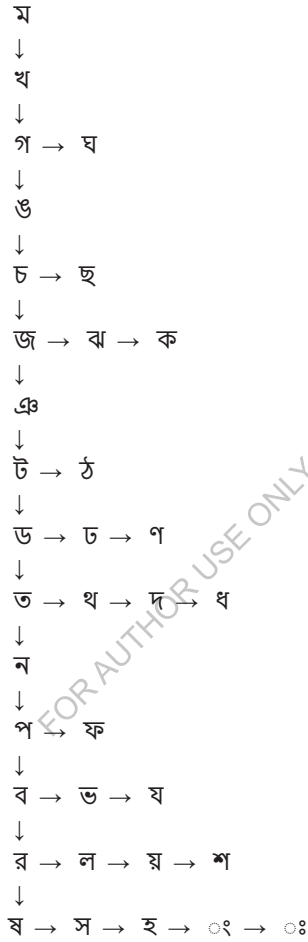


Fig. 2.32



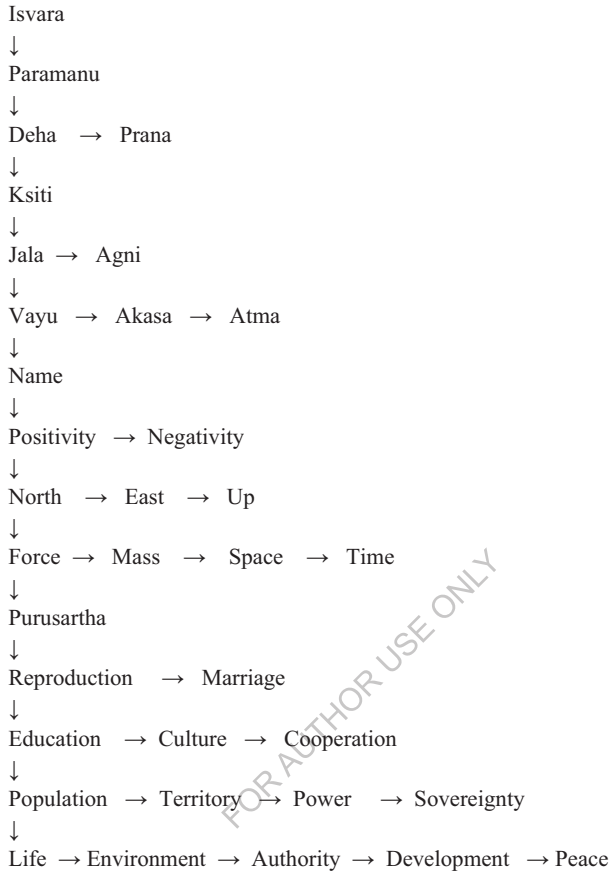


Fig. 2.33

### 2.1.5.4 Three Dimensional Order Combination

Replacing numbers with letters, words and applying orders in the model of figure 2.5 we get two figures as

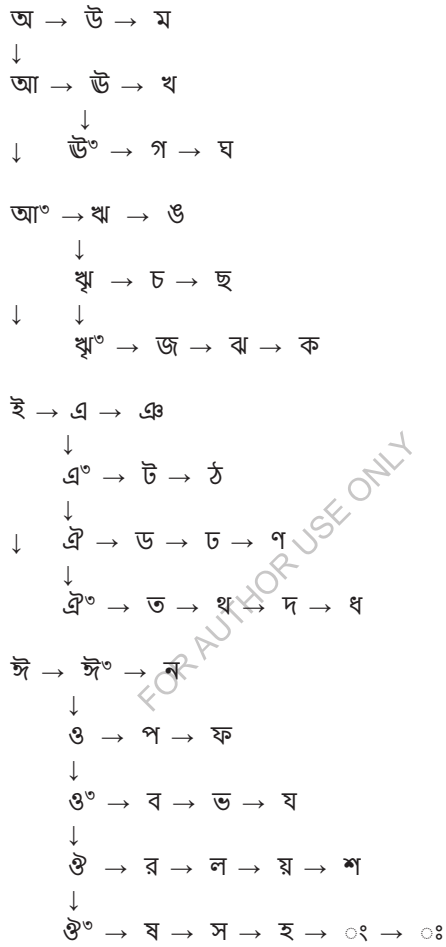


Fig. 2.34

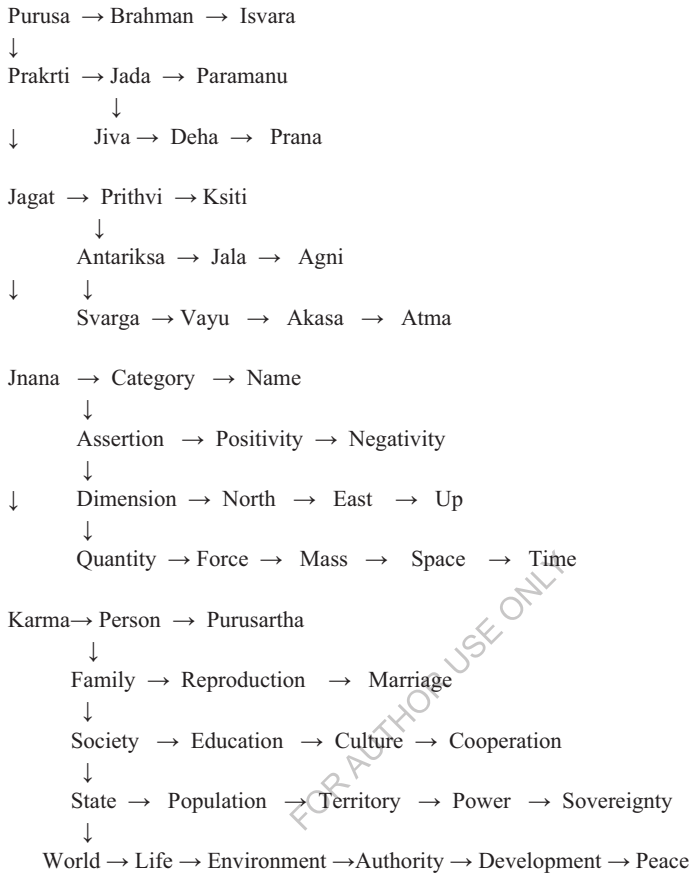


Fig. 2.35

Replacing numbers with letters, words and applying orders in the model of figure 2.6 we get two figures as

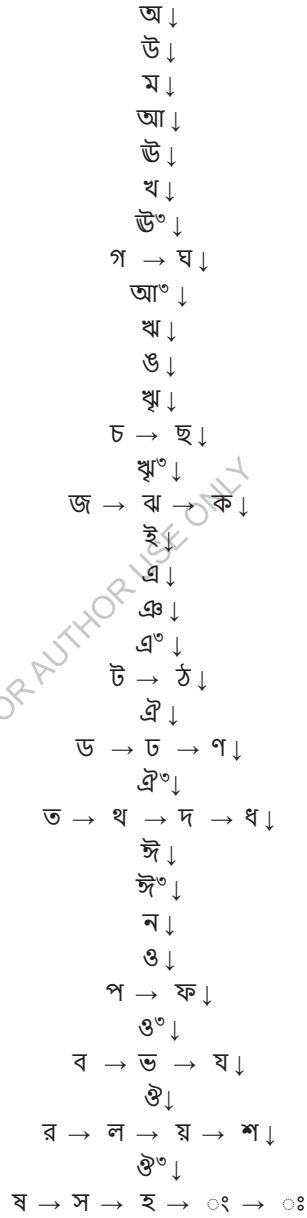


Fig. 2.36

Purusa ↓  
 Brahman ↓  
 Isvara ↓  
 Prakrti ↓  
 Jada ↓  
 Paramanu ↓  
 Jiva ↓  
 Deha → Prana ↓  
 Jagat ↓  
 Prithvi ↓  
 Ksiti ↓  
 Antariksa ↓  
 Jala → Agni ↓  
 Svarga ↓  
 Vayu → Akasa → Atma ↓  
 Jnana ↓  
 Category ↓  
 Name ↓  
 Assertion ↓  
 Positivity → Negativity ↓  
 Dimension ↓  
 North → East → Up ↓  
 Quantity ↓  
 Force → Mass → Space → Time ↓  
 Karma ↓  
 Person ↓  
 Purusartha ↓  
 Family ↓  
 Reproduction → Marriage ↓  
 Society ↓  
 Education → Culture → Cooperation ↓  
 State ↓  
 Population → Territory → Power → Sovereignty ↓  
 World ↓  
 Life → Environment → Authority → Development → Peace

Fig. 2.37

## 2.1.6 Necessary Order Combination

### 2.1.6.1 Necessary Order Introduction

We draw a three dimensional figure marking with cause as  $\Downarrow$ , relation as  $\Downarrow$  and rule as  $\Rightarrow$ .

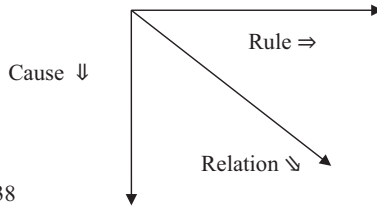


Fig. 2.38

Making the Generancy model it is considered letter as bricks, cause as rod, relation as sand and rule as cement. The Generancy model is made by letter, cause, relation and rule. It is considered the Generancy statue when aum  $\text{ॐ}$  is on top of the Generancy model.

### 2.1.6.2 Precise First or One Dimensional Order Combination

Combining the figures 2.26 and 2.27 and applying cause mark  $\Downarrow$  we get,

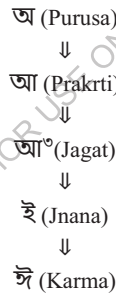
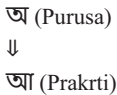


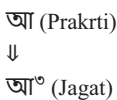
Fig. 2.39

Divide the figure 2.39 according to panchatattva and get four decisions.

**Decision 2.6.2.1** Purusa is the cause, prakrti is the effect.



**Decision 2.6.2.2** Prakrti is the cause, jagat is the effect i.e., Purusa and prakrti are the cause, jagat is the effect.



**Decision 2.6.2.3** Jagat is the cause, jnana is the effect i.e., Purusa, prakrti and jagat are the cause, jnana is the effect.

আ° (Jagat)  
 ↓  
 ই (Jnana)

**Decision 2.6.2.4** Jnana is the cause, karma is the effect i.e., Purusa, prakrti, jagat and jnana are the cause, karma is the effect.

ই (Jnana)  
 ↓  
 কৈ (Karma)

**2.1.6.3 Precise Second Dimensional Order Combination**

Combining the figures 2.28 and 2.29 and applying relation mark ∽ we get,

ঔ (Brahman)  
 ↓  
 ঔ (Jada) ∽ ঔ° (Jiva)  
 ↓  
 ঋ (Prithvi) ∽ ঋ (Antariksa) ∽ ঋ° (Svarga)  
 ↓  
 ঐ (Category) ∽ ঐ° (Assertion) ∽ ঐ (Dimension) ∽ ঐ° (Quantity)  
 ↓  
 ঐ° (Person) ∽ ও (Family) ∽ ও° (Society) ∽ ও (State) ∽ ও° (World)

Fig. 2.40

**2.1.6.4 Precise Two Dimensional Order Combination**

Now combining the figures 2.39 and 2.40 we get,

অ (Purusa) ↓ ঔ (Brahman)  
 ↓  
 আ (Prakrti) ↓ ঔ (Jada) ∽ ঔ° (Jiva)  
 ↓  
 আ° (Jagat) ↓ ঋ (Prithvi) ∽ ঋ (Antariksa) ∽ ঋ° (Svarga)  
 ↓  
 ই (Jnana) ↓ ঐ (Category) ∽ ঐ° (Assertion) ∽ ঐ (Dimension) ∽ ঐ° (Quantity)  
 ↓  
 কৈ (Karma) ↓ ঐ° (Person) ∽ ও (Family) ∽ ও° (Society) ∽ ও (State) ∽ ও° (World)

Fig. 2.41

Divide the figure 2.41 according to panchatattva and get five decisions.

**Decision 2.6.4.1** Brahman and Brahman related. Purusa is the cause of Brahman.

अ (Purusa) ↓ उ (Brahman)

**Decision 2.6.4.2** Jada and jiva are related. Prakrti is the cause of these.

आ (Prakrti) ↓ उ (Jada) ∽ उ° (Jiva)

**Decision 2.6.4.3** Prithvi, antariksa and svarga are related. Jagat is the cause of these.

आ° (Jagat) ↓ अ (Prithvi) ∽ अ (Antariksa) ∽ अ° (Svarga)

**Decision 2.6.4.4** Category, assertion, dimension and quantity are related. Jnana is the cause of these.

इ (Jnana) ↓ ए (Category) ∽ ए° (Assertion) ∽ ऐ (Dimension) ∽ ऐ° (Quantity)

**Decision 2.6.4.5** Person, family, society, state and world are related. Karma is the cause of these.

ई (Karma) ↓ ई° (Person) ∽ उ (Family) ∽ उ° (Society) ∽ उ (State) ∽ उ° (World)

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### 2.1.6.5 Precise Third Dimensional Order Combination

Combining the figures 2.32 and 2.33 and applying rule mark  $\Rightarrow$  we get,

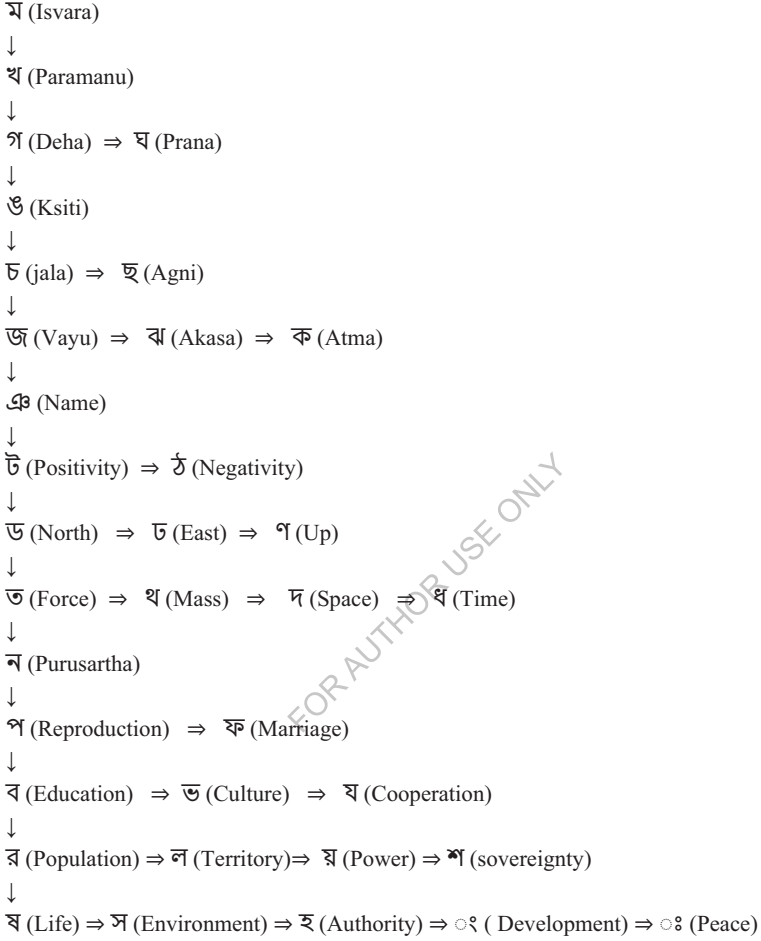


Fig. 2.42

### 2.1.6.6 Precise Three Dimensional Order Combination

Combining the figures 2.41 and 2.42 we get the following model

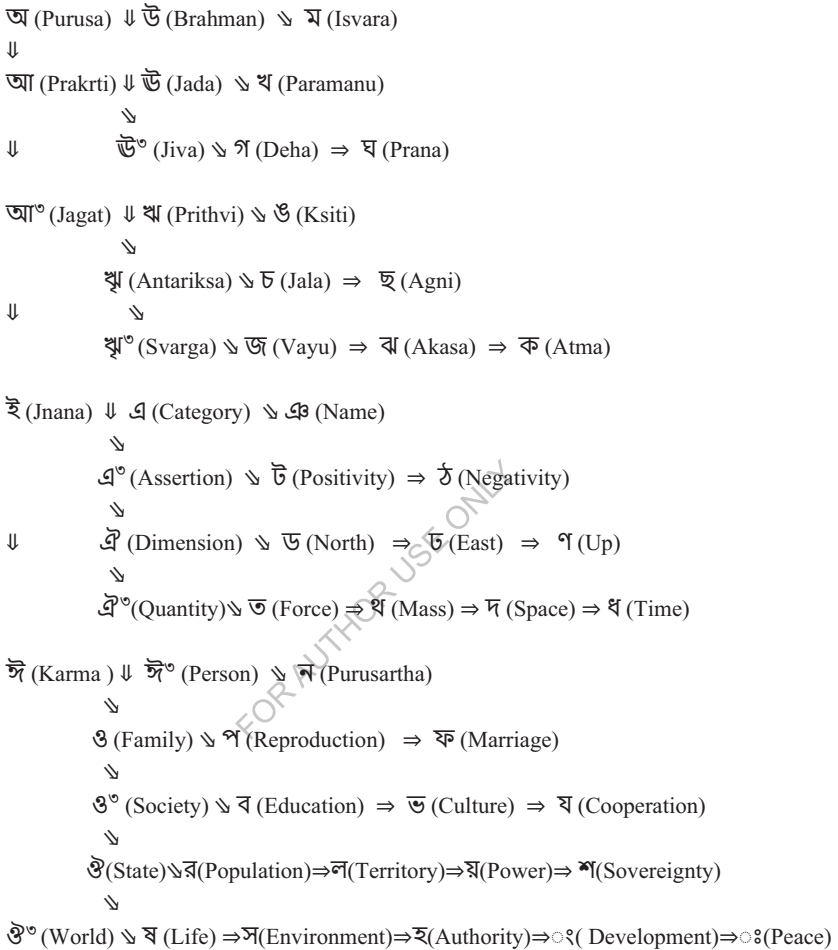


Fig. 2.43

### 2.1.7 Precise Panchatattva Based Order Combination

Dividing the above figure according to panchatattva we get (1) precise Purusa based order combination, (2) precise prakrti based order combination, (3) precise jagat based order combination, (4) precise jnana based order combination and (5) precise karma based order combination.

### 2.1.7.1 Precise Purusa Based Order Combination

অ (Purusa) ↓ উ (Brahman) ∽ ম (Isvara)

Fig. 2.44

We get two decisions from the figure 2.44.

**Decision 2.7.1.1** We get Isvara at point rule. Brahman is related to Isvara.

We get one law from point rule.

**Law 1** ম (Isvara) = ম (Isvara)

**Decision 2.7.1.2** Brahman and Brahman related. Purusa is the cause of Brahman.

### 2.1.7.2 Precise Prakrti Based Order Combination

আ (Prakrti) ↓ উ (Jada) ∽ খ (Paramanu)

∽

উ° (Jiva) ∽ গ (Deha) ⇒ ঘ (Prana)

Fig. 2.45

We get three decisions from the figure 2.45.

**Decision 2.7.2.1** Paramanu follows the point rule. Jada is related to paramanu.

We get one law from point rule.

**Law 1** খ (Paramanu) = খ (Paramanu)

**Decision 2.7.2.2** Deha and prana follow the balance rule. Jiva is related to these (deha and prana)

We get one law from balance rule.

**Law 1** গ (Deha) ∝ ঘ (Prana)

**Decision 2.7.2.3** Jada and jiva are related. Prakrti is the cause of these .

### 2.1.7.3 Precise Jagat Based Order Combination

আ° (Jagat) ↓ ঋ (Prithvi) ∽ ঔ (Ksiti)

∽

ঋ (Antariksa) ∽ ঠ (Jala) ⇒ হ্র (Agni)

∽

ঋ° (Svarga) ∽ ঙ (Vayu) ⇒ ঝ (Akasa) ⇒ ক (Atma)

Fig. 2.46

We get four decisions from the figure 2.46.

**Decision 2.7.3.1** Ksiti follows the point rule. Prithvi is related to ksiti.

We get one law from point rule.

$$\text{Law 1} \quad \text{ঔ}(\text{Ksiti}) = \text{ঔ}(\text{Ksiti})$$

**Decision 2.7.3.2** Jala and agni follow the balance rule. Antariksa is related to these (jala and agni).

We get one law from balance rule.

$$\text{Law 1} \quad \text{চ}(\text{Jala}) \propto \text{ছ}(\text{Agni})$$

**Decision 2.7.3.3** Vayu, akasa and atma follow the left hand rule. Svarga is related to these (vayu, akasa and atma).

We get three laws from left hand rule.

**Law 1** Keeping জ (Vayu) constant, বা (Akasa) is inversely proportional to ক (Atma), i.e.,  
 $\text{বা}(\text{Akasa}) \propto 1/\text{ক}(\text{Atma})$

**Law 2** Keeping বা (Akasa) constant, জ (Vayu) is inversely proportional to ক (Atma), i.e.,  
 $\text{জ}(\text{Vayu}) \propto 1/\text{ক}(\text{Atma})$

**Law 3** Keeping ক (Atma) constant, জ (Vayu) is inversely proportional to বা (Akasa), i.e.,  
 $\text{জ}(\text{Vayu}) \propto 1/\text{বা}(\text{Akasa})$

**Decision 2.7.3.4** Prithvi, antariksa and svarga are related. Jagat is the cause of these.

#### 2.1.7.4 Precise Jnana Based Order Combination

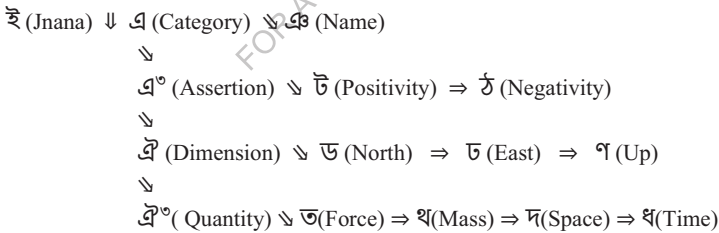


Fig. 2.47

We get five decisions from the figure 2.47.

**Decision 2.7.4.1** Name follows the point rule. Category is related to Name.

We get one law from point rule.

$$\text{Law 1} \quad \text{ঞ}(\text{Name}) = \text{ঞ}(\text{Name})$$

**Decision 2.7.4.2** Positivity and negativity follow the balance rule. Assertion is related to these (positivity and negativity).

We get one law from balance rule.

**Law 1**     $\bar{\text{उ}}$  (Positivity)  $\propto$   $\bar{\text{ऋ}}$  (Negativity)

**Decision 2.7.4.3** North, east and up follow the left hand rule. Dimension is related to these (north, east and up).

We get three laws from left hand rules.

**Law 1** Keeping  $\bar{\text{उ}}$  (North) constant,  $\bar{\text{उ}}$  (East) is inversely proportional to  $\bar{\text{ऀ}}$  (Up), i. e.,  
 $\bar{\text{उ}}$  (East)  $\propto$   $1/\bar{\text{ऀ}}$  (Up)

**Law 2** Keeping  $\bar{\text{उ}}$  (East) constant,  $\bar{\text{उ}}$  (North) is inversely proportional to  $\bar{\text{ऀ}}$  (Up), i. e.,  
 $\bar{\text{उ}}$  (North)  $\propto$   $1/\bar{\text{ऀ}}$  (Up)

**Law 3** Keeping  $\bar{\text{ऀ}}$  (Up) constant,  $\bar{\text{उ}}$  (North) is inversely proportional to  $\bar{\text{उ}}$  (East), i. e.,  
 $\bar{\text{उ}}$  (North)  $\propto$   $1/\bar{\text{उ}}$  (East)

**Decision 2.7.4.4** Force, mass, space and time follow the cross rule. Quantity is related to these (force, mass, space and time).

We get six laws from cross rules.

**Law 1** Keeping  $\bar{\text{त}}$  (Force) and  $\bar{\text{थ}}$  (Mass) constant,  $\bar{\text{द}}$  (Space) is directly proportional to  $\bar{\text{ध}}$  (Time), i. e.,

$\bar{\text{द}}$  (Space)  $\propto$   $\bar{\text{ध}}$  (Time)

**Law 2** Keeping  $\bar{\text{त}}$  (Force) and  $\bar{\text{द}}$  (Space) constant,  $\bar{\text{थ}}$  (Mass) is directly proportional to  $\bar{\text{ध}}$  (Time), i. e.,

$\bar{\text{थ}}$  (Mass)  $\propto$   $\bar{\text{ध}}$  (Time)

**Law 3** Keeping  $\bar{\text{त}}$  (Force) and  $\bar{\text{ध}}$  (Time) constant,  $\bar{\text{थ}}$  (Mass) is inversely proportional to  $\bar{\text{द}}$  (Space), i. e.,

$\bar{\text{थ}}$  (Mass)  $\propto$   $1/\bar{\text{द}}$  (Space)

**Law 4** Keeping  $\bar{\text{थ}}$  (Mass) and  $\bar{\text{द}}$  (Space) constant,  $\bar{\text{त}}$  (Force) is inversely proportional to  $\bar{\text{ध}}$  (Time), i. e.,

$\bar{\text{त}}$  (Force)  $\propto$   $1/\bar{\text{ध}}$  (Time)

**Law 5** Keeping  $\bar{\text{थ}}$  (Mass) and  $\bar{\text{ध}}$  (Time) constant,  $\bar{\text{त}}$  (Force) is directly proportional to  $\bar{\text{द}}$  (Space), i. e.,

$\bar{\text{त}}$  (Force)  $\propto$   $\bar{\text{द}}$  (Space)

**Law 6** Keeping  $\bar{\text{द}}$  (Space) and  $\bar{\text{ध}}$  (Time) constant,  $\bar{\text{त}}$  (Force) is directly proportional to  $\bar{\text{थ}}$  (Mass), i. e.,

$\bar{\text{त}}$  (Force)  $\propto$   $\bar{\text{थ}}$  (Mass)

**Decision 2.7.4.5** Category, assertion, dimension and quantity are related. Jnana is the cause of these.

### 2.1.7.5 Precise Karma Based Order Combination

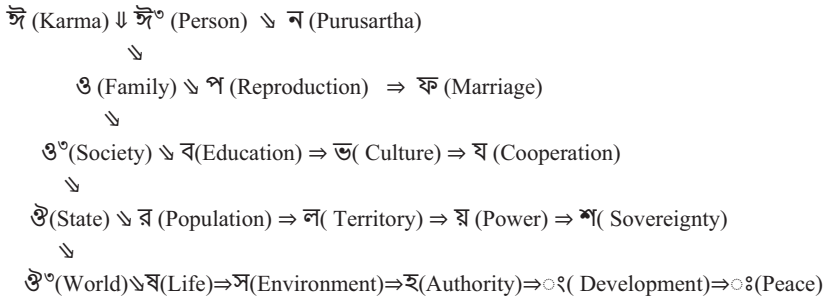


Fig. 2.48

We get six decisions from the figure 2.48.

**Decision 2.7.5.1** Purusartha follows the point rule. Person is related to purusartha.

We get one law from point rule.

**Law 1** 𑀲 (Purusartha) = 𑀲 (Purusartha)

**Decision 2.7.5.2** Reproduction and Marriage follow the balance rule. Family is related to these (reproduction and marriage).

We get one law from balance rule.

**Law 1** 𑀲 (Reproduction) ∝ 𑀲𑀲 (Marriage)

**Decision 2.7.5.3** Education, culture and cooperation follow the left hand rule. Society is related to these (education, culture, cooperation).

We get three laws from left hand rule.

**Law 1** Keeping 𑀲𑀲 (Education) constant, 𑀲𑀲𑀲 (Culture) is inversely proportional to 𑀲𑀲𑀲𑀲 (Cooperation), i. e.,

𑀲𑀲𑀲 (Culture) ∝ 1/ 𑀲𑀲𑀲𑀲 (Cooperation).

**Law 2** Keeping 𑀲𑀲𑀲 (Culture) constant, 𑀲𑀲 (Education) is inversely proportional to 𑀲𑀲𑀲𑀲 (Cooperation), i. e.,

𑀲𑀲 (Education) ∝ 1/ 𑀲𑀲𑀲𑀲 (Cooperation)

**Law 3** Keeping 𑀲𑀲𑀲𑀲 (Cooperation) constant, 𑀲𑀲 (Education) is inversely proportional to 𑀲𑀲𑀲 (Culture), i. e.,

𑀲𑀲 (Education) ∝ 1/ 𑀲𑀲𑀲 (Culture)

**Decision 2.7.5.4** Population, territory, power and sovereignty follow the cross rule. State is related to these (population, territory, power and sovereignty).

We get six laws from cross rule.

**Law 1** Keeping  $\bar{r}$  (Population) and  $\bar{l}$  (Territory) constant,  $\bar{y}$  (Power) is directly proportional to  $\bar{s}$  (Sovereignty), i. e.,

$$\bar{y}(\text{Power}) \propto \bar{s}(\text{Sovereignty}),$$

**Law 2** Keeping  $\bar{r}$  (Population) and  $\bar{y}$  (Power) constant,  $\bar{l}$  (Territory) is directly proportional to  $\bar{s}$  (Sovereignty), i. e.,

$$\bar{l}(\text{Territory}) \propto \bar{s}(\text{Sovereignty})$$

**Law 3** Keeping  $\bar{r}$  (Population) and  $\bar{s}$  (Sovereignty) constant,  $\bar{l}$  (Territory) is inversely proportional to  $\bar{y}$  (Power), i. e.,

$$\bar{l}(\text{Territory}) \propto 1/\bar{y}(\text{Power})$$

**Law 4** Keeping  $\bar{l}$  (Territory) and  $\bar{y}$  (Power) constant,  $\bar{r}$  (Population) is inversely proportional to  $\bar{s}$  (Sovereignty), i. e.,

$$\bar{r}(\text{Population}) \propto 1/\bar{s}(\text{Sovereignty})$$

**Law 5** Keeping  $\bar{l}$  (Territory) and  $\bar{s}$  (Sovereignty) constant,  $\bar{r}$  (Population) is directly proportional to  $\bar{y}$  (Power), i. e.,

$$\bar{r}(\text{Population}) \propto \bar{y}(\text{Power})$$

**Law 6** Keeping  $\bar{y}$  (Power) and  $\bar{s}$  (Sovereignty) constant,  $\bar{r}$  (Population) is directly proportional to  $\bar{l}$  (Territory), i. e.,

$$\bar{r}(\text{Population}) \propto \bar{l}(\text{Territory})$$

**Decision 2.7.5.5** Life, environment, authority, development and peace follow the symmetrical distribution rule. World is related to these (life, environment, authority, development and peace).

We get ten laws from symmetrical distribution rule.

**Law 1** Keeping  $\bar{v}$  (Life),  $\bar{e}$  (Environment), and  $\bar{a}$  (Authority) constant,  $\bar{d}$  (Development) is directly proportional to  $\bar{p}$  (Peace), i. e.,

$$\bar{d}(\text{Development}) \propto \bar{p}(\text{Peace})$$

**Law 2** Keeping  $\bar{v}$  (Life),  $\bar{e}$  (Environment), and  $\bar{d}$  (Development) constant,  $\bar{a}$  (Authority) is inversely proportional to  $\bar{p}$  (Peace), i. e.,

$$\bar{a}(\text{Authority}) \propto 1/\bar{p}(\text{Peace})$$

**Law 3** Keeping  $\bar{v}$  (Life),  $\bar{e}$  (Environment), and  $\bar{p}$  (Peace) constant,  $\bar{a}$  (Authority) is inversely proportional to  $\bar{d}$  (Development), i. e.,

$$\bar{a}(\text{Authority}) \propto 1/\bar{d}(\text{Development})$$

**Law 4** Keeping  $\bar{v}$  (Life),  $\bar{a}$  (Authority) and  $\bar{d}$  (Development) constant,  $\bar{e}$  (Environment) is inversely proportional to  $\bar{p}$  (Peace), i. e.,

$$\bar{e}(\text{Environment}) \propto 1/\bar{p}(\text{Peace})$$

**Law 5** Keeping  $\bar{v}$  (Life),  $\bar{a}$  (Authority) and  $\bar{p}$  (Peace) constant,  $\bar{e}$  (Environment) is directly proportional to  $\bar{d}$  (Development), i. e.,

$$\bar{e}(\text{Environment}) \propto \bar{d}(\text{Development})$$

**Law 6** Keeping ष (Life), ०९ (Development) and ०३ (Peace) constant, ष (Environment) is inversely proportional to ऋ (Authority), i. e.,

$$\text{ष (Environment)} \propto 1 / \text{ऋ (Authority)}$$

**Law 7** Keeping ष (Environment), ऋ (Authority) and ०९ (Development) constant, ष (Life) is directly proportional to ०३ (Peace), i. e.,

$$\text{ष (Life)} \propto ०३ \text{ (Peace)}$$

**Law 8** Keeping ष (Environment), ऋ (Authority) and ०३ (Peace) constant, ष (Life) is inversely proportional to ०९ (Development), i. e.,

$$\text{ष (Life)} \propto 1 / ०९ \text{ (Development)}$$

**Law 9** Keeping ष (Environment), ०९ (Development) and ०३ (Peace) constant, ष (Life) is inversely proportional to ऋ (Authority), i. e.,

$$\text{ष (Life)} \propto 1 / \text{ऋ (Authority)}$$

**Law 10** Keeping ऋ (Authority), ०९ (Development) and ०३ (Peace) constant, ष (Life) is directly proportional to ष (Environment), i. e.,

$$\text{ष (Life)} \propto \text{ष (Environment)}$$

**Decision 2.7.5.6** Person, family, society, state and world are related. Karma is the cause of these.

## 2.2 Main Theory Applications

### 2.2.1 A Review on Classical Mechanics

In this section Galileo's equations of motion and laws of the falling bodies and Newton's laws of motion are reviewed. A standard equation has been derived from this review. Then a fundamental theorem was developed. This article I wrote in 1985 while I was in my final year of I.S.C. at Raozan College, Chittagong, Bangladesh.

#### 2.2.1.1 Galileo's Equations of Motion

Let us discuss Galileo's equations of motion. Galileo's three equations related to motion are,

$$s = ut \dots\dots\dots [1(i)]$$

$$v = u + at \dots\dots\dots [1(ii)]$$

$$s = ut + \frac{1}{2} a t^2 \dots\dots\dots [1(iii)]$$

Here it is seen that there is a difference between t in the first equation and t in the second equation. In the first equation we assume that an object is moving at u cm/sec initial velocity or uniform velocity. Then if we find the displacement of the object in 1 second we get,

$$u \text{ cm/sec} \times 1 \text{ sec} = u \text{ cm.}$$

Again, in the second equation, an object is moving at a uniform velocity of u cm/sec, that is, its initial velocity is u cm/sec. The acceleration of the object is a cm/sec<sup>2</sup> by using force. Now if we observe the position of the object for 1 second, we see that the final velocity of the object is v = (u + a) cm/sec. That is, the time of the object was thought to be 0 when the object was moving at the initial velocity. Now it turns out that there is a difference between t of the



first equation and the t of the second equation. If we sort the second equation according to the first equation, we can write,

$$v = u + a(t-1).$$

Again, in the case of the third equation, how far will an object moving in uniform acceleration of a cm/sec<sup>2</sup> travel in 1 second? Then we see that the object will cross a distance of  $(u.1 + \frac{1}{2}.a.1^2)$  cm or  $(u + \frac{1}{2}a)$  cm. Here it is also seen that the time of the object was considered to be 0 when the object was moving at initial velocity. Thus, there is a difference between t of the third equation and t of the first equation. Now the third equation has to be explained according to the first equation.

Suppose an object moving in the uniform acceleration of a cm/sec<sup>2</sup>, whose initial velocity was u cm/sec, crosses the distance s cm in a total of t seconds. Suppose at the end of that time the final velocity of the object is v cm / sec.

Thus, the total distance traveled by the object is

$$s = [u + (u + a) + (u + 2a) + \dots + (v - a) + v] \dots \dots \dots [1(iv)]$$

If we reverse the series and write the first term at the end and the last term at the first, we get,

$$s = [v + (v - a) + (v - 2a) + \dots + (u + a) + u] \dots \dots \dots [1(v)]$$

Now by adding the equations [1(iv)] and [1(v)] we get,

$$2s = [(u + v) + (u + v) + (u + v) + \dots + (u + v) + (u + v)]$$

Since the number of (u + v) is equal to the total time number t, we can write,

$$2s = (u + v) \times t$$

$$\text{Or, } s = \frac{1}{2} t (u + v)$$

$$s = \frac{t}{2} \{2u + a(t-1)\}$$

Again, from the average velocity we get,  $v = \left(\frac{u+v}{2}\right)$ . Here the time is considered at the initial velocity u cm/sec.

Now Galileo's three equations of motion can be written as follows.

$$s = ut \dots \dots \dots [1(vi)]$$

$$v = u + a(t-1) \dots \dots \dots [1(vii)]$$

$$s = \frac{t}{2} \{2u + a(t-1)\} \dots \dots \dots [1(viii)]$$

Now how far will an object cross in the t<sup>th</sup> second? In this case, it will indicate how much velocity the object will get in t seconds. That is, the displacement in the t<sup>th</sup> second is

$$s_t = u + a(t-1) \dots \dots \dots [1(ix)]$$

### 2.2.1.2 Newton's Laws of Motion

From Newton's first law of motion, we find that force is what moves or intends to move a stationary object and wants to change or intends to change the direction or magnitude or both of motion of a moving object. In this case, if no force is applied to the object, the stationary object will remain stationary and the moving object will continue to move in a straight line with uniform velocity.

Now, suppose F<sub>1</sub> dyne force is applied on an object in a stationary state. In that case the velocity of the object will continue to increase. Suppose the object continues to run in a cm/sec<sup>2</sup> uniform acceleration until the force acts. Then the object will move forever at a final velocity, suppose, u cm/sec. Now at this velocity we can say that the F<sub>1</sub> dyne force was applied to the

object in the initial state (i.e. at the stationary state). We can call it primary force or initial force. But if we have to find the magnitude of this force, then the magnitude of this force is proportional to the momentum. Since the momentum is always constant (when moving at a velocity of  $u$  cm/sec) so the force will always be constant. Now, with the help of equation we get,

$$F_1 \propto mu \quad [\text{where } m = \text{mass of the object}]$$

$$\text{Or, } F_1 = kmu$$

Here the magnitude of  $k$  will depend on the unit of force.

If we create a velocity of  $1$  cm/sec in an object of mass  $1$  gm, then if the force required is considered as a unit, then the magnitude of  $k$  is a unit. That is,

$$1 = k.1.1$$

$$\text{Or, } k = 1$$

In this case we can write,

$$F_1 = mu$$

Sorting the equation by considering  $t$  = total time and  $s$  = total distance traveled, we get,

$$F_1.t = ms$$

Now the two equations are

$$F_1 = mu \quad \dots\dots\dots [2(i)]$$

$$F_1.t = ms \quad \dots\dots\dots [2(ii)]$$

Again, from the second law, we get that when force is applied to an object, that object is accelerated. For this purpose we will return to the first example. Suppose  $F_2$  dyne force is applied on that object again while moving at  $u$  cm/sec velocity. Then suppose the object will continue to run at  $a_2$  cm/sec<sup>2</sup> uniform acceleration as long as the force acts. When the action of the force stops, let the object will continue to move at the final velocity of  $v$  cm/sec. Here  $v > u$ . In this case, the magnitude of any force cannot be found by applying Newton's second law while running at the velocity of  $v$  cm/sec. Because, then there is no acceleration of the object. Then we can find the magnitude of the initial force  $F_2$  of the object (at the velocity of  $v$  cm/sec) as in equation [2(i)]. That is,

$$F_2 = mv \quad (\text{when running at a velocity of } v \text{ cm/sec}).$$

Now let us go back to the previous state i.e. when the object is moving at a velocity of  $u$  cm/sec. Since the force  $F_2$  was applied then, we get in that case the magnitude of force applied to the object as  $F_2$ . Expressing with the help of equations, we can write,

$$F_2 = ma_2 \quad (\text{when force is applied while running at a velocity of } u \text{ cm/sec}).$$

Now the two equations are,

$$F_2 = mv \quad (\text{running at the uniform velocity of } v \text{ cm/sec}) \quad \dots\dots\dots [2(iii)]$$

$$F_2 = ma_2 \quad (\text{running at the uniform acceleration of } a_2 \text{ cm/sec}^2) \quad \dots\dots\dots [2(iv)]$$

Now it turns out that the force  $F_2$  is the applied force when the object travels at a velocity of  $u$  cm/sec and when it travels at a velocity of  $v$  cm/sec it is the initial force. In other words, the force  $F_1$  was the initial force and the force  $F_2$  was the applied force when moving at a velocity of  $u$  cm/sec. Thus it is proved that there is a difference between  $F_1$  and  $F_2$  forces. That is, there is a difference between the force obtained according to Newton's first law and the force obtained according to the second law.

On the other hand, there is another inconsistency between the forces obtained from the equation  $F_2 = ma_2$ . If we say that an object of mass  $m$  gm is moving in the uniform acceleration of  $a_2$  cm/sec<sup>2</sup>, then we get the magnitude of force  $F_2 = ma_2$ . Again, if we say that the acceleration

of  $a_2$  cm/sec<sup>2</sup> after maintaining a certain time is obtained a uniform velocity, then also the magnitude of force of the object is  $F_2 = ma_2$ . Here it is seen that time has an impact on the force i.e. we also have to mention time.

There is another inconsistency between Newton's absolute force and gravitational force.

Newton's equation of absolute force is

$$F = ma \quad \dots\dots\dots [2(v)]$$

Again Newton's equation of gravitational force is

$$F = \frac{GMm}{d^2} \quad \dots\dots\dots [2(vi)]$$

Where, M = The mass of the earth

m = The mass of the object

d = The distance of the object from the center of the earth

G = Gravitational constant

We get the equations [2(v)] and [2(vi)] together

$$ma = \frac{GMm}{d^2} \text{ or, } a = \frac{GM}{d^2}$$

When a is denoted by g we get,

$$g = \frac{GM}{d^2} \quad \dots\dots\dots [2(vii)]$$

But from the above discussion we get, the force of an object (initial force) moving at a velocity of v cm/sec is  $F = mv$ . Now comparing it to the gravitational force, we get,

$$mv = \frac{GMm}{d^2}$$

$$\text{or, } v = \frac{GM}{d^2} \quad \dots\dots\dots [2(viii)]$$

Now equation [2(vii)] says that the higher an object is taken from the center of the earth to the surface, the lower the magnitude of g on it. But Equation [2(viii)] says that the higher an object is lifted from the center of the earth to the surface, the lower the magnitude of velocity v on it.

### 2.2.1.3 Galileo's Laws of the Falling Bodies

Let us try to eliminate the inconsistency of the previous two equations [2(vii)] and [2(viii)] from Galileo's laws of the falling bodies. From Galileo's second law of the falling bodies we get, the displacement covered by a falling body at a given time is proportional to the square of that time.

That is, displacement  $\propto$  (fall time)<sup>2</sup>

$$\text{Or, } h \propto t^2$$

$$\text{Or, } \frac{h}{t^2} = k$$

Or,  $g = k$  Here, k is a constant.

If we write in a different way,

$$h \propto t^2$$

$$\text{Or, } \frac{h}{t} \propto t$$

Or,  $v = kt$  Here, k is a constant.

Now the two equations are,

$$g = k \quad \dots\dots\dots [3(i)]$$

$$v = kt \quad \dots\dots\dots [3(ii)]$$

Here from the equation [3(i)] we see that the gravitational acceleration of a falling body is a constant calculation. This means that the acceleration is constant anywhere at any time. But the equation [3(ii)] shows that the velocity of a falling body is a variable calculation over time.

Again from the third law of the falling bodies we get, the velocity of a falling body at a given time is proportional to that time. That is, velocity  $\propto$  fall time.

Or,  $v \propto t$

Or,  $v = kt$  Here, k is a constant.

If we write in a different way,

$v \propto t$

Or,  $\frac{v}{t} = k$

Or,  $g = k$  Here, k is a constant.

Now the two equations are,

$v = kt$  ..... [3(iii)]

$g = k$  ..... [3(iv)]

In fact here, equation [3(iii)] and equation [3(iv)] are repetitions of equation [3(ii)] and equation [3(i)], respectively. Now it appears from equation [3(iii)] that the velocity of a falling body is a variable calculation over time. But equation [3(iv)] shows that the gravitational acceleration of a falling body is a constant calculation.

From the above discussion it can be seen that the velocity of the falling object increases with time. That is, if an object is released from the top to the bottom, the velocity of that object increases with time (approximately 32 feet per second). That is, the more the object comes to the center of the earth, the faster the velocity increases. On the contrary, the higher an object is taken above the earth's surface, the lower the magnitude of velocity on it.

The acceleration of a falling body, on the other hand, is not related to time. If an object is dropped from top to bottom, the acceleration of that object will always be constant. In other words, the velocity of the object will increase by 32 feet (approximately) per second. So the acceleration of that object will always be 32 feet/sec<sup>2</sup> (approximately). Conversely, no matter how high an object is taken from the surface, the acceleration of that object will always be constant.

However, when Newton's absolute force and gravitational force are combined, we get that the acceleration of the falling body is a varied calculation, which is contrary to the above discussion. And when the initial force (equations [2(i)] and [2(ii)]) and the gravitational force are combined, we get a varied calculation of the velocity of the falling body, which is favorable to the above discussion.

From the above discussion, we can express the view that Newton's main equation on force needs to change. In this case we will take the equation of force ( $F = mv$ ) of an object moving at the uniform velocity as the main equation of force.

Therefore,  $F = mv$

Or,  $Ft = ms$  Since  $v = \frac{s}{t}$

Now if we write t, m, s in capital letters we get,

$FT = MS$  ..... [3(v)]

This equation is a standard equation. This equation means that the product of the force and time of any object is equal to the product of the mass and length of that object. This equation can be called the fundamental equation of force. This is being discussed in detail in the fundamental theorem.

### 2.2.2 Fundamental Theorem on Classical Mechanics

I wrote this article in 1985 while I was in my final year of I.S.C. at Raozan College, Chittagong, Bangladesh.

#### 2.2.2.1 Fundamental Theorem

There are five addresses of any matter in our universe which are category, assertion, dimension, quantity and account.

#### 2.2.2.2 Category

To know the exact address of an object, it is necessary to know the category of that object. Names need to be known first as category. Any object has a specific name and that name is expressed by N.

#### 2.2.2.3 Assertion

In order to know the correct address of any object, it is necessary to know which assertion or direction the object is on. Any object can be on two sides, one is on negative and the other is on positive. For example, if there is an object to the left of the origin or zero of the number line, it is on the negative side and if there is any object on the right side, it is said to be on the positive side.

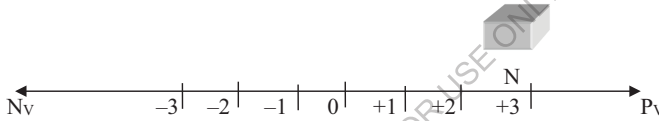


Fig. 2.49

The negative side is abbreviated as Nv and the positive side is abbreviated as Pv. Again, the negative side can also be expressed by the (-) sign and the positive side also be expressed by the (+) sign. Any object moving in a straight path can be to the left or right of the origin but no object can be to the left and right at the same time. For example, the object called N (Fig. 2.49) is at a point marked by 3 to the right of the origin. But the object is not at the point marked 1 or -3 at that moment.

#### 2.2.2.4 Dimension

To know the correct address of any object, one has to know about the three dimensions of that object. These three dimensions are expressed by X, Y and Z. These three dimensions are definitely needed to know the quantity of any object in the world. If the direction of an object moving in a straight path is expressed by x, then y is considered at right angle to x and z is considered at right angle to both (x and y). Now we know from conventional science that object is only three-dimensional (of course, in relativity theory, four dimensional: x, y, z, t). That is, any object has length, width and height. In fact, it is only three dimensions of length measurement. Just as scales are needed to measure length, so scales are needed to measure width and height. In the same way, not only in length, but also in force, mass and time, each has three dimensions. In other words, the mass of an object is one gram, if so it is not clearly stated. We must mention, the mass of the object is one gram, in which direction? Will the mass

of the object be on the north or east or any other side? As we mention, the length of the station is 50 yards to the north or 15 yards to the east. Just saying 50 yards or 15 yards does not give clear idea. It is clear from this that mass is only three-dimensional. In the same way force and time are three-dimensional. This means that if the object called N has a lifespan of 50 years, then nothing is said clearly. We must mention that the life span of the object called N is 50 years— in the north, east or any other direction. That is assertion required. Similarly, the same example applies to the force. Without saying another thing here, the discussion will remain incomplete. That is, what is the difference between the assertion of the previous address and the dimension of the current address? In fact, the assertion of the previous address is the motion of an object moving in a straight line which is negative if it is to the left of the origin of the number line and positive if it is to the right. But the concept of dimension is more extensive. However it is necessary to measure the quantity of an object located at any point on either side of the number line.

### 2.2.2.5 Quantity

To know the correct address of any object, one must know the four quantities of that object. These four quantities are force, time, mass and space. These quantities are expressed by F, T, M and S respectively. These four quantities of any object are fundamental and vector. The main equation related to the quantity is the equation of [3(v)] of the previous presentation 2.2.1.3, i.e.  $FT = MS$

#### 2.2.2.5.1 Corollary: The X Rule

If the four fundamental quantities of any object are rotated in the shape of X, if the two constant quantities are in the same line, then the other two quantities will change in opposite proportions to each other. And if they (the two constant quantities) are not in the same line, then (of the other two quantities) one will change in proportion to the other. Of course, here F and T have to be placed on the same line and M and S on another line. For example, if shown with the help of a figure, it will be as follows;

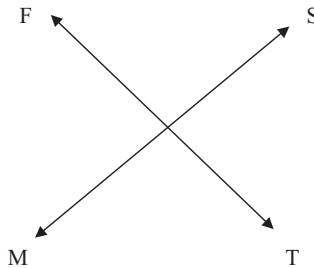


Fig. 2.50

However, keep in mind that F and T are transferable on the same line and in the same way M and S are transferable on the other line. Now if we write the rule mathematically, we get it,

- (i)  $F \propto \frac{1}{T}$  [When M and S are fixed]
- (ii)  $M \propto \frac{1}{S}$  [When F and T are fixed]
- (iii)  $F \propto M$  [When S and T are fixed]

- (iv)  $M \propto T$  [When F and S are fixed]
- (v)  $T \propto S$  [When M and F are fixed]
- (vi)  $S \propto F$  [When T and M are fixed]

To prove the fundamental equation related to quantity we would think that there is an object N in space, where there is no gravitational force. Suppose also the mass M and the length S of the object on which the force F was first applied. The direction of motion is towards the x axis. Now suppose that the time at which the object crosses the distance S is denoted by T.

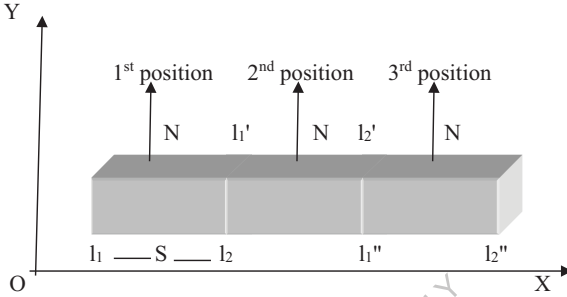


Fig. 2.51

We notice here that since the object is outside the force of gravity, only F force will act on the object. Therefore, according to Newton's first law, the object will continue to move in a straight line at the uniform velocity forever. Now we have been observing the movement of the object for some time. Since the object is moving, at some point the limit  $l_1$  of the object will come to the limit  $l_2$  and then we will mark this limit as  $l_1'$  and at the same time  $l_2$  limit will reach  $l_2'$  limit. We will identify this time as T i.e. the object will reach 2<sup>nd</sup> position from 1<sup>st</sup> position in T time. In this way the object will reach 3<sup>rd</sup> position in the next T time.

Now let us measure the force, time, mass and length of an object in outer space. Suppose  $N_1$  and  $N_2$  these two objects are in motion in outer space (mahasunya). Suppose more, the force of each object is F, time is T, mass is M and length is S. Now at some point we double the force of the  $N_2$  object and think more that the mass and length of the object are constant (fig. 2.52).

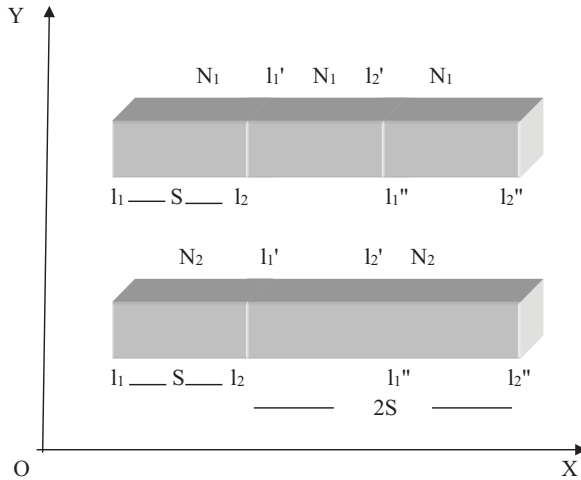


Fig. 2.52

From the previous discussion we find that the object will exceed the distance  $S$  at time  $T$ . But since the value of the force has been doubled, the object will travel twice the distance according to the conventional law, that is, it will travel  $2S$  distance. But  $S$  remains constant. Therefore, in the case of the object  $N_2$ ,  $2S$  distance cross at  $T$  time or  $S$  distance crosses at  $\frac{T}{2}$  time. Thus, if  $M$  and  $S$  remain constant, the time of any object changes in inverse proportion to the force. In other words, the force of any object changes in the opposite proportion of time. Mathematically speaking,

$$F \propto \frac{1}{T} \quad [\text{When } M \text{ and } S \text{ are fixed}]$$

In this way the 6 formulas of X rule can be proved easily.

### 2.2.2.6 Account

To know the correct address of any object, It is necessary to know the five accounts of that object. These five accounts are velocity, acceleration, incremental acceleration, period and distance. These are represented by symbols as  $v$ ,  $a$ ,  $f$ ,  $p$  and  $h$  respectively. It should be remembered that these five accounts are required to measure force, time, mass and space. Suppose the velocity of an object  $N$  is  $v = 3$ , the acceleration is  $a = 2$  and the incremental acceleration is  $f = 1$ . Then let us calculate the distance of the object in 5 periods. Here the object will cover a distance of 3 units in the first period and  $(3+2)$  units in the second period,  $(3+2+3)$  units in the third period,  $(3+2+3+4)$  units in the fourth period and  $(3+2+3+4+5)$  units in the fifth period. Now we get arranged in the form of a series as 3, 5, 8, 12, 17. Now how many distances will the object travel in total in five periods? Obviously this distance is  $(3+5+8+12+17)$  or 45 units.

Let us now find out the basic equation relating to velocity, acceleration, incremental acceleration, period and distance of an object. Suppose the velocity of an object called  $N$  is  $v$ ,



the acceleration is  $a$ , the incremental acceleration is  $f$ , the period is  $p$  and the distance is  $h$ . In that case, if the object exceeds the total distance  $h$  in period  $p$ , then,

$$\begin{aligned}
 h &= v + \{v + a\} + \{v + a + (a + f)\} + \{v + a + (a + f) + (a + f + f)\} \\
 &\quad + \dots + \{v + a + (a + f) + (a + f + f) + \dots + (a + (p - 2)f)\} \\
 &= \{v + v + \dots + p \text{ terms}\} + \{a + (a + f) + (a + f + f) + \dots + (a + (p - 2)f)\} \\
 &\quad + \{a + (a + f) + (a + f + f) + \dots + (a + (p - 3)f)\} \\
 &\quad + \{a + (a + f) + (a + f + f) + \dots + (a + (p - 4)f)\} + \{a + (a + f)\} + a \\
 &= vp + \frac{(p-2+1)}{2}\{2a + (p - 2 + 1 - 1)f\} + \frac{(p-3+1)}{2}\{2a + (p - 3 + 1 - 1)f\} + \dots \\
 &\quad + \{2a + f\} + a \\
 &= vp + \frac{(p-1)}{2}\{2a + (p - 2)f\} + \frac{(p-2)}{2}\{2a + (p - 3)f\} + \dots \\
 &\quad + \{2a + f\} + a \\
 &= vp + a(p - 1) + a(p - 2) + \dots + a.2 + a \\
 &\quad + \frac{1}{2}f(p - 1)(p - 2) + \frac{1}{2}f(p - 2)(p - 3) + \dots + f \\
 &= vp + a\{(p - 1) + (p - 2) + \dots + 2 + 1\} \\
 &\quad + \frac{1}{2}f\{(p - 1)(p - 2) + (p - 2)(p - 3) + \dots + 2.1\} \\
 &= vp + a. \frac{(p-1)(p-1+1)}{2} + \frac{1}{2}.f. \frac{(p-2)(p-2+1)(p-2+2)}{3} \\
 &= vp + \frac{1}{2}ap(p - 1) + \frac{1}{6}fp(p - 1)(p - 2)
 \end{aligned}$$

Therefore, we get

$$h = vp + \frac{1}{2}ap(p - 1) + \frac{1}{6}fp(p - 1)(p - 2) \dots \dots \dots [4(i)]$$

The above equation is the basic equation for the five accounts of an object. If we put incremental acceleration  $f = 0$  in this equation, we get,

$$h = \frac{p}{2}\{2v + a(p - 1)\}$$

The equation obtained is similar to equation [1(viii)]. Again if we put  $f = 0$  and  $a = 0$  we get,  $h = vp$

The equation obtained is similar to equation [1(vi)].

## 2.2.3 Generalization of Gaseous Laws

### 2.2.3.1 Cross Rule or X rule

All the formulas of the generalization of gaseous laws were discovered in 1984 when I studied in the I.S.C. class at Raozan College, Chittagong, Bangladesh. Of the four variable quantity  $P$  (pressure),  $N$  (number of molecules),  $T$  (absolute temperature) and  $V$  (volume) of a gas amount, if any two are fixed, then the other two comply with certain rules. So we propose three other formulas out of the conventional three formulas (Boyle's law, Charles law and Pressure law).

1. At constant volume and fixed pressure, the number of molecules of a gas is inversely proportional to its absolute temperature, i. e.,

$$N \text{ (number of molecules)} \propto 1/T \text{ (absolute temperature)}$$

2. At constant temperature and fixed pressure, the volume of a gas is directly proportional to its number of molecules, i. e.,

$$V \text{ (volume)} \propto N \text{ (number of molecules)}$$

3. At constant volume and fixed temperature, the pressure of a gas is directly proportional to its number of molecules, i. e.,

$$P \text{ (pressure)} \propto N \text{ (number of molecules)}$$

If four variables of a gas or gas mixture are arranged in four edges of English X, we get four rules. These four rules applicable to all ideal gases.

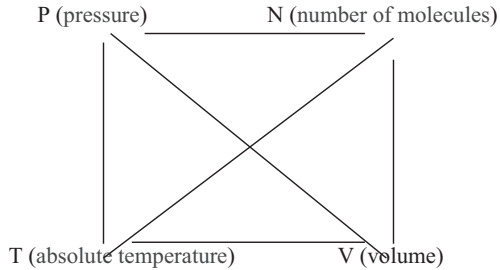


Fig. 2.53

2.3.1.1 If the two fixed quantities of a gas rotating in X-diagram is placed on an angular line, then the other two will be inversely proportional to each other.

2.3.1.2 If the two fixed quantities of a gas rotating in X- diagram is placed on a horizontal or vertical line, then the other two will be directly proportional to each other.

2.3.1.3 If the two fixed quantities of a mixture of gases measuring in same dimension (one of the remaining two quantities) rotating in X- diagram is placed on an angular line, then the inverse of remaining quantity is the sum of the inverses of its partial quantities.

2.3.1.4 If the two fixed quantities of a mixture of gases measuring in same dimension (one of the remaining two quantities) rotating in X- diagram is placed on a horizontal or vertical line, then the remaining quantity is the sum of its partial quantities.

### 2.2.3.2 Laws of Unit Gas

Now let us write down all the formulas. Suppose, the pressure is P, the volume is V, the absolute temperature is T and the number of molecules is N, then-

Formulas obtained from first rule-

2.3.2.1 When T and N fixed, then  $P \propto \frac{1}{V}$  [ Boyle's law]

2.3.2.2 When P and V fixed, then  $T \propto \frac{1}{N}$

Formulas obtained from second rule-

2.3.2.3 When T and P fixed, then  $V \propto N$

2.3.2.4 When P and N fixed, then  $T \propto V$  [ Charles' law]

2.3.2.5 When N and V fixed, then  $P \propto T$  [ Pressure law]

2.3.2.6 When V and T fixed, then  $N \propto P$

### 2.2.3.3 Laws of Mixture Gases

Formulas obtained from third rule-

For T- dimensional mixture of r-gases

$$2.3.3.1 \text{ When P and V fixed, then } \frac{1}{N} = \frac{1}{N_1} + \frac{1}{N_2} + \frac{1}{N_3} + \dots + \frac{1}{N_r}$$

For P- dimensional mixture of r-gases

$$2.3.3.2 \text{ When T and N fixed, then } \frac{1}{V} = \frac{1}{V_1} + \frac{1}{V_2} + \frac{1}{V_3} + \dots + \frac{1}{V_r}$$

For N- dimensional mixture of r-gases

$$2.3.3.3 \text{ When P and V fixed, then } \frac{1}{T} = \frac{1}{T_1} + \frac{1}{T_2} + \frac{1}{T_3} + \dots + \frac{1}{T_r}$$

For V- dimensional mixture of r-gases

$$2.3.3.4 \text{ When T and N fixed, then } \frac{1}{P} = \frac{1}{P_1} + \frac{1}{P_2} + \frac{1}{P_3} + \dots + \frac{1}{P_r}$$

Formulas obtained from fourth rule-

For T- dimensional mixture of r-gases

$$2.3.3.5 \text{ When P and N fixed, then } V = V_1 + V_2 + V_3 + \dots + V_r$$

$$2.3.3.6 \text{ When N and V fixed, then } P = P_1 + P_2 + P_3 + \dots + P_r$$

For P- dimensional mixture of r-gases

$$2.3.3.7 \text{ When N and V fixed, then } T = T_1 + T_2 + T_3 + \dots + T_r$$

$$2.3.3.8 \text{ When V and T fixed, then } N = N_1 + N_2 + N_3 + \dots + N_r$$

For N- dimensional mixture of r-gases

$$2.3.3.9 \text{ When V and T fixed, then } P = P_1 + P_2 + P_3 + \dots + P_r$$

[Dalton's law of partial pressure]

$$2.3.3.10 \text{ When T and P fixed, then } V = V_1 + V_2 + V_3 + \dots + V_r$$

For V- dimensional mixture of r-gases

$$2.3.3.11 \text{ When T and P fixed, then } N = N_1 + N_2 + N_3 + \dots + N_r$$

$$2.3.3.12 \text{ When P and N fixed, then } T = T_1 + T_2 + T_3 + \dots + T_r$$

## 2.2.4 Cash Transaction Approach in Terms of X Rule

Before discussing the cash transaction approach of money we need to know about money, demand for money and supply of money.

### 2.2.4.1 Money

All types of metallic or paper currency accepted by the government are called money. Money is a medium of exchange and as a medium of exchange everyone is willing to accept it. Therefore, the thing recognized by the government as a medium of exchange and as a means of paying debts are obliged to be accepted without question by the public, it is called money.

#### 2.2.4.2 Demand for Money

Demand for money is the need of money for various activities including purchase, sale or exchange of goods and services in daily life. People want to hold cash for various needs. They also want to keep money in the form of savings for the needs of the hardship. Generally, the desire to retain cash can be called the demand for money. Therefore, the amount of cash that the people of the society want to hold for various needs at a particular time is called demand for money. Demand for money can be divided into three categories in terms of need, namely, transactional demand for money, precautionary demand for money and speculative demand for money. Demand for money is influenced by many factors. These factors are called determinants of demand for money. These determinants are income, propensity to consume, nature of income earning, propensity to save, rate of interest, money market, price level, banking system, expectation, social security etc. The demand for money can be expressed as the product of two quantities. For example-

Demand for money = Price level  $\times$  Amount of transactionable goods and services

$$D_m = PT$$

Where  $D_m$  is demand for money, P is price level and T is amount of transactionable goods and services.

#### 2.2.4.3 Supply of Money

The sum of all types of currency issued by the government of a country is generally called the supply of money. Currency in the conventional sense refers to the collection of all types of paper notes and metal coins introduced in the market. Again, the money deposited in the demand deposits of commercial banks is also included in the conventional currency. This is because the depositor can only get the money from the demand deposit on demand. Therefore, the sum of conventional currency and demand deposits together is called the supply of money. However, the amount of money held in fixed deposits at present is also included in the supply of money. Because such deposits can be converted into cash at the end of the fixed period or money can be withdrawn if necessary even before the expiry of the period. Therefore, the sum of currency in the hands of the people, demand deposits and fixed deposits held in banks can be collectively called the supply of money. The supply of money which does not include fixed deposits is called the narrow sense supply of money. On the other hand, the supply of money which includes fixed deposits is called broad sense supply of money. Supply of money is influenced by many factors. These factors are called determinants of supply of money. These determinants are paper notes and metal currency, demand deposits, fixed deposits, credit policy, deficit spending policy, reserve ratio, foreign exchange reserves, foreign debt, velocity of money etc. The supply of money can be expressed as the product of two quantities. For example-

Supply of money = Amount of money  $\times$  Velocity of money

$$S_m = MV$$

Where  $S_m$  is supply of money, M is amount of money and V is velocity of money.

According to Generancy philosophy, money is a category. So money can be analyzed on the basis of jnanatattva.

Akaras of jnana	Components of akara	Example
Category	Name	Money
Assertion	Positivity	Money inclusion
	Negativity	Money exclusion
Dimension	North	Money is in the north-south
	East	Money is in the east-west
	Up	Money is in the up-down
Quantity	Force	There is force in this money
	Mass	There is mass in this money
	Space	This money is in a space
	Time	This money is in a time

Tab. 2.1

The money kept in the bank is kept for various purposes. Many people have money in the bank but this money is not for publishing books. Not even to donate to anyone. Money has force and mass. Again, money exists in space and time. I did not have money before, now I have it. The velocity of money can be called mobility, so money has force.

The cross rule or X rule in figure is

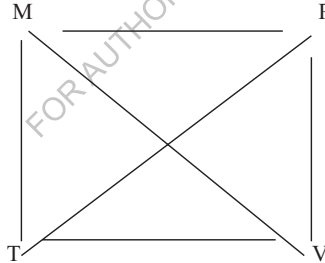


Fig. 2.54

- Where, M = Total supply of money
- P = General price level
- T = Total transactions in physical goods
- V = Velocity of circulation of money

**Sub Rule 1.** If the two fixed quantities of the cash transaction approach rotating in X-diagram is placed on an angular line, then the other two will be inversely proportional to each other.

**Sub Rule 2.** If the two fixed quantities of the cash transaction approach rotating in X-diagram is placed on a horizontal or vertical line, then the other two will be directly proportional to each other.

#### 2.2.4.4 Laws of Cash Transaction Approach

Now let us write down all the formulas. Suppose, the total supply of money is  $M$ , the velocity of circulation of money is  $V$ , the total transactions in physical goods is  $T$  and the general price level is  $P$ , then-

Formulas obtained from first rule-

2.4.4.1 When  $T$  and  $P$  fixed, then  $M \propto \frac{1}{V}$

2.4.4.2 When  $M$  and  $V$  fixed, then  $T \propto \frac{1}{P}$

Formulas obtained from second rule-

2.4.4.3 When  $T$  and  $M$  fixed, then  $V \propto P$

2.4.4.4 When  $M$  and  $P$  fixed, then  $T \propto V$

2.4.4.5 When  $P$  and  $V$  fixed, then  $M \propto T$

2.4.4.6 When  $V$  and  $T$  fixed, then  $P \propto M$

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## 2.3 Main Theory Foundations

### 2.3.1 Generancy Model

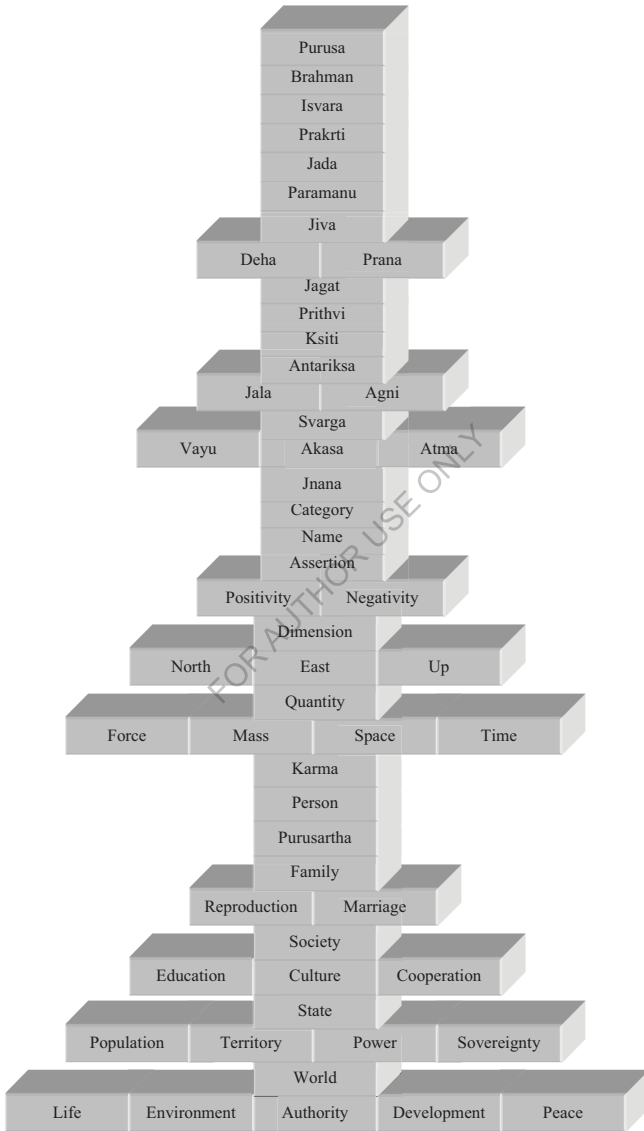


Fig. 2.55







### 2.3.2 Generancy Basis

অ ↓  
 উ ↓  
 ম →  
 আ ↓  
 ঊ ↓  
 খ →  
 ঙ° ↓  
 গ → ঘ  
 ঙ° ↓  
 ঞ ↓  
 ঙ →  
 ঞ ↓  
 চ → ছ  
 ঞ° ↓  
 জ → ঝ → ঞ  
 ঞ ↓  
 ঞ° ↓  
 ঞ° ↓  
 ট → ঠ  
 ঞ ↓  
 ড → ঢ → ণ  
 ঞ° ↓  
 ত → থ → দ → ধ  
 ঞ ↓  
 ঞ° ↓  
 ন →  
 ঙ ↓  
 প → ফ  
 ঙ° ↓  
 ব → ভ → য  
 ঙ ↓  
 র → ল → ঝ → শ  
 ঙ° ↓  
 ষ → স → হ → ং → ঃ

Fig. 2.56

2.3.3 Generancy Statue

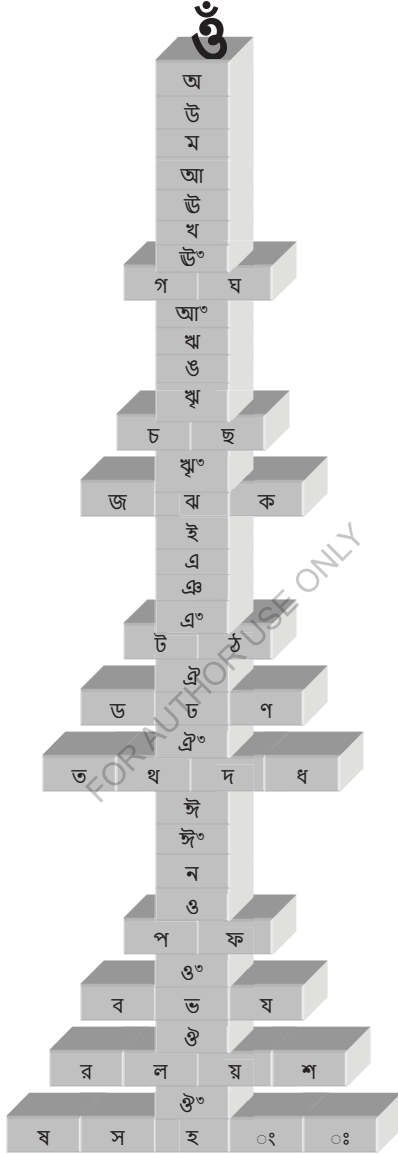


Fig. 2.57

## CHAPTER 3

Dravyanomics

3.1 Dravya

3.2 Purustattva

3.3 Prakritology

3.4 Jagatonomy

### 3.1 Dravya

A substance or dravya is a category in which quality and action reside. Although quality and action are sheltered in substance, the substance is different from them. Quality and action cannot exist without substance. However, substance is not the sum of quality and action. Substance is a distinct category separate from quality and action. Quality and action sheltered in substances, substances are their refuge. Shelter and sheltered cannot be the same. Therefore, substance is different from quality and action. On the other hand, dravya is kriya-gunavat samavayi-karanam. Dravya kriyavat means that there is action in the substance. Action is bound by the inherent relationship with the substance. Dravya gunavat means that there is quality in the substance. Quality is bound by the inherent relationship with the substance.

Substance is the samavayi karana or upadana karana or material cause of composite things produced from it. For example, cloth is a composite thing made by the combination of a number of yarns. So, the yarn, this substance is the material cause of the cloth. Similarly, the clay, this substance is the material cause or samavayi karana of a pot.

#### 3.1.1 Generancy Theory about Dravya

Different schools of Indian philosophy have discussed dravya in different ways. In the present section, generancy theory about dravya is discussed.

(1) The partial model of dravya can be derived from main theory as,

Tattva ↓  
Akara ↘  
Upakarana ⇒

We know that tattva is five namely, Purusa, prakrti, jagat, jnana and karma. Among them Purusa, prakrti and jagat are dravya. Therefore, the above partial model can be arranged in the following way.

Dravya ↓  
Akara ↘  
Upakarana ⇒

(2) Dravya is the tattva (theory) and Purusa, prakrti and jagat are dravyas (substances). Brahman, jada, jiva, prithvi, antariksa and svarga are the akaras (forms). The related upakaranas (components) are Isvara, paramanu, deha, prana, ksiti, jala, agni, vayu, akasa and atma. Arranged in the form of a table, we get,

Tattva		Akara	Upakarana
Dravya	Purusa	Brahman	Isvara
	Prakrti	Jada	Paramanu
		Jiva	Deha
			Prana
	Jagat	Prithvi	Ksiti
		Antariksa	Jala
			Agni
		Svarga	Vayu
			Akasa
			Atma

Tab. 3.1

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, dravya is the cause of the form of dravya and at the same time the cause of the component of the form. On the other hand, the form of dravya is the cause of the component of the form and is related to the component of the form.

(4) Now let us analyze dravya in the light of jnanatattva.

Dravya is a tattva. It has six akaras (forms) namely, Brahman, jada, jiva, prithvi, antariksa and svarga. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Dravya can be taken as a category, it has a specific name and let us think that this name is dravya. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If dravya is added, then we can say that dravya is positive. Again, if dravya is subtracted, then we can say that dravya is negative. If it is on the right side of the number line, dravya will be positive. Again, if it is on the left side of the number line, dravya will be negative.

Every object in this universe is three-dimensional. Dravya is not out of it. Dravya is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, dravya may be in the north or south, it may be in the east or west, or it may be in the up or down. Dravya can be measured as a solid object. Dravya has four quantities. These four quantities are force, mass, space and time. There is force and mass in dravya. Again dravya is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Dravya
Assertion	Positivity	Dravya inclusion
	Negativity	Dravya exclusion
Dimension	North	Dravya is in the north-south
	East	Dravya is in the east-west
	Up	Dravya is in the up-down
Quantity	Force	There is force in this dravya
	Mass	There is mass in this dravya
	Space	This dravya is in a space
	Time	This dravya is in a time

Tab. 3.2

### 3.2 Purustattva

I would like to mention what Dr. Mahanambrata Brahmachariji has said at the beginning of the Purusa-Sukta. In the Upanishads, who is Advaita Brahman, in the Samhita He is Purusa. He created and entered into the creation Himself. Yajna is the main cause of creation. Supreme Person (Purusa) continues this great creation by sacrificing Himself in this great universal sacrifice (vishva yajna). No great work is done without self-effacement. He is Purusa, and He has not ceased to give himself in this creation.

It is always subsisting, and also existing beyond it. He has not lost his consciousness even after becoming one with this earthly world. This is not a prehistoric fact- a commonplace. Presently Compiled Theory. Creating, preserving and destroying are going on continuously.

#### 3.2.1 Purusa

In the first mantra of Purusa Sukta, Narayana Rishi says,

Om sahasra shirsha purushaha  
sahasrakshas sahasrapat  
sa bhumim vishvato vritva  
atyatishthad dhashangulam

**Meaning:** Purusa (the Supreme Being) has a thousand heads, a thousand eyes and a thousand feet. He has enveloped this world from all sides and has (even) transcended it by ten angulas or inches.

Note:- This is the first Mantra of the famous Purusa Sukta of the Vedas. Here the transcendent totality of all creation is conceived as the Cosmic Person, the Universal Consciousness animating all manifestation. The word 'earth' is to be understood in the sense of all creation. 'Dasangulam' is interpreted as ten fingers' length, in which case it is said to refer to the distance of the heart from the navel, the former having been accepted as the seat of the atma and the latter symbolic of the root of manifestation. The word ten is also said to mean 'infinity', as numbers are only up to nine and what is above is regarded as numberless.

Let us see what Svetasvatara Upanishad says about Purusa.

These mantras of Svetasvatara Upanishad are taken from 'Svetasvatara Upanishad - Chap 3 The Highest Reality' by T.N.Sethumadhavan (eSamskriti).

#### **Mantra 12**

mahan prabhur vai purusah sattvasyaisa pravartakah  
sunirmalam imam praptim isano jyotir avyayah

He, indeed, is the great Purusha, all pervasive and all-powerful. He also inspires the mind to attain the state of purity. He is the Supreme Lord, self-luminous and imperishable.

#### **Mantra 13**

angusthamatrah puruso ntaratma sada jananam hrdaye samnivistah  
hrda manisa manasabhiklpto ya etad vidur amrtas te bhavanti

The Purusha, no bigger than a thumb, is the inner Self, ever seated in the heart of man. He is known by the mind, which controls knowledge and is perceived in the heart. They who know Him become immortal.

#### **Mantra 14**

sahasrasirsa purusah sahasraksah sahasrapat  
sa bhumim visvato vrtva atyatisthad dasangulam

The Purusha with a thousand heads, a thousand eyes, a thousand feet, compasses the earth on all sides and extends beyond it by ten fingers' breadth.

#### **Mantra 15**

purusa evedam sarvam yad bhutam yac ca bhavyam  
utamrtatvasesano yad annenatirohati

The Purusha alone is all this-what has been and what will be. He is also the Lord of Immortality and of whatever grows by food.

#### **Mantra 16**

sarvatahpanipadam tat sarvato ksisiriromukham  
sarvatahsrutimal loke sarvam avrtya tisthati

His hands and feet are everywhere; His eyes, heads and faces are everywhere; His ears are everywhere; He exists compassing all.

Purusa is a tattva (theory). There is one akara (forms) of this tattva. This akara is Brahman.



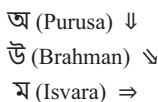
Fig. 3.1

In the earliest Vedas, Purusa is a cosmic man, whose sacrifice by the gods created the whole of life. In the Upanishads the concept of Purusa was developed to convey an abstract universal significance, the eternal, indestructible, omnipresent universal principle of self and soul. Although various schools of Indian philosophy have different views on the definition, scope and nature, many of them agree that it is everything and connects everyone.

### 3.2.2 Generancy Theory about Purusa

Different schools of Indian philosophy have discussed Purusa in different ways. In the present section, generancy theory about Purusa is discussed.

(2) The partial model of Purusa derived from main theory is,



(2) Purusa is the tattva (theory). Brahman is the akara (form) of Purusa. The upakarana (component) of Brahman is Isvara. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Purusa	Brahman	Isvara

Tab. 3.3

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, Purusa is the cause of the form of Purusa and at the same time the cause of the component of the form. On the other hand, the form of Purusa is the cause of the component of the form and is related to the component of the form.

(4) Now let us analyze Purusa in the light of jnanatattva.

Purusa is a tattva. It has one akara (form) namely, Brahman. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Purusa can be taken as a category, it has a specific name and let us think that this name is Purusa. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If Purusa is added, then we can say that Purusa is positive. Again, if Purusa is subtracted, then we can say that Purusa is negative. If it



is on the right side of the number line, Purusa will be positive. Again, if it is on the left side of the number line, Purusa will be negative.

Every object in this universe is three-dimensional. Purusa is not out of it. Purusa is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, Purusa may be in the north or south, it may be in the east or west, or it may be in the up or down. Purusa can be measured as a solid object. Purusa has four quantities. These four quantities are force, mass, space and time. There is force and mass in Purusa. Again Purusa is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Purusa
Assertion	Positivity	Purusa inclusion
	Negativity	Purusa exclusion
Dimension	North	Purusa is in the north-south
	East	Purusa is in the east-west
	Up	Purusa is in the up-down
Quantity	Force	There is force in this Purusa
	Mass	There is mass in this Purusa
	Space	This Purusa is in a space
	Time	This Purusa is in a time

Tab. 3.4

(5) The decision of Purusa derived from the main theory is ‘Brahman and Brahman related. Purusa is the cause of Brahman.’ That is

$$\text{ଅ (Purusa)} \downarrow \text{ଓ (Brahman)} \curvearrowright$$

### 3.2.3 Brahman

Brahman is the akara (form) of the tattva (theory) named Purusa. Isvara is the upakarana (component) of Brahman.

We find following by rewriting the figure 2.44

$$\text{ଅ (Purusa)} \downarrow \text{ଓ (Brahman)} \curvearrowright \text{ଐ (Isvara)}$$

Tattva	Akara	Upakarana
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Fig. 3.2

It is said in the Brahmasutra, 'janmady asya yatah'. Janmady- origin etc. Birth, subsistence and dissolution. Asya- Of this world. This is the visible world phenomenon. Yatah- From which. From which birth, subsistence and dissolution of this visible world occur is He i.e., Brahman. Brahman is the truth, the knowledge and the infinite. Satyam jnanam anantam brahma (real, consciousness, infinite) is the svarupa lakshana of Brahman. Svarupa lakshana means definition as is. The identity that mentions about the universe with Him is tatastha lakshana. Tatastha lakshana means definition by indication. Brahman is not jivatma (individual self), He is Paramatma (supreme self). Srimad Bhagavatam mentions,

'Janmady asya yatah anvayad itaratas carthesv abhijnah svarat  
tene brahma hrda ya adi-kavaye muhyanti yat surayah  
tejo-vari-mrdam yatha vinimayo yatra tri-sargo 'mrsa  
dhamna svena sada nirasta-kuhakam satyam param dhimahi'

'I meditate upon Lord Sri Krishna because He is the Absolute Truth and the primeval cause of all causes of creation, sustenance and destruction on the manifested universes. He is directly and indirectly conscious of all manifestations and He is independent because there is no other cause beyond Him. It is He only who first imparted the Vedic knowledge unto the heart of Brahmaji, the original living being. By Him even the great sages and demigods are placed into illusion, as one is bewildered by the illusory representations of water seen in fire, or land seen on water. Only because of Him do the material universes, temporarily manifested by the reactions of the three modes of nature, appear factual, although they are unreal. I therefore meditate upon Him, Lord Sri Krishna, who is eternally existent in the transcendental abode, which is forever free from the illusory representations of the material world. I meditate upon Him, for He is the Absolute Truth.'

(The above paragraph is cited from the article 'Ten Subjects of Srimad-Bhagavatam').

Brahman is eternal, pure, free. There are two variants of Brahman mentioned in the Upanishads, namely Parabrahman and Aparabrahman. Parabrahman is nirvisesa (indeterminate), nirguna (without character) Brahman and Aparabrahman is savisesa (determinate), saguna (with character) Brahman. Brahman is nirupadhi (free from passions or attachment). He has no bheda (difference). He is niravayava (devoid of parts). Brahman is visvagata (omnipresent) and visvatita (all surpassing).

### **3.2.4 Karana Brahman and Karya Brahman**

Before creation, living beings and inanimate beings reside in Brahman unevolved (avyakta). This state is called the state of dissolution (pralaya) when Brahman is in causal condition (karanavastha). Then there is no difference in nama (name) and rupa (form). In this state Brahman is called Karana Brahman. When Brahman emerges as living beings and inanimate beings after creation, this state of Brahman is called effect condition (karyavastha). Then this state of Brahman is called Karya Brahman.

### **3.2.5 Nirguna Brahman and Saguna Brahman**

Nirguna Brahman means the Absolute without qualities or gunas. It implies the Absolute as pure consciousness having no name, form or attributes. He is nirvisesa or indeterminate, because He is perfectly formless, qualityless and distinctionless. Parabrahman (Supreme Reality) is nirvisesa (indeterminate) and nirguna (without character) Brahman. Nirvikalpa Samadhi reveals the Nirguna nature of Brahman.

Saguna Brahman means the Absolute with qualities or gunas. It implies God having forms and attributes. Brahman is the base of all virtues. He is savisesa or determinate, because everything special is emanating from him. Aparabrahman is savisesa (determinate) and saguna (with character) Brahman. Savikalpa Samadhi reveals the Saguna nature of Brahman. When Brahman manifests itself into Paramatma (the supreme soul) then creates the three gunas and yogmaya that create the universe. The gunas are

- Rajas Guna: Force of Creation => Brahma
- Sattva Guna: Force of Sustenance => Vishnu
- Tamas Guna: Force of Dissolution => Shiva

Yogmaya or maya is the force of illusion that covers all the creation. God descends as an avatara (incarnation) when the repression of evil and the upbringing of discipline are needed. This is said in the Srimad Bhagavad Gita Chapter 4- Verses 7 and 8.

Yada yada hi dharmasya glanir bhavati bharata I  
 Abhyuktanam adharmasya tadatmanam srijamyaham II (sloka 7)

O Bharata, whenever there is decline of righteousness (dharma) and rise of evil (adharm), I manifest Myself.

Paritranaaya sadhunam vinashaya cha dushkritam I  
 Dharma samsthapanarthaya sambhavami yuge yuge II (sloka 8)

For the protection of the righteous, for the destruction of the wicked and for the establishment of dharma, I am born age after age.

The idea is found in the figure below about Purusa, Brahman and Isvara.

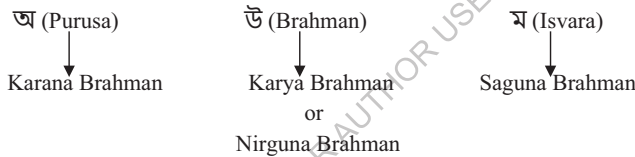


Fig. 3.3

### 3.2.6 Generancy Theory about Brahman

Generancy theory about Brahman is discussed below.

(1) The partial model of Brahman derived from main theory is,

$$\begin{aligned} \text{उ (Brahman)} &\rightsquigarrow \\ \text{म (Isvara)} &\Rightarrow \end{aligned}$$

(2) Brahman is an akara (form) of Purusa. The upakarana (component) of Brahman is Isvara. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Purusa	Brahman	Isvara

Tab. 3.5

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, Purusa is the cause of Brahman and at the same time the cause of the upakarana of Brahman. On the other hand, Brahman is the cause of the upakarana of Brahman and is related to the upakarana of Brahman. That is, Brahman is the cause of its component Isvara and is also related to this component. Writing in sign language is as follows:

অ (Purusa) ↓  
 উ (Brahman) ↘  
 ম (Isvara) ⇒

(4) Now let us analyze Brahman in the light of jnanatattva.

Purusa is a tattva. Brahman is a form of Purusa. Isvara is the component of Brahman. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Brahman can be taken as a category, it has a specific name and let us think that this name is Brahman. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If Brahman is added, then we can say that Brahman is positive. Again, if Brahman is subtracted, then we can say that Brahman is negative. If it is on the right side of the number line, Brahman will be positive. Again, if it is on the left side of the number line, Brahman will be negative.

Every object in this universe is three-dimensional. Brahman is not out of it. Brahman is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, Brahman may be in the north or south, it may be in the east or west, or it may be in the up or down. Brahman can be measured as a solid object. Brahman has four quantities. These four quantities are force, mass, space and time. There is force and mass in Brahman. Again Brahman is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Brahman
Assertion	Positivity	Brahman inclusion
	Negativity	Brahman exclusion
Dimension	North	Brahman is in the north-south
	East	Brahman is in the east-west
	Up	Brahman is in the up-down
Quantity	Force	There is force in this Brahman
	Mass	There is mass in this Brahman
	Space	This Brahman is in a space
	Time	This Brahman is in a time

Tab. 3.6

(5) The decision of Brahman derived from the main theory is ‘Brahman is related to Isvara.’  
That is

$$\text{ॐ (Brahman)} \rightsquigarrow \text{ॐ (Isvara)} \Rightarrow$$

### 3.2.7 Isvara

The word ‘Isvara’ comes from the Sanskrit root ‘is’ which means owner, ruler, etc. and ‘vara’ which means best, beautiful, choice, etc. So the composite word ‘Isvara’ literally means owner of best, ruler of choices, etc.

Isa Upanishad in hymn 1.5-7, states Isvara is ‘above everything, outside everything, beyond everything, yet also within everything’; he who knows himself as all beings and all beings as himself– he never becomes alarmed before anyone. He becomes free from fears, from delusions, from root cause of evil. He becomes pure, invulnerable, unified, free from evil, true to truth.

Purusa is tattva, Brahman is akara and Isvara is upakarana. Isvara is sat (ultimate being), cit (pure consciousness) and ananda (perfect bliss) as a substance. Saguna Brahman is Isvara (God). God is omniscient, omnipotent and active.

### 3.2.8 Generancy Theory about Isvara

Generancy theory about Isvara is discussed below.

(1) The partial model of Isvara derived from main theory is,

$$\text{ॐ (Brahman)} \rightsquigarrow \text{ॐ (Isvara)} \Rightarrow$$

(2) Isvara is the upakarana (component) of Brahman. Brahman is the akara (form) of Purusa. Arranged in the form of a table, we get,

Akara	Upakarana
Brahman	Isvara

Tab. 3.7

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, Purusa is the cause of Brahman and at the same time the cause of Isvara. On the other hand, Brahman is the cause of Isvara and is related to Isvara. Writing in sign language is as follows:

$$\text{ॐ (Purusa)} \Downarrow \text{ॐ (Brahman)} \rightsquigarrow \text{ॐ (Isvara)} \Rightarrow$$

(4) Now let us analyze Isvara in the light of jnanatattva.

Isvara is the component of Brahman. Brahman is the form of Purusa. Purusa is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are

north, east and up. There are four components of quantity and that is force, mass, space and time.

Isvara can be taken as a category, it has a specific name and let us think that this name is Isvara. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If Isvara is added, then we can say that Isvara is positive. Again, if Isvara is subtracted, then we can say that Isvara is negative. If it is on the right side of the number line, Isvara will be positive. Again, if it is on the left side of the number line, Isvara will be negative.

Every object in this universe is three-dimensional. Isvara is not out of it. Isvara is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, Isvara may be in the north or south, it may be in the east or west, or it may be in the up or down. Isvara can be measured as a solid object. Isvara has four quantities. These four quantities are force, mass, space and time. There is force and mass in Isvara. Again Isvara is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Isvara
Assertion	Positivity	Isvara inclusion
	Negativity	Isvara exclusion
Dimension	North	Isvara is in the north-south
	East	Isvara is in the east-west
	Up	Isvara is in the up-down
Quantity	Force	There is force in this Isvara
	Mass	There is mass in this Isvara
	Space	This Isvara is in a space
	Time	This Isvara is in a time

Tab. 3.8

(5) Isvara follows the point rule. The law of Isvara derived from the point rule is,

$$\mathfrak{A}(\text{Isvara}) = \mathfrak{A}(\text{Isvara})$$

To discuss the controlling power of the universe, two doctrines have to be mentioned first. These two doctrines are niresvaravada (atheism) and sesvaravada (theism). Atheism is to disbelieve in the existence of God. Theism is to believe in the existence of God. The doctrine that holds a negative view of the controlling power of the universe is called niresvaravada. Again the doctrine that holds a positive view of the controlling power of the universe is called sesvaravada. God is believed to have no existence in niresvaravada. On the other hand, God is believed to be present in sesvaravada.

### 3.2.9 Interpretation of Point Rule for Brahman

Let us explain the law of point rule for Brahman. Brahman has one component and this component is Isvara. This component is at a point. A point is a geometric object that has no length, width and height. So there is no distortion of the point. A point is a unique and singular

object. There is a great beauty of points in mathematics. There is a law under the point rule and that is Isvara is one and unique. The expression 'Isvara is at the point' means that Isvara is unique. Isvara has not been compared to anything. Isvara is only equal to Isvara. The improvement or deterioration of Isvara is entirely a matter of Brahman and no other component is responsible for it.

### 3.2.10 Generancy Theory about God in Terms of Dravya, Guna and Karma

God can be discussed in terms of dravya (substance), guna (quality) and karma (action). Four doctrines can be mentioned about this. These four doctrines are akatvavada, visistavada, vahutvavada and ansatvavada.

#### 3.2.11 Akatvavada

The word 'akatvavada' comes from the words 'akatva' means oneness and 'vada' means theory. The doctrine according to which the controlling power of the universe is considered to be the one is called akatvavada (monotheism). Believers of this doctrine think that God is one and that He is the holder and bearer of everything in the universe. According to this doctrine, God alone controls this universe. He is not bound by any distinction. His guna (quality) is sunya (void) and karma (action) is niscala (static). Nirguna Brahman is the power that controls the universe described in monotheism. This controlling power is nirviseśa that is devoid of variety. All visesas (varieties) are implicit to him.

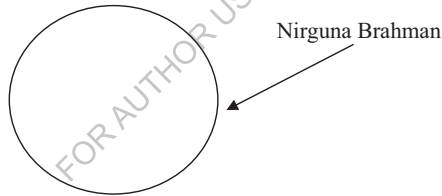


Fig. 3.4

#### 3.2.12 Visistavada

The word 'visistavada' comes from the words 'visista' means distinguished and 'vada' means theory. The doctrine according to which the controlling power of the universe is one but all visesas (varieties) is considered to be with him is called visistavada. Believers in this doctrine also think that God is one and He is the holder and bearer of everything in the universe. According to this doctrine He alone controls this universe. His guna (quality) is purna (full) and karma (action) is sacala (moving). The controlling power described in visistavada is Saguna Brahman. This controlling power is savisesa that is having varieties.

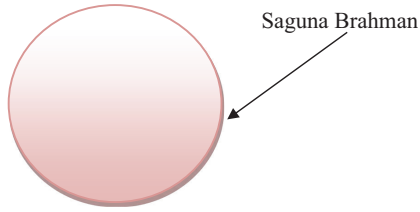


Fig. 3.5

### 3.2.13 Vahutvavada

The word 'vahutvavada' comes from the two words 'vahutva' and 'vada' where 'vahutva' means plurality and 'vada' means theory. The doctrine according to which the controlling power of the universe is one, but through many. He controls everything in the universe. This is called vahutvavada. Believers in this doctrine think that God is one, but He has many vibhuti (glorious forms). Different deities are the vibhuti of God. He is born as an avatara (incarnation) in the universe to destroy the wicked and to protect the gentlemen. The quality of the power that controls the universe described in this doctrine is vrhat (large) and action is bistirna (broad).

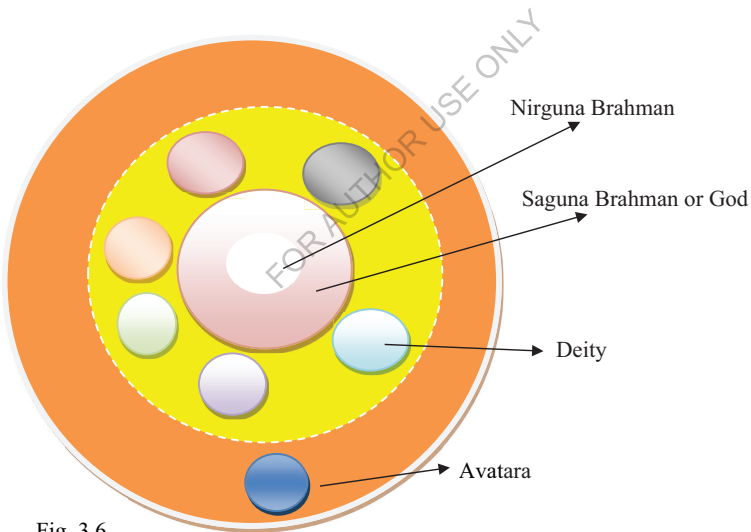


Fig. 3.6

### 3.2.14 Ansatvavada

The word 'ansatvavada' comes from the two words 'ansatva' and 'vada', where 'ansatva' means partially and 'vada' means theory. The doctrine that the controlling power of the universe is one but that it controls the universe through its parts is called ansatvavada. In this doctrine any deity or incarnation is placed in the seat of God. The quality of the power that controls the universe described in this doctrine is ksudra (small) and action is sankirna (narrow).



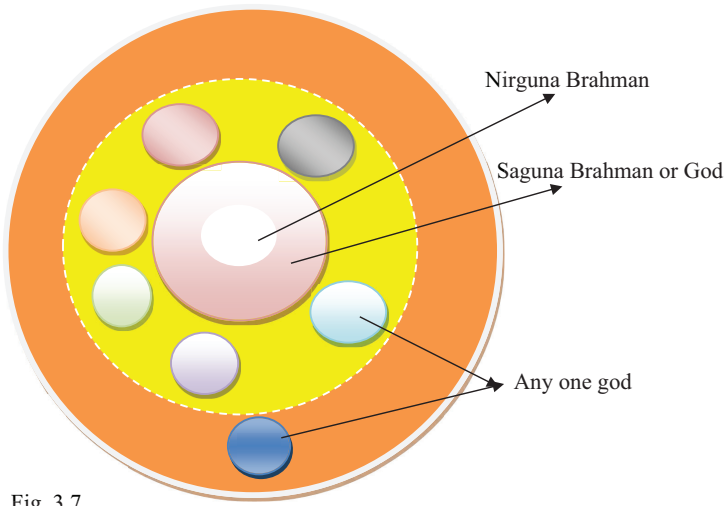


Fig. 3.7

The doctrines concerning the power that controls the universe are shown in the classification below.

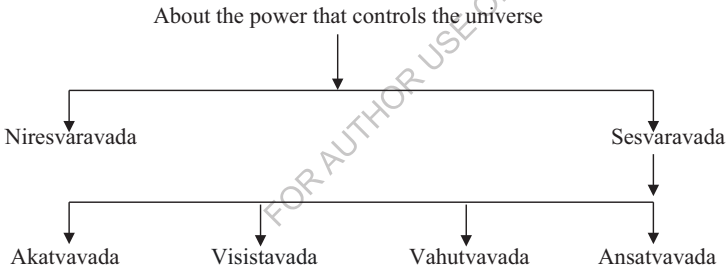


Fig. 3.8

The doctrines mentioned in Sesvaravada are shown in the following table in terms of dravya, guna and karma.

Doctrines	Dravya (substance)	Guna (quality)	Karma (action)
Akatvavada	Aka (one)	Sunya (void)	Niscala (static)
Visistavada	Visesa (variety)	Purna (full)	Sacala (moving)
Vahutvavada	Vahu (many)	Vrhat (large)	Bistirna (broad)
Ansavavada	Ansa (part)	Ksudra (small)	Sankirna (narrow)

Tab. 3.9

Notice the figure below in the light of the dravya (substance) of padarthas (Categories).

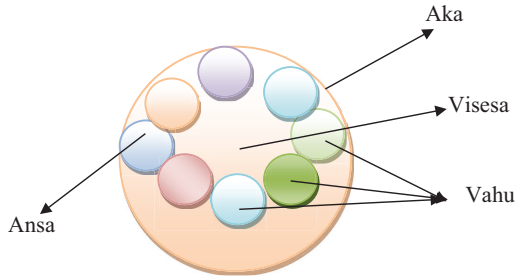


Fig. 3.9

The following inequality is found from the figure above.

$$\text{Aka} \geq \text{Visesa} > \text{Vahu} > \text{Ansa}$$

Notice the figure below in the light of the guna (quality) of padarthas (Categories).

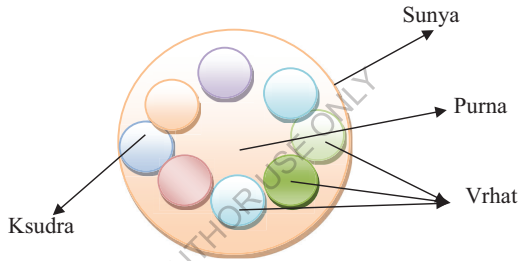


Fig. 3.10

The following inequality is found from the figure above.

$$\text{Sunya} \geq \text{Purna} > \text{Vrhat} > \text{Ksudra}$$

Notice the figure below in the light of the karma (action) of padarthas (Categories).

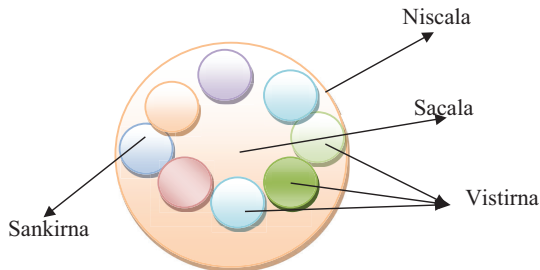


Fig. 3.11

The following inequality is found from the figure above.

$$\text{Niscala} \geq \text{Sacala} > \text{Vistirma} > \text{Sankirna}$$

### 3.2.15 Generancy Theory about the Relation of God to the Universe

The relation of God to the universe is an important philosophical issue. There is disagreement among philosophers on this point. Some believe that God exists outside the universe after He created the universe. Others believe that God remains within the universe after he created the universe. Again, a third party believes that after God created the universe, He resides inside the universe and also resides outside. There are three doctrines in this regard. These three doctrines are deism, pantheism and panentheism.

According to deism, God is an extraterrestrial being and the relationship of the universe with God is extraterrestrial. The essence of deism is that God and the universe are two distinct realities. There is no internal relationship between God and the universe, the relationship between the two is an external relationship. On the other hand, according to pantheism, God is an all-encompassing reality and the relationship of the world with God is an all-encompassing relationship. The essence of pantheism is that God is everything and everything is God. God and the universe are one.

Panentheism is an accepted doctrine of reconciling the two doctrines by eliminating the flaws of deism and pantheism. The characteristic of panentheism is that it seeks to reconcile deism and pantheism. According to deism, God transcends the universe and is outside the universe. Again, according to pantheism, God is in the universe by pervading the universe. Panentheism combines these two opposing doctrines in such a way that God is both within the universe and beyond the universe.

According to this doctrine, God is eternal, infinite and endless. He is both superficial and intermediate. He is transcendent and immanent. He expresses himself through this universe. He is holding everything. But His eternal being in the universe has not ended. The existence of God exists beyond this universe. In panentheism, there is an inevitable and formative relationship between God and the universe, the one and the many, the infinite and the finite, and the perfect and the imperfect.

In Western philosophy, there are two different interpretations of panentheism by Hegel and Martineau. They both believe that God is in the universe and outside the universe. But they differ on God's relationship with living beings (jivas). Hegel thinks that God is transcendent and intermediate even in the case of living beings like the universe. But Martineau thinks that God is completely transcendent in the case of living beings. That is, God is completely outside of living beings. God has no close relationship with living beings.

Generancy philosophy believes in panentheism. Generancy philosophy thinks that God is in the universe and also outside the universe. This philosophy thinks that jada (inanimate object) and jiva (living being) belong to prakrti (nature). Jada and jiva are two akaras (forms) of prakrti. Prakrti (nature) is a tattva (theory). He created the nature (prakrti) before he created the universe (jagat). So, He is outside of nature and is also inside. Therefore, to say that God is inside the universe means that God is inside inanimate objects and living beings. God has a close relationship with living beings. The Purusa Sukta of the Rig Veda is found to support panentheism. Panentheism can be explained with the help of the following figure.

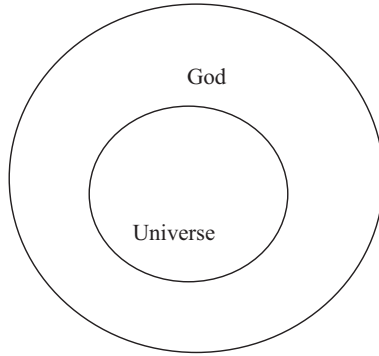


Fig. 3.12

### 3.3 Prakritology

#### 3.3.1 Prakrti

Prakrti (nature) is a tattva (theory). There are two akaraṣ (forms) of this tattva. Both of these akaras are jada (intimate objects) and jiva (living beings). Prakrti (nature) originates from Purusa, that is, Purusa is cause, prakrti is action. The components of inanimate objects are atoms or paramanu and the objects of living beings are deha (body) and prana (vitality).

Prakrti is made up of a combination of sthula dravya (gross substance) and suksma dravya (subtle substance). Sthula dravya are the five great elements (panchamahabhutas) namely, ksiti (soil), jala (water), agni (fire), vayu (air) and akasa (ether). Suksma dravya are the manas (mind), buddhi (intellect) and ahankara (ego-sense). Prakrti has two kinds namely, jada and jiva. Purusa is karana (cause), prakrti is karya (effect).

The effect is generated from the cause and then in the time of destruction it (effect) becomes immersed in the cause. The effect is an extension of the cause. The expanding form of prakrti is the universe (jagat). Before the creation, the universe is in a state of inexpressible. So prakrti has been called avaktya (unmanifested).

The word prakrti refers to what gives rise to various changes (vikaran prakrti iti). It refers to primitive cosmic matter from where various evolutions such as mahat, ahamkara, etc. originate. The existence of such primitive substances has been accepted by the Sankhya and Vedanta systems to explain a causal beginning of the physical universe.

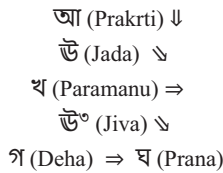
Vacaspati Misra in his commentary Tattva Kaumudi has described prakrti in the following verse: 'Prakaroti iti Prakrti Pradhanam (Tattva Kaumudi on Samkhya Karika) Sattvarajostamsam Samyavastha.' On the basis of this verse it may be said that the state of equilibrium of the three gunas is prakrti. The three gunas are sattva, rajas and tamas. The term equilibrium or samyavastha means the state in which the three gunas are of the same plane, i.e. no gunas either predominate or is subdued. Another meaning of the word 'prakrti' is the universe by which it is made is prakrti. The source of the universe is called prakrti because prakrti results in the form of the universe. Prakrti is the material cause of the universe, Purusa is the efficient cause of the universe.

Prakrti is the sum of three gunas. These three gunas are sattva, rajas and tamas. These three gunas are the elements of prakrti. Prakrti is in harmony with these three gunas. Sattva guna is the manifestation of purity and holiness. Rajas guna is the manifestation of action and drive. Tamas guna is the manifestation laziness and inertia. The nature of these three gunas is to dominate each other. These three gunas help one another, even though they are against each other. Without the cooperation of these three gunas, nothing can be created.

### 3.3.2 Generancy Theory about Prakrti

Different schools of Indian philosophy have discussed prakrti (nature) in different ways. In the present section, generancy theory about prakrti is discussed.

(1) The partial model of prakrti derived from main theory is,



(2) Prakrti is the tattva (theory). Jada and jiva are akara (form) of prakrti. The upakarana (component) of jada is paramanu. The upakaranas of jiva are deha and prana. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Prakrti	Jada	Paramanu
	Jiva	Deha and prana

Tab. 3.10

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the forms of the prakrti and at the same time the cause of the components of the forms. On the other hand, the forms of prakrti are the cause of the components of the forms and are related to the components of the forms.

(4) Jada and jiva are bound by the inherent relationship. There is an inseparable and eternal relationship between jada and jiva. Jada is in the jiva. Jiva stays connected to jada. Jiva cannot exist without jada, but jada can exist without jiva.

(5) Now let us analyze prakrti in the light of jnanatattva.

Prakrti or nature is a tattva. It has two akaras (forms) namely, jada and jiva. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Prakrti can be taken as a category, it has a specific name and let us think that this name is prakrti. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the prakrti is added, then we can say that the prakrti is positive. Again, if the prakrti is subtracted, then we can say that the prakrti is negative. If it is on the right side of the number line, the prakrti will be positive. Again, if it is on the left side of the number line, the prakrti will be negative.

Every object in this universe is three-dimensional. Prakrti is not out of it. Prakrti is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the prakrti may be in the north or south, it may be in the east or west, or it may be in the up or down. Prakrti can be measured as a solid object. Each prakrti has four quantities. These four quantities are force, mass, space and time. There is force and mass in prakrti. Again the prakrti is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Prakrti
Assertion	Positivity	Prakrti inclusion
	Negativity	Prakrti exclusion
Dimension	North	Prakrti is in the north-south
	East	Prakrti is in the east-west
	Up	Prakrti is in the up-down
Quantity	Force	There is force in this prakrti
	Mass	There is mass in this prakrti
	Space	This prakrti is in a space
	Time	This prakrti is in a time

Tab. 3.11

(6) The decision of prakrti derived from the main theory is 'jada and jiva are related. Prakriti is the cause of these (jada and jiva).' That is

$$\text{আ (Prakrti)} \downarrow \text{উ (Jada)} \rightsquigarrow \text{জীব (Jiva)}$$

### 3.3.3 Jada

Jada is an akara (form) of the tattva (theory) named prakrti (nature). Jada is an unconscious substance. The upakarana (component) of the jada (intimate objects) is paramanu (atom). The upakarana refers to a structural unit of akara or form.

The desire to know nature (prakrti) has come from the evolution of human civilization. Jada is a part of this nature. In the year 460 BC, the Indian philosopher Kanada first proposed that all matter is made up of a very thin inseparable particles. At about the same time, the Greek philosophers Democritus and Leucippus presented a similar doctrine.

The inert materials are of two types again- elements and compounds. The difference between an element and a compound is that an element is made up of same type of atoms, whereas a compound is made up of different elements in definite proportions. Examples of elements are hydrogen H<sub>2</sub>, oxygen O<sub>2</sub> etc. and examples of compounds are water H<sub>2</sub>O, carbon dioxide CO<sub>2</sub>. The molecule is the smallest particle of the element or compound. The compound is a type of molecule. Molecules consist of two or more atoms that are held together by chemical bonds. When in the molecule the types of atoms are different from each other, then it is called compound. Again the molecule consists of only one type of atoms is called element.

### 3.3.4 Generancy Theory about Jada

Generancy theory about jada is discussed below.

(1) The partial model of jada derived from main theory is,

$$\begin{aligned} & \text{ঔ (Jada) } \rightsquigarrow \\ & \text{খ (Paramanu) } \Rightarrow \end{aligned}$$

(2) Jada is an akara (form) of prakrti. The upakarana (component) of jada is paramanu. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Prakrti	Jada	Paramanu

Tab. 3.12

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the jada and at the same time the cause of the upakarana of the jada. On the other hand, the jada is the cause of the upakarana of the jada and is related to the upakarana of the jada. That is, the jada is the cause of its component paramanu and is also related to this component. Writing in sign language is as follows:

$$\begin{aligned} & \text{আ (Prakrti) } \Downarrow \\ & \text{ঔ (Jada) } \rightsquigarrow \\ & \text{খ (Paramanu) } \Rightarrow \end{aligned}$$

(4) Now let us analyze jada in the light of jnanatattva.

Prakrti is a tattva. Jada is a form of prakrti. Paramanu is a component of jada. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Jada can be taken as a category, it has a specific name and let us think that this name is jada. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the jada is added, then we can say that the jada is positive. Again, if the jada is subtracted, then we can say that the jada is negative. If it is on the right

side of the number line, the jada will be positive. Again, if it is on the left side of the number line, the jada will be negative.

Every object in this universe is three-dimensional. Jada is not out of it. Jada is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the jada may be in the north or south, it may be in the east or west, or it may be in the up or down. Jada can be measured as a solid object. Each jada has four quantities. These four quantities are force, mass, space and time. There is force and mass in jada. Again the jada is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Jada
Assertion	Positivity	Jada inclusion
	Negativity	Jada exclusion
Dimension	North	Jada is in the north-south
	East	Jada is in the east-west
	Up	Jada is in the up-down
Quantity	Force	There is force in this jada
	Mass	There is mass in this jada
	Space	This jada is in a space
	Time	This jada is in a time

Tab. 3.13

(5) The decision of jada derived from the main theory is 'jada is related to paramanu.' That is

$$\text{जडा (Jada)} \simeq \text{परमाणु (Paramanu)} \Rightarrow$$

### 3.3.5 Paramanu

The Indian philosophers first introduced the theory about atoms (paramanu). At about the same time Greek philosophers presented their doctrines about atoms.

#### 3.3.5.1 Indian Atomism

In the ancient Indian Philosophy the Vaisesika school developed one of the earliest forms of atomism in the 6<sup>th</sup> century B. C. Kanada Muni is the founder of Vaisesika Philosophy. He has had extensive discussions about atomism in his Philosophy. This is known as Vaisesika atomism. According to Vaisesika atomism everything we see in the universe is made up of a



combination of four types of atoms- ksiti (soil), jala (water), agni (fire) and vayu (air). When these atoms are detached, all the material are destroyed. The Vaisesikas believe that atoms are a fundamental component of all the material objects of the universe. According to Vaisesikas, continuously dividing any compound some fine particles are found at the end that can no longer be divided. These particles are called paramanu or atoms. The atoms are eternal as they are neither created nor destroyed. Atoms are inactive and motionless in themselves. These atoms are so small that they cannot be perceived. Atoms are the inherent cause of all compounds because the creation of inert materials is in connection with different atoms. God is the efficient cause of the material world. Atoms are co-eternal with God.

In the first phase of creation two atoms are united into a dyad or dvyanuka. This dyad is the first state of the compound world. Like an atom, the dyad is not perceivable. So three dyad combination created a triad or tryanuka. This triad is the first perceivable compound. Atoms are many in number and separate from each other. Atoms do not have quantitative differences but there are qualitative differences. This is the first landmark on atomic theory. Kanada Muni is the person to whom credit can be given for developing this theory.

### **3.3.5.2 Greek Atomism**

Greek philosophers Leucippus (480-420 B.C.) and his pupil Democritus (460-370 B.C.) thought that all matter was made up of small indivisible particles. They are called atoms. Atoms continually float in a vacuum or in the void, bouncing into each other. According to them, there is no qualitative difference between atoms, they have only quantitative difference. Some are small, some are big, some are overweight, some are underweight. They vary in form, order, and posture.

### **3.3.5.3 Modern Atomism**

John Dalton in 1803 proposed that all chemical elements are composed of a unique type of atoms which are indivisible. All atoms of a given element are identical in mass and properties. The chemical compounds are made of molecules which are composed of atoms in definite proportions. So, the atoms determine the structure of matter and compounds are separated into their individual elements.

Later, different scientists presented different models of the structure of atoms. Sir J. J. Thomson proposed in 1904 the Plum Pudding Model soon after the discovery of electron (1897). In this model Thomson mentions that inside the pudding, such as plums are scattered, just as negative electrons (plums) are embedded in a positively charged sphere (pudding) in an atom.

New Zealand born physicist Ernest Rutherford proposed the solar model of atom in 1911. In this model he described positively charged nucleus where all the mass of an atom is concentrated. The nucleus is surrounded by the negatively charged electrons. These electrons circulate around the nucleus much like the planets circulate around the sun.

Neil Bohr, a Danish physicist proposed the Bohr atom model in 1913. He proposed in his model that electrons orbit the nucleus in a fixed circular path termed as stationary orbit. The orbit has a fixed amount of energy. The energy of the orbit is related to its size. The change in energy occurs when the electrons moves from one orbit to another.

### 3.3.5.4 Panchamahabhutas

This jada jagat (material universe) is made up of a combination of panchamahabhutas namely, ksiti (soil), jala (water), agni (fire), vayu (air) and akasa (ether). This panchamahabhutas (five physical elements) is again made up of smallest unit named atoms. The atoms are composed of mainly three type of particles named protons, neutrons and electron.

This inert universe originates from prakrti. Prakrti is again the sum of three gunas- sattva, rajas and tamas. Although there is a conflict between these three gunas, there is a sense of cooperation between them. These three gunas are constantly changing. The nature of the three gunas is to influence one another. But even if the other two gunas become overwhelmed when one guna is dominated. No one can work without recourse to the other two gunas. This is how the jadas (inert material) and the jivas (living beings) are created. The nature of the object is determined by the gunas within which the object takes precedence. The three gunas combine in different composition to create the panchamahabhutas.

Combination of trigunas	Predominant element	Combination of trigunas	Predominant element
Sattva	Akasa (Ether)	Sattva + Tamas	Jala (Water)
Rajas	Vayu (Air)	Tamas	Ksiti (soil)
Sattva + Rajas	Agni (Fire)		

Tab. 3.14

### 3.3.6 Generancy Theory about Paramanu

Generancy theory about paramanu is discussed below.

(1) The partial model of paramanu derived from main theory is,

$$\begin{aligned} & \text{ঐ (Jada)} \Downarrow \\ & \text{ঋ (Paramanu)} \Rightarrow \end{aligned}$$

(2) Paramanu is an upakarana (component) of a jada. The jada is the akara (form) of prakrti. Arranged in the form of a table, we get,

Akara	Upakarana
Jada	Paramanu

Tab. 3.15

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the jada and at the same time the cause of paramanu. On the other hand, the jada is the cause of paramanu and is related to paramanu. Writing in sign language is as follows:

$$\text{আ (Prakrti)} \Downarrow \text{ঐ (Jada)} \Downarrow \text{ঋ (Paramanu)}$$

(4) Now let us analyze paramanu in the light of jnanatattva.

Paramanu is a component of a jada. Jada is a form of prakrti. Prakrti is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Paramanu can be taken as a category, it has a specific name and let us think that this name is paramanu. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the paramanu is added, then we can say that the paramanu is positive. Again, if the paramanu is subtracted, then we can say that the paramanu is negative. If it is on the right side of the number line, the paramanu will be positive. Again, if it is on the left side of the number line, the paramanu will be negative.

Every object in this universe is three-dimensional. Paramanu is not out of it. Paramanu is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, paramanu may be in the north or south, it may be in the east or west, or it may be in the up or down. Paramanu can be measured as a solid object. Each paramanu has four quantities. These four quantities are force, mass, space and time. There is force and mass in paramanu. Again paramanu is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Paramanu
Assertion	Positivity	Paramanu inclusion
	Negativity	Paramanu exclusion
Dimension	North	Paramanu is in the north-south
	East	Paramanu is in the east-west
	Up	Paramanu is in the up-down
Quantity	Force	There is force in this paramanu
	Mass	There is mass in this paramanu
	Space	This paramanu is in a space
	Time	This paramanu is in a time

Tab. 3.16

- (5) Paramanu follows the point rule. The law of paramanu derived from the point rule is,  
 $\text{ॐ (Paramanu)} = \text{ॐ (Paramanu)}$

### 3.3.7 Interpretation of Point Rule for Jada

Let us explain the law of point rule for jada. Jada has one component and this component is paramanu. This component is at a point. A point is a geometric object that has no length, width and height. So there is no distortion of the point. A point is a unique and singular object. There is a great beauty of points in mathematics. There is a law under the point rule and that is paramanu is one and unique. The expression 'paramanu is at the point' means that paramanu is unique. Paramanu has not been compared to anything. Paramanu is only equal to paramanu. The improvement or deterioration of paramanu is entirely a matter of the jada and no other component is responsible for it.

### 3.3.8 Jiva

Jiva is an akara (form) of the tattva (theory) named prakrti (nature). Jiva is a living being or any entity imbued with a life force. The word jiva originates from the Sanskrit verb-root 'jiv' which means 'to breathe or to live'. There are two upakaranas (components) of the jiva. One is the deha or sarira (body) and other is the prana or the vitality.

### 3.3.9 Generancy Theory about Jiva

Generancy theory about jiva is discussed below.

- (1) The partial model of jiva derived from main theory is,

$$\begin{array}{c} \text{ॐ (Jiva)} \Downarrow \\ \text{ॐ (Deha)} \Rightarrow \text{ॐ (Prana)} \end{array}$$

- (2) Jiva is an akara (form) of prakrti. The upakaranas (components) of jiva are deha and prana. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Prakrti	Jiva	Deha and prana

Tab. 3.17

- (3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the jiva and at the same time the cause of the upakaranas of the jiva. On the other hand, the jiva is the cause of the upakaranas of the jiva and is related to the upakaranas of the jiva. That is, the jiva is the cause of its components deha and prana and is also related to these components. Writing in sign language is as follows:

$$\begin{array}{c} \text{आ (Prakrti)} \Downarrow \\ \text{ॐ (Jiva)} \Downarrow \\ \text{ॐ (Deha)} \Rightarrow \text{ॐ (Prana)} \end{array}$$

(4) Jada and jiva are bound by the inherent relationship. There is an inseparable and eternal relationship between jada and jiva. Jada is in the jiva. Jiva stays connected to jada. Jiva cannot exist without jada, but jada can exist without jiva.

(5) Now let us analyze jiva in the light of jnanatattva.

Prakrti is a tattva. Jiva is a form of prakrti. Deha and prana are the components of jiva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Jiva can be taken as a category, it has a specific name and let us think that this name is jiva. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the jiva is added, then we can say that the jiva is positive. Again, if the jiva is subtracted, then we can say that the jiva is negative. If it is on the right side of the number line, the jiva will be positive. Again, if it is on the left side of the number line, the jiva will be negative.

Every object in this universe is three-dimensional. Jiva is not out of it. Jiva is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the jiva may be in the north or south, it may be in the east or west, or it may be in the up or down. Jiva can be measured as a solid object. Each jiva has four quantities. These four quantities are force, mass, space and time. There is force and mass in jiva. Again the jiva is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Jiva
Assertion	Positivity	Jiva inclusion
	Negativity	Jiva exclusion
Dimension	North	Jiva is in the north-south
	East	Jiva is in the east-west
	Up	Jiva is in the up-down
Quantity	Force	There is force in this jiva
	Mass	There is mass in this jiva
	Space	This jiva is in a space
	Time	This jiva is in a time

Tab. 3.18

(6) The decision of jiva derived from the main theory is 'jiva is related to deha and prana.' That is

$$\text{ଓ} (\text{Jiva}) \text{ ଯ } \text{ଘ} (\text{Deha}) \Rightarrow \text{ଞ} (\text{Prana})$$

### 3.3.10 Deha

According to Indian philosophy there are three types of human body or deha (sarira). These three types of bodies or sarira traya are

- (1) sthula sarira or the gross body,
- (2) sukshma sarira or the subtle body and
- (3) karana sarira or the causal body.

#### 3.3.10.1 Sthula Sarira

The sthula sarira or the gross body is the physical body that is composed of the panchamahabhutas or five great elements namely, ksiti (soil), jala (water), agni (fire), vayu (air), akasa (ether). The gross body is the mortal body that eats, breathes, moves and decays. It is subject to a sixfold change in the body and the changes are birth, subsistence, growth, maturity, decay, and death. The sthula sarira is determined by the karmaphala of ones past life. The process of formation of the gross body is done through the panchikarana i.e. combining of the five primordial subtle elements. After death the body of the jiva is destroyed and its five constituent elements are dissolved. Annamaya kosha (physical sheath) reside in the sthula sarira. The sthula sarira is composed of the panchamahabhutas.

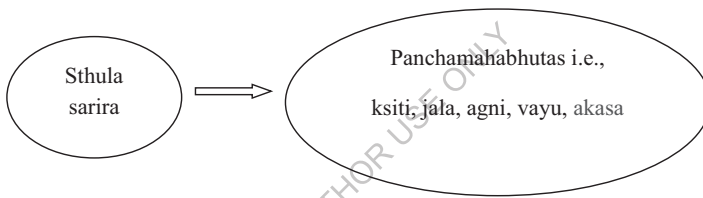


Fig. 3.13

#### 3.3.10.2 Suksma Sarira

The suksma sarira or linga sarira is the subtle body which is considered to contain all vital energies and keeps the physical body alive. The subtle body is composed of five organs of cognition (eyes, ears, nose, tongue and skin), five organs of action (hands, feet, rectum, mouth and genitals), five vital forces (prana, apana, samana, udana and vyana), manas (the mind), buddhi (the intellect) and ahankara (ego sense). At the death of the jivas the gross body is destroyed but the subtle body is not destroyed. After death, a subtle body remains present and plays a role in the reincarnation. When a person dies, his or her gross body is burnt and the soul by which leaves the gross body is called a type of vehicle and this vehicle is the linga sarira. This linga sarira sometimes described as angustha-matra (of the size of a thumb). Pranamaya kosha (vital energy sheath), manomaya kosha (mental sheath) and vijñanamaya kosha (intellectual sheath) reside in the suksma sarira.

The suksma sarira is composed of buddhi (the intellect), ahankara (ego sense), manas (the mind), pancha jñanendriyas (five organs of cognition), pancha karmendriyas (five organs of action) and pancha pranas (five vital breaths).

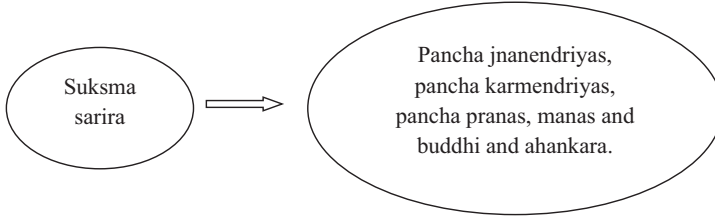


Fig. 3.14

### 3.3.10.3 Karana sarira

The karana sarira or the causal body is the basis of the sthula sarira and the sukshma sarira. It is the seed of the two other bodies so it is called the karana sarira. The causal body functions after the other bodies are gone. It plays a role in the new life of the new body. At the time of death the subtle body and the causal body are separated from the physical body. At a time the soul is completely detached from the causal body. Anandamaya kosha (blissful sheath) reside in the karana sarira.

### 3.3.10.4 Indriyas

According to yoga, the indriyas (sense organs) are pancha jnanendriyas, pancha karmendriyas, and antarendriya (manas or mind).

Pancha jnanendriyas mean five sense organs of cognition. They are

1. Shotra (ears) for hearing
2. Chaksu (eyes) for sighting
3. Ghrana (nose) for smelling
4. Jivha (tongue) for tasting
5. Tvak (skin) for touching

Pancha karmendriyas mean five sense organs of action. They are

1. Vak (mouth) for speech
2. Pani (hands) for grasping
3. Pada (feet) for walking
4. Payu (tongue) for excretion
5. upastha (genitals) for reproduction

Antarendriya means manas or mind. This is for thinking.

### 3.3.10.5 Pancha koshas

Pancha kosha is the concept in the Yoga philosophy and in the Vedanta philosophy that means the five sheaths or the five layers around the human soul. The term comes from the Sanskrit pancha meaning 'five' and kosha meaning 'sheath'. The pancha kosha consists of the following

- (1) annamaya kosha (physical sheath),
- (2) pranamaya kosha (vital energy sheath),
- (3) manomaya kosha (mental sheath)
- (4) vijnanamaya kosha (intellectual sheath) and
- (5) anandamaya kosha (blissful sheath).

### 3.3.10.6 Seven chakras

Here the chakra names, Sanskrit and English, their locations, colours, elements and number of lotus petals are given below.

Sanskrit names	English names	Locations	Colours	Elements	Lotus petals
Muladhara chakra	Root chakra	Base of spine	Red	Earth	4
Svadhithana chakra	Sacral chakra	Root of sexual organs	Orange	Water	6
Manipura chakra	Solar plexus chakra	Navel	Yellow	Fire	10
Anahata chakra	Heart chakra	Heart	Green	Air	12
Vishuddhi chakra	Throat chakra	Throat	Blue	Ether	16
Ajna chakra	Third eye chakra	Between eyebrows	Indigo	Extra-Sensory Perception	2
Sahasrara chakra	Crown chakra	top of the head	Violet	Thought	1000

Tab. 3.19

### 3.3.11 Generancy Theory about Deha

Generancy theory about deha is discussed below.

(1) The partial model of deha derived from main theory is,

$$\begin{aligned} & \text{ॐ (Jiva) } \bowtie \\ & \text{ॐ (Deha) } \Rightarrow \text{ ॐ (Prana)} \end{aligned}$$

(2) Deha is an upakarana (component) of a jiva. The jiva is the akara (form) of prakrti. Arranged in the form of a table, we get,

Akara	Upakarana
Jiva	Deha and prana

Tab. 3.20

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the jiva and at the same time the cause of deha. On the other hand, the jiva is the cause of deha and is related to deha. Writing in sign language is as follows:

$$\text{आ (Prakrti) } \downarrow \text{ ॐ (Jiva) } \bowtie \text{ ॐ (Deha)}$$



(4) Now let us analyze deha in the light of jnanatattva.

Deha is a component of a jiva. Jiva is a form of prakrti. Prakrti is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Deha can be taken as a category, it has a specific name and let us think that this name is deha. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the deha is added, then we can say that the deha is positive. Again, if the deha is subtracted, then we can say that the deha is negative. If it is on the right side of the number line, the deha will be positive. Again, if it is on the left side of the number line, the deha will be negative.

Every object in this universe is three-dimensional. Deha is not out of it. Deha is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, deha may be in the north or south, it may be in the east or west, or it may be in the up or down. Deha can be measured as a solid object. Each deha has four quantities. These four quantities are force, mass, space and time. There is force and mass in deha. Again deha is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Deha
Assertion	Positivity	Deha inclusion
	Negativity	Deha exclusion
Dimension	North	Deha is in the north-south
	East	Deha is in the east-west
	Up	Deha is in the up-down
Quantity	Force	There is force in this deha
	Mass	There is mass in this deha
	Space	This deha is in a space
	Time	This deha is in a time

Tab. 3.21

(5) Deha follows the balance rule. The law of deha derived from the balance rule is,

$$\text{Deha} \propto \text{Prana}$$

### 3.3.12 Prana

The prana vayu or the life force divided into five and each governing different functions. The five pranas are (1) prana, (2) apana, (3) udana, (4) samana and (5) vyana. Pranamaya kosha is made up of these five pranas, which are collectively known as the pancha-prana.

Prana vayu is upward flowing from the chest to the thorax. This governs the thoracic area between the larynx and the top of the diaphragm. It is the force by which breath is drawn into the body. It is associated with the element of air.

Apana vayu is the downward flowing which located below the navel region. This is responsible for all excretory, reproductive functions and provides energy for the large intestine, kidneys, anus and genitals. Disturbances of apana vayu can cause constipation, diarrhoea, piles, etc. It is associated with the element of water.

Udana vayu governs the neck and head and is responsible for all the sense organs. Udana also governs thought and consciousness. It harmonizes and activates the limbs and all their associated muscles, ligaments, nerves and joints. It is associated with the element of ether.

Samana vayu is located between the heart and the navel. It activates and controls the digestive system and governs the heart, liver, intestine, stomach, pancreas and their secretions. Disturbance of the samana vayu can cause indigestion and other stomach disorders. It is associated with the element of Fire.

Vyana vayu pervades the whole body, regulating and controlling all movement and coordinating the other prana vayus. It acts as the reserve force for the other prana vayus. It is associated with the element of earth.

Vayus, according to the Nisvasattvasamhita Nayasutra (6th-10th century) given below its location and responsibility.

Vayu	Location	Responsibility
Prana	Heart	Talking, laughing, singing, dancing, fighting, the arts, crafts, tasks
Apana (downward breath)	Anus	Lets food and drink enter body, waste move down and out of body
Udana (upward breath)	Throat	Sneezing, hiccuping, vomiting, coughing
Samana	Navel	Mixes what is eaten and drunk
Vyana	All the joints	Horripilation, sweating, stomach pain, bending of limbs, sense of touch.

Tab. 3.22

### 3.3.13 Generancy Theory about Prana

Generancy theory about prana is discussed below.

(1) The partial model of prana derived from main theory is,

$$\text{ॐ (Jiva) } \bowtie \text{ } \text{ॐ (Deha) } \Rightarrow \text{ ॐ (Prana)}$$

(2) Prana is an upakarana (component) of a jiva. The jiva is the akara (form) of prakrti. Arranged in the form of a table, we get,

Akara	Upakarana
Jiva	Deha and prana

Tab. 3.23

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, prakrti is the cause of the jiva and at the same time the cause of prana. On the other hand, the jiva is the cause of prana and is related to prana. Writing in sign language is as follows:

आ (Prakrti) ↓ उ° (Jiva) ∽ ष (Prana)

(4) Now let us analyze prana in the light of jnanatattva.

Prana is a component of a jiva. Jiva is a form of prakrti. Prakrti is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Prana can be taken as a category, it has a specific name and let us think that this name is prana. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the prana is added, then we can say that the prana is positive. Again, if the prana is subtracted, then we can say that the prana is negative. If it is on the right side of the number line, the prana will be positive. Again, if it is on the left side of the number line, the prana will be negative.

Every object in this universe is three-dimensional. Prana is not out of it. Prana is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, prana may be in the north or south, it may be in the east or west, or it may be in the up or down. Prana can be measured as a solid object. Each prana has four quantities. These four quantities are force, mass, space and time. There is force and mass in prana. Again prana is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Prana
Assertion	Positivity	Prana inclusion
	Negativity	Prana exclusion
Dimension	North	Prana is in the north-south
	East	Prana is in the east-west
	Up	Prana is in the up-down
Quantity	Force	There is force in this prana
	Mass	There is mass in this prana
	Space	This prana is in a space
	Time	This prana is in a time

Tab. 3.24

(5) Prana follows the balance rule. The law of prana derived from the balance rule is,  
 $\text{Prana} \propto \text{Deha}$

### 3.3.14 Interpretation of Straight Line Rule for Jiva

Let us explain the law of straight line rule for jiva. Jiva has two components and these two components are deha and prana. These two components are at the two endpoints of the straight line. Let the straight line be divided into two equal parts along the middle point. The straight line along the midpoint is in equilibrium. In this case the straight line has a mathematical beauty. To the left of the middle point is deha and to the right is prana. So deha and prana are in equilibrium along the middle point. There is a law under this rule and that is deha and prana will change proportionally. That is, if deha is doubled, prana will be doubled and if deha is halved, prana will be halved. Otherwise the straight line will lose balance and deviate from mathematical beauty.

## 3.4 Jagatonomy

### 3.4.1 Jagat

Jagat (universe) is a tattva (theory). There are three akaras (forms) of this tattva. These akaras are prithvi (earth), antariksa (sky) and svarga (heaven).

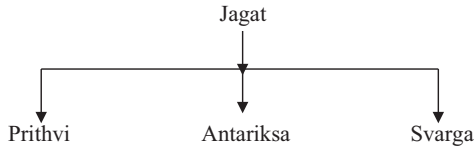


Fig. 3.15

There are three gunas of prakrti. This three gunas are sattva, rajas and tamas. These gunas are components of prakrti, not qualities. The three gunas of prakrti cannot last for a moment. Prakrti is constantly creating due to its nature (svabhava). Ahankara (ego-sense) is created from prakrti. There are three types of ego-sense, namely sattvika, rajasika and tamasika.

### 3.4.2 Generancy Theory about Jagat

Different schools of Indian philosophy have discussed jagat (universe) in different ways. In the present section, generancy theory about jagat is discussed.

(1) The partial model of jagat derived from main theory is,

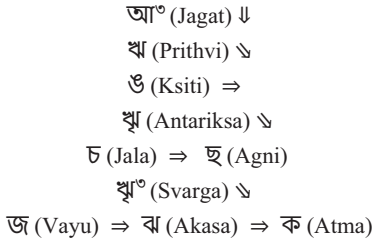


Fig. 3.16

(2) Jagat is the tattva (theory). Prithvi, antariksa and svarga are akara (form) of jagat. The upakarana (component) of prithvi is ksiti. The upakaranas of antariksa are jala and agni. The upakaranas of svarga are vayu, akasa and atma. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jagat	Prithvi	Ksiti
	Antariksa	Jala and agni
	Svarga	Vayu, akasa and atma

Tab. 3.25

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the forms of the jagat and at the same time the cause of the components of the forms. On the other hand, the forms of the jagat are the cause of the components of the forms and are related to the components of the forms.

(4) Prithvi and antariksa are bound by the inherent relationship. There is an inseparable and eternal relationship between prithvi and antariksa. Prithvi is in the antariksa. Antariksa stays connected to prithvi. Antariksa cannot exist without prithvi, but prithvi can exist without antariksa.

Similarly antariksa and svarga are bound by the inherent relationship. There is an inseparable and eternal relationship between antariksa and svarga. Antariksa is in the svarga.

Svarga stays connected to antariksa. Svarga cannot exist without antariksa, but antariksa can exist without svarga.

(5) Now let us analyze jagat in the light of jnanatattva.

Jagat or universe is a tattva. It has three akaras (forms) namely, prithvi, antariksa and svarga. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Jagat can be taken as a category, it has a specific name and let us think that this name is jagat. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the jagat is added, then we can say that the jagat is positive. Again, if the jagat is subtracted, then we can say that the jagat is negative. If it is on the right side of the number line, the jagat will be positive. Again, if it is on the left side of the number line, the jagat will be negative.

Every object in this universe is three-dimensional. Jagat is not out of it. Jagat is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the jagat may be in the north or south, it may be in the east or west, or it may be in the up or down. Jagat can be measured as a solid object. Each jagat has four quantities. These four quantities are force, mass, space and time. There is force and mass in jagat. Again the jagat is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Jagat
Assertion	Positivity	Jagat inclusion
	Negativity	Jagat exclusion
Dimension	North	Jagat is in the north-south
	East	Jagat is in the east-west
	Up	Jagat is in the up-down
Quantity	Force	There is force in this jagat
	Mass	There is mass in this jagat
	Space	This jagat is in a space
	Time	This jagat is in a time

Tab. 3.26

(6) The decision of jagat derived from the main theory is ‘prithvi, antariksa and svarga are related. Jagat is the cause of these (prithvi, antariksa and svarga).’ That is

$$\text{ਆ}^\circ (\text{Jagat}) \Downarrow \text{ਘ} (\text{Prithvi}) \rightsquigarrow \text{ਘ}^\circ (\text{Antariksa}) \rightsquigarrow \text{ਘ}^\circ (\text{Svarga})$$

### 3.4.3 Prithvi

Prithvi is an akara (form) of the tattva (theory) named jagat (universe). The upakarana (component) of prithvi is ksiti. The upakarana refers to a structural unit of akara or form.

Prithvi or earth is a planet in our solar system. Earth is the third planet in the solar system by distance and the fifth largest by volume. The earth is home to billions of species, including humans. Earth is by far the only cosmic place where the existence of life is known. The only natural satellite of the earth is the moon. Both the mineral and biological resources of this planet are essential for the survival of humankind.

### 3.4.4 Generancy Theory about Prithvi

Generancy theory about prithvi is discussed below.

(1) The partial model of prithvi derived from main theory is,

$$\text{ਘ} (\text{Prithvi}) \rightsquigarrow \text{ਓ} (\text{Ksiti}) \Rightarrow$$

(2) Prithvi is an akara (form) of jagat. The upakarana (component) of prithvi is ksiti. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jagat	Prithvi	Ksiti

Tab. 3.27

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the prithvi and at the same time the cause of the upakarana of the prithvi. On the other hand, the prithvi is the cause of the upakarana of the prithvi and is related to the upakarana of the prithvi. That is, the prithvi is the cause of its component ksiti and is also related to this component. Writing in sign language is as follows:

$$\text{ਆ}^\circ (\text{Jagat}) \Downarrow \text{ਘ} (\text{Prithvi}) \rightsquigarrow \text{ਓ} (\text{Ksiti}) \Rightarrow$$

(4) Now let us analyze prithvi in the light of jnanatattva.

Jagat is a tattva. Prithvi is a form of jagat. Ksiti is a component of prithvi. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and

that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Prithvi can be taken as a category, it has a specific name and let us think that this name is prithvi. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the prithvi is added, then we can say that the prithvi is positive. Again, if the prithvi is subtracted, then we can say that the prithvi is negative. If it is on the right side of the number line, the prithvi will be positive. Again, if it is on the left side of the number line, the prithvi will be negative.

Every object in this universe is three-dimensional. Prithvi is not out of it. Prithvi is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the prithvi may be in the north or south, it may be in the east or west, or it may be in the up or down. Prithvi can be measured as a solid object. Each prithvi has four quantities. These four quantities are force, mass, space and time. There is force and mass in prithvi. Again the prithvi is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Prithvi
Assertion	Positivity	Prithvi inclusion
	Negativity	Prithvi exclusion
Dimension	North	Prithvi is in the north-south
	East	Prithvi is in the east-west
	Up	Prithvi is in the up-down
Quantity	Force	There is force in this prithvi
	Mass	There is mass in this prithvi
	Space	This prithvi is in a space
	Time	This prithvi is in a time

Tab. 3.28

(5) The decision of prithvi derived from the main theory is 'prithvi is related to ksiti.' That is

$$\text{Prithvi} \rightsquigarrow \text{Ksiti} \Rightarrow$$

### 3.4.5 Ksiti

Ksiti is an structural unit of prithvi. Ksiti is in the state of solid. Ksiti is a Sanskrit word meaning soil, land, earth etc. It is stable. According to Ayurveda, ksiti expresses itself within the solid structure of the body such as bones, teeth, meat and hair etc. It is hard, stable, heavy, dull and slow. Any food with similar features will provide nutrition, and cause heaviness in the body. It will also improve strength and stability.



We can show ksiti, the attribute of ksiti and the sense (indriya) associated with ksiti given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Ksiti	Smell	Nose (ghrana)

Tab. 3.29

### 3.4.6 Generancy Theory about Ksiti

Generancy theory about ksiti is discussed below.

(1) The partial model of ksiti derived from main theory is,

$$\begin{aligned} \text{𑂔 (Prithvi)} &\Downarrow \\ \text{𑂔 (Ksiti)} &\Rightarrow \end{aligned}$$

(2) Ksiti is an upakarana (component) of a prithvi. The prithvi is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Prithvi	Ksiti

Tab. 3.30

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the prithvi and at the same time the cause of ksiti. On the other hand, the prithvi is the cause of ksiti and is related to ksiti. Writing in sign language is as follows:

$$\text{𑂔 (Jagat)} \Downarrow \text{𑂔 (Prithvi)} \Downarrow \text{𑂔 (Ksiti)}$$

(4) Now let us analyze ksiti in the light of jnanatattva.

Ksiti is a component of a prithvi. Prithvi is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Ksiti can be taken as a category, it has a specific name and let us think that this name is ksiti. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the ksiti is added, then we can say that the ksiti is positive. Again, if the ksiti is subtracted, then we can say that the ksiti is negative. If it is on the right side of the number line, the ksiti will be positive. Again, if it is on the left side of the number line, the ksiti will be negative.

Every object in this universe is three-dimensional. Ksiti is not out of it. Ksiti is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, ksiti may be in the north or south, it may be in the east or west, or it may be in the up or down. Ksiti can be measured as a solid object. Each ksiti has four

quantities. These four quantities are force, mass, space and time. There is force and mass in ksiti. Again ksiti is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Ksiti
Assertion	Positivity	Ksiti inclusion
	Negativity	Ksiti exclusion
Dimension	North	Ksiti is in the north-south
	East	Ksiti is in the east-west
	Up	Ksiti is in the up-down
Quantity	Force	There is force in this ksiti
	Mass	There is mass in this ksiti
	Space	This ksiti is in a space
	Time	This ksiti is in a time

Tab. 3.31

(5) Ksiti follows the point rule. The law of ksiti derived from the point rule is,

$$\mathfrak{U}(\text{Ksiti}) = \mathfrak{U}(\text{Ksiti})$$

### 3.4.7 Interpretation of Point Rule for Prithvi

Let us explain the law of point rule for prithvi. Prithvi has one component and this component is ksiti. This component is at a point. A point is a geometric object that has no length, width and height. So there is no distortion of the point. A point is a unique and singular object. There is a great beauty of points in mathematics. There is a law under the point rule and that is ksiti is one and unique. The expression 'ksiti is at the point' means that ksiti is unique. Ksiti has not been compared to anything. Ksiti is only equal to ksiti. The improvement or deterioration of ksiti is entirely a matter of the prithvi and no other component is responsible for it.

### 3.4.8 Antariksa

Antariksa literally means the sky, which is full of stars. Prithvi or earth is known as bhuloka and svarga or heaven is known as dyuloka. The region pervading the space between this earth and heaven is called antariksa. It is also known as bhuvarloka. According to Rigveda, Indra or Vayu is the chief deity of this region. The Aryans believe that different types of demi-gods live in antariksa.

According to the Puranas and the Atharva Veda, there are 14 lokas, seven higher and seven lower. The seven higher lokas are called vyahrtis and the seven lower lokas are called patalas. Among the fourteen lokas bhu, bhuvras, svar, mahas, janas, tapas, and satya are in the above and atala, vitala, sutala, rasatala, talatala, mahatala, patala are in the below. Antariksa is one of the higher seven lokas.

### 3.4.9 Generancy Theory about Antariksa

Generancy theory about antariksa is discussed below.

(1) The partial model of antariksa derived from main theory is,

$$\begin{aligned} & \text{ꣳ} \text{ (Antariksa) } \Downarrow \\ & \text{ꣳ} \text{ (Jala) } \Rightarrow \text{ꣳ} \text{ (Agni)} \end{aligned}$$

(2) Antariksa is an akara (form) of jagat. The upakaranas (components) of antariksa are jala and agni. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jagat	Antariksa	Jala and agni

Tab. 3.32

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the antariksa and at the same time the cause of the upakaranas of the antariksa. On the other hand, the antariksa is the cause of the upakaranas of the antariksa and is related to the upakaranas of the antariksa. That is, the antariksa is the cause of its components jala and agni and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} & \text{ꣳ}^\circ \text{ (Jagat) } \Downarrow \\ & \text{ꣳ} \text{ (Antariksa) } \Downarrow \\ & \text{ꣳ} \text{ (Jala) } \Rightarrow \text{ꣳ} \text{ (Agni)} \end{aligned}$$

(4) Prithvi and antariksa are bound by the inherent relationship. There is an inseparable and eternal relationship between prithvi and antariksa. Prithvi is in the antariksa. Antariksa stays connected to prithvi. Antariksa cannot exist without prithvi, but prithvi can exist without antariksa.

(5) Now let us analyze antariksa in the light of jnanatattva.

Jagat is a tattva. Antariksa is a form of jagat. Jala and agni are the components of antariksa. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Antariksa can be taken as a category, it has a specific name and let us think that this name is antariksa. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the antariksa is added, then we can say that the antariksa is positive. Again, if the antariksa is subtracted, then we can say that the antariksa is negative. If it is on the right side of the number line, the antariksa will be positive. Again, if it is on the left side of the number line, the antariksa will be negative.

Every object in this universe is three-dimensional. Antariksa is not out of it. Antariksa is also three-dimensional. These three dimensions are north, east and up. Again, each dimension

can be positive or negative. Therefore, the antariksa may be in the north or south, it may be in the east or west, or it may be in the up or down. Antariksa can be measured as a solid object. Each antariksa has four quantities. These four quantities are force, mass, space and time. There is force and mass in antariksa. Again the antariksa is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Antariksa
Assertion	Positivity	Antariksa inclusion
	Negativity	Antariksa exclusion
Dimension	North	Antariksa is in the north-south
	East	Antariksa is in the east-west
	Up	Antariksa is in the up-down
Quantity	Force	There is force in this antariksa
	Mass	There is mass in this antariksa
	Space	This antariksa is in a space
	Time	This antariksa is in a time

Tab. 3.33

(6) The decision of antariksa derived from the main theory is ‘antariksa is related to jala and agni’. That is

$$\text{ꣳ (Antariksa) } \cup \text{ ꣳ (Jala) } \Rightarrow \text{ꣳ (Agni)}$$

### 3.4.10 Jala

Jala is one of the five gross elements (panchamahabhutas). Its English synonym is water. Jala is a dravya (substance). With the help of the jivha (tongue) indriya we enjoy the taste of water. Jala exists in liquid state. According to Ayurveda, jala is present in all bodily fluids such as plasma, saliva, digestive juices.

Water serves as an important ingredient for Hindu worship. Water is used for bathing the gods and for cleaning the worship items, flowers, fruits etc. The water offered to the gods and goddesses is considered to be very sacred.

We can show jala, the attribute of jala and the sense (indriya) associated with jala given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Jala	Taste	Jivha (tongue)

Tab. 3.34

### 3.4.11 Generancy Theory about Jala

Generancy theory about jala is discussed below.

(1) The partial model of jala derived from main theory is,

$$\begin{array}{c} \text{ꣳ (Antariksa) } \text{ꣳ} \\ \text{ꣳ (Jala) } \Rightarrow \text{ꣳ (Agni)} \end{array}$$

(2) Jala is an upakarana (component) of an antariksa. The antariksa is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Antariksa	Jala and agni

Tab. 3.35

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the antariksa and at the same time the cause of jala. On the other hand, the antariksa is the cause of jala and is related to jala. Writing in sign language is as follows:

$$\text{ꣳ (Jagat) } \Downarrow \text{ꣳ (Antariksa) } \text{ꣳ } \text{ꣳ (Jala)}$$

(4) Now let us analyze jala in the light of jnanatattva.

Jala is a component of an antariksa. Antariksa is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Jala can be taken as a category, it has a specific name and let us think that this name is jala. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the jala is added, then we can say that the jala is positive. Again, if the jala is subtracted, then we can say that the jala is negative. If it is on the right side of the number line, the jala will be positive. Again, if it is on the left side of the number line, the jala will be negative.

Every object in this universe is three-dimensional. Jala is not out of it. Jala is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, jala may be in the north or south, it may be in the east or west, or it may be in the up or down. Jala can be measured as a solid object. Each jala has four quantities. These four quantities are force, mass, space and time. There is force and mass in jala. Again jala is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Jala
Assertion	Positivity	Jala inclusion
	Negativity	Jala exclusion
Dimension	North	Jala is in the north-south
	East	Jala is in the east-west
	Up	Jala is in the up-down
Quantity	Force	There is force in this jala
	Mass	There is mass in this jala
	Space	This jala is in a space
	Time	This jala is in a time

Tab. 3.36

(5) Jala follows the balance rule. The law of jala derived from the balance rule is,

$$\bar{\text{J}} (\text{Jala}) \propto \bar{\text{A}} (\text{Agni})$$

### 3.4.12 Agni

The word agni originated from the Sanskrit root 'aj' which means 'to drive'. Agni is derived from three verbs namely, 'going', 'shining or burning' and 'leading'. The letter 'a' is from the root 'i' which means 'to go', the letter 'g' is from the root 'anj' which means 'to shine' or 'dah' which means 'to burn', and the last letter is by itself the root 'ni' which means 'to lead'. In the case of the word 'fire', the meanings of all the roots mentioned above exist. The word 'agni' used in the Indian Philosophy for 'fire'. Agni is one of the fifth gross elements. Its main characteristic is rupa or sight. We feel it through the caksu indriya (the senses of eyes). Agni is one of the five gross elements (panchamahabhutas). Its English synonym is fire. Agni is a dravya (substance).

Agni is the god of fire and the recipient of yajna. Fire is the bridge between heaven and earth. Agni is considered to be the messenger of the gods. Sri Aurobindo said, 'sublime mediator between earth and heaven'. Agni works as a vehicle. Take our sacrifice to the gods. And not only bring their blessings, but bring them to us.

Agni is the heating power (tapah shakti) of Brahman. When there was nothing, everything was dark, darkness covered by darkness, then there was only one real thing. Tapah shakti was integrated with that real thing. Tejas (fire) is the first child of tapasya (austerity) or tapah shakti. According to the Vedas, tejas exists at three levels that is in the highest (sky) as the sun, in the space (antariksa) as lightning, and on the earth as fire.

We can show agni, the attribute of agni and the sense (indriya) associated with agni given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Agni	Sight	Caksu (eyes)

Tab. 3.37

### 3.4.13 Generancy Theory about Agni

Generancy theory about agni is discussed below.

(1) The partial model of agni derived from main theory is,

$$\begin{aligned} & \text{ꣳ} \text{ (Antariksa)} \text{ } \text{ꣳ} \\ & \text{ꣳ} \text{ (Jala)} \Rightarrow \text{ꣳ} \text{ (Agni)} \end{aligned}$$

(2) Agni is an upakarana (component) of an antariksa. The antariksa is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Antariksa	Jala and agni

Tab. 3.38

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the antariksa and at the same time the cause of agni. On the other hand, the antariksa is the cause of agni and is related to agni. Writing in sign language is as follows:

$$\text{ꣳ}^\circ \text{ (Jagat)} \Downarrow \text{ꣳ} \text{ (Antariksa)} \text{ } \text{ꣳ} \text{ (Agni)}$$

(4) Now let us analyze agni in the light of jnanatattva.

Agni is a component of an antariksa. Antariksa is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Agni can be taken as a category, it has a specific name and let us think that this name is agni. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the agni is added, then we can say that the agni is positive. Again, if the agni is subtracted, then we can say that the agni is negative. If it is on the right side of the number line, the agni will be positive. Again, if it is on the left side of the number line, the agni will be negative.

Every object in this universe is three-dimensional. Agni is not out of it. Agni is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, agni may be in the north or south, it may be in the east or west, or it may be in the up or down. Agni can be measured as a solid object. Each agni has four quantities. These four quantities are force, mass, space and time. There is force and mass in agni. Again agni is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Agni
Assertion	Positivity	Agni inclusion
	Negativity	Agni exclusion
Dimension	North	Agni is in the north-south
	East	Agni is in the east-west
	Up	Agni is in the up-down
Quantity	Force	There is force in this agni
	Mass	There is mass in this agni
	Space	This agni is in a space
	Time	This agni is in a time

Tab. 3.39

(5) Agni follows the balance rule. The law of agni derived from the balance rule is,

$$\text{अग्नि (Agni)} \propto \text{जला (Jala)}$$

#### 3.4.14 Interpretation of Straight Line Rule for Antariksa

Let us explain the law of straight line rule for antariksa. Antariksa has two components and these two components are jala and agni. These two components are at the two endpoints of the straight line. Let the straight line be divided into two equal parts along the middle point. The straight line along the midpoint is in equilibrium. In this case the straight line has a mathematical beauty. To the left of the middle point is jala and to the right is agni. So jala and agni are in equilibrium along the middle point. There is a law under this rule and that is jala and agni will change proportionally. That is, if jala is doubled, agni will be doubled and if jala is halved, agni will be halved. Otherwise the straight line will lose balance and deviate from mathematical beauty.

#### 3.4.15 Svarga

Svarga is a Sanskrit word which literally means ‘heaven’ or ‘paradise’. According to Hinduism, it is the abode of Indra, the lord of heaven. Svarga is one of the seven higher lokas in Hindu cosmology. The seven lokas consist of bhuloka, bhuvar loka, svarga loka, maharloka, janaloka, taparloka, satyaloka.

Heaven is a transfer place for the righteous souls who have performed good deeds in their lives but are not yet ready to attain moksa or elevation to Vaikuntha. Vaikuntha is the abode of Lord Vishnu which is considered as the Supreme Abode. It is said that the souls who attain liberation or moksa live in this abode of Shri Vishnu. The Rig Veda (1.22.20) states.

“Om tad visnoh paramam padam sada pasyanti surayah”

This verse means ‘all the suras or devas (god and goddess) look towards the feet of Lord Vishnu as the Supreme Abode’.

The capital of heaven is Amaravati and its entrance is protected by Airavata. Indra, the leader of the gods, presided over the heaven. The souls of the righteous in heaven have not yet



been released from the cycle of birth and death or from rebirth. In svarga, which is refer to heaven in general the souls live in paradise waiting for the next reincarnation.

Everything in the galaxies or in the constellations is svarga (heaven). Our milky way is a svarga. Antariksa is in svarga, so prithvi is in svarga.

### 3.4.16 Generancy Theory about Svarga

Generancy theory about svarga is discussed below.

(1) The partial model of svarga derived from main theory is,

$$\text{ঋ}^\circ (\text{Svarga}) \Downarrow \\ \text{জ} (\text{Vayu}) \Rightarrow \text{ব} (\text{Akasa}) \Rightarrow \text{ক} (\text{Atma})$$

(2) Svarga is an akara (form) of jagat. The upakaranas (components) of svarga are vayu, akasa and atma. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jagat	Svarga	Vayu, akasa and atma

Tab. 3.40

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the svarga and at the same time the cause of the upakaranas of the svarga. On the other hand, the svarga is the cause of the upakaranas of the svarga and is related to the upakaranas of the svarga. That is, the svarga is the cause of its components vayu, akasa and atma and is also related to these components. Writing in sign language is as follows:

$$\text{আ}^\circ (\text{Jagat}) \Downarrow \\ \text{ঋ}^\circ (\text{Svarga}) \Downarrow \\ \text{জ} (\text{Vayu}) \Rightarrow \text{ব} (\text{Akasa}) \Rightarrow \text{ক} (\text{Atma})$$

(4) Antariksa and svarga are bound by the inherent relationship. There is an inseparable and eternal relationship between antariksa and svarga. Antariksa is in the svarga. Svarga stays connected to antariksa. Svarga cannot exist without antariksa, but antariksa can exist without svarga.

(5) Now let us analyze svarga in the light of jnanatattva.

Jagat is a tattva. Svarga is a form of jagat. Vayu, akasa and atma are the components of svarga. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Svarga can be taken as a category, it has a specific name and let us think that this name is svarga. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the svarga is added, then we can say that

the svarga is positive. Again, if the svarga is subtracted, then we can say that the svarga is negative. If it is on the right side of the number line, the svarga will be positive. Again, if it is on the left side of the number line, the svarga will be negative.

Every object in this universe is three-dimensional. Svarga is not out of it. Svarga is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the svarga may be in the north or south, it may be in the east or west, or it may be in the up or down. Svarga can be measured as a solid object. Each svarga has four quantities. These four quantities are force, mass, space and time. There is force and mass in svarga. Again the svarga is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Svarga
Assertion	Positivity	Svarga inclusion
	Negativity	Svarga exclusion
Dimension	North	Svarga is in the north-south
	East	Svarga is in the east-west
	Up	Svarga is in the up-down
Quantity	Force	There is force in this svarga
	Mass	There is mass in this svarga
	Space	This svarga is in a space
	Time	This svarga is in a time

Tab. 3.41

(6) The decision of svarga derived from the main theory is ‘svarga is related to vayu, akasa and atma.’ That is

$$\text{व्यु}^{\circ} (\text{Svarga}) \text{ \& } \text{व्यु} (\text{Vayu}) \Rightarrow \text{व्यु} (\text{Akasa}) \Rightarrow \text{व्यु} (\text{Atma})$$

### 3.4.17 Vayu

The word ‘vayu’ originated from the Sanskrit word ‘vata’ which literally means blown. So vayu translated as blower. The word used in the Indian Philosophy for ‘air’. Vayu is one of the fifth gross elements. Its main characteristic is sparsa or touch. We feel it through the tvak indriya (the senses of skin). Vayu is a dravya (substance). It is the fourth element, the other four elements of five panchamahabhutas are ksiti, jala, agni and akasa. Vayu exists in gaseous state.

According to Hindu texts Vayu is the name of the Hindu deity, the lord of the winds. Sometimes it is called pranvayu or lifeforce. Ancient yogis think, pranvayu is subdivided into five vayus. The subdivisions are prana vayu, apana vayu, vyana vayu, udana vayu and samana vayu. One can get the best out of yogic practice by being aware of the wind. Balancing the air during yoga practice not only increases physical strength, but also helps the practitioner to get closer to their spiritual desires. Lifeforce is the essence of yogic practice.

We can show vayu, the attribute of vayu and the sense (indriya) associated with vayu given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Vayu	Touch	Tvak (skin)

Tab. 3.42

### 3.4.18 Generancy Theory about Vayu

Generancy theory about vayu is discussed below.

(1) The partial model of vayu derived from main theory is,

$$\text{ঋ}^\circ (\text{Svarga}) \Downarrow \\ \text{ঐ} (\text{Vayu}) \Rightarrow \text{ঔ} (\text{Akasa}) \Rightarrow \text{ক} (\text{Atma})$$

(2) Vayu is an upakarana (component) of a svarga. The svarga is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Svarga	Vayu, akasa and atma

Tab. 3.43

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the svarga and at the same time the cause of vayu. On the other hand, the svarga is the cause of vayu and is related to vayu. Writing in sign language is as follows:

$$\text{আ}^\circ (\text{Jagat}) \Downarrow \text{ঋ}^\circ (\text{Svarga}) \Downarrow \text{ঐ} (\text{Vayu})$$

(4) Now let us analyze vayu in the light of jnanatattva.

Vayu is a component of a svarga. Svarga is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Vayu can be taken as a category, it has a specific name and let us think that this name is vayu. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the vayu is added, then we can say that the vayu is positive. Again, if the vayu is subtracted, then we can say that the vayu is negative. If it is on the right side of the number line, the vayu will be positive. Again, if it is on the left side of the number line, the vayu will be negative.

Every object in this universe is three-dimensional. Vayu is not out of it. Vayu is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, vayu may be in the north or south, it may be in the east or west, or it may be in the up or down. Vayu can be measured as a solid object. Each vayu has four quantities. These four quantities are force, mass, space and time. There is force and mass in vayu. Again vayu is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Vayu
Assertion	Positivity	Vayu inclusion
	Negativity	Vayu exclusion
Dimension	North	Vayu is in the north-south
	East	Vayu is in the east-west
	Up	Vayu is in the up-down
Quantity	Force	There is force in this vayu
	Mass	There is mass in this vayu
	Space	This vayu is in a space
	Time	This vayu is in a time

Tab. 3.44

(5) Vayu follows the left hand rule. There are two laws of vayu from the left hand rule and these two laws are,

**Law 1** At constant akasa वा, the vayu ज of a svarga varies inversely with its atma क. That is,

$$ज (Vayu) \propto 1/ क (Atma)$$

**Law 2** At constant atma क, the vayu ज of a svarga varies inversely with its akasa वा. That is,

$$ज (Vayu) \propto 1/ वा (Akasa)$$

### 3.4.19 Akasa

The term akasa is derived from the Sanskrit root 'kas' meaning 'to be'. The word used in the Indian Philosophy for 'ether'. In the Indo-Aryan and Dravidian languages the corresponding word of akasa is 'sky'. It is one of the five gross elements or panchamahabhutas. Its main characteristic is sabda or sound. As a reservoir for sound attribute, we know the existence of akasa. We feel it through the srotra indriya (the senses of ears). Akasa is a dravya (substance). It is the fifth element, the other four are ksiti, jala, agni and vayu. Akasa is one and eternal substance.

It is the thing by which gods and celestial beings are created. It is immortal, inseparable, infinite and eternal. It is the finest and the subtlest element. It is the means by which we can communicate with gods using sound vibrations due to chanting of mantras or sacred syllables. There are three worlds mentioned in the Vedas. Bhur, bhuva and svar. Bhur is the prithvi or earth, bhuva is the antariksa or sky, the middle region from earth to heaven and svar is the highest region above antariksa. Gods shows their miraculous power in the sky. Rainfall from the sky creates vegetation and floods. Sometimes they bring in meteorites and lightning that cause fear and destruction.

In ancient times, people thought the sky was a meeting place for humans and gods. They also thought the sky was a playground where the gods would show their wonderful power. It was also believed that after death, men had ascended through the sky into the world of gods and ancestors.

We can show akasa, the attribute of akasa and the sense (indriya) associated with akasa given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Akasa	Sound	Srotra (ears)

Tab. 3.45

### 3.4.20 Generancy Theory about Akasa

Generancy theory about akasa is discussed below.

(1) The partial model of akasa derived from main theory is,

$$\text{ঋ}^\circ (\text{Svarga}) \Downarrow \\ \text{জ} (\text{Vayu}) \Rightarrow \text{ব} (\text{Akasa}) \Rightarrow \text{ক} (\text{Atma})$$

(2) Akasa is an upakarana (component) of a svarga. The svarga is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Svarga	Vayu, akasa and atma

Tab. 3.46

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the svarga and at the same time the cause of akasa. On the other hand, the svarga is the cause of akasa and is related to akasa. Writing in sign language is as follows:

$$\text{আ}^\circ (\text{Jagat}) \Downarrow \text{ঋ}^\circ (\text{Svarga}) \Downarrow \text{ব} (\text{Akasa})$$

(4) Now let us analyze akasa in the light of jnanatattva.

Akasa is a component of a svarga. Svarga is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Akasa can be taken as a category, it has a specific name and let us think that this name is akasa. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the akasa is added, then we can say that the akasa is

positive. Again, if the akasa is subtracted, then we can say that the akasa is negative. If it is on the right side of the number line, the akasa will be positive. Again, if it is on the left side of the number line, the akasa will be negative.

Every object in this universe is three-dimensional. Akasa is not out of it. Akasa is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, akasa may be in the north or south, it may be in the east or west, or it may be in the up or down. Akasa can be measured as a solid object. Each akasa has four quantities. These four quantities are force, mass, space and time. There is force and mass in akasa. Again akasa is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Akasa
Assertion	Positivity	Akasa inclusion
	Negativity	Akasa exclusion
Dimension	North	Akasa is in the north-south
	East	Akasa is in the east-west
	Up	Akasa is in the up-down
Quantity	Force	There is force in this akasa
	Mass	There is mass in this akasa
	Space	This akasa is in a space
	Time	This akasa is in a time

Tab. 3.47

(5) Akasa follows the left hand rule. There are two laws of akasa from the left hand rule and these two laws are,

**Law 1** At constant vayu  $\text{জ}$ , the akasa  $\text{ব}$  of a svarga varies inversely with its atma  $\text{ক}$ . That is,

$$\text{ব} (\text{Akasa}) \propto 1/\text{ক} (\text{Atma})$$

**Law 2** At constant atma  $\text{ক}$ , the akasa  $\text{ব}$  of a svarga varies inversely with its vayu  $\text{জ}$ . That is,

$$\text{ব} (\text{Akasa}) \propto 1/\text{জ} (\text{Vayu})$$

### 3.4.21 Atma

The soul (atma) is pure consciousness and blissful. The soul is one and unique. In the paramarthika (transcendental) point of view the soul is one, but in the vyavaharika (empirical)

point of view the soul is many. Therefore, it can be said that there are two types of self or soul, Paramatma (Supreme self) and jivatma (individual self). Soul is different from body, mind, senses etc. The body is subject to birth and death, but the soul is not subject to birth and death.

The soul that is an invariable consciousness (nirviesha chaitanya) is found in the susupati (deep sleep experience). There are four states of experience in our daily life. These four experiences are, jagrat (waking) state, svapna (dreaming) state, susupti (deep sleep) state and turiya (pure consciousness) state. The experience we get while awake is the waking experience. In the waking state, both knowledge and the object of knowledge are present. In this case both knowledge and the object of knowledge seem to be true. The experience that occurs during dreams is the dreaming experience. The object of knowledge in the dreaming state is not as true as the object of knowledge in the waking state. In this case the knower is true, but the object of knowledge depends on the experience of the knower. The experience of deep sleep without dreams is the deep sleep experience. In this state there is only self-consciousness, there is no memory of any object which exists in waking or dreaming state. The joy or knowledge that is found during deep sleep is actually the nature of the soul. It is impossible to think that there is no soul. Because the soul is the nature of the one who is thinking. Nothing exists without the soul, but the soul exists without the object. During the deep sleep, there is a hint of reality, consciousness and blissful soul. The experience that a devotee gets after being buried (samadhistha) is the turiya experience. The devotee realizes the full form of the soul in the state of turiya.

The soul is self-evident. The existence of the soul is not perfected by others but the existence of others is perfected by the soul. The soul manifests itself, the omniscient witness. The soul is a form of pure consciousness. There is no other form of soul than consciousness. One has to acknowledge the existence of the soul as the basis (adhara) of consciousness. The soul is inactive. The soul is unchangeable, beginningless and eternal. There is no lack of soul. The soul is indifferent, inactive and unbroken. The soul is a witness to all. The soul is present as a witness to all knowledge. The soul is free from passions or attachment (nirupadhi). The soul is indestructible. The soul is one. The soul seems to be many because of ignorance. Paramatma is mahakasa (outer space or infinite void) and jivatma is ghatakasa (the empty space contained inside a pot or ghata). There is no difference between jivatma and Paramatma when the ghata form disappears. We can show atma, the attribute of atma and the sense (indriya) associated with atma given in the following table.

Mahabhuta	Attribute	Indriya (sense)
Atma	Consciousness	Manas (mind)

Tab. 3.48

### 3.4.22 Generancy Theory about Atma

Generancy theory about atma is discussed below.

(1) The partial model of atma derived from main theory is,

$$\text{ঋ}^\circ (\text{Svarga}) \rightsquigarrow \text{জ} (\text{Vayu}) \Rightarrow \text{ব} (\text{Akasa}) \Rightarrow \text{ক} (\text{Atma})$$

(2) Atma is an upakarana (component) of a svarga. The svarga is the akara (form) of jagat. Arranged in the form of a table, we get,

Akara	Upakarana
Svarga	Vayu, akasa and atma

Tab. 3.49

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jagat is the cause of the svarga and at the same time the cause of atma. On the other hand, the svarga is the cause of atma and is related to atma. Writing in sign language is as follows:

আ° (Jagat) ↓ ঋ° (Svarga) ∋ ক (Atma)

(4) Now let us analyze atma in the light of jnanatattva.

Atma is a component of a svarga. Svarga is a form of jagat. Jagat is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Atma can be taken as a category, it has a specific name and let us think that this name is atma. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the atma is added, then we can say that the atma is positive. Again, if the atma is subtracted, then we can say that the atma is negative. If it is on the right side of the number line, the atma will be positive. Again, if it is on the left side of the number line, the atma will be negative.

Every object in this universe is three-dimensional. Atma is not out of it. Atma is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, atma may be in the north or south, it may be in the east or west, or it may be in the up or down. Atma can be measured as a solid object. Each atma has four quantities. These four quantities are force, mass, space and time. There is force and mass in atma. Again atma is in space and time. Arranged in the form of a table, we get,



Akaras of jnana	Components of akara	Example
Category	Name	Atma
Assertion	Positivity	Atma inclusion
	Negativity	Atma exclusion
Dimension	North	Atma is in the north-south
	East	Atma is in the east-west
	Up	Atma is in the up-down
Quantity	Force	There is force in this atma
	Mass	There is mass in this atma
	Space	This atma is in a space
	Time	This atma is in a time

Tab. 3.50

(5) Atma follows the left hand rule. There are two laws of atma from the left hand rule and these two laws are,

**Law 1** At constant vayu  $\text{ଝ}$ , the atma  $\text{କ}$  of a svarga varies inversely with its akasa  $\text{ଋ}$ . That is,

$$\text{କ (Atma)} \propto 1/\text{ଋ (Akasa)}$$

**Law 2** At constant akasa  $\text{ଋ}$ , the atma  $\text{କ}$  of a svarga varies inversely with its vayu  $\text{ଝ}$ . That is,

$$\text{କ (Atma)} \propto 1/\text{ଝ (Vayu)}$$

### 3.4.23 Interpretation of Triangle Rule for Svarga

Let us explain the laws of triangle rule for svarga. Svarga has three components and these three components are vayu, akasa and atma. These three components are at the three angular points of the triangle. Now if one component at any angular point of the triangle remains constant, the other two components will vary in inverse proportion to each other. There are three laws under this rule. For example if vayu is fixed the akasa and atma of svarga will change in opposite proportion. That is, if akasa is doubled, atma will be halved and if akasa is halved, atma will be doubled.

### 3.4.24 Generancy Cosmology

#### 3.4.24.1 State before Creation

The state before creation is beautifully described in the Nasadiya Sukta of the Rig Veda. In this hymn the pre-existence of creation is presented indisputably. The source of creation is adequately represented. Dr. Mahanambrata Brahmachariji thinks that in the sweetness of poetry, in the extraordinary power of narration, in the seriousness of language and in the depth of theory, it is doubtful whether there is an equivalent in any other language of the world. The Nasadiya Sukta is a hymn from the Rig Veda (RV 10:129). This sukta is taken from the site [https:// www.swami-krishnananda.org](https://www.swami-krishnananda.org).

Rishi- Prajapati, Devata- Paramatma, Chandas- Tristubh

Text one

Then even nothingness was not, nor existence,  
There was no air then, nor the heavens beyond it.  
What covered it? Where was it? In whose keeping?  
Was there then cosmic water, in depths unfathomed?

Text two

Then there was neither death nor immortality  
Nor was there then the torch of night and day.  
The One breathed windlessly and self-sustaining.  
There was that One then, and there was no other.

Text three

At first there was only darkness wrapped in darkness.  
All this was only unilluminated water.  
That One which came to be, enclosed in nothing,  
arose at last, born of the power of heat.

Text four

In the beginning desire descended on it.  
That was the primal seed, born of the mind.  
The sages who have searched their hearts with wisdom  
know that which is kin to that which is not.

Text five

And they have stretched their cord across the void,  
and know what was above, and what below.  
Seminal powers made fertile mighty forces.  
Below was strength, and over it was impulse.

Text six

But, after all, who knows, and who can say  
Whence it all came, and how creation happened?

The gods themselves are later than creation,  
so who knows truly whence it has arisen?

Text seven

Whence all creation had its origin,  
he, whether he fashioned it or whether he did not,  
he, who surveys it all from highest heaven,  
he knows - or maybe even he does not know.

#### 3.4.24.2 Creator and Purpose of Creation

In the Upanishads, who is Advaita Brahman, in the Samhita He is Purusa. Purusa (Supreme Person) is the creator of this universe and the creation of the universe is just His lila. Lila means divine play. The purpose of creating the universe is His will to do lila. Yajna is the main source of creation of this universe. Since the first yajna was performed prior to creation, there was nothing to offer in the fire of yajna. So, Purusa sacrificed himself in that yajna. Supreme Person or Purusa continues this great creation by sacrificing himself. No great creation takes place without sacrifice. Purusa has not ceased to give himself in the midst of creation because He is infinite. Just as the spider, without taking any material from outside, creates a net with the fibers emitted by the body and plays within it, similarly Brahman creates the universe from himself and plays in the shape of a universe. Brahman wished, I will become many. The universe was built as expected only with determination.

On the other hand, Purusa is the cause, prakrti is the effect. Again prakrti is the cause, jagat is the effect. From the precise first dimensional order combination of the main theory, we get,

अ (Purusa)

↓

आ (Prakrti)

↓

आ° (Jagat)

Purusa first creates prakrti (nature) as part of lila or divine play and then creates jagat (universe) with prakrti. The universe is created as a result of a Purusa's divine play with nature. Conscious Purusa can be compared as male and unconscious prakrti as female. This universe can be seen as the result of the divine play of male and female. Brahman of the Upanishads or Purusa of the Samhita, He is one and unique. It is mentioned in many mantras of the Vedas. He assumes many forms under the influence of Maya. This universe is created out of God's power of illusion.

#### 3.4.24.3 Order of Creation

Even if Brahman creates this universe under the influence of maya, there will be a sequence of creation. Maya is an indescribable power. Maya is his tool. With the help of this tool this universe is created in a certain order. From Purusa to prakrti and prakrti to jagat, the emergence of the universe is in the following order.

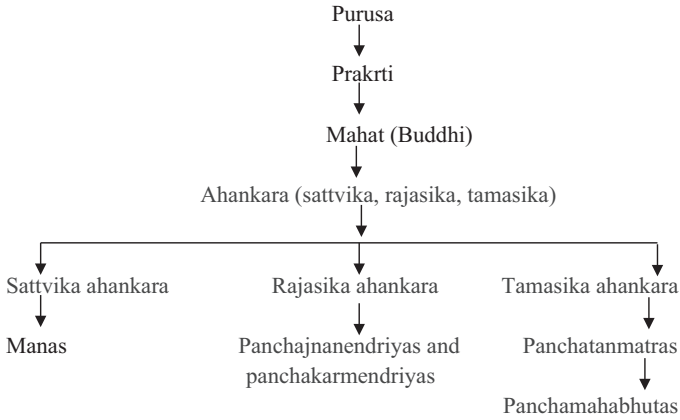


Fig. 3.17

Purusa first desired to perform the lila and created prakrti as part of this lila. Later, Purusa in union with prakrti created this jagat or universe. Mahat or buddhi is the first creation from prakrti. This consequence or product of prakrti is called mahat because it is the seed of all things in the universe. Again, it is called buddhi because it is manifested in the form of intelligence in living beings. In the second stage of the creation of the universe, ahankara (ego-sense) is created. Ahankara is a Sanskrit word that derives from two root words, these two root words are aham which means 'self' and kara which means 'to do with'. According to the predominance of sattva, rajas and tamas gunas, there are three types of ahankara, namely, sattvika ahankara, rajasika ahankara and tamasika ahankara. From sattvika ahankara, manas is created and from rajasika ahankara, panchajnanendriyas and panchakarmendriyas are created. From tamasika ahankara, first panchatanmatras and then panchamahabhutas are created. From tamasika ahankara, akasa (ether) first appeared and then gradually vayu (air), agni (fire), jala (water) and ksiti (soil) emerged. These are the panchatanmatras. From the five different combinations of these panchatanmatras, the panchamahabhutas emerged. For example, akasa mahabhuta is formed by the combination of half akasa tanmatra, one-eighth vayu tanmatra, one-eighth agni tanmatra, one-eighth jala tanmatra and one-eighth ksiti tanmatra. The origin of the other mahabhutas is organized in exactly the same way. That is, any mahabhuta is created by combining half of its tanmatra and one-eighth of each of the other tanmatras. Such combination of panchatanmatras is called panchikarana. In this manner, the qualities of sound in the ether, sound and touch in the air, sound, touch and sight in the fire, sound, touch, sight and taste in the water, and sound, touch, sight, taste and smell in the soil are expressed.

Karmendriyas, Jnanendriyas, Tanmatras, Mahabhutas and avasthas were arranged in the table below.

Karmendriyas (organs of action)	Jnanendriyas (organs of cognition)	Tanmatras (subtle elements)	Mahabhutas (gross elements)	avasthas (states)
Payu (rectum)	Ghrana (nose)	Gandha (smell)	Ksiti (soil)	Solid
Upastha (genitals)	Jivha (tongue)	Rasa (taste)	Jala (water)	Liquid
Pada (feet)	Caksu (eyes)	Rupa (sight)	Agni (fire)	Energy
Pani (hands)	Tvak (skin)	Sparsa (touch)	Vayu (air)	Gas
Mukh (mouth)	Srotra (ears)	Sabda (sound)	Akasa (ether)	
	Manas (mind)	Caitanya (consciousness)	Atma (soul)	Unstable

Tab. 3.51

#### 3.4.24.4 Srishti Sthiti Pralaya

Brahman is the supreme being. Brahman is sat (ultimate being), cit (pure consciousness) and ananda (perfect bliss) in its nature. Truth, knowledge and joy are the nature (svarupa) of Brahman. There are two forms of Brahman; one is nirguna Brahman without characters and the other is saguna Brahman with characters. Taking the power of maya, nirguna Brahman becomes saguna. This sagunn Brahman is God. Saguna Brahman is the creator, preserver and destroyer of the universe. The deities are the different forms of saguna Brahman. The most significant forms of saguna Brahman are Brahma, Vishnu and Shiva. These three gods are together called Trideva. These three gods control the creation, preservation and destruction of the universe. Brahma is the creator of the universe, Vishnu is the preserver of the universe and Shiva is the destroyer of the universe. The three important actions of God are creation, preservation and destruction. In order to accomplish these three actions, God manifested himself as Trideva under the influence of maya.

Taittiriya Upanishad says- omi brahma, that is to say OM means Brahman. omidagm sarvam- that is, everything is OM. Omkara is the root of all words. Omkara is the origin of all mantras and the essence of all mantras. The word OM is formed by combining these three letters A-U-M. These three letters represent the power of the Trideva. A is the symbol of creation Brahma, U is the symbol of preservation Vishnu and M is the symbol of destruction Shiva.

Apart from Brahma, Vishnu and Shiva, there are three other major goddesses who are different forms or manifestations of Brahman. They are Saraswati, Lakshmi and Parvati. Together they are called Tridevi. These goddesses are important because they are associated with three gods in the Trinity. Saraswati is the goddess of learning and knowledge. She is the consort of Brahma. Lakshmi is the goddess of wealth and beauty. She is the consort of Vishnu. Parvati is the goddess of divine energy and motherhood. She is the consort of Shiva.

## CHAPTER 4

### Gunometrics

#### 4.1 Guna

#### 4.2 Jnana

#### 4.3 Category

#### 4.4 Assertion

#### 4.5 Dimension

#### 4.6 Quantity

### 4.1 Guna

Padasya artha: padartha- that is, all things indicated by words are padarthas. The category (padartha) that resides in substance (dravya) and which has no action (karma) is called guna (quality). Quality is always based on the substance. Substance is the base of quality. Without substance, there is no separate existence of quality. For example sweetness, bitterness, happiness, sorrow, etc. Sweetness exists by sheltering sweet substances. Bitterness prevails by resorting to bitter substances. Happiness-sorrow etc. exist by taking shelter of substance in the form of soul. Therefore, quality is the extra substance category and depending on a substance. Quality exists in the substance as the inactive (niskriya) adjective of the substance. Even if the quality exists in the substance, it is different from the substance. It is different from action too. Quality is stable and passive.

Although both quality and action depend on the substance, action can be a neutral cause of conjunction and disjunction of objects, but quality can not be the neutral cause of conjunction and disjunction of objects. When a ball on the surface is thrown into the sky above, the ball divides the surface and connects with the sky above. This is because of the movement of the ball. The movement of the ball is action and the quality is color. The movement or action of the ball is responsible for this conjunction and disjunction, quality or color is not responsible in any way. Again, the substance may be the samavayi karana (inherent cause) or upadana karana (material cause) of composite matter, but the quality cannot be the samavayi karana or upadana karana of composite matter. Quality is the asamavayi karana (non-inherent cause) of composite matter. For example, the yarn of a cloth is a dravya which is the material cause of the cloth. Again, the color of the yarn is the quality which determines the form or beauty of composite matter by being present in the material cause of composite matter. So quality is the non-inherent cause (asamavayi karana) of composite matter.

According to the Vaisesika system, gunas or qualities are twenty-four, namely, rupa (colour), rasa (taste), gandha (smell), sparsa (touch), sabda (sound), sankhya (number), parimana (magnitude), prthaktva (distinctness), samyoga (conjunction), vibhaga (disjunction), paratva (remoteness), aparatva (nearness), buddhi (cognition), sukha (pleasure), dukkha (suffering), iccha (desire), dvesa (aversion), prayatna (effort), gurutva (heaviness), dravatva (fluidity), sneha (visciduity), samskara (tendency), dharma (merit) and adharma (demerit).

#### 4.1.1 Generancy Theory about Guna

Different schools of Indian philosophy have discussed guna in different ways. In the present section, generancy theory about guna is discussed.

(1) The partial model of guna can be derived from main theory as,

Tattva ↓  
 Akara ∞  
 Upakarana ⇒

We know that tattva is five namely, Purusa, prakrti, jagat, jnana and karma. Among them jnana is a guna. Therefore, the above partial model can be arranged in the following way.

Guna ↓  
 Akara ∞  
 Upakarana ⇒

(2) Guna is the tattva (theory) and jnana is a guna (quality). Category, assertion, dimension and quantity are the akaras (forms). The related upakaranas (components) are name, positivity, negativity, north, east, up, force, mass, space and time. Arranged in the form of a table, we get,

Tattva		Akara	Upakarana
Guna	Jnana	Category	Name
		Assertion	Positivity
			Negativity
		Dimension	North
			East
			Up
		Quantity	Force
			Mass
			Space
			Time

Tab. 4.1

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, guna is the cause of the form of guna and at the same time the cause of the component of the form. On the other hand, the form of guna is the cause of the component of the form and is related to the component of the form.

(4) Now let us analyze guna in the light of jnanatattva.

Guna is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Guna can be taken as a category, it has a specific name and let us think that this name is guna. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If guna is added, then we can say that guna is positive. Again, if guna is subtracted, then we can say that guna is negative. If it is on the right side of

the number line, guna will be positive. Again, if it is on the left side of the number line, guna will be negative.

Every object in this universe is three-dimensional. Guna is not out of it. Guna is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, guna may be in the north or south, it may be in the east or west, or it may be in the up or down. Guna can be measured as a solid object. Guna has four quantities. These four quantities are force, mass, space and time. There is force and mass in guna. Again guna is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Guna
Assertion	Positivity	Guna inclusion
	Negativity	Guna exclusion
Dimension	North	Guna is in the north-south
	East	Guna is in the east-west
	Up	Guna is in the up-down
Quantity	Force	There is force in this guna
	Mass	There is mass in this guna
	Space	This guna is in a space
	Time	This guna is in a time

Tab. 4.2

#### 4.2 Jnana

Jnana or knowledge is the manifestation of objects. Knowledge is to convey the object as it is. Knowledge is the only way to understand something unknown. As the lamp illuminates all things in front of it, knowledge also reveals everything to us. Knowledge is self-evident.

There are mainly two types of knowledge, namely prama (valid knowledge) and aprama (non-valid knowledge). The characteristic of valid knowledge (prama) is the similarity, uniformity, adequacy and consistency to the nature of its object. Otherwise the knowledge is non-valid (aprama). Any valid knowledge requires three conditions, namely, pramata (the subject), prameya (the object) and pramana (the source of knowledge). Pramata acquires the valid knowledge of objects with the help of pramanas. Pramata is the jnata, one who knows. Prameya is the jneya, that is the knowledge of that object is acquired. Pramanas is the valid source of knowledge that is with the help of which the right knowledge can be obtained.

There are four types of pramanas of valid knowledge, namely, pratyaksan, anumiti, upamiti and sabdaboda. Again, there are four types of non-valid knowledge, namely, smrti (memory), samsaya (doubt), bhrama (error) and tarka (hypothetical argument). In all valid knowledge there are three factors, namely, pramata (the subject), prameya (the object) and pramana (the source of knowledge). Pramanas are of four kinds, namely, pratyaksa (perception), anumana (inference), upamana (comparison) and sabda (testimony).



Jnana (knowledge) is a tattva (theory). Category, assertion, dimension and quantity are akaras. Name, positivity, negativity, north, east, up, force, mass, space and time are upakaranas. So we find the following table by rewriting figure 2.47.

Tattva (theory)	Akara (form)	Upakarana (component)
ज्ञ (Jnana) ↓	ए (Category) ∽	अ (Name) ⇒
	ए° (Assertion) ∽	उ (Positivity) ⇒ ऊ (Negativity) ⇒
	ऐ (Dimension) ∽	उ (North) ⇒ उ (East) ⇒ ए (Up) ⇒
	ए° (Quantity) ∽	उ (Force) ⇒ थ (Mass) ⇒ द (Space) ⇒ ध (Time) ⇒

Tab. 4.3

#### 4.2.1 Generancy Theory about Jnana

Different schools of Indian philosophy have discussed jnana (knowledge) in different ways. In the present section, generancy theory about jnana is discussed.

(1) The partial model of jnana derived from main theory is,

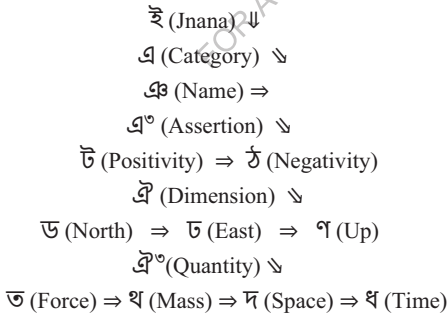


Fig. 4.1

(2) Jnana is the tattva (theory). Category, assertion, dimension and quantity are akara (form) of jnana. The upakarana (component) of category is name. The upakaranas of assertion are positivity and negativity. The upakaranas of dimension are north, east and up. The upakaranas of quantity are force, mass, space and time. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jnana	Category	Name
	Assertion	Positivity and negativity
	Dimension	North, east and up
	Quantity	Force, mass, space and time

Tab. 4.4

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the forms of the jnana and at the same time the cause of the components of the forms. On the other hand, the form is the cause of the components of the form and is related to the components of the form.

(4) Category and assertion are bound by the inherent relationship. There is an inseparable and eternal relationship between category and assertion. Similarly assertion and dimension are bound by the inherent relationship. There is an inseparable and eternal relationship between assertion and dimension. Again dimension and quantity are bound by the inherent relationship. There is an inseparable and eternal relationship between dimension and quantity.

(5) Now let us analyze jnana in the light of jnanatattva.

Jnana or knowledge is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Jnana can be taken as a category, it has a specific name and let us think that this name is jnana. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If jnana is added, then we can say that jnana is positive. Again, if jnana is subtracted, then we can say that jnana is negative. If it is on the right side of the number line, jnana will be positive. Again, if it is on the left side of the number line, jnana will be negative.

Every object in this universe is three-dimensional. Jnana is not out of it. Jnana is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, jnana may be in the north or south, it may be in the east or west, or it may be in the up or down. Jnana can be measured as a solid object. Jnana has four quantities. These four quantities are force, mass, space and time. There is force and mass in jnana. Again jnana is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Jnana
Assertion	Positivity	Jnana inclusion
	Negativity	Jnana exclusion
Dimension	North	Jnana is in the north-south
	East	Jnana is in the east-west
	Up	Jnana is in the up-down
Quantity	Force	There is force in this jnana
	Mass	There is mass in this jnana
	Space	This jnana is in a space
	Time	This jnana is in a time

Tab. 4.5

(6) The decision of jnana derived from the main theory is ‘category, assertion, dimension and quantity are related. Jnana is the cause of these (category, assertion, dimension and quantity).’ That is

$$\text{ज्ञे (Jnana)} \Downarrow \text{अ (Category)} \rightsquigarrow \text{अ (Assertion)} \rightsquigarrow \text{अ (Dimension)} \rightsquigarrow \text{अ (Quantity)}$$

## 4.2.2 Generancy Theory about the Methods of Gaining Knowledge

### 4.2.2.1 Argumentism

In order to gain proper knowledge about something, one has to follow a certain method. Western philosophers followed different methods to gain knowledge. These are dogmatism, scepticism and dialectic method etc.

Dogmatism introduces philosophical discussion without following the origin and conditions of knowledge. This method initiates philosophical discussions based on superstition and previous ideas. This method accepts the truth and falsehood of knowledge without judgment.

Scepticism expresses doubt on the possibilities of theoretical knowledge. According to this doctrine, knowledge is not precise and certain. Dogmatism accepts the truth of knowledge without considering judgment and scepticism denies the truth of knowledge.

The name given to the combination of two opposing ideas is the dialectic method. In this method, the knower acquires correct knowledge through the combination of thesis, antithesis and synthesis. This process does not stop at the first adjustment. Here the first time adjustment appears as thesis for the second time. This thesis has antithesis again. Thus the dialectic method continues until the absolute truth is reached.

However the unsuspecting can be found through doubt. Where there is no doubt, dogmatism is born. But doubting something does not mean denying it. So everything in the world has to be doubted like Rene Descartes. There is no question of reasoning without doubting something. Therefore, argument is the only ideal method of gaining knowledge. I think only argument is appropriate as the ideal method of philosophical discussion.

There is a thesis (beginning proposition) first in this argumentism. This thesis becomes antithesis (negation of that thesis) through doubt. Later, through argument, thesis and antithesis were combined to form synthesis (new proposition that combines two conflicting ideas). Here too, the first coordination appears as the thesis for the second time. This thesis turns into antithesis through doubt and later synthesis is formed by combining through argument. This method continues until it reaches the absolute truth. This method is called argumentism.

The following figures illustrate the argumentism.

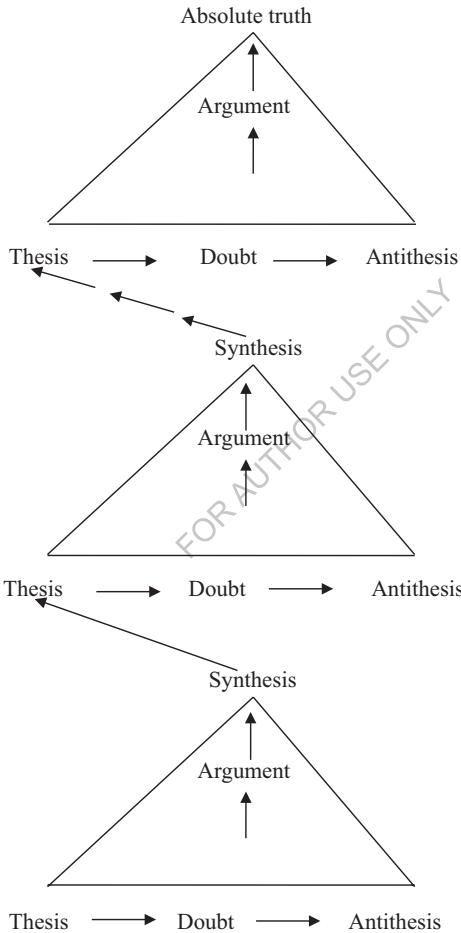


Fig. 4.2

To know an object, the knower has to go a long way. The matter can be explained in a very simple way. Suppose a Cartesian coordinate where the object is at the point P. The knower is

at the point O. Then the knower has to go from point O to point P. Let's explain the matter with the help of a figure.

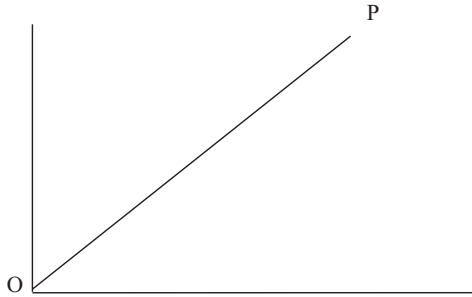


Fig. 4.3

Here the knower has to go from point O to point P. He or she has to step on every point. If one point is left out, there will be discontinuity. Then there will be no proper knowledge. Therefore, the matter of gaining knowledge has to be acquired. There is no short or easy way to acquire knowledge. Knowledge is a matter of achievement.

### 4.2.3 Generancy Theory about the Origin of Knowledge

#### 4.2.3.1 Cognitism

According to the empiricists, knowledge can be gained only through experience. They consider experience as a source of accurate knowledge. Experience is sensation or sense feeling. By senses we mean five external senses, viz. the eyes (caksu), the ears (srotra), the nostrils (ghrana), the tongue (rasana) and the skin (tvak). According to empiricism, the five senses are the only means of gaining knowledge.

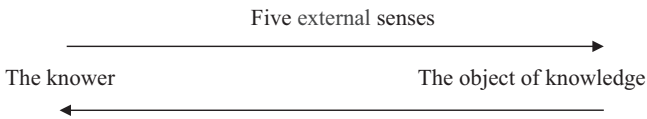


Fig. 4.4

Again, according to rationalism, intellect is the only means of gaining knowledge. According to the rationalists, proper knowledge can be gained through intellect. The knowledge that can be obtained with the help of the five senses is inconsistent and there is no perfection in this knowledge. Intellect is the natural quality of the mind. The mind naturally generates knowledge from its inner perception.

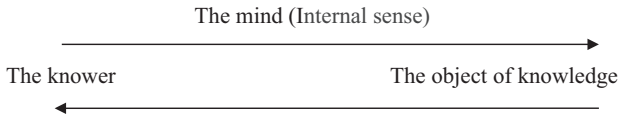


Fig. 4.5

According to criticism (critical theory of Kant), not only experience or intellect produces knowledge, but also experience and intellect are required for the origin of knowledge. Experience gives the element of knowledge and intellect gives the shape of knowledge. Through sensation we get the element of knowledge and that element is integrated by the intellect and produces knowledge.

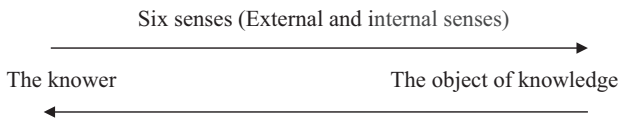


Fig. 4.6

Indian philosophers consider perception (pratyaksha) to be one of the sources of true knowledge. According to them, there are more sources of true knowledge, for example, inference (anumana), comparison (upamana) and testimony (sabda). However, this perception is again of two types, namely, external perception (bahya pratyaksha) and internal perception (antara pratyaksha). External perception is the perception of the five senses. Internal perception is the perception of the mind. In Indian philosophy, the mind is called the sixth sense. Therefore, according to Indian philosophy, the knowledge that is obtained through perception, according to Western philosophy, it is obtained through empiricism, rationalism and criticism.

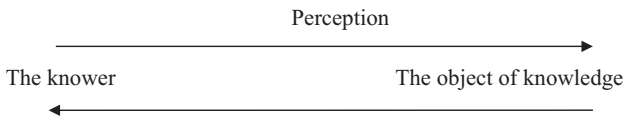


Fig. 4.7

Here perception means perception with the help of six senses. The sensation of the five senses give the material of knowledge and the intellect which is the characteristics of the mind give the shape of knowledge. Beyond this there are sources of knowledge such as inference, comparison and testimony. Perception, inference, comparison and testimony are the four aspects of human consciousness or cognition. Therefore, cognition can be considered as the only source of knowledge. The knower acquires accurate knowledge of the knowable object with the help of cognition.

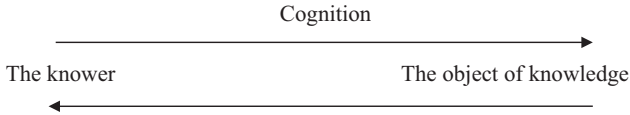


Fig. 4.8

Now let us discuss these four types of cognition separately.

#### 4.2.3.2 Pratyaksa

The knowledge gained through the connection of the senses with the object is called pratyaksa or perception. First of all, pratyaksa is of two types, namely, laukika pratyaksa (ordinary perception) and alaukika pratyaksa (extraordinary perception). The perception in which indriya sannikarsa (the contact of the senses with their objects) is simple and usual is called laukika pratyaksa. The perception that occurs with the help of five external senses such as eyes, ears, etc., and internal sense mind is laukika pratyaksa. On the other hand, the perception in which indriya sannikarsa is unusual or miraculous is called alaukika pratyaksa. In the extraordinary perception, the senses do not have a usual connection with the object, but are perceived in an extraordinary way.

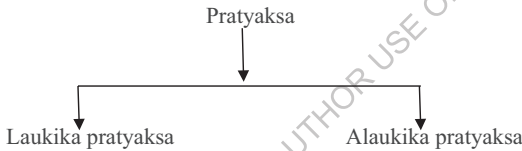


Fig. 4.9

Laukika pratyaksa is again of two kinds, namely, bahya pratyaksa (external perception) and antara pratyaksa (internal perception). The knowledge that comes with the help of the five external senses, namely, the eyes (caksu), the ears (srotra), the nostrils (ghrana), the tongue (rasana) and the skin (tvak), are called external perception. Again, the perception in connection with the mind through the mental process of thinking, feeling etc. is called internal perception.

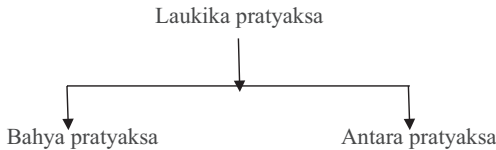


Fig. 4.10

According to another view, ordinary perception or laukika pratyaksa may be divided into three parts, namely, nirvikalpa pratyaksa (indeterminate perception), savikalpa pratyaksa (determinate perception) and pratyabhijna (recognition). An object which is known only as an

object that is merely the existence of the object is known is called nirvikalpa pratyaksa. The ordinary perception which has the knowledge of the existence of an object and its class and various qualities is called savikalpa pratyaksa. Pratyabhijna or recognition is to cognize a person or an object as pre-identified.

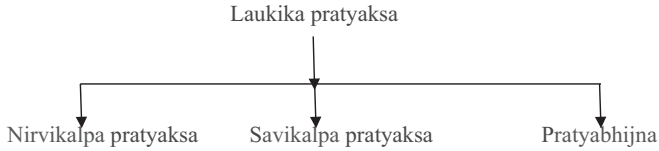


Fig. 4.11

Alaukika pratyaksa or extraordinary perception is of three types, namely, samanyalaksana, jnanalaksana and yogaja. The perception of a person or an object where the entire class is perceived on the basis of the generality of that class of person or object then it is called samanyalaksana perception. Again with the help of a sense, when perceiving an object, if the qualities attributable to other senses are perceived then it is called jnanalaksana perception. With the help of intuition or with the help of supernatural power generated by devout meditation, what the yogis perceive in which the past, present, future, distant and finer objects is called yogaja perception.

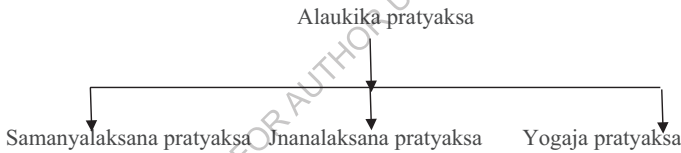


Fig. 4.12

#### 4.2.3.3 Anumana

Depending on what is known and supported by it, if it is possible to know about something unknown, then it is called anumana or inference. There are three terms in an inference. They are sadhya (major term), paksa (minor term) and hetu (middle term). What is inferred is sadhya, that is where the existence of sadhya is inferred is paksa and the term that establish the link between the sadhya and the paksa is hetu. Another name for hetu is linga or sadhana. The following is an illustration of the terms with an example.

There is smoke on the hill.

Wherever there is smoke, there is fire.

Therefore, there is fire on the hill.

In the above inference, fire is sadhya or major term, because, on that inference, fire is inferred, the hill is paksa or minor term, because the existence of fire is inferred in the hill and the smoke is hetu or linga because fire is inferred on the basis of smoke. Each inference has at least three propositions. An invariable concomitance relation between the hetu and the sadhya is called vyapti. The propositions are called the avayavas or members of syllogism.



On the basis of the purpose of which the inference is fulfilled, the inference can be divided into two parts. They are svarthanumana (inference for oneself) and pararthanumana (inference for others). The inference that one is made to gain knowledge for himself is svarthanumana and the inference that one assumes something to prove to other is pararthanumana.

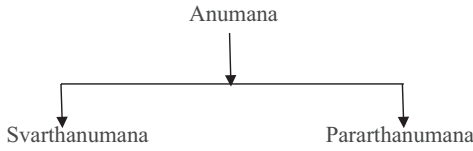


Fig. 4.13

According to the systematic differences in the journey from known truth to unknown truth, the inference can be divided into three parts. They are purvavat, sesavat and samanyatodrsta. The inference that infers unperceived effect by perceiving the cause is called purvavat anumana. The inference that infers unperceived cause by perceiving the effect is called sesavat anumana. The inference that is made based on prior experience and similarity, not based on causal relationships, is called samanyatodrsta anumana.

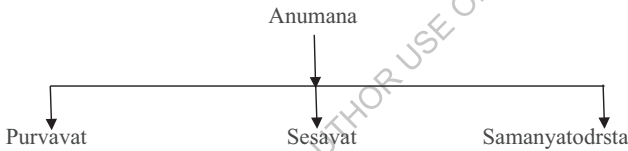


Fig. 4.14

The inferences can be divided into three, based on the point of view of induction of vyapti between the hetu and the sadhya. They are kevalanvayi anumana, kevalavyatireki anumana and anvayavyatireki anumana.

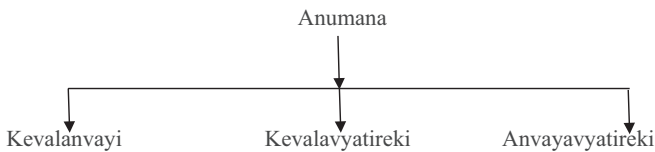


Fig. 4.15

The inference where hetu (middle term) looks like a reason but not actually so, that inference is misleading and the name of this delusion is hetvabhasa or fallacies of inference. There are five kinds of hetvabhasa, namely, savyabhicara, viruddha, satpratipaksa, asiddha and badhita.

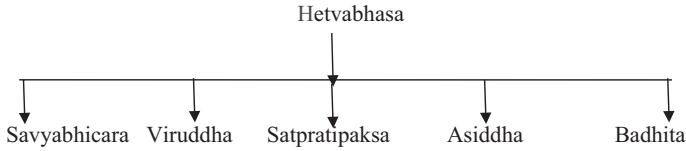


Fig. 4.16

#### 4.2.3.4 Upamana

When knowledge of a new object is obtained by observing the similarity of a new and unfamiliar object with a previously known object, the method of acquiring that knowledge is called upamana or comparison. Let us understand the matter with the help of an example. No one has seen gavaya (wild cow) before. One of the forest dwellers told him that gavaya looks like a cow. Going into the forest, the man saw a new animal and noticed that the new animal resembled a cow. Then, with the help of the description of the forest dweller, he recognized the new animal as gavaya. Upamana is the way of knowing the denotation of words, i.e., the relation between names and the objects denoted by the names. There are two factors involved in a comparison which are (1) gain knowledge about an unfamiliar object that has not been seen before and (2) knowledge of the resemblance of a new unfamiliar object to a previously familiar object.

#### 4.2.3.5 Sabda

Sabda or testimony is the word of a trustworthy person. Trustworthy person is the one who knows the truth and tells the truth. It is also called aptavakya. The knowledge that derives from sabda or aptavakya is called sabda-jnana.

According to the object of knowledge, sabda-pramana is of two kinds, namely, drstartha or that relating to perceptible objects and adrstartha or that relating to imperceptible objects. The words of a trustworthy person about sensible objects or things is called drstartha sabda pramana. Again the words of a trustworthy person about an object or thing that is not sensible is called adrstartha sabda pramana.

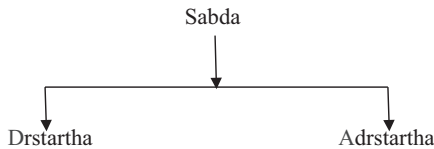


Fig. 4.17

According to another classification, there are two kinds of sabda jnana, one is vaidika or scriptural and other is laukika or secular. The words of the Vedas are vaidika sabda pramana. The vaidika testimony is the words of God and so is perfect. Again the words of human beings are laukika sabda pramana. The knowledge that comes from laukika sabda pramana is likely to go astray.

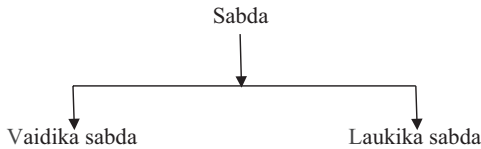


Fig. 4.18

#### 4.2.4 Generancy Theory about the Nature of Known Object

##### 4.2.4.1 Relativism

Humans are social creatures. He has to face different situations to continue in the society. People have to acquire knowledge to sustain life. Now our topic is what is the nature of the known object or knowable object? There are differences among philosophers about this. If there is to be knowledge, both the knower and the object to be known are needed. The one who acquires knowledge of the object is called the knower and the object that one has knowledge of is called the known object. So to be knowledge, both individuals and objects are needed. Knowledge reveals the relationship between the knower and the known object.

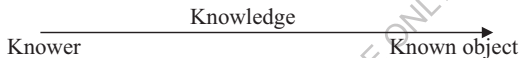


Fig. 4.19

Different philosophers have expressed different views on the nature of known objects. There is a group of philosophers who think that a known object has a mind-neutral or knowledge-neutral entity. Their doctrine is called realism. Again there are other philosophers who think that the known object is dependent on the mind or knowledge. Their doctrine is called idealism. The realists want to establish substance as the substratum of quality as an out-of-mind entity. They want to protect the sovereignty of nature. On the other hand, the idealists want to make all kinds of qualities of objects dependent on the mind and substance the substratum of the qualities to be made dependent on the mind. The realists are object-centered and the idealists are self-centered.

What is the nature of the known object? I will try to answer this question in a different way. We know that we can gain accurate knowledge only through cognition. Cognition is perception (pratyaksha), inference (anumana), comparison (upamana) and testimony (Sabda). Perception is a kind of cognition. This perception can be the perception of the five senses (external perception) or the perception in connection with the mind (internal perception). It is important to remember that the mind is also a kind of sense. In Indian philosophy, the mind is called the sixth sense. Therefore, the question of whether the existence of an out-of-mind entity is acceptable or excluded is not more important. Through the five senses perception we get the element (contents) of knowledge and through the mind sense perception we get the shape (concepts) of knowledge. The realists make the existence of known objects mind-neutral. On the other hand the idealists make the existence of known objects dependent on the mind. The mind has a role to play in knowing objects. Because intellect is the quality of the mind and if

there is no intellect, knowledge is not its shape. Without the shape of knowledge, knowledge is not integrated and well-organized.

Thus the nature of the knowable object depends on the cognition of the knower. That is, the nature of the knowable object is relative. This is normal that the nature of the knowable object will depend on the knower, because the knower knows the matter. Now it can be said that known objects are perception-dependent, inference-dependent, comparison-dependent and testimony-dependent. Perception-dependent means perception-dependent of the five senses or perception-dependent of the mind.

So the nature of the knowable object depends on how the knower knows the object. Therefore the nature of the known object is relative. The matter can be explained with the help of mathematics.

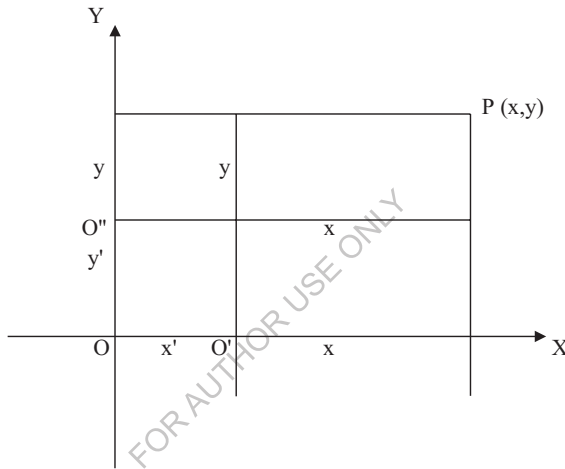


Fig. 4.20

Suppose XOY indicates the Cartesian coordinate system. Here the knower is in O position. The knowable object is in the P position. Then the position of the knowable object will be  $P = (x, y)$ . Now suppose, if the knower moves  $x'$  amount along the X axis, then the position of the knower will be O'. Then if the knower wants to know the position of the object, the position will be  $P(x-x', y)$ . On the other hand, if the knower moves  $y'$  amount along the y axis, then the position of the knower will be O''. Then if the knower wants to know the position of the object, then the position of the object will be  $P(x, y-y')$ . So it can be said that the nature of the known object is relative. This doctrine is called relativism.

### 4.3 Category

Category is padartha. Padasya artha: padartha- that is, all things indicated by words are padarthas. Can not imagine anything on this universe that has no name. Padartha is the object of what is known with the name. Whatever knowledge matters, it certainly has a name. The topic that is specified by word is padartha.

There are four types of padarthas, namely, dravya (substance), guna (quality), karma (action) and samanwaya (adjustment).

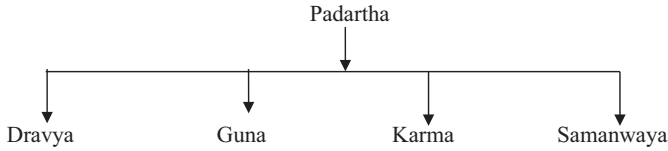


Fig. 4.21

The padarthas or categories of Generancy philosophy and Vaisesika philosophy can be arranged with the following table.

Padartha	Generancy philosophy	Vaisesika philosophy
	Dravya	Dravya
	Guna	Guna, samanya and visesa
	Karma	Karma
	Samanwaya	Samyoga and samavaya
		Abhava or non-existence

Tab. 4.6

What is abhava or non-existence in the Vaisesika philosophy is the absence of anything. Abhava or non-existence is the opposite of existence. Abhava is a negative category or padartha.

According to the Nyaya philosophy sixteen categories or padarthas have been acknowledged. These are (1) pramana (valid means of knowledge), (2) prameya (objects of valid knowledge), (3) samsaya (doubt), (4) prayojana (aim), (5) drstanta (example), (6) siddhanta (conclusion), (7) avayava (members of syllogism), (8) tarka (hypothetical argument), (9) nirnaya (settlement), (10) vada (discussion), (11) jalpa (wrangling), (12) vitanda (cavilling), (13) hetvabhava (fallacy), (14) chala (quibbling), (15) jati (sophisticated refutation) (16) nigrahasthana (point of defeat). According to the Vaisesika philosophy, padarthas are of seven kinds, namely, dravya (substance), guna (quality), karma (action), samanya (generality or universal), visesa (particularity), samavaya (inherence) and abhava (non-existence).

### 4.3.1 Generancy Theory about Category

Generancy theory about category is discussed below.

(1) The partial model of category derived from main theory is,

$$\begin{aligned} \mathfrak{A} \text{ (Category)} &\ni \\ \mathfrak{B} \text{ (Name)} &\Rightarrow \end{aligned}$$

(2) Category is an akara (form) of jnana. The upakarana (component) of category is name. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jnana	Category	Name

Tab. 4.7

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the category and at the same time the cause of the upakarana of the category. On the other hand, the category is the cause of the upakarana of the category and is related to the upakarana of the category. That is, the category is the cause of its component name and is also related to this component. Writing in sign language is as follows:

$$\begin{aligned}
 \text{ॐ (Jnana)} &\downarrow \\
 \text{ॐ (Category)} &\rightsquigarrow \\
 \text{ॐ (Name)} &\Rightarrow
 \end{aligned}$$

(4) Now let us analyze category in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Category can be taken as a category, it has a specific name and let us think that this name is category. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the category is added, then we can say that the category is positive. Again, if the category is subtracted, then we can say that the category is negative. If it is on the right side of the number line, the category will be positive. Again, if it is on the left side of the number line, the category will be negative.

Every object in this universe is three-dimensional. Category is not out of it. Category is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the category may be in the north or south, it may be in the east or west, or it may be in the up or down. Category can be measured as a solid object. Each category has four quantities. These four quantities are force, mass, space and time. There is force and mass in category. Again the category is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Category
Assertion	Positivity	Category inclusion
	Negativity	Category exclusion
Dimension	North	Category is in the north-south
	East	Category is in the east-west
	Up	Category is in the up-down
Quantity	Force	There is force in this category
	Mass	There is mass in this category
	Space	This category is in a space
	Time	This category is in a time

Tab. 4.8

(5) The decision of category derived from the main theory is ‘category is related to name.’ That is

$$\mathcal{A}(\text{Category}) \rightsquigarrow \mathcal{B}(\text{Name}) \Rightarrow$$

### 4.3.2 Name

A name is a term that identifies a padartha or category. Everything around us has a name to mark it. Without a name we cannot identify anything. In order to gain knowledge of something, it is important to know the name first. Now let us discuss about the four types of categories, namely dravya, guna, karma and samanwaya. The prerequisite for knowledge of an object is to find out the appropriate name of that object. For example, it is ignorant to call the imaginary number as a real number; to call an imaginary number as an imaginary number is knowledge.

### 4.3.3 Generancy Theory about Name

Generancy theory about name is discussed below.

(1) The partial model of name derived from main theory is,

$$\mathcal{A}(\text{Category}) \rightsquigarrow \mathcal{B}(\text{Name}) \Rightarrow$$

(2) Name is an upakarana (component) of a category. The category is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Category	Name

Tab. 4.9

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the category and at the same time the cause of name. On the other hand, the category is the cause of name and is related to name. Writing in sign language is as follows:

$$\text{ॐ (Jnana)} \downarrow \text{ॐ (Category)} \searrow \text{ॐ (Name)}$$

(4) Now let us analyze name in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Name can be taken as a category, it has a specific name and let us think that this name is name. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the name is added, then we can say that the name is positive. Again, if the name is subtracted, then we can say that the name is negative. If it is on the right side of the number line, the name will be positive. Again, if it is on the left side of the number line, the name will be negative.

Every object in this universe is three-dimensional. Name is not out of it. Name is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, name may be in the north or south, it may be in the east or west, or it may be in the up or down. Name can be measured as a solid object. Each name has four quantities. These four quantities are force, mass, space and time. There is force and mass in name. Again name is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Name
Assertion	Positivity	Name inclusion
	Negativity	Name exclusion
Dimension	North	Name is in the north-south
	East	Name is in the east-west
	Up	Name is in the up-down
Quantity	Force	There is force in this name
	Mass	There is mass in this name
	Space	This name is in a space
	Time	This name is in a time

Tab. 4.10

(5) Name follows the point rule. The law of name derived from the point rule is,

$$\text{ॐ (Name)} = \text{ॐ (Name)}$$



#### 4.3.4 Interpretation of Point Rule for Category

Let us explain the law of point rule for category. Category has one component and this component is name. This component is at a point. A point is a geometric object that has no length, width and height. So there is no distortion of the point. A point is a unique and singular object. There is a great beauty of points in mathematics. There is a law under the point rule and that is name is one and unique. The expression 'name is at the point' means that name is unique. Name has not been compared to anything. Name is only equal to name. The improvement or deterioration of name is entirely a matter of the category and no other component is responsible for it.

#### 4.4 Assertion

An assertion is the correct and definitive description of an object. A confident and forceful statement about an object is the assertion. With an assertion, one can get accurate knowledge of a topic. An assertion reveals the attitude of a name. There are two types of attitudes of an assertion, namely: positivity and negativity.

##### 4.4.1 Generancy Theory about Assertion

Generancy theory about assertion is discussed below.

(1) The partial model of assertion derived from main theory is,

$$\begin{aligned} \text{अ}^\circ (\text{Assertion}) \Downarrow \\ \text{उ} (\text{Positivity}) \Rightarrow \text{ऒ} (\text{Negativity}) \end{aligned}$$

(2) Assertion is an akara (form) of jnana. The upakaranas (components) of assertion are positivity and negativity. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jnana	Assertion	Positivity and negativity

Tab. 4.11

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the assertion and at the same time the cause of the upakaranas of the assertion. On the other hand, the assertion is the cause of the upakaranas of the assertion and is related to the upakaranas of the assertion. That is, the assertion is the cause of its components positivity and negativity and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} \text{ज्ञ} (\text{Jnana}) \Downarrow \\ \text{अ}^\circ (\text{Assertion}) \Downarrow \\ \text{उ} (\text{Positivity}) \Rightarrow \text{ऒ} (\text{Negativity}) \end{aligned}$$

(4) Category and assertion are bound by the inherent relationship. There is an inseparable and eternal relationship between category and assertion.

(5) Now let us analyze assertion in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Assertion can be taken as a category, it has a specific name and let us think that this name is assertion. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the assertion is added, then we can say that the assertion is positive. Again, if the assertion is subtracted, then we can say that the assertion is negative. If it is on the right side of the number line, the assertion will be positive. Again, if it is on the left side of the number line, the assertion will be negative.

Every object in this universe is three-dimensional. Assertion is not out of it. Assertion is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the assertion may be in the north or south, it may be in the east or west, or it may be in the up or down. Assertion can be measured as a solid object. Each assertion has four quantities. These four quantities are force, mass, space and time. There is force and mass in assertion. Again the assertion is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Assertion
Assertion	Positivity	Assertion inclusion
	Negativity	Assertion exclusion
Dimension	North	Assertion is in the north-south
	East	Assertion is in the east-west
	Up	Assertion is in the up-down
Quantity	Force	There is force in this assertion
	Mass	There is mass in this assertion
	Space	This assertion is in a space
	Time	This assertion is in a time

Tab. 4.12

(6) The decision of assertion derived from the main theory is ‘assertion is related to positivity and negativity.’ That is

$$\mathcal{A}^\circ (\text{Assertion}) \rightsquigarrow \mathcal{C}^\circ (\text{Positivity}) \Rightarrow \mathcal{D}^\circ (\text{Negativity})$$

#### 4.4.2 Positivity

Positivity means thinking in an optimistic way, looking for solutions, expecting good results and success. It is the practice of being or tendency to be positive or optimistic in attitude. Positivity associated with emotions of joy, love and inspiration. It also associated with thoughts of courage, certainty and success.

The following figure explains a positivity.

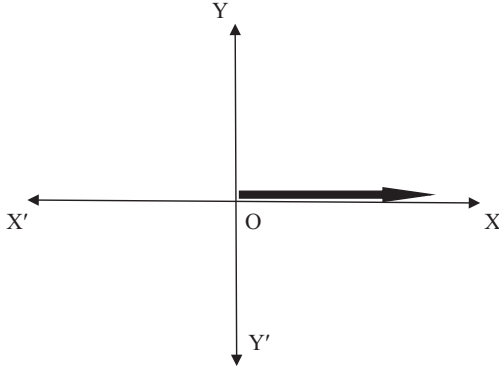


Fig. 4.22

If there is an object to the right of the origin in the Cartesian co-ordinate system is positive and this position assertion of the object is called positivity.

#### 4.4.3 Generancy Theory about Positivity

Generancy theory about positivity is discussed below.

(1) The partial model of positivity derived from main theory is,

$$\text{अ}^\circ (\text{Assertion}) \simeq \text{उ} (\text{Positivity}) \Rightarrow \text{ऒ} (\text{Negativity})$$

(2) Positivity is an upakarana (component) of an assertion. The assertion is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Assertion	Positivity and negativity

Tab. 4.13

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the assertion and at the same time the cause of positivity. On the other hand, the assertion is the cause of positivity and is related to positivity. Writing in sign language is as follows:

$$\text{ज्ञ} (\text{Jnana}) \Downarrow \text{अ}^\circ (\text{Assertion}) \simeq \text{उ} (\text{Positivity})$$

(4) Now let us analyze positivity in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Positivity can be taken as a category, it has a specific name and let us think that this name is positivity. Each category can be asserted in two ways. These two ways are positivity and

negativity. The opposite of positivity is negativity. If the positivity is added, then we can say that the positivity is positive. Again, if the positivity is subtracted, then we can say that the positivity is negative. If it is on the right side of the number line, the positivity will be positive. Again, if it is on the left side of the number line, the positivity will be negative.

Every object in this universe is three-dimensional. Positivity is not out of it. Positivity is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, positivity may be in the north or south, it may be in the east or west, or it may be in the up or down. Positivity can be measured as a solid object. Positivity has four quantities. These four quantities are force, mass, space and time. There is force and mass in positivity. Again positivity is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Positivity
Assertion	Positivity	Positivity inclusion
	Negativity	Positivity exclusion
Dimension	North	Positivity is in the north-south
	East	Positivity is in the east-west
	Up	Positivity is in the up-down
Quantity	Force	There is force in this positivity
	Mass	There is mass in this positivity
	Space	This positivity is in a space
	Time	This positivity is in a time

Tab. 4.14

(5) Positivity follows the balance rule. The law of positivity derived from the balance rule is,

$$\vec{P}(\text{Positivity}) \propto \vec{N}(\text{Negativity})$$

#### 4.4.4 Negativity

Negativity is one where there is no positivity. It is something that is not positive. Negativity is expressing, containing, or consisting of a negation, refusal, or denial. It is lacking positive or constructive features.

The following figure explains a negativity.

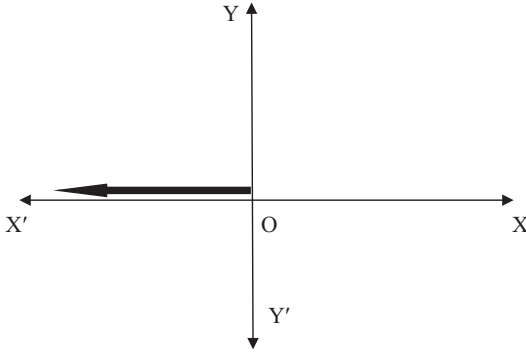


Fig. 4.23

If there is an object to the left of the origin in the Cartesian co-ordinate system is negative and this position assertion of the object is called negativity.

#### 5.4.5 Generancy Theory about Negativity

Generancy theory about negativity is discussed below.

(1) The partial model of negativity derived from main theory is,

$$\begin{aligned} \text{ঞ}^\circ (\text{Assertion}) \text{ ঁ} \\ \text{ঐ} (\text{Positivity}) \Rightarrow \text{ঔ} (\text{Negativity}) \end{aligned}$$

(2) Negativity is an upakarana (component) of an assertion. The assertion is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Assertion	Positivity and negativity

Tab. 4.15

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the assertion and at the same time the cause of negativity. On the other hand, the assertion is the cause of negativity and is related to negativity. Writing in sign language is as follows:

$$\text{ঔ} (\text{Jnana}) \downarrow \text{ঞ}^\circ (\text{Assertion}) \text{ ঁ} \text{ঔ} (\text{Negativity})$$

(4) Now let us analyze negativity in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Negativity can be taken as a category, it has a specific name and let us think that this name is negativity. Each category can be asserted in two ways. These two ways are positivity and

negativity. The opposite of positivity is negativity. If the negativity is added, then we can say that the negativity is positive. Again, if the negativity is subtracted, then we can say that the negativity is negative. If it is on the right side of the number line, the negativity will be positive. Again, if it is on the left side of the number line, the negativity will be negative.

Every object in this universe is three-dimensional. Negativity is not out of it. Negativity is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, negativity may be in the north or south, it may be in the east or west, or it may be in the up or down. Negativity can be measured as a solid object. Negativity has four quantities. These four quantities are force, mass, space and time. There is force and mass in negativity. Again negativity is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Negativity
Assertion	Positivity	Negativity inclusion
	Negativity	Negativity exclusion
Dimension	North	Negativity is in the north-south
	East	Negativity is in the east-west
	Up	Negativity is in the up-down
Quantity	Force	There is force in this negativity
	Mass	There is mass in this negativity
	Space	This negativity is in a space
	Time	This negativity is in a time

Tab. 4.16

(5) Negativity follows the balance rule. The law of negativity derived from the balance rule is,

$$\mathfrak{N}(\text{Negativity}) \propto \mathfrak{P}(\text{Positivity})$$

#### 4.4.6 Interpretation of Straight Line Rule for Assertion

Let us explain the law of straight line rule for assertion. Assertion has two components and these two components are positivity and negativity. These two components are at the two endpoints of the straight line. Let the straight line be divided into two equal parts along the middle point. The straight line along the middle point is in equilibrium. In this case the straight line has a mathematical beauty. To the left of the midpoint is negativity and to the right is positivity. So positivity and negativity are in balance along the midpoint. There is a law under this rule and that is positivity and negativity will change proportionally. That is, if positivity is doubled, negativity will be doubled and if positivity is halved, negativity will be halved. Otherwise the straight line will lose balance and deviate from mathematical beauty.

#### 4.5 Dimension

The expansion of padartha is called dimension. Dimension is three. They are north, east and up. Any padartha or category is tri-dimensional. That is all objects bearing a name have three dimensions. On the other hand, all objects can be positioned on these three sides. Now let us describe the dimensions.

##### 4.5.1 Generancy Theory about Dimension

Generancy theory about dimension is discussed below.

(1) The partial model of dimension derived from main theory is,

$$\begin{aligned} & \text{ঐ (Dimension)} \rightsquigarrow \\ & \text{ঠ (North)} \Rightarrow \text{ড (East)} \Rightarrow \text{ণ (Up)} \end{aligned}$$

(2) Dimension is an akara (form) of jnana. The upakaranas (components) of dimension are north, east and up. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jnana	Dimension	North, east and up

Tab. 4.17

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the dimension and at the same time the cause of the upakaranas of the dimension. On the other hand, the dimension is the cause of the upakaranas of the dimension and is related to the upakaranas of the dimension. That is, the dimension is the cause of its components north, east and up and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} & \text{ঐ (Jnana)} \Downarrow \\ & \text{ঐ (Dimension)} \rightsquigarrow \\ & \text{ঠ (North)} \Rightarrow \text{ড (East)} \Rightarrow \text{ণ (Up)} \end{aligned}$$

(4) Assertion and dimension are bound by the inherent relationship. There is an inseparable and eternal relationship between assertion and dimension.

(5) Now let us analyze dimension in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Dimension can be taken as a category, it has a specific name and let us think that this name is dimension. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the dimension is added, then we can say that the dimension is positive. Again, if the dimension is subtracted, then we can say that the

dimension is negative. If it is on the right side of the number line, the dimension will be positive. Again, if it is on the left side of the number line, the dimension will be negative.

Every object in this universe is three-dimensional. Dimension is not out of it. Dimension is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the dimension may be in the north or south, it may be in the east or west, or it may be in the up or down. Dimension can be measured as a solid object. Each dimension has four quantities. These four quantities are force, mass, space and time. There is force and mass in dimension. Again the dimension is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Dimension
Assertion	Positivity	Dimension inclusion
	Negativity	Dimension exclusion
Dimension	North	Dimension is in the north-south
	East	Dimension is in the east-west
	Up	Dimension is in the up-down
Quantity	Force	There is force in this dimension
	Mass	There is mass in this dimension
	Space	This dimension is in a space
	Time	This dimension is in a time

Tab. 4.18

(6) The decision of dimension derived from the main theory is 'dimension is related to north, east and up.' That is

$$\text{ॐ (Dimension)} \rightsquigarrow \text{ॐ (North)} \Rightarrow \text{ॐ (East)} \Rightarrow \text{ॐ (Up)}$$

#### 4.5.2 North

In the Cartesian co-ordinate system north and south is YOY' axis where north is OY axis and south is OY' axis.

In the following figure the arrow sign to the OY axis is north and the arrow sign to the OY' axis is south.



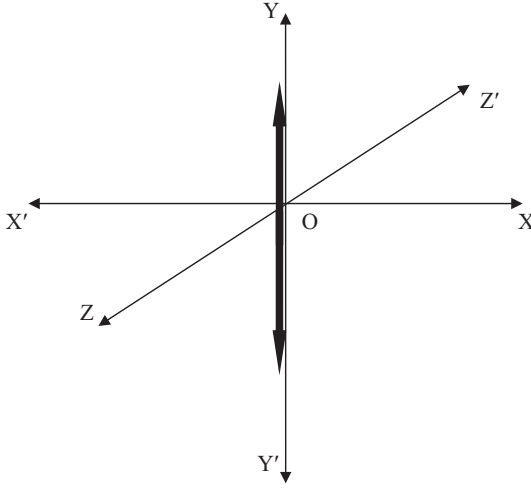


Fig. 4.24

### 4.5.3 Generancy Theory about North

Generancy theory about north is discussed below.

(1) The partial model of north derived from main theory is,

$$\begin{aligned} & \text{ঐ (Dimension)} \Downarrow \\ & \text{ঔ (North)} \Rightarrow \text{ঔ (East)} \Rightarrow \text{ঊ (Up)} \end{aligned}$$

(2) North is an upakarana (component) of a dimension. The dimension is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Dimension	North, east and up

Tab. 4.19

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the dimension and at the same time the cause of north. On the other hand, the dimension is the cause of north and is related to north. Writing in sign language is as follows:

$$\text{ঐ (Jnana)} \Downarrow \text{ঐ (Dimension)} \Downarrow \text{ঔ (North)}$$

(4) Now let us analyze north in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

North can be taken as a category, it has a specific name and let us think that this name is north. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the north is added, then we can say that the north is positive. Again, if the north is subtracted, then we can say that the north is negative. If it is on the right side of the number line, the north will be positive. Again, if it is on the left side of the number line, the north will be negative.

Every object in this universe is three-dimensional. North is not out of it. North is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, north may be in the north or south, it may be in the east or west, or it may be in the up or down. North can be measured as a solid object. North has four quantities. These four quantities are force, mass, space and time. There is force and mass in north. Again north is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	North
Assertion	Positivity	North inclusion
	Negativity	North exclusion
Dimension	North	North is in the north-south
	East	North is in the east-west
	Up	North is in the up-down
Quantity	Force	There is force in this north
	Mass	There is mass in this north
	Space	This north is in a space
	Time	This north is in a time

Tab. 4.20

(5) North follows the left hand rule. There are two laws of north from the left hand rule and these two laws are,

**Law 1** At constant east  $\bar{v}$ , the north  $\bar{u}$  of a dimension varies inversely with its up  $\bar{w}$ . That is,

$$\bar{u}(\text{North}) \propto 1/\bar{w}(\text{Up})$$

**Law 2** At constant up  $\bar{w}$ , the north  $\bar{u}$  of a dimension varies inversely with its east  $\bar{v}$ . That is,

$$\bar{u}(\text{North}) \propto 1/\bar{v}(\text{East})$$

#### 4.5.4 East

In the Cartesian co-ordinate system east and west is  $XOX'$  axis where east is  $OX$  axis and west is  $OX'$  axis.

In the following figure the arrow sign to the OX axis is east and the arrow sign to the OX' axis is west.

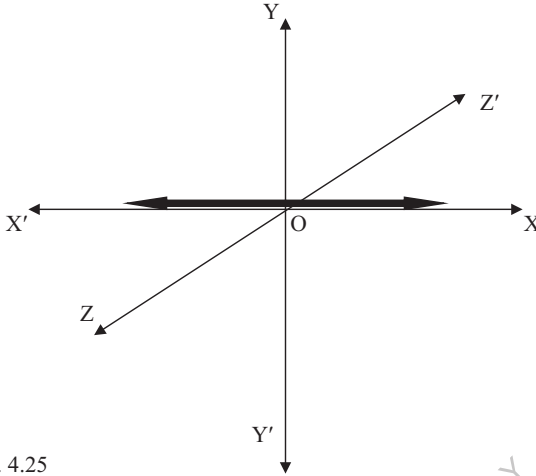


Fig. 4.25

**4.5.5 Generancy Theory about East**

Generancy theory about east is discussed below:

(1) The partial model of east derived from main theory is,

$$\text{ঐ (Dimension)} \Downarrow \\ \text{ঔ (North)} \Rightarrow \text{ঔ (East)} \Rightarrow \text{ঊ (Up)}$$

(2) East is an upakarana (component) of a dimension. The dimension is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Dimension	North, east and up

Tab. 4.21

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the dimension and at the same time the cause of east. On the other hand, the dimension is the cause of east and is related to east. Writing in sign language is as follows:

$$\text{ঐ (Jnana)} \Downarrow \text{ঐ (Dimension)} \Downarrow \text{ঔ (East)}$$

(4) Now let us analyze east in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are

north, east and up. There are four components of quantity and that is force, mass, space and time.

East can be taken as a category, it has a specific name and let us think that this name is east. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the east is added, then we can say that the east is positive. Again, if the east is subtracted, then we can say that the east is negative. If it is on the right side of the number line, the east will be positive. Again, if it is on the left side of the number line, the east will be negative.

Every object in this universe is three-dimensional. East is not out of it. East is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, east may be in the north or south, it may be in the east or west, or it may be in the up or down. East can be measured as a solid object. East has four quantities. These four quantities are force, mass, space and time. There is force and mass in east. Again east is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	East
Assertion	Positivity	East inclusion
	Negativity	East exclusion
Dimension	North	East is in the north-south
	East	East is in the east-west
	Up	East is in the up-down
Quantity	Force	There is force in this east
	Mass	There is mass in this east
	Space	This east is in a space
	Time	This east is in a time

Tab. 4.22

(5) East follows the left hand rule. There are two laws of east from the left hand rule and these two laws are,

**Law 1** At constant north  $\overline{\text{N}}$ , the east  $\overline{\text{E}}$  of a dimension varies inversely with its up  $\overline{\text{U}}$ . That is,

$$\overline{\text{E}} (\text{East}) \propto 1 / \overline{\text{U}} (\text{Up})$$

**Law 2** At constant up  $\overline{\text{U}}$ , the east  $\overline{\text{E}}$  of a dimension varies inversely with its north  $\overline{\text{N}}$ . That is,

$$\overline{\text{E}} (\text{East}) \propto 1 / \overline{\text{N}} (\text{North})$$

#### 4.5.6 Up

In the Cartesian co-ordinate system up and down is ZOZ' axis where up is OZ axis and down is OZ' axis.

In the following figure the arrow sign to the OZ axis is up and the arrow sign to the OZ' axis is down.

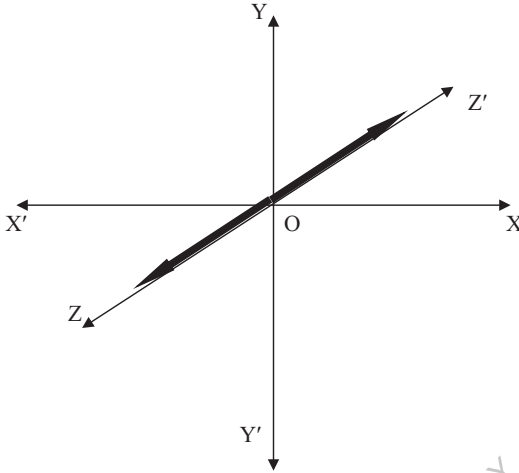


Fig. 4.26

**4.5.7 Generancy Theory about Up**

Generancy theory about up is discussed below.

(1) The partial model of up derived from main theory is,

$$\text{ঐ (Dimension)} \rightsquigarrow \text{ঔ (North)} \Rightarrow \text{ঔ (East)} \Rightarrow \text{ঊ (Up)}$$

(2) Up is an upakarana (component) of a dimension. The dimension is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Dimension	North, east and up

Tab. 4.23

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the dimension and at the same time the cause of up. On the other hand, the dimension is the cause of up and is related to up. Writing in sign language is as follows:

$$\text{ঐ (Jnana)} \Downarrow \text{ঐ (Dimension)} \rightsquigarrow \text{ঊ (Up)}$$

(4) Now let us analyze up in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of

assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Up can be taken as a category, it has a specific name and let us think that this name is up. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the up is added, then we can say that the up is positive. Again, if the up is subtracted, then we can say that the up is negative. If it is on the right side of the number line, the up will be positive. Again, if it is on the left side of the number line, the up will be negative.

Every object in this universe is three-dimensional. Up is not out of it. Up is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, up may be in the north or south, it may be in the east or west, or it may be in the up or down. Up can be measured as a solid object. Up has four quantities. These four quantities are force, mass, space and time. There is force and mass in up. Again up is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Up
Assertion	Positivity	Up inclusion
	Negativity	Up exclusion
Dimension	North	Up is in the north-south
	East	Up is in the east-west
	Up	Up is in the up-down
Quantity	Force	There is force in this up
	Mass	There is mass in this up
	Space	This up is in a space
	Time	This up is in a time

Tab. 4.24

(5) Up follows the left hand rule. There are two laws of up from the left hand rule and these two laws are,

**Law 1** At constant north  $\overline{\mathfrak{N}}$ , the up  $\overline{\mathfrak{U}}$  of a dimension varies inversely with its east  $\overline{\mathfrak{E}}$ . That is,

$$\overline{\mathfrak{U}} \propto 1/\overline{\mathfrak{E}} \text{ (East)}$$

**Law 2** At constant east  $\overline{\mathfrak{E}}$ , the up  $\overline{\mathfrak{U}}$  of a dimension varies inversely with its north  $\overline{\mathfrak{N}}$ . That is,

$$\overline{\mathfrak{U}} \propto 1/\overline{\mathfrak{N}} \text{ (North)}$$

#### 4.5.8 Interpretation of Triangle Rule for Dimension

Let us explain the laws of triangle rule for dimension. Dimension has three components and these three components are north, east and up. These three components are at the three angular points of the triangle. Now if one component at any angular point of the triangle remains constant, the other two components will vary in inverse proportion to each other. There are three laws under this rule. For example, if one dimension component north is fixed, the other two dimension components east and up will change in opposite proportion to each other. Let us explain the matter better. Let us say that a solid has three dimensions  $x$ ,  $y$  and  $z$ . Let the object be placed in three-dimensional Cartesian coordinates along the  $X$ ,  $Y$  and  $Z$  axes. Let us also assume that  $X = \text{east}$ ,  $Y = \text{north}$  and  $Z = \text{up}$ . Now if the height of the object remains constant, then the length and width will vary in inverse proportion to each other.

#### 4.6 Quantity

What we measure in a category or padartha is called quantity or rashi. For example, we measure length and mass of a table. Then length and mass are quantities. Again let us find out how many times a car is running and what is the force of the car? Then time and force acting on the car are quantities. There are many quantities in this physical world. Firstly, the quantity can be divided into two parts, namely, fundamental quantity and derived quantity.

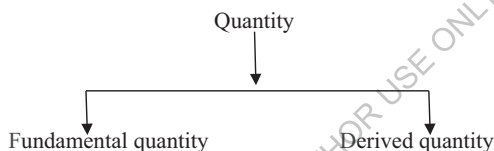


Fig. 4.27

To measure the quantity that do not require any other quantities are called fundamental quantity. For example, if the length and mass of the table is measured, only the length and mass are measured. No other measurements are needed. Again, the force applied to a moving object and the time to measure only force and time are measured. No other measurements are needed. So force, mass, space and time are fundamental quantities.

There are many quantities to measure them other quantities are needed. They are derived quantities. For example, to measure the velocity or speed of a moving vehicle, it is to measure that how much distance the vehicle crossed over time. Then the velocity or speed will be calculated by dividing the distance by time. Therefore, the velocity or speed is derived quantities. Again, to measure the density of a gold bar, you must measure the mass and volume of the gold bar. Then the density will be calculated by dividing the mass by volume. Therefore, the density is derived quantities.

Each of the numerous physical quantities used in science has its own unit. These units can be divided into two parts. They are fundamental unit and derived unit.

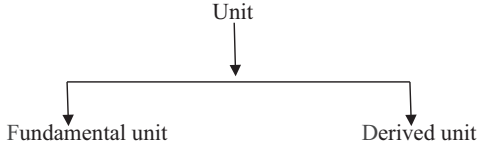


Fig. 4.28

A unit that does not depend on any other unit and is absolutely unrelated or independent is called a fundamental unit. Units such as force, mass, space and time do not depend on any other unit. So these four units are the fundamental units. The unit of force is newton, the unit of mass is kilogram, the unit of space is meter and the unit of time is second.

The unit that can be made based on the fundamental units are called derived unit. For example, velocity, acceleration, momentum etc. The velocity depends on the meter and second. That is

$$\text{Velocity} = \frac{\text{meter}}{\text{second}} \quad \text{or, } v = \frac{m}{s}$$

Again, the acceleration is also depends on the meter and second. That is

$$\text{Acceleration} = \frac{\text{meter}}{\text{second}^2} \quad \text{or, } a = \frac{m}{s^2}$$

Again, the momentum is also depends on the kilogram, meter and second. That is

$$\text{Momentum} = \text{mass} \times \text{velocity} \quad \text{or, } p = \text{kg} \times \frac{m}{s} \quad \text{or, } p = \frac{\text{kgm}}{s}$$

#### 4.6.1 Generancy Theory about Quantity

Generancy theory about quantity is discussed below.

(1) The partial model of quantity derived from main theory is,

$$\begin{aligned} & \text{ঐ}^\circ (\text{Quantity}) \text{ ঙ} \\ & \text{ত} (\text{Force}) \Rightarrow \text{খ} (\text{Mass}) \Rightarrow \text{দ} (\text{Space}) \Rightarrow \text{ধ} (\text{Time}) \end{aligned}$$

(2) Quantity is an akara (form) of jnana. The upakaranas (components) of quantity are force, mass, space and time. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Jnana	Quantity	Force, mass, space and time

Tab. 4.25

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the quantity and at the same time the cause of the upakaranas of the quantity. On the other hand, the quantity is the cause of the upakaranas of the quantity and is related to the upakaranas of the quantity. That is, the quantity is the cause of its components force, mass, space and time and is also related to these components. Writing in sign language is as follows:



$$\begin{aligned} & \text{ज्ञ (Jnana) } \Downarrow \\ & \text{ज्ञैः (Quantity) } \Downarrow \\ & \text{त (Force) } \Rightarrow \text{थ (Mass) } \Rightarrow \text{द (Space) } \Rightarrow \text{ध (Time)} \end{aligned}$$

(4) Dimension and quantity are bound by the inherent relationship. There is an inseparable and eternal relationship between dimension and quantity.

(5) Now let us analyze quantity in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Quantity can be taken as a category, it has a specific name and let us think that this name is quantity. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the quantity is added, then we can say that the quantity is positive. Again, if the quantity is subtracted, then we can say that the quantity is negative. If it is on the right side of the number line, the quantity will be positive. Again, if it is on the left side of the number line, the quantity will be negative.

Every object in this universe is three-dimensional. Quantity is not out of it. Quantity is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the quantity may be in the north or south, it may be in the east or west, or it may be in the up or down. Quantity can be measured as a solid object. Each quantity has four quantities. These four quantities are force, mass, space and time. There is force and mass in quantity. Again the quantity is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Quantity
Assertion	Positivity	Quantity inclusion
	Negativity	Quantity exclusion
Dimension	North	Quantity is in the north-south
	East	Quantity is in the east-west
	Up	Quantity is in the up-down
Quantity	Force	There is force in this quantity
	Mass	There is mass in this quantity
	Space	This quantity is in a space
	Time	This quantity is in a time

Tab. 4.26

(6) The decision of quantity derived from the main theory is ‘quantity is related to force, mass, space and time.’ That is

$$\text{ज्ञैः (Quantity) } \Downarrow \text{ त (Force) } \Rightarrow \text{थ (Mass) } \Rightarrow \text{द (Space) } \Rightarrow \text{ध (Time)}$$

## 4.6.2 Force

We know that every object wants to maintain the state it is in, that is, if the object is stationary, it wants to remain stationary and if it is dynamic it wants to be dynamic. This property of object is called inertia. To change the inertia of the object, something has to be applied from the outside. An external cause is called force or bala which causes the object to move or wants to move, or to change or wants to change the motion of a moving object.

### 4.6.2.1 Fundamental Force

In nature we are familiar with different types of forces, but not all forces are fundamental. Those forces that are original or independent, that are not produced by any other force or form of any other force, but are expressed as other, are called fundamental forces. In Physics the fundamental forces are four. They are: gravitational force, electromagnetic force, strong nuclear force and weak nuclear force.

The interaction between any two objects in the universe is called the gravitational force. Gravity is a universal force. Every object in the universe feels this force because of another object. All objects on the surface feel this force because of the earth. The magnitude of this force is direct proportional to the product of the mass of the two acting objects and is inverse proportional to the square of the distance between the two. The range of gravitational force is infinite. The carrier particles of gravitational force is gravitons (hypothetical).

There is a kind of force acting between two charged objects and between two magnets. They are called Coulomb's electric and magnetic forces, respectively. Electric force and magnetic force are closely related. The attraction or repulsion force that two charged particles exert on each other because of their charge is called electromagnetic force. The range of electromagnetic force is infinite. The carrier particles of electromagnetic force is photons. Structure of atoms and molecules, chemical reactions, thermal and other properties of matter are the result of electromagnetic force.

The nucleus of an atom is made up of protons and neutrons. Collectively they are called nucleons. The strong force that binds together nuclear elements in the nucleus of an atom is called a strong nuclear force. The strong nuclear force binds proton and neutron to the nucleus. This force is attractive and the range is short. The carrier particles of strong nuclear force is gluons.

The force that acts on the nucleus causing instability in the nucleus is called a weak nuclear force. When a  $\beta$  ray is emitted from a nucleus, then weak nuclear force arises. This is a weak force and range is short. The carrier particles of weak nuclear force is W and Z bosons.

### 4.6.2.2 Newton's Laws of Motion

In 1687, Sir Isaac Newton published three laws, establishing the relation between the mass, the motion, and the force of the object. These three laws are known as Newton's laws of motion.

Newton's first law states that if body at rest will remain at rest, and a body in motion will remain in motion unless it is acted upon by an external force. From the first law, we know that the object cannot change its position if no external force is applied to the object. If the object is in a stable state, it always wants to be stable, again once in a dynamic state it always wants to be dynamic. This particular properties of matter is called inertia. So this law is also called the law of inertia.

Newton's second law states that the rate of change of momentum is proportional to the force applied to the object. Where in the direction the force is acting, the changes in momentum also occur in that direction.

We can write with the help of symbols as  $\vec{p} = m\vec{v}$ , where,  $\vec{p}$  is momentum,  $m$  is mass and  $\vec{v}$  is velocity. Now according to Newton's second law, the rate of change of momentum is proportional to the force applied to the object. So, if the momentum is  $\vec{p}$  and the force is  $\vec{F}$ , then

$$\vec{F} \propto \frac{d\vec{p}}{dt}$$

$$\text{or, } \vec{F} \propto \frac{d}{dt}m\vec{v}$$

$$\text{or, } \vec{F} \propto m \frac{d}{dt}\vec{v}$$

$$\text{or, } \vec{F} \propto m\vec{a} \quad [\text{where, } \frac{d}{dt}\vec{v} = a, \text{ acceleration}]$$

$$\text{or, } \vec{F} = k m \vec{a}$$

$$\text{or, } \vec{F} = m\vec{a} \quad \text{where, } k=1$$

So, the force acting on an object is equal to the mass of that object times its acceleration.

Newton's third law states that each action has an equal and opposite reaction. Newton's first and second laws are about a single object, while the third law is related to two objects. Suppose P and Q are two objects. Then  $\vec{F}_1$  is the attraction force by the second object Q on the first object P. And  $\vec{F}_2$  is the attraction force by the first object P on the second object Q.

Then according to Newton's third law, we get

$$\vec{F}_1 = - \vec{F}_2$$

#### 4.6.2.3 Conservation of Momentum

When the net force exerted on a system composed of multiple objects is zero, the total momentum  $\vec{P}$  of the system does not change over time. This is the conservation principle of momentum.

Suppose two objects with mass  $m_1$  and  $m_2$  collide while moving along the same straight line at  $\vec{u}_1$  and  $\vec{u}_2$  velocity, respectively. After the collision, the two objects moved along the same straight line at  $\vec{v}_1$  and  $\vec{v}_2$  velocity, respectively. So the total momentum of the two objects before the collision is  $m_1\vec{u}_1 + m_2\vec{u}_2$ . And the total momentum of the objects after the collision is  $m_1\vec{v}_1 + m_2\vec{v}_2$ .

Now if there is no external force applied, then according to the conservation principle of momentum,

$$m_1\vec{u}_1 + m_2\vec{u}_2 = m_1\vec{v}_1 + m_2\vec{v}_2$$

Therefore the total linear momentum remains unchanged.

Similarly when the net torque exerted on a system is zero, the total angular momentum of the system is conserved.

The following figure explains a two- asserted force.



Fig. 4.29

The following figure explains a three-dimensional force.

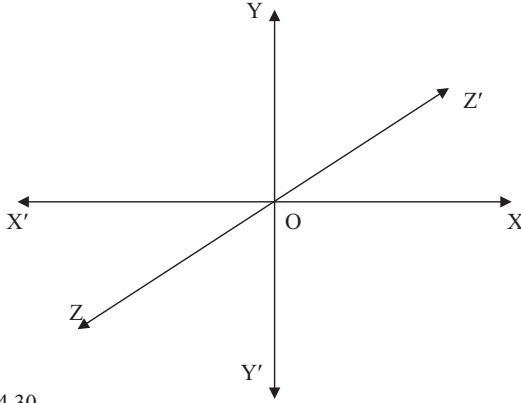


Fig. 4.30

### 4.6.3 Generancy Theory about Force

Generancy theory about force is discussed below.

(1) The partial model of force derived from main theory is,

$$\begin{aligned} & \text{ঐ}^\circ (\text{Quantity}) \Downarrow \\ & \text{ত} (\text{Force}) \Rightarrow \text{খ} (\text{Mass}) \Rightarrow \text{দ} (\text{Space}) \Rightarrow \text{ধ} (\text{Time}) \end{aligned}$$

(2) Force is an upakarana (component) of a quantity. The quantity is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Quantity	Force, mass, space and time

Tab. 4.27

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the quantity and at the same time the cause of force. On the other hand, the quantity is the cause of force and is related to force. Writing in sign language is as follows:

$$\text{ই} (\text{Jnana}) \Downarrow \text{ঐ}^\circ (\text{Quantity}) \Downarrow \text{ত} (\text{Force})$$

(4) Now let us analyze force in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Force can be taken as a category, it has a specific name and let us think that this name is force. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the force is added, then we can say that the force is positive. Again, if the force is subtracted, then we can say that the force is negative. If it is on

the right side of the number line, the force will be positive. Again, if it is on the left side of the number line, the force will be negative.

Every object in this universe is three-dimensional. Force is not out of it. Force is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, force may be in the north or south, it may be in the east or west, or it may be in the up or down. Force can be measured as a solid object. Force has four quantities. These four quantities are force, mass, space and time. There is force and mass in force. Again force is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Force
Assertion	Positivity	Force inclusion
	Negativity	Force exclusion
Dimension	North	Force is in the north-south
	East	Force is in the east-west
	Up	Force is in the up-down
Quantity	Force	There is force in this force
	Mass	There is mass in this force
	Space	This force is in a space
	Time	This force is in a time

Tab. 4.28

(5) Force follows the cross rule. There are three laws of force from the cross rule and these three laws are,

**Law 1** At constant mass  $\mathfrak{F}$  and space  $\mathfrak{D}$ , the force  $\mathfrak{T}$  of a quantity varies inversely with its time  $\mathfrak{K}$ . That is,

$$\mathfrak{T}(\text{Force}) \propto 1/\mathfrak{K}(\text{Time})$$

**Law 2** At constant mass  $\mathfrak{F}$  and time  $\mathfrak{K}$ , the force  $\mathfrak{T}$  of a quantity varies directly with its space  $\mathfrak{D}$ . That is,

$$\mathfrak{T}(\text{Force}) \propto \mathfrak{D}(\text{Space})$$

**Law 3** At constant space  $\mathfrak{D}$  and time  $\mathfrak{K}$ , the force  $\mathfrak{T}$  of a quantity varies directly with its mass  $\mathfrak{M}$ . That is,

$$\mathfrak{T}(\text{Force}) \propto \mathfrak{M}(\text{Mass})$$

#### 4.6.4 Mass

Mass or bhara is an important concept in philosophy and physics. Mass is a measure of what is in that dravya or substance. Bhara or mass is one, eternal and all-pervading substance. Bhara is not many, there seems to be a lot of masses for adding conditions (upadhi). We divide

mass into bricks, a table, a book and so on if we need it. Bhara is boundless extent. In Newtonian physics, mass is irreversible, wherever it is measured, is equal everywhere. But there is a difference of opinion in modern physics. In modern physics, mass is not something constant, but mass is relative. Due to space and time, mass may vary for different individuals. It is two-asserted and three-dimensional. Here are some laws of mass described in physics.

**4.6.4.1 Inertial Mass**

According to Newton’s second law of motion we get the inertial mass as

$$m = \frac{F}{a}$$

where, F is the force imposed on, m is the mass of the body and a is the acceleration.

**4.6.4.2 Gravitational Mass**

According to Newton’s law of gravitation we get gravitational mass as

$$m_g = \frac{Fd^2}{GM}$$

where,  $m_g$  is the gravitational mass, F is the gravitational force, M is the mass of standard object, d is the distance of the two objects and G is the gravitational constant.

**4.6.4.3 Relativistic Mass**

According to Einstein’s theory of relativity, the relativistic mass is given by

$$m = \frac{m_0}{\sqrt{1-v^2/c^2}}$$

where, m = relativistic mass,  $m_0$  = rest mass, v = velocity and c = speed of light.

The following figure is two- asserted mass.



Fig. 4.31

The following figure is three-dimensional mass.

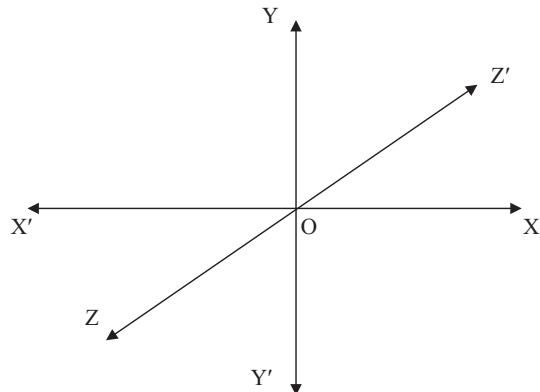


Fig. 4.32

#### 4.6.5 Generancy Theory about Mass

Generancy theory about mass is discussed below.

(1) The partial model of mass derived from main theory is,

$$\begin{aligned} & \text{ঐ}^\circ(\text{Quantity}) \simeq \\ & \text{ত} (\text{Force}) \Rightarrow \text{খ} (\text{Mass}) \Rightarrow \text{দ} (\text{Space}) \Rightarrow \text{ধ} (\text{Time}) \end{aligned}$$

(2) Mass is an upakarana (component) of a quantity. The quantity is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Quantity	Force, mass, space and time

Tab. 4.29

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the quantity and at the same time the cause of mass. On the other hand, the quantity is the cause of mass and is related to mass. Writing in sign language is as follows:

$$\text{ই} (\text{Jnana}) \Downarrow \text{ঐ}^\circ(\text{Quantity}) \simeq \text{খ} (\text{Mass})$$

(4) Now let us analyze mass in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Mass can be taken as a category, it has a specific name and let us think that this name is mass. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the mass is added, then we can say that the mass is positive. Again, if the mass is subtracted, then we can say that the mass is negative. If it is on the right side of the number line, the mass will be positive. Again, if it is on the left side of the number line, the mass will be negative.

Every object in this universe is three-dimensional. Mass is not out of it. Mass is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, mass may be in the north or south, it may be in the east or west, or it may be in the up or down. Mass can be measured as a solid object. Mass has four quantities. These four quantities are force, mass, space and time. There is force and mass in mass. Again mass is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Mass
Assertion	Positivity	Mass inclusion
	Negativity	Mass exclusion
Dimension	North	Mass is in the north-south
	East	Mass is in the east-west
	Up	Mass is in the up-down
Quantity	Force	There is force in this mass
	Mass	There is mass in this mass
	Space	This mass is in a space
	Time	This mass is in a time

Tab. 4.30

(5) Mass follows the cross rule. There are three laws of mass from the cross rule and these three laws are,

**Law 1** At constant force  $\bar{t}$  and space  $\bar{d}$ , the mass  $\bar{m}$  of a quantity varies directly with its time  $\bar{t}$ . That is,

$$\bar{m}(\text{Mass}) \propto \bar{t}(\text{Time})$$

**Law 2** At constant force  $\bar{t}$  and time  $\bar{t}$ , the mass  $\bar{m}$  of a quantity varies inversely with its space  $\bar{d}$ . That is,

$$\bar{m}(\text{Mass}) \propto 1/\bar{d}(\text{Space})$$

**Law 3** At constant space  $\bar{d}$  and time  $\bar{t}$ , the mass  $\bar{m}$  of a quantity varies directly with its force  $\bar{t}$ . That is,

$$\bar{m}(\text{Mass}) \propto \bar{t}(\text{Force})$$

#### 4.6.6 Space

Space or sthana is one, eternal and all-pervading. Sthana is not many, there seems to be a lot of space for adding conditions. As a result, we have the idea of a vacant and full, here and there, near and far etc. Sthana is boundless extent. Sthana is one of the most important concepts in philosophy and physics. Space is needed to describe any event. Without knowing where an incident occurred, it is difficult to get a clear idea of the event. It is two-asserted and three-dimensional.

The following figure is two- asserted space.



Fig. 4.33



The following figure is three-dimensional space.

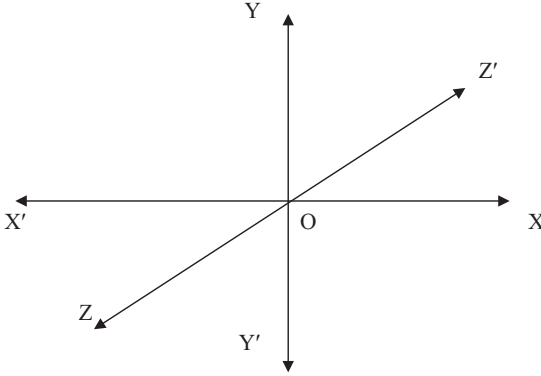


Fig. 4.34

#### 4.6.7 Generancy Theory about Space

Generancy theory about space is discussed below.

(1) The partial model of space derived from main theory is,

$$\begin{aligned} & \text{ঐ}^\circ(\text{Quantity}) \text{ \textasciitilde} \\ & \text{ত} (\text{Force}) \Rightarrow \text{খ} (\text{Mass}) \Rightarrow \text{দ} (\text{Space}) \Rightarrow \text{ধ} (\text{Time}) \end{aligned}$$

(2) Space is an upakarana (component) of a quantity. The quantity is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Quantity	Force, mass, space and time

Tab. 4.31

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the quantity and at the same time the cause of space. On the other hand, the quantity is the cause of space and is related to space. Writing in sign language is as follows:

$$\text{জি} (\text{Jnana}) \downarrow \text{ঐ}^\circ(\text{Quantity}) \text{ \textasciitilde} \text{দ} (\text{Space})$$

(4) Now let us analyze space in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Space can be taken as a category, it has a specific name and let us think that this name is space. Each category can be asserted in two ways. These two ways are positivity and negativity.

The opposite of positivity is negativity. If the space is added, then we can say that the space is positive. Again, if the space is subtracted, then we can say that the space is negative. If it is on the right side of the number line, the space will be positive. Again, if it is on the left side of the number line, the space will be negative.

Every object in this universe is three-dimensional. Space is not out of it. Space is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, space may be in the north or south, it may be in the east or west, or it may be in the up or down. Space can be measured as a solid object. Space has four quantities. These four quantities are force, mass, space and time. There is force and mass in space. Again space is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Space
Assertion	Positivity	Space inclusion
	Negativity	Space exclusion
Dimension	North	Space is in the north-south
	East	Space is in the east-west
	Up	Space is in the up-down
Quantity	Force	There is force in this space
	Mass	There is mass in this space
	Space	This space is in a space
	Time	This space is in a time

Tab. 4.32

(5) Space follows the cross rule. There are three laws of space from the cross rule and these three laws are,

**Law 1** At constant force  $\bar{\text{t}}$  and mass  $\text{q}$ , the space  $\bar{\text{d}}$  of a quantity varies directly with its time  $\text{t}$ . That is,

$$\bar{\text{d}} (\text{Space}) \propto \text{t} (\text{Time})$$

**Law 2** At constant force  $\bar{\text{t}}$  and time  $\text{t}$ , the space  $\bar{\text{d}}$  of a quantity varies inversely with its mass  $\text{q}$ . That is,

$$\bar{\text{d}} (\text{Space}) \propto 1/\text{q} (\text{Mass})$$

**Law 3** At constant mass  $\text{q}$  and time  $\text{t}$ , the space  $\bar{\text{d}}$  of a quantity varies directly with its force  $\bar{\text{t}}$ . That is,

$$\bar{\text{d}} (\text{Space}) \propto \bar{\text{t}} (\text{Force})$$

#### 4.6.8 Time

Like space or sthana, time or kala is one, eternal and all-pervading. Kala is not many, but the application of conditions (upadhi) make kala many. Time is the cause of our cognitions of past, present and future. To apply the conditions we divide time into days, months and years

etc. Kala is boundless extent. It is two-asserted and three-dimensional. We divide time into hours, minutes, and seconds for our own needs. Kala or time such as space is an important concept in philosophy and physics. Space is also needed to describe any event. It is difficult to get a clear idea of an event without knowing when it happened. Sthana and kala are different categories.

The following figure is two- asserted time.



Fig. 4.35

The following figure is three-dimensional time.

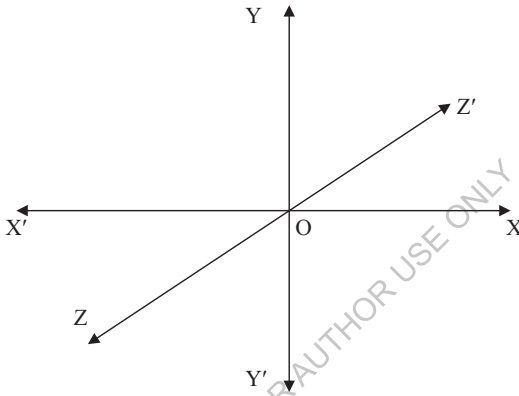


Fig. 4.36

#### 4.6.9 Generancy Theory about Time

Generancy theory about time is discussed below.

(1) The partial model of time derived from main theory is,

$$\text{ଐ}^{\circ}(\text{Quantity}) \rightsquigarrow \text{ତ} (\text{Force}) \Rightarrow \text{ଖ} (\text{Mass}) \Rightarrow \text{ଢ} (\text{Space}) \Rightarrow \text{ସ} (\text{Time})$$

(2) Time is an upakarana (component) of a quantity. The quantity is the akara (form) of jnana. Arranged in the form of a table, we get,

Akara	Upakarana
Quantity	Force, mass, space and time

Tab. 4.33

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, jnana is the cause of the quantity and at the same time the cause of time. On the other hand, the quantity is the cause of time and is related to time. Writing in sign language is as follows:

$$\text{ज्ञे (Jnana)} \Downarrow \text{अं (Quantity)} \rightsquigarrow \text{स (Time)}$$

(4) Now let us analyze time in the light of jnanatattva.

Jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Time can be taken as a category, it has a specific name and let us think that this name is time. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the time is added, then we can say that the time is positive. Again, if the time is subtracted, then we can say that the time is negative. If it is on the right side of the number line, the time will be positive. Again, if it is on the left side of the number line, the time will be negative.

Every object in this universe is three-dimensional. Time is not out of it. Time is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, time may be in the north or south, it may be in the east or west, or it may be in the up or down. Time can be measured as a solid object. Time has four quantities. These four quantities are force, mass, space and time. There is force and mass in time. Again time is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Time
Assertion	Positivity	Time inclusion
	Negativity	Time exclusion
Dimension	North	Time is in the north-south
	East	Time is in the east-west
	Up	Time is in the up-down
Quantity	Force	There is force in this time
	Mass	There is mass in this time
	Space	This time is in a space
	Time	This time is in a time

Tab. 4.34

(5) Time follows the cross rule. There are three laws of time from the cross rule and these three laws are,

**Law 1** At constant force  $\bar{t}$  and mass  $\bar{m}$ , the time  $\bar{t}$  of a quantity varies directly with its space  $\bar{d}$ . That is,

$$\bar{t} (\text{Time}) \propto \bar{d} (\text{Space})$$

**Law 2** At constant force  $\bar{t}$  and space  $\bar{d}$ , the time  $\bar{t}$  of a quantity varies directly with its mass  $\bar{m}$ . That is,

$$\bar{t} (\text{Time}) \propto \bar{m} (\text{Mass})$$

**Law 3** At constant mass  $\bar{m}$  and space  $\bar{d}$ , the time  $\bar{t}$  of a quantity varies inversely with its force  $\bar{t}$ . That is,

$$\bar{t} (\text{Time}) \propto 1/\bar{t} (\text{Force})$$

#### 4.6.10 Interpretation of Rectangle Rule for Quantity

Let us explain the laws of rectangle rule for quantity. The components of quantity are four namely force, mass, space and time. These four components are at the four angular points of the rectangle. The two components on the diagonal will vary in inverse proportion to each other if the other two components remain constant. On the other hand, the two components on a horizontal or vertical line will change proportionally if the other two components remain constant. Six laws are available under this rule. For example, if the force and time of an object moving in uniform velocity are constant, then mass and space will change in inverse proportion. Again, if the force and mass of this moving object remain constant, then space and time will vary proportionally.

## CHAPTER 5

Karmodynamics

5.1 Karma

5.2 Personomics

5.3 Familiomics

5.4 Socionomics

5.5 Statonomics

5.6 Worldiomics

### 5.1 Karma

In order to survive, people have to take action (karma). He has to take action to survive in the family, society, state and world. Action is the motion of inert matter. Just as quality exists by taking refuge in a substance, so action exists by taking refuge in a substance. But action differs from substance and quality. The difference between action and quality is that action is dynamic and active, while quality is stable and passive. The action of the limited corporeal substances (murtadravya) is known through motion. The limited corporeal substances are earth, water, light, air and the mind. The Vaisesika-sutra composer Kanada defines action is that which takes refuge in a substance but is not a quality and is considered to be the direct cause of conjunction and disjunction of things.

For example, if a mango located on a branch of a tree is hit, it falls to the ground. Mango and its motion are not the same. Mango is a substance and motion is action. That motion belongs to mango. So action takes refuge in the substance. Again conjunction and disjunction of the mango with the branches of the tree arises directly from hit or motion. That is, action is proven as a direct and independent cause of conjunction and disjunction of things. When the mango falls to the ground, it runs out of motion. So the action is impermanent or temporary. On the other hand, guna or quality lasts as long as his shelter lasts, so quality is permanent and stable.

Karma or action takes refuge in goods. Asraya (shelter) and asrita (sheltered) cannot be one. So karma or action is not a dravya or substance, it is a distinct padartha or category. Again substance has quality but action has no quality. Action is also a different category than quality. If the substance is perceptible, its action will also be perceptible. Again, if the substance is imperceptible, its action will also be imperceptible. Ksiti, ap, tejas are perceptible, so their actions are also perceptible. The mind or manas is not perceptible so the action or motion of the mind is not perceptible. Action takes place only by taking refuge in concrete objects.

Karmavada (law of karma) is a moral concept of Indian philosophy. According to karmavada, every human being has to enjoy the fruits of his deeds. Good, evil, sin and virtue are conserved through karmaphala (fruits of karma). For this reason, karmavada is called the law of conservation of moral values. Karmavada is a kind of moral causality. Karma (action) is the cause and phalabhog (enjoying fruit) is effect. People will enjoy the fruits of their labor. People have to enjoy virtue if they do good deeds and sin when they do bad deeds. Karma produces a kind of 'invisible power' which causes organisms to suffer happiness and sorrow in the future according to actions.

Organisms usually perform two types of actions. These are namely, sakam karma and nishkam karma. Sakam karma means action with desire. Nishkam karma means action without desire. The action that is done for the sake of fruit is called sakam karma. The action that is

done without expecting fruit is called nishkam karma. Sakam karma create bondage and attachment to the objects, resulting in reincarnation. As a result of performing nishkam karma, there is no possibility of attachment to the objects and as a result, there is no possibility of rebirth.

### 5.1.1 Generancy Theory about Karma

Different schools of Indian philosophy have discussed karma (action) in different ways. In the present section, generancy theory about karma is discussed.

(1) The partial model of karma derived from main theory is,

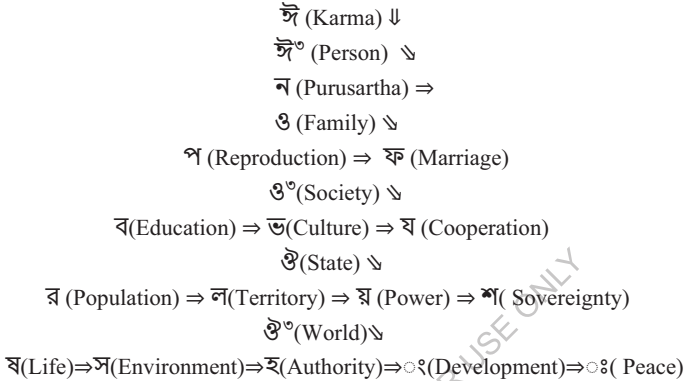


Fig. 5.1

(2) Karma is the tattva (theory). Person, family, society, state and world are akara (form) of karma. The upakarana (component) of person is purusartha. The upakarana of family is reproduction and marriage. The upakarana of society is education, culture and cooperation. The upakarana of state is population, territory, power and sovereignty. The upakarana of world is life, environment, authority, development and peace. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	Person	Purusartha
	Family	Reproduction and marriage
	Society	Education, culture and cooperation
	State	Population, territory, power and sovereignty
	World	Life, environment, authority, development and peace

Tab. 5.1

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the forms of the karma and at the same time the cause of the components of the forms. On the other hand, the form is the cause of the components of the form and is related to the components of the form.

(4) Person and family are bound by the inherent relationship. There is an inseparable and eternal relationship between person and family. Person is in the family. Family stays connected to person. Family cannot exist without person, but person can exist without family.

Similarly family and society are bound by the inherent relationship. There is an inseparable and eternal relationship between family and society. Family is in the society. Society stays connected to family. Society cannot exist without family, but family can exist without society.

Society and state are bound by the inherent relationship. There is an inseparable and eternal relationship between society and state. Society is in the state. State stays connected to society. State cannot exist without society, but society can exist without state.

State and world are bound by the inherent relationship. There is an inseparable and eternal relationship between state and world. State is in the world. World stays connected to state. World cannot exist without state, but state can exist without world.

(5) Now let us analyze karma in the light of jnanatattva.

Karma or action is a tattva. It has five akaras (forms) namely, person, family, society, state and world. Again, jnana is a tattva. It has four akaras (forms) namely, category, assertion, dimension and quantity. There is a component (upakarana) of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Action can be taken as a category, it has a specific name and let us think that this name is action. Doing anything can be called an action. Action is dynamic. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the action is added, then we can say that the action is positive. Again, if the action is subtracted, then we can say that the action is negative. If it is on the right side of the number line, the action will be positive. Again, if it is on the left side of the number line, the action will be negative.

Every object in this universe is three-dimensional. Action is not out of it. Action is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the action may be in the north or south, it may be in the east or west, or it may be in the up or down. Action can be measured as a solid object. Each action has four quantities. These four quantities are force, mass, space and time. There is force and mass in action. Again the action is in space and time. Arranged in the form of a table, we get,



Akaras of jnana	Components of akara	Example
Category	Name	Karma
Assertion	Positivity	Karma inclusion
	Negativity	Karma exclusion
Dimension	North	Karma is in the north-south
	East	Karma is in the east-west
	Up	Karma is in the up-down
Quantity	Force	There is force in this karma
	Mass	There is mass in this karma
	Space	This karma is in a space
	Time	This karma is in a time

Tab. 5.2

(6) The decision of karma derived from the main theory is ‘person, family, society, state and world are related. Karma is the cause of these (person, family, society, state and world).’ That is

କର୍ମ Karma ↓ ମନୁ Person ∩ ଓ Family ∩ ଓ Society ∩ ରାଜ୍ୟ State ∩ ଭୂମି World

## 5.2 Personomics

### 5.2.1 Person

A person is a human being that has certain attributes such as logic, morality, consciousness etc. Man is composed of body, mind, breath and spirit. And as a result of their balanced development, human personality is formed. The plural form of person is people or persons. People have to do many things to survive. Man is a contemplative being. His behavior cannot be explained without the mind.

From birth, babies feel the need for hunger, thirst, breathing, sleep, etc. His need increases with age. He feels other needs besides physical needs. Man is an intelligent social creature. He has to live in society. And if he wants to live in the society, he has to adapt to the society. The person is not only driven by a number of desires, emotions, feelings, but also by the power of intellect or judgment. He has the power of intellect or thinking. As a result, the person can think and act independently.

Language is the expression of the mind by all the semantic sounds or combinations of sounds uttered with the help of voice-organ. Language expresses the thoughts of people in a particular language area. Language in the broadest sense is a medium of communication through which people express their feelings to others. Language is the verbal and non-verbal means of communication used by humans, animals and even machines.

From birth people learn first from family and then from society. People take formal education from schools, colleges and universities. The main purpose of education is to prepare him for the future life. Through education a man becomes perfect. Every human being should

practice yoga regularly. As a result of yoga, people get physical and mental peace and stay healthy and beautiful. One should adopt a lifestyle in keeping consistency with the society.

Naturally persons can be divided into two groups- male and female. This difference is also called biological difference. This difference is made according to the biological and physical condition. The difference between male and female created by society is called gender. Masculinity and femininity are created by society. Sex carries a biological identity on women and men but gender carries a social identity imposed on women and men.

### 5.2.2 Generancy Theory about Person

Generancy theory about person is discussed below.

(1) The partial model of person derived from main theory is,

$$\begin{aligned} \text{पै}^\circ (\text{Person}) &\Downarrow \\ \text{न} (\text{Purusartha}) &\Rightarrow \end{aligned}$$

(2) Person is an akara (form) of karma. The upakarana (component) of person is purusartha. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	Person	Purusartha

Tab. 5.3

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the person and at the same time the cause of the upakarana of the person. On the other hand, the person is the cause of the upakarana of the person and is related to the upakarana of the person. That is, the person is the cause of its component purusartha and is also related to this component. Writing in sign language is as follows:

$$\begin{aligned} \text{पै} (\text{Karma}) &\Downarrow \\ \text{पै}^\circ (\text{Person}) &\Downarrow \\ \text{न} (\text{Purusartha}) &\Rightarrow \end{aligned}$$

(4) Now let us analyze person in the light of jnanatattva.

Karma is a tattva. Person is a form of karma. Purusartha is a component of person. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Person can be taken as a category, it has a specific name and let us think that this name is person. Generally, a person means a single woman or man. However, a person is an entity that has some qualities such as reason, morality, consciousness etc. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the person is added, then we can say that the person is positive. Again, if the

person is subtracted, then we can say that the person is negative. If it is on the right side of the number line, the person will be positive. Again, if it is on the left side of the number line, the person will be negative.

Every object in this universe is three-dimensional. Person is not out of it. Person is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the person may be in the north or south, it may be in the east or west, or it may be in the up or down. Person can be measured as a solid object. Each person has four quantities. These four quantities are force, mass, space and time. There is force and mass in person. Again the person is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Person
Assertion	Positivity	Person inclusion
	Negativity	Person exclusion
Dimension	North	Person is in the north-south
	East	Person is in the east-west
	Up	Person is in the up-down
Quantity	Force	There is force in this person
	Mass	There is mass in this person
	Space	This person is in a space
	Time	This person is in a time

Tab. 5.4

(5) The decision of person derived from the main theory is ‘person is related to purusartha.’ That is

$$\text{ज्ञे}^{\circ}(\text{Person}) \rightsquigarrow \text{न}(\text{Purusartha}) \Rightarrow$$

### 5.2.3 Purusartha

Purusartha (object of human pursuit) means the desirable object of person. In Indian philosophy, the highest purpose or goal of a living being is called purusartha. There are four things that human beings need, namely, dharma (righteousness or moral values), artha (prosperity or economic values), kama (sensual pleasure or psychological values) and moksa (liberation or spiritual values). Dharma is the first purushartha. Then there is artha, kama and moksa. In Indian philosophy, there is no word of fulfilling any desire by rejecting moral values (dharma). To earn money from the path of dharma, to fulfill desires from the path of dharma and to attain moksa from the path of dharma.

Moksa or salvation is the release of the bondage of the living being. The individual self (jivatma) is eternal, pure, enlightened and free in nature (svabhava). But due to ignorance the living being feels oneness with the body. The feeling of oneness of the organism with the body

is its closed state. The unity of jiva and Brahman can be realized by breaking this bond. Knowledge of the difference (bhedajnana) between jiva and Brahman is the cause of bondage. This discrimination is due to ignorance. When ignorance is removed, the soul acquires knowledge of its true nature and then the soul is liberated.

The upakarana or component of the individual (form of karma) can be shown with the help of the following figure.

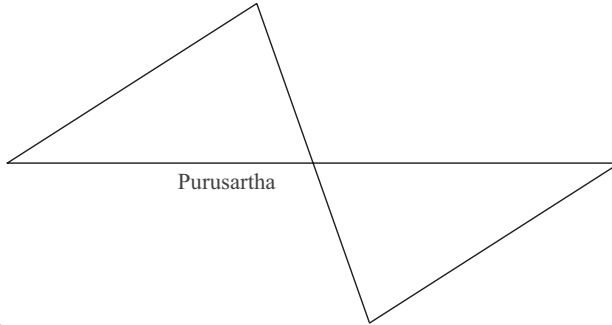


Fig. 5.2

#### 5.2.4 Generancy Theory about Purusartha

Generancy theory about purusartha is discussed below.

(1) The partial model of purusartha derived from main theory is,

$$\begin{aligned} & \text{पै}^\circ \text{ (Person)} \Downarrow \\ & \text{न} \text{ (Purusartha)} \Rightarrow \end{aligned}$$

(2) Purushartha is an upakarana (component) of a person. The person is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Person	Purusartha

Tab. 5.5

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the person and at the same time the cause of purusartha. On the other hand, the person is the cause of purusartha and is related to purusartha. Writing in sign language is as follows:

$$\text{कै} \text{ (Karma)} \Downarrow \text{पै}^\circ \text{ (Person)} \Downarrow \text{न} \text{ (Purusartha)}$$

(4) Now let us analyze purusartha in the light of jnanatattva.

Purushartha is a component of a person. Person is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are

north, east and up. There are four components of quantity and that is force, mass, space and time.

Purushartha can be taken as a category, it has a specific name and let us think that this name is purushartha. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the purushartha is added, then we can say that the purushartha is positive. Again, if the purushartha is subtracted, then we can say that the purushartha is negative. If it is on the right side of the number line, the purushartha will be positive. Again, if it is on the left side of the number line, the purushartha will be negative.

Every object in this universe is three-dimensional. Purushartha is not out of it. Purushartha is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, purushartha may be in the north or south, it may be in the east or west, or it may be in the up or down. Purushartha can be measured as a solid object. Each purushartha has four quantities. These four quantities are force, mass, space and time. There is force and mass in purushartha. Again purushartha is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Purushartha
Assertion	Positivity	Purushartha inclusion
	Negativity	Purushartha exclusion
Dimension	North	Purushartha is in the north-south
	East	Purushartha is in the east-west
	Up	Purushartha is in the up-down
Quantity	Force	There is force in this purushartha
	Mass	There is mass in this purushartha
	Space	This purushartha is in a space
	Time	This purushartha is in a time

Tab. 5.6

- (5) Purusartha follows the point rule. The law of purusartha derived from the point rule is,  
 $\bar{n}$  (Purusartha) =  $\bar{n}$  (Purusartha)

### 5.2.5 Interpretation of Point Rule for Person

Let us explain the law of point rule for person. Person has one component and this component is purusartha. This component is at a point. A point is a geometric object that has no length, width and height. So there is no distortion of the point. A point is a unique and singular object. There is a great beauty of points in mathematics. There is a law under the point rule and that is purusartha is one and unique. The expression 'purusartha is at the point' means that purusartha is unique. Purusartha has not been compared to anything. Purusartha is only equal to purusartha. The improvement or deterioration of purusartha is entirely a matter of the person and no other component is responsible for it.

## 5.3 Familiomics

### 5.3.1 Family

The family is the smallest primary group. The family is determined by the permanent relationship between husband and wife where children are produced and nurtured. The family is the primary social organization. People are born into families. The family is a safe and secure place for people. The unit of the family is the individual. The existence of society without family cannot be thought of. The child is born into the family and is introduced to the larger life through the family. The family is the only recognized social institution for child production.

There are some characteristics of the family. For example, the family is universal. Every human being is born into one or another family. Families are formed for the purpose of preserving the lineage. The family is the source of human physical instincts and mental emotions. Feeling-compassion, love-affection etc. are practiced among the family members.

On the basis of relationship, the family can be divided into two parts, namely, single family and joint family. When a husband, wife and their children live in a family, it is called a single family. When a family has a husband, wife and their children living together with their parents, it is called a joint family. Single family is the simplest form of family. Whether the family is single or joint, this is the first stage of social life. If the authority of the family is in the hands of the father then that family is called patriarchal family. Again, if the authority of the family is in the hands of the mother, then that family is called matriarchal family.

Through marriage the family is formed and the husband and wife gain social acceptance to have sex with each other and give birth to children. The family meets the biological and physical needs of the people. Families are needed to preserve the lineage of the human race. It is the responsibility of the family to meet the expenses of the family members including child rearing. Children are the future citizens of the country. The child's education starts at home before going to school. The importance of family in making them human is immense. The fact that sexual desire is not a sin, not obscene and indecent, carries the truth in our family life.

### 5.3.2 Generancy Theory about Family

Generancy theory about family is discussed below.

(1) The partial model of family derived from main theory is,

$$\text{ॐ (Family)} \rightsquigarrow \text{ॐ (Reproduction)} \Rightarrow \text{ॐ (Marriage)}$$

(2) Family is an akara (form) of karma. The upakaranas (components) of family are reproduction and marriage. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	Family	Reproduction and marriage

Tab. 5.7

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the family and at the same time the cause of the upakaranas of the family. On the other hand, the family is the cause of the upakaranas of the family and is related to the upakaranas of the family. That is, the family is the cause of its components reproduction and marriage and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} & \text{𑂔 (Karma) } \Downarrow \\ & \text{𑂕 (Family) } \Downarrow \\ & \text{𑂖 (Reproduction) } \Rightarrow \text{𑂗 (Marriage)} \end{aligned}$$

(4) Person and family are bound by the inherent relationship. There is an inseparable and eternal relationship between person and family. Person is in the family. Family stays connected to person. Family cannot exist without person, but person can exist without family.

(5) Now let us analyze family in the light of jnanatattva.

Karma is a tattva. Family is a form of karma. Reproduction and marriage are the components of family. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Family can be taken as a category, it has a specific name and let us think that this name is family. Generally, the family is the smallest primary group consisting of parents and their children. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the family is added, then we can say that the family is positive. Again, if the family is subtracted, then we can say that the family is negative. If it is on the right side of the number line, the family will be positive. Again, if it is on the left side of the number line, the family will be negative.

Every object in this universe is three-dimensional. Family is not out of it. Family is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the family may be in the north or south, it may be in the east or west, or it may be in the up or down. Family can be measured as a solid object. Each family has four quantities. These four quantities are force, mass, space and time. There is force and mass in family. Again the family is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Family
Assertion	Positivity	Family inclusion
	Negativity	Family exclusion
Dimension	North	Family is in the north-south
	East	Family is in the east-west
	Up	Family is in the up-down
Quantity	Force	There is force in this family
	Mass	There is mass in this family
	Space	This family is in a space
	Time	This family is in a time

Tab. 5.8

(6) The decision of family derived from the main theory is ‘family is related to reproduction and marriage.’ That is

$$\text{ଓ (Family)} \ni \text{ଞ (Reproduction)} \Rightarrow \text{ଝ (Marriage)}$$

### 5.3.3 Reproduction

Reproduction is a biological process by which parents produce their offspring. As a result of this process, there is no possibility of extinction of any animal from the earth. This process is very important to maintain the stability of the ecosystem. All species on earth are the result of reproductive processes. Without the reproductive process, all the species on earth would be extinct. Reproduction is of two types, sexual reproduction and asexual reproduction.

An important feature of an organism is reproduction. It is an important biological process that helps species survive. Through this process the species maintains their continuity. The younger ones take the place of the older ones. These young eat, grow and reproduce. Reproduction plays an important role in maintaining the balance of the population. Reproduction can act as a vehicle for biological evolution. Reproduction balances birth and death rates. The genes are transmitted to the offspring from their parents. As a result of reproduction, the species can acquire the ability to survive in different environments.

The period from the birth of an organism to the time of natural death is called the lifespan. Every organism grows and survives for a certain period of time. Lifespan can be divided into four stages. These stages are called ashramas in Hinduism. The four ashramas are namely, Brahmacharya (student life), Grihastha (householder life), Vanaprastha (retired life) and Sannyasa (renounced life).

Brahmacharya refers to the student state of life. This stage places importance on education. The individual goes to the guru (teacher) and learns philosophy, mathematics, science etc. and learns to live a life of dharma (righteousness, morals, duties). Grihastha refers to the married life of an individual. In this stage a family is formed, children are produced, they are nurtured



and educated. This stage is very important in the social context because at this stage people produce food and resources which sustain the people of other stages. Vanaprastha refers to the retirement stage where a person transfers family responsibilities to the next generation. This stage enters the retirement life with greater emphasis on moksa from the household life with greater emphasis on artha and kama. Sannyasa refers to the stage of renunciation of material desires and superstitions. At this stage an individual renounces all of his desires, fears, hopes, responsibilities etc.

### 5.3.4 Generancy Theory about Reproduction

Generancy theory about reproduction is discussed below.

(1) The partial model of reproduction derived from main theory is,

$$\text{ॐ (Family)} \Downarrow \\ \text{ॐ (Reproduction)} \Rightarrow \text{ॐ (Marriage)}$$

(2) Reproduction is an upakarana (component) of a family. The family is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Family	Reproduction and marriage

Tab. 5.9

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the family and at the same time the cause of reproduction. On the other hand, the family is the cause of reproduction and is related to reproduction. Writing in sign language is as follows:

$$\text{ॐ (Karma)} \Downarrow \text{ॐ (Family)} \Downarrow \text{ॐ (Reproduction)}$$

(4) Now let us analyze reproduction in the light of jnanattva.

Reproduction is a component of a family. Family is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Reproduction can be taken as a category, it has a specific name and let us think that this name is reproduction. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the reproduction is added, then we can say that the reproduction is positive. Again, if the reproduction is subtracted, then we can say that the reproduction is negative. If it is on the right side of the number line, the reproduction will be positive. Again, if it is on the left side of the number line, the reproduction will be negative.

Every object in this universe is three-dimensional. Reproduction is not out of it. Reproduction is also three-dimensional. These three dimensions are north, east and up. Again,

each dimension can be positive or negative. Therefore, reproduction may be in the north or south, it may be in the east or west, or it may be in the up or down. Reproduction can be measured as a solid object. Each reproduction has four quantities. These four quantities are force, mass, space and time. There is force and mass in reproduction. Again reproduction is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Reproduction
Assertion	Positivity	Reproduction inclusion
	Negativity	Reproduction exclusion
Dimension	North	Reproduction is in the north-south
	East	Reproduction is in the east-west
	Up	Reproduction is in the up-down
Quantity	Force	There is force in this reproduction
	Mass	There is mass in this reproduction
	Space	This reproduction is in a space
	Time	This reproduction is in a time

Tab. 5.10

(5) Reproduction follows the balance rule. The law of reproduction derived from the balance rule is,

$$\text{ଋ (Reproduction)} \propto \text{ଋ (Marriage)}$$

### 5.3.5 Marriage

Marriage is a social and legal agreement that unites two persons of the opposite sex socially and legally. It is a formal union where two individuals are united economically, socially and emotionally. Marriage is a universal social event. Contractual marriage implies that couples have the legal obligation to stay together for the rest of their lives or until they get divorced. Through marriage, couples gain social approval to have sex. Marriage is traditionally regarded as a key factor in the preservation of civilization.

Marriage is the beginning of a family and it is a lifelong commitment to live together in a family. Marriage is not only a physical union of two men and women but also their spiritual and emotional union. The social acceptance of men and women comes through marriage. Marriage is based on religion and law. Through marriage, husband and wife establish sexual relations with each other and gain social approval to give birth to children.

Marriage as a universal social institution is present in all societies. It is intimately connected with the family. However, the forms of marriage in different societies depend on their thoughts, customs and practices. In some societies it is a religious obligation and in others it is a social

contract. The main forms of marriage based on the number of partners are, monogamy and polygamy.

Monogamy is a marriage where a man marries a woman at a time. This marriage is ideal, popular and prevalent worldwide. There are two types of monogamy, namely, serial monogamy and straight monogamy. In serial monogamy, a person can remarry in case of death or divorce of the spouse. Remarriage is not allowed in the case of straight monogamy. Polygamy is a marriage where one partner can marry more than one partner. There are three types of polygamy, namely, polygyny, polyandry and group marriage. Polygyny is a form of marriage where a man can marry more than one woman at a time. Polyandry is very rare in today's society where one woman can marry many men at the same time. Polygyny is more popular than polyandry but not as universal as monogamy. Group marriage is a marriage where a group of men can marry a group of women at the same time. In that case husbands are considered as common husbands and wives are considered as common wives. Children are considered as the children of the whole group.

### 5.3.6 Generancy Theory about Marriage

Generancy theory about marriage is discussed below.

(1) The partial model of marriage derived from main theory is,

$$\text{ଓ (Family) } \Downarrow \text{ } \text{ଞ (Reproduction) } \Rightarrow \text{ } \text{ଝ (Marriage)}$$

(2) Marriage is an upakarana (component) of a family. The family is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Family	Reproduction and marriage

Tab. 5.11

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the family and at the same time the cause of marriage. On the other hand, the family is the cause of marriage and is related to marriage. Writing in sign language is as follows:

$$\text{କ୍ଷି (Karma) } \Downarrow \text{ } \text{ଓ (Family) } \Downarrow \text{ } \text{ଝ (Marriage)}$$

(4) Now let us analyze marriage in the light of jnanatattva.

Marriage is a component of a family. Family is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Marriage can be taken as a category, it has a specific name and let us think that this name is marriage. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the marriage is added, then we can say

that the marriage is positive. Again, if the marriage is subtracted, then we can say that the marriage is negative. If it is on the right side of the number line, the marriage will be positive. Again, if it is on the left side of the number line, the marriage will be negative.

Every object in this universe is three-dimensional. Marriage is not out of it. Marriage is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, marriage may be in the north or south, it may be in the east or west, or it may be in the up or down. Marriage can be measured as a solid object. Each marriage has four quantities. These four quantities are force, mass, space and time. There is force and mass in marriage. Again marriage is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Marriage
Assertion	Positivity	Marriage inclusion
	Negativity	Marriage exclusion
Dimension	North	Marriage is in the north-south
	East	Marriage is in the east-west
	Up	Marriage is in the up-down
Quantity	Force	There is force in this marriage
	Mass	There is mass in this marriage
	Space	This marriage is in a space
	Time	This marriage is in a time

Tab. 5.12

(5) Marriage follows the balance rule. The law of marriage derived from the balance rule is,

$$\text{ফ (Marriage)} \propto \text{প (Reproduction)}$$

### 5.3.7 Interpretation of Straight Line Rule for Family

Let us explain the law of straight line rule for family. Family has two components and these two components are reproduction and marriage. These two components are at the two endpoints of the straight line. Let the straight line be divided into two equal parts along the middle point. The straight line along the middle point is in equilibrium. In this situation, the straight line has a mathematical beauty. There is reproduction on the left side of the center and marriage on the right. Therefore reproduction and marriage are in equilibrium along the midpoint. There is one law under this rule and that is that reproduction and marriage will change proportionally. That is, if reproduction is doubled, marriage will be doubled and if reproduction is halved, marriage will be halved. Otherwise, the straight line will lose balance and deviate from mathematical beauty.

## 5.4 Socionomics

### 5.4.1 Society

A society is a permanent large grouping or collectivity of people formed for the purpose of mutual interests. Society is formed when many people live together for the same purpose. If a population has the two characteristics, it may be called a society. These two characteristics are a collectivity of people live in an organized way and at the root of this organization is the presence of a purpose. The unit of a society is family.

Human beings are social creatures. It is human instinct to live collectively in a society. But not all public societies in the world are the same. Different societies have developed in different parts of the world at different times. Humans have come from primitive wild life to the present social life in order to sustain their existence and put forward multiple needs. There is no single and universally accepted definition of the suffix 'society'. However, in this case, MacIver's definition deserves attention. MacIver, along with his co-writer Charles Page, later on defined it in his new book 'Society: An Introductory Analysis' (1949) as 'Society is a system of usages and procedures, of authority and mutual aid, of many groupings and divisions, of controls of human behaviour and of liberties. This ever changing, complex system we call society. It is the web of social relations which is always changing.'

The basic features of a society are:

- (1) A society has a large grouping of people living in an organized way.
- (2) A society has a definite, limited space or territory.
- (3) There are various individuals, groups, associations and organizations in a society.
- (4) The members of a society share a common and distinct culture.
- (5) Society is constantly changing.
- (6) The people in the society speak the same mother tongue.
- (7) Individuals and society are interdependent. Excluding the individual the society and excluding the society, the individual is unimaginable.

People feel both cooperation and conflict while living in the society. Reconciliation and conflict are both present in the society. Society has no external appearance. Society is an abstract concept.

Social inequality and social stratification are realities in social life. Within society we see the individuals in different positions. And in the context of this position the social prestige of the individual is determined. Social stratification refers to the arrangement of unequal positions of individuals, groups or classes. Social Stratification is the process of dividing the population of a society into levels according to property, power, and prestige. Just as there is a layer (strata) layout in the soil, just as there is a layer (strata) layout in the atmosphere, so does the society. Social stratification was in the beginning of human society, still is and will be in the future. The social stratification has changed due to various events in history, but has not completely disappeared. Social stratification is a common feature of human society. Social stratification is based on various principles. Sociologists mention four types of stratification. These are namely, (1) slavery (2) estate (3) caste and (4) class.

Slavery is one of the main stratifications. Ancient Greek and Roman civilizations were based on slavery. In the system of slavery, the people of the society were divided into two levels namely, slave owner and slave. Slaves were considered the property of masters (slave owners). Every slave was a product of the master and any work was done by them. In the middle ages

the estate system was prevalent in Europe. This system is seen in feudal society. This system emphasis to birth as well as to wealth. In feudal society there are three characteristics namely, clergy, nobility and commoners.

The caste (varna) system is another type of social stratification. This system is prevalent in Hindu society. In the caste system, a person's social status is determined by birth and there is no scope for change. There are four varnas or groups namely, Brahmins (priests and scholars), Kshatriyas (rulers and warriors), Vaishya (agriculturalists and merchants) and Shudras (laborers and service providers). The modern form of social stratification is the class system. Current society is divided on the basis of class and status. The characteristic of class system in the modern age is social mobility. This class is open as the system is determined through income, education, occupation etc. Social factors and individual achievements play an important role in shaping the class system.

#### 5.4.2 Generancy Theory about Society

Generancy theory about society is discussed below.

(1) The partial model of society derived from main theory is,

$$\begin{aligned} & \text{ॐ(Society) } \Downarrow \\ & \text{ब(Education) } \Rightarrow \text{ ॐ(Culture) } \Rightarrow \text{ ष(Cooperation)} \end{aligned}$$

(2) Society is an akara (form) of karma. The upakaranas (components) of society are education, culture and cooperation. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	Society	Education, culture and cooperation

Tab. 5.13

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the society and at the same time the cause of the upakaranas of the society. On the other hand, the society is the cause of the upakaranas of the society and is related to the upakaranas of the society. That is, the society is the cause of its components education, culture and cooperation and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} & \text{ॐ (Karma) } \Downarrow \\ & \text{ॐ(Society) } \Downarrow \\ & \text{ब(Education) } \Rightarrow \text{ ॐ(Culture) } \Rightarrow \text{ ष(Cooperation)} \end{aligned}$$

(4) Family and society are bound by the inherent relationship. There is an inseparable and eternal relationship between family and society. Family is in the society. Society stays connected to family. Society cannot exist without family, but family can exist without society.

(5) Now let us analyze society in the light of jnanatattva.

Karma is a tattva. Society is a form of karma. Education, culture and cooperation are the components of society. Again, jnana is a tattva. It has four forms namely, category, assertion,

dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Society can be taken as a category, it has a specific name and let us think that this name is society. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the society is added, then we can say that the society is positive. Again, if the society is subtracted, then we can say that the society is negative. If it is on the right side of the number line, the society will be positive. Again, if it is on the left side of the number line, the society will be negative.

Every object in this universe is three-dimensional. Society is not out of it. Society is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the society may be in the north or south, it may be in the east or west, or it may be in the up or down. Society can be measured as a solid object. Each society has four quantities. These four quantities are force, mass, space and time. There is force and mass in society. Again the society is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Society
Assertion	Positivity	Society inclusion
	Negativity	Society exclusion
Dimension	North	Society is in the north-south
	East	Society is in the east-west
	Up	Society is in the up-down
Quantity	Force	There is force in this society
	Mass	There is mass in this society
	Space	This society is in a space
	Time	This society is in a time

Tab. 5.14

(6) The decision of society derived from the main theory is ‘society is related to education, culture and cooperation.’ That is

$$\text{ଓ}^{\circ}(\text{Society}) \text{ ଯ } \text{ଐ}(\text{Education}) \Rightarrow \text{ଭ}(\text{Culture}) \Rightarrow \text{ଐ}(\text{Cooperation})$$

### 5.4.3 Education

Education is the process of acquiring knowledge or skills. Education makes a huge difference in people’s lives and behavior. Through education, people gain knowledge and can adapt to society.

The word education is used in both broad and narrow senses. Education and life are synonymous in the broadest sense. Life means education and education means life. Every

experience of life is education, because every experience teaches us something. Education in the narrow sense refers to the acquisition of institutional knowledge.

There are three major types of education, namely, formal, informal and non-formal. Formal education generally takes place in school, college or university. One can learn many basic, trade and academic skills. Formal education is given in an organized way. It provides a systematic learning process. Students get knowledge from skilled teachers and professors. Informal education is required to increase social or general knowledge. It is like suppose a parent teaching a child how to prepare a meal or ride a bicycle. People can also get an informal education by reading books or educational websites. Non-formal education is the balance between formal and informal education. It includes adult basic education or adult literacy education.

Formal education has a syllabus and subject-oriented while informal education has no definite syllabus. Formal education has a specific timetable while informal education has no specific timetable. In the non-formal education syllabus and timetable can be adjustable.

#### 5.4.4 Generancy Theory about Education

Generancy theory about education is discussed below.

(1) The partial model of education derived from main theory is,

$$\begin{aligned} & \text{ଓ}^\circ(\text{Society}) \simeq \\ & \text{ବ}(\text{Education}) \Rightarrow \text{ଭ}(\text{Culture}) \Rightarrow \text{ସ}(\text{Cooperation}) \end{aligned}$$

(2) Education is an upakarana (component) of a society. The society is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Society	Education, culture and cooperation

Tab. 5.15

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the society and at the same time the cause of education. On the other hand, the society is the cause of education and is related to education. Writing in sign language is as follows:

$$\text{କ୍ରି}(\text{Karma}) \downarrow \text{ଓ}^\circ(\text{Society}) \simeq \text{ବ}(\text{Education})$$

(4) Now let us analyze education in the light of jnanatattva.

Education is a component of a society. Society is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Education can be taken as a category, it has a specific name and let us think that this name is education. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the education is added, then we can say



that the education is positive. Again, if the education is subtracted, then we can say that the education is negative. If it is on the right side of the number line, the education will be positive. Again, if it is on the left side of the number line, the education will be negative.

Every object in this universe is three-dimensional. Education is not out of it. Education is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, education may be in the north or south, it may be in the east or west, or it may be in the up or down. Education can be measured as a solid object. Each education has four quantities. These four quantities are force, mass, space and time. There is force and mass in education. Again education is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Education
Assertion	Positivity	Education inclusion
	Negativity	Education exclusion
Dimension	North	Education is in the north-south
	East	Education is in the east-west
	Up	Education is in the up-down
Quantity	Force	There is force in this education
	Mass	There is mass in this education
	Space	This education is in a space
	Time	This education is in a time

Tab. 5.16

(5) Education follows the left hand rule. There are two laws of education from the left hand rule and these two laws are,

**Law 1** At constant culture  $\bar{\mathfrak{B}}$ , the education  $\bar{\mathfrak{B}}$  of a society varies inversely with its cooperation  $\mathfrak{B}$ . That is,

$$\bar{\mathfrak{B}} (\text{Education}) \propto 1/\mathfrak{B} (\text{Cooperation})$$

**Law 2** At constant cooperation  $\mathfrak{B}$ , the education  $\bar{\mathfrak{B}}$  of a society varies inversely with its culture  $\bar{\mathfrak{B}}$ . That is,

$$\bar{\mathfrak{B}} (\text{Education}) \propto 1/\bar{\mathfrak{B}} (\text{Culture})$$

### 5.4.5 Culture

One of the most widely used concepts in modern civilized society is culture. The term culture is usually used to mean 'elegant taste'. Collective beliefs, arts, rules, principles, customs, reforms, or skills in any subject are part of the culture of that society. From a sociological point of view, culture is a way of life. In this sense, culture is the way of life of all the people in the society. Culture is what people have achieved as a social entity. In this situation culture is the creation of social condition. Culture is changeable and differences exist in cultures depending on social status. Language is a major carriage of culture and members of society

communicate through language. Culture is not innate. Culture is not transmitted to a person in the same way that a child is inherited from birth.

When culture has advanced to a stage where political and economic security has come, higher knowledge, art and conscience have been created, civilization is believed to have emerged. Civilization is an overall success achieved through the efforts of human beings which indicates a better state of culture. Civilization has come to the next level of culture. Culture is the non-material creation of human beings such as customs, beliefs, meditative ideas, thoughts, religion, knowledge, etc. Civilization is the material creation of people, all the discoveries and inventions of man belong to his civilization.

The relationship of education with culture is immense. The education of the individual begins through social culture. Individuals learn through interactions with the social environment. The majority of individuals in a society follow a number of common practices that are recognized as customs. There is a sense of obligation in the custom. These are one of the hallmarks of culture. Analysis of culture reveals not only thoughts, actions, religions, beliefs, etc., but also a sense of beauty. Through music, dance, drama, painting, etc., people's sense of beauty and creation of beauty are identified. So art can also be called the introductory of a culture.

The impact of the environment on culture is immense. Culture is born out of the relentless effort of human life struggle. Since the environment of different societies is different, the culture is also different in different societies. Culture plays a helpful role in fulfilling the objectives of both the individual and society. Culture is important enough to maintain the solidarity of human society.

#### 5.4.6 Generancy Theory about Culture

Generancy theory about culture is discussed below.

(1) The partial model of culture derived from main theory is,

$$\text{ଓ}^\circ(\text{Society}) \searrow \\ \text{ବ}(\text{Education}) \Rightarrow \text{ଭ}(\text{Culture}) \Rightarrow \text{ସ}(\text{Cooperation})$$

(2) Culture is an upakarana (component) of a society. The society is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Society	Education, culture and cooperation

Tab. 5.17

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the society and at the same time the cause of culture. On the other hand, the society is the cause of culture and is related to culture. Writing in sign language is as follows:

$$\text{କ୍ରି}(\text{Karma}) \downarrow \text{ଓ}^\circ(\text{Society}) \searrow \text{ଭ}(\text{Culture})$$

(4) Now let us analyze culture in the light of jnanatattva.

Culture is a component of a society. Society is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Culture can be taken as a category, it has a specific name and let us think that this name is culture. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the culture is added, then we can say that the culture is positive. Again, if the culture is subtracted, then we can say that the culture is negative. If it is on the right side of the number line, the culture will be positive. Again, if it is on the left side of the number line, the culture will be negative.

Every object in this universe is three-dimensional. Culture is not out of it. Culture is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, culture may be in the north or south, it may be in the east or west, or it may be in the up or down. Culture can be measured as a solid object. Each culture has four quantities. These four quantities are force, mass, space and time. There is force and mass in culture. Again culture is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Culture
Assertion	Positivity	Culture inclusion
	Negativity	Culture exclusion
Dimension	North	Culture is in the north-south
	East	Culture is in the east-west
	Up	Culture is in the up-down
Quantity	Force	There is force in this culture
	Mass	There is mass in this culture
	Space	This culture is in a space
	Time	This culture is in a time

Tab. 5.18

(5) Culture follows the left hand rule. There are two laws of culture from the left hand rule and these two laws are,

**Law 1** At constant education  $\bar{v}$ , the culture  $\bar{b}$  of a society varies inversely with its cooperation  $\bar{y}$ . That is,

$$\bar{b}(\text{Culture}) \propto 1/\bar{y}(\text{Cooperation})$$

**Law 2** At constant cooperation  $\bar{y}$ , the culture  $\bar{b}$  of a society varies inversely with its education  $\bar{v}$ . That is,

$$\bar{b}(\text{Culture}) \propto 1/\bar{v}(\text{Education})$$

### 5.4.7 Cooperation

Cooperation is a social process where two or more people work to achieve a common goal. Cooperation is an essential element for building a society. No society can survive without cooperation. People of the society extend their hands of cooperation to each other to achieve common goals. If the members of the society do not cooperate with each other, they cannot live a happy and comfortable life. Cooperation is more needed for a modern, industrialized and advanced society. To produce a cloth requires the cooperation of different types of people. For example, the farmers produce cotton, the spinners produce yarn, the weavers weave the clothes, the dyers colour the clothes and the merchants market clothes. So, everyone in the society has to continue with the spirit of cooperation.

#### 5.4.7.1 Interdependence

Humans are social creatures. He or she can't be alone. In isolation man cannot fulfill his hopes and aspirations. He has to depend on others to fulfill his hopes, aspirations and dreams. This dependence on each other is interdependence. For example, in a family, husband and wife depend on each other to satisfy their cravings. That is why we should cooperate with each other. At present, not only the people of the society, but every country in the world is dependent on each other.

#### 5.4.7.2 Competition

Competition arises when more than one person pursues a common goal at the same time. It is an important social process. Competition is centered around physical objects, social status, fame, power, etc., when the chances of obtaining are limited compared to human needs. Competition becomes meaningful through collaboration.

#### 5.4.7.3 Conflict

Conflict is present in every society. It is a social process. Conflict is the dispute between two or more people over a particular purpose. There can be different types of conflicts such as personal conflict, class conflict, religious conflict, political conflict, etc. Conflict originates from competition, but it is not as continuous as competition.

### 5.4.8 Generancy Theory about Cooperation

Generancy theory about cooperation is discussed below.

(1) The partial model of cooperation derived from main theory is,

$$\begin{aligned} & \text{ଓ}(\text{Society}) \Downarrow \\ & \text{ବ}(\text{Education}) \Rightarrow \text{ଭ}(\text{Culture}) \Rightarrow \text{ସ}(\text{Cooperation}) \end{aligned}$$

(2) Cooperation is an upakarana (component) of a society. The society is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
Society	Education, culture and cooperation

Tab. 5.19

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the society and at the same time the cause of cooperation. On the other hand, the society is the cause of cooperation and is related to cooperation. Writing in sign language is as follows:

𑂔 (Karma) ↓ 𑂔 (Society) ∽ 𑂔 (Cooperation)

(4) Now let us analyze cooperation in the light of jnanatattva.

Cooperation is a component of a society. Society is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Cooperation can be taken as a category, it has a specific name and let us think that this name is cooperation. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the cooperation is added, then we can say that the cooperation is positive. Again, if the cooperation is subtracted, then we can say that the cooperation is negative. If it is on the right side of the number line, the cooperation will be positive. Again, if it is on the left side of the number line, the cooperation will be negative.

Every object in this universe is three-dimensional. Cooperation is not out of it. Cooperation is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, cooperation may be in the north or south, it may be in the east or west, or it may be in the up or down. Cooperation can be measured as a solid object. Each cooperation has four quantities. These four quantities are force, mass, space and time. There is force and mass in cooperation. Again cooperation is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Cooperation
Assertion	Positivity	Cooperation inclusion
	Negativity	Cooperation exclusion
Dimension	North	Cooperation is in the north-south
	East	Cooperation is in the east-west
	Up	Cooperation is in the up-down
Quantity	Force	There is force in this cooperation
	Mass	There is mass in this cooperation
	Space	This cooperation is in a space
	Time	This cooperation is in a time

Tab. 5.20

(5) Cooperation follows the left hand rule. There are two laws of cooperation from the left hand rule and these two laws are,

**Law 1** At constant education  $\bar{b}$ , the cooperation  $\bar{c}$  of a society varies inversely with its culture  $\bar{a}$ . That is,

$$\bar{c} \text{ (Cooperation)} \propto 1/\bar{a} \text{ (Culture)}$$

**Law 2** At constant culture  $\bar{a}$ , the cooperation  $\bar{c}$  of a society varies inversely with its education  $\bar{b}$ . That is,

$$\bar{c} \text{ (Cooperation)} \propto 1/\bar{b} \text{ (Education)}$$

#### **5.4.9 Interpretation of Triangle Rule for Society**

Let us explain the laws of triangle rule for society. The components of a society are three namely education, culture and cooperation. These three components are at the three angular points of the triangle. If one component at any angular point of the triangle remains constant, the other two components will vary in inverse proportion to each other. Three laws are available under this rule. For example, if the education of a society is constant, culture and cooperation will change in opposite proportion. That is, if culture is doubled, cooperation will be halved and if culture is halved, cooperation will be doubled. Society is like an organism. The organism needs moderate amounts of food. Too much or too little food can cause damage to the organism. A healthy and beautiful organism has harmony and balance in its organs. Excess nutrition or weakness of any organ can harm the organism. The stability of a society can be ensured through these laws. If one of the components is more or less, the distortion of the other component can be found with the help of these laws. There is a beauty to the triangle as a geometric object. We can maintain the beauty of society by placing the three components of society in three angular points of the triangle. Of course, the knowledge of beauty is relative. For some, equilateral triangles are beautiful, for some, isosceles triangles are beautiful and for others, scalene triangles are beautiful. Accordingly, we can construct the society according to our needs by placing the three components of the society at the three angular points of the appropriate triangle.

### **5.5 Statonomics**

#### **5.5.1 State**

The state is a social organization. With the development of civilization, the state is the highest and strongest association among the people have formed as many associations as possible. The main difference between the state and other organizations is that they may not be governed by law. In different ages, different authors have defined the state. Even then there is a confusion.

Woodrow Wilson says to define the state, 'A state is a people organized for law within a definite territory'. The famous political scientist Harold Laski says, 'The modern state is a territorial society divided into government and subjects, claiming within its allotted physical area supremacy over all other institutions'.

Political scientist Mac Iver says, 'The state is an association which acting through law as promulgated by a government endowed to this end with coercive power, maintaining within a community territorially demarcated, the universal external condition of social order'. Professor Dr. Garner has given a clear, beautiful and acceptable definition of the state. He says, 'The state is a community of persons more or less numerous, permanently occupying a definite portion of

territory, independent of external control and possessing an organized government to which the great body of inhabitants render habitual obedience'. An analysis of Garner's definition reveals four basic characteristics of the state. These are namely, population, territory, government and sovereignty.

It is not possible to say exactly when and how the state originated. However, research in anthropology, archeology and sociology has revealed much about the origin of the state. There are various theories about the origin of the state. These are the theory of divine origin, the theory of force, the social contract theory, the historical theory or the evolutionary theory, etc. Different philosophers have expressed different theories about the nature of the state in different eras. These theories include: (1) juristic theory, (2) mechanistic theory, (3) organic theory, (4) contract theory, (5) idealistic theory and so on.

### 5.5.2 Generancy Theory about State

Generancy theory about state is discussed below.

(1) The partial model of state derived from main theory is,

$$\begin{aligned} & \text{ঔ(State)} \Downarrow \\ & \text{ব (Population)} \Rightarrow \text{ল(Territory)} \Rightarrow \text{ঝ (Power)} \Rightarrow \text{ঞ(Sovereignty)} \end{aligned}$$

(2) State is an akara (form) of karma. The upakaranas (components) of state are population, territory, power and sovereignty. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	State	Population, territory, power and sovereignty

Tab. 5.21

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the state and at the same time the cause of the upakaranas of the state. On the other hand, the state is the cause of the upakaranas of the state and is related to the upakaranas of the state. That is, the state is the cause of its components population, territory, power and sovereignty and is also related to these components. Writing in sign language is as follows:

$$\begin{aligned} & \text{ঐ(Karma)} \Downarrow \\ & \text{ঔ(State)} \Downarrow \\ & \text{ব (Population)} \Rightarrow \text{ল(Territory)} \Rightarrow \text{ঝ (Power)} \Rightarrow \text{ঞ(Sovereignty)} \end{aligned}$$

(4) Society and state are bound by the inherent relationship. There is an inseparable and eternal relationship between society and state. Society is in the state. State stays connected to society. State cannot exist without society, but society can exist without state.

(5) Now let us analyze state in the light of jnanatattva.

Karma is a tattva. State is a form of karma. Population, territory, power and sovereignty are the components of state. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are

two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

State can be taken as a category, it has a specific name and let us think that this name is state. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the state is added, then we can say that the state is positive. Again, if the state is subtracted, then we can say that the state is negative. If it is on the right side of the number line, the state will be positive. Again, if it is on the left side of the number line, the state will be negative.

Every object in this universe is three-dimensional. State is not out of it. State is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the state may be in the north or south, it may be in the east or west, or it may be in the up or down. State can be measured as a solid object. Each state has four quantities. These four quantities are force, mass, space and time. There is force and mass in state. Again the state is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	State
Assertion	Positivity	State inclusion
	Negativity	State exclusion
Dimension	North	State is in the north-south
	East	State is in the east-west
	Up	State is in the up-down
Quantity	Force	There is force in this state
	Mass	There is mass in this state
	Space	This state is in a space
	Time	This state is in a time

Tab. 5.22

(6) The decision of state derived from the main theory is 'state is related to population, territory, power and sovereignty.' That is

$$\text{State} \ni \text{Population} \Rightarrow \text{Territory} \Rightarrow \text{Power} \Rightarrow \text{Sovereignty}$$

### 5.5.3 Population

No state can be imagined without population. The population is an essential element of the state. The state has been established by the people. The people have established the state for their own welfare. The state is a social institution. But there are questions about how much population a state should have. Greek philosophers such as Plato and Aristotle spoke of a small population. However Greek philosophers have spoken of the city-state. Thinking of economic well-being and overall happiness, they are thinking of a desirable population within the confines of the city-state. They want a population desirable for good governance that is consistent with the size and resources of the state. However, this desirable population has not been canceled even today. This question is the subject of sociology and economics today.



The desirable population of the ancient Greek philosophers today seems insignificant due to the tremendous advances in science. At present there is no population limit in the state. India, China, USA etc. are the most populous countries in the world. Again, the two smallest states in terms of population are San Marino and Monaco. India and China have a population of about 130 crore and 140 crore respectively. The population of Monaco and San Marino are about 39,000 and 34,000 respectively. However, the question comes up here how small a population can form a state. A family can no longer be called a state. The family no longer has the power to solve all the complexities of social life. The state is a social institution where a large number of people and a large number of families exist.

### 5.5.4 Generancy Theory about Population

Generancy theory about population is discussed below.

(1) The partial model of population derived from main theory is,

$$\begin{aligned} & \text{ଓ(State)} \Downarrow \\ & \text{ଋ(Population)} \Rightarrow \text{କ(Territory)} \Rightarrow \text{ସ(Power)} \Rightarrow \text{ମ(Sovereignty)} \end{aligned}$$

(2) Population is an upakarana (component) of a state. The state is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
State	Population, territory, power and sovereignty

Tab. 5.23

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the state and at the same time the cause of population. On the other hand, the state is the cause of population and is related to population. Writing in sign language is as follows:

$$\text{କ୍(Karma)} \Downarrow \text{ଓ(State)} \Downarrow \text{ଋ(Population)}$$

(4) Now let us analyze population in the light of jnanatattva.

Population is a component of a state. State is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Population can be taken as a category, it has a specific name and let us think that this name is population. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the population is added, then we can say that the population is positive. Again, if the population is subtracted, then we can say that the population is negative. If it is on the right side of the number line, the population will be positive. Again, if it is on the left side of the number line, the population will be negative.

Every object in this universe is three-dimensional. Population is not out of it. Population is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, population may be in the north or south, it may be in the

east or west, or it may be in the up or down. Population can be measured as a solid object. Each population has four quantities. These four quantities are force, mass, space and time. There is force and mass in population. Again population is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Population
Assertion	Positivity	Population inclusion
	Negativity	Population exclusion
Dimension	North	Population is in the north-south
	East	Population is in the east-west
	Up	Population is in the up-down
Quantity	Force	There is force in this population
	Mass	There is mass in this population
	Space	This population is in a space
	Time	This population is in a time

Tab. 5.24

(5) Population follows the cross rule. There are three laws of population from the cross rule and these three laws are,

**Law 1** At constant territory  $\bar{a}$  and power  $\bar{p}$ , the population  $\bar{p}$  of a state varies inversely with its sovereignty  $\bar{s}$ . That is,

$$\bar{p} (\text{Population}) \propto 1/\bar{s} (\text{Sovereignty})$$

**Law 2** At constant territory  $\bar{a}$  and sovereignty  $\bar{s}$ , the population  $\bar{p}$  of a state varies directly with its power  $\bar{p}$ . That is,

$$\bar{p} (\text{population}) \propto \bar{p} (\text{power})$$

**Law 3** At constant power  $\bar{p}$  and sovereignty  $\bar{s}$ , the population  $\bar{p}$  of a state varies directly with its territory  $\bar{a}$ . That is,

$$\bar{p} (\text{Population}) \propto \bar{a} (\text{Territory})$$

### 5.5.5 Territory

A certain territory is required for a population to live. Just as population is an essential element of the state, so is certain territory an essential element of the state. The state cannot be established in a vacuum. This requires a territory marked with a certain boundary. For this reason, there is no state for nomadic nomads without permanent residence.

Territory refers not only to the surface of the soil, but also to the subterranean mineral resources, rivers, mountains, coastal areas etc. At present the water level up to twelve miles from the sea shore are considered to belong to the state. The sky above the territory falls within the boundaries of the state. If the aeroplanes of other countries are guilty of breaking the law by flying over that sky without any permission. The sovereign authority and governance of the state over the territory that carries all these things will be maintained.

The beginning of a state can be when a group of people start living within a certain geographical boundary. How big this geographical boundary will be cannot be determined. However, in terms of size, the state can be divided into two parts, namely, small state and large state.

The scholars of the past have given much thought to the territory of the state. Greek philosophers such as Aristotle and Plato thought that the territory of a state should have a definite boundary. Plato compared the size of a well-formed body with the size of a state. Rousseau also expressed his weakness about the small state. He thinks the government has close ties with the size of the state. According to him, large state is suitable for monarchy and small state is suitable for democracy. He thinks that in a large country it is not possible to employ every person in the state and it is not possible to enforce the same law everywhere.

However, the communication system has improved considerably as a result of the phenomenal advancement of science. Mutual communication and formation of public opinion among the larger states is no longer as difficult as it used to be. It is not known that the regime is being disrupted in large countries like Russia and the United States. Again, there are many small countries in the world where the skills of governance are not recognized.

### 5.5.6 Generancy Theory about Territory

Generancy theory about territory is discussed below.

(1) The partial model of territory derived from main theory is,

$$\text{ঔ(State)} \Downarrow \\ \overline{\text{ব}}(\text{Population}) \Rightarrow \overline{\text{ক}}(\text{Territory}) \Rightarrow \overline{\text{প}}(\text{Power}) \Rightarrow \overline{\text{স}}(\text{Sovereignty})$$

(2) Territory is an upakarana (component) of a state. The state is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
State	Population, territory, power and sovereignty

Tab. 5.25

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the state and at the same time the cause of territory. On the other hand, the state is the cause of territory and is related to territory. Writing in sign language is as follows:

$$\overline{\text{ক}}(\text{Karma}) \Downarrow \text{ঔ(State)} \Downarrow \overline{\text{ক}}(\text{Territory})$$

(4) Now let us analyze territory in the light of jnanatattva.

Territory is a component of a state. State is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Territory can be taken as a category, it has a specific name and let us think that this name is territory. Each category can be asserted in two ways. These two ways are positivity and

negativity. The opposite of positivity is negativity. If the territory is added, then we can say that the territory is positive. Again, if the territory is subtracted, then we can say that the territory is negative. If it is on the right side of the number line, the territory will be positive. Again, if it is on the left side of the number line, the territory will be negative.

Every object in this universe is three-dimensional. Territory is not out of it. Territory is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, territory may be in the north or south, it may be in the east or west, or it may be in the up or down. Territory can be measured as a solid object. Each territory has four quantities. These four quantities are force, mass, space and time. There is force and mass in territory. Again territory is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Territory
Assertion	Positivity	Territory inclusion
	Negativity	Territory exclusion
Dimension	North	Territory is in the north-south
	East	Territory is in the east-west
	Up	Territory is in the up-down
Quantity	Force	There is force in this territory
	Mass	There is mass in this territory
	Space	This territory is in a space
	Time	This territory is in a time

Tab. 5.26

(5) Territory follows the cross rule. There are three laws of territory from the cross rule and these three laws are,

**Law 1** At constant population  $\bar{r}$  and power  $\bar{p}$ , the territory  $\bar{t}$  of a state varies directly with its sovereignty  $\bar{s}$ . That is,

$$\bar{t} (\text{Territory}) \propto \bar{s} (\text{Sovereignty})$$

**Law 2** At constant population  $\bar{r}$  and sovereignty  $\bar{s}$ , the territory  $\bar{t}$  of a state varies inversely with its power  $\bar{p}$ . That is,

$$\bar{t} (\text{Territory}) \propto 1/\bar{p} (\text{Power})$$

**Law 3** At constant power  $\bar{p}$  and sovereignty  $\bar{s}$ , the territory  $\bar{t}$  of a state varies directly with its population  $\bar{r}$ . That is,

$$\bar{t} (\text{Territory}) \propto \bar{r} (\text{Population})$$

### 5.5.7 Power

Power is a type of ability that involves approval. Power is the ability to influence the behavior of others in order to get something. Human conduct can be controlled with the help of approved capabilities. People who do not want power are rare in the world. Power brings

people dignity, property, security, etc. Who is more dependent on you, the more power you have over him. Reliance on you increases when you have something that is rare and important. People have been involved in conflicts for power. One has ruled, exploited and controlled the other by power. Man has conquered this world by the force of power.

The multifaceted activities of the state have resulted in a variety of powers. The more work the state has, the more power it can be. However, the three main powers are political power, social power and economic power.

Political power is the ability to control human behavior or to influence the outcome of events. Political power is related to the legal framework and to the wider bureaucracy. In most cases political power is wielded by the elite, which is controlled by small, selected and privileged groups. Social power is found in society and politics. Social power is based on the opinions of different communities, family status, respect and dignity, and the enjoyment and lifestyle of society. Social power is available within the rules of society and the laws of land. Political power and economic power are deeply related. Political power is meaningless without economic power. Economic power is the skill to improve the quality of life of individuals, societies or states. Economic power increases the freedom of decision-making of a state and decreases the ability of external forces to reduce their freedom.

All power is a matter of approval. If this approval is widespread, the jurisdiction of power will also be widespread. The consequences of power for this approval can be positive or negative. Power is an important part of the state. The government exercises the power of the state. Now let us discuss about the government.

#### **5.5.7.1 Government**

One of the main features of the state is the government. If a group of people live in a territory, the state will not be established. They must have a common purpose and a specific organization to implement this common purpose. This particular institution is called the government. Without the government, the people are disorganized, incoherent and have no collective power. The will of the state is expressed through the government and the state performs all its functions. Just as a board of directors is needed to run an organization, so is a government needed to run a state. That government acts as the spokesperson of the state.

A government normally consists of legislature, executive and judiciary. The main function of the legislature is to make laws. The main function of the executive is to manage the governance of the country. The main functions of the judiciary is to explain and enforce the law in specific cases. Therefore, the government is formed with those who make laws, administer governance work and perform judicial functions. In general, the government is the body of persons who are involved in legislature, executive and judiciary in order to carry out the functions of the state. No state can be imagined without government. When the government falls for any reason, anarchy and chaos occur in the country.

In a democratic system, there can be different types of government. For example, there can be two governments based on the relationship of the state with the central government. These two governments are the unitary government and the federal government. The governing power of a unitary government is vested in a central level. On the other hand, some of the governing powers of the federal government are vested in the regional bodies and others in the central bodies. Again there can be two governments based on the relationship between the legislature and the executive. These two governments are the government ruled by the presidential

government and the parliamentary government. In a presidential government, the president administers the affairs of the state and is not accountable to the legislature. In a parliamentary government, the cabinet is the governing body and is accountable to the legislature for its functions.

### 5.5.8 Generancy Theory about Power

Generancy theory about power is discussed below.

(1) The partial model of power derived from main theory is,

$$\text{ঔ(State)} \rightsquigarrow \text{ব্র(Population)} \Rightarrow \text{ল( Territory)} \Rightarrow \text{শ্ব(Power)} \Rightarrow \text{শ্ব(Sovereignty)}$$

(2) Power is an upakarana (component) of a state. The state is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
State	Population, territory, power and sovereignty

Tab. 5.27

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the state and at the same time the cause of power. On the other hand, the state is the cause of power and is related to power. Writing in sign language is as follows:

$$\text{ঔ(Karma)} \downarrow \text{ঔ(State)} \rightsquigarrow \text{শ্ব(Power)}$$

(4) Now let us analyze power in the light of jnanatattva.

Power is a component of a state. State is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Power can be taken as a category, it has a specific name and let us think that this name is power. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the power is added, then we can say that the power is positive. Again, if the power is subtracted, then we can say that the power is negative. If it is on the right side of the number line, the power will be positive. Again, if it is on the left side of the number line, the power will be negative.

Every object in this universe is three-dimensional. Power is not out of it. Power is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, power may be in the north or south, it may be in the east or west, or it may be in the up or down. Power can be measured as a solid object. Each power has four quantities. These four quantities are force, mass, space and time. There is force and mass in power. Again power is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Power
Assertion	Positivity	Power inclusion
	Negativity	Power exclusion
Dimension	North	Power is in the north-south
	East	Power is in the east-west
	Up	Power is in the up-down
Quantity	Force	There is force in this power
	Mass	There is mass in this power
	Space	This power is in a space
	Time	This power is in a time

Tab. 5.28

(5) Power follows the cross rule. There are three laws of power from the cross rule and these three laws are,

**Law 1** At constant population  $\bar{r}$  and territory  $\bar{l}$ , the power  $\bar{p}$  of a state varies directly with its sovereignty  $\bar{s}$ . That is,

$$\bar{p} (\text{Power}) \propto \bar{s} (\text{Sovereignty}),$$

**Law 2** At constant population  $\bar{r}$  and sovereignty  $\bar{s}$ , the power  $\bar{p}$  of a state varies inversely with its territory  $\bar{l}$ . That is,

$$\bar{p} (\text{Power}) \propto 1/\bar{l} (\text{Territory})$$

**Law 3** At constant territory  $\bar{l}$  and sovereignty  $\bar{s}$ , the power  $\bar{p}$  of a state varies directly with its population  $\bar{r}$ . That is,

$$\bar{p} (\text{Power}) \propto \bar{r} (\text{Population})$$

### 5.5.9 Sovereignty

Sovereignty is the most important part of the state. Without sovereignty, the vital force of the state is not established. A state without sovereignty cannot be considered a real state even if it has a population, a certain territory, and a well-controlled government. Sovereignty means the highest and ultimate power that is inflexible, indivisible, single and unique. In fact, the will of the state in a state is the extreme desire. Sovereignty is the power of will of the state. Any other person or organization will have to bow to this will of the state. If an individual or organization does not bow to this will, then the state has the power to bow down or punish it.

Sovereignty has to be understood from two sides. One, the right to all power in the internal affairs of the state and two, the freedom from the control of the external enemy. Extreme power from the inside and freedom from external control, this is the form of sovereignty. The state can enact laws to establish internal peace and order and apply them to the people. This is internal sovereignty. Again, it can set its own policy for maintaining relations with other states, including the power to declare war and make peace. This is external sovereignty.

The sovereign power of the state is the original and uncontrolled absolute power. The state is completely independent for this absolute power. The state has no power to be equal or over

it. This power is completely permanent. As long as the state exists, sovereignty is retained. Sovereign power is not transferable. Just as man cannot give his vitality to anyone else, so the state cannot transfer its sovereignty to anyone else. Universality is one of the main characteristic of sovereignty. The sovereign power of the state shall be maintained over every individual or institution within the state. However, foreign ambassadors or embassies are outside this sovereign power even though they are organized in the order of the sovereign power of the state.

### 5.5.10 Generancy Theory about Sovereignty

Generancy theory about sovereignty is discussed below.

(1) The partial model of sovereignty derived from main theory is,

$$\text{ॐ(State)} \Downarrow \\ \text{ॐ(Population)} \Rightarrow \text{ॐ(Territory)} \Rightarrow \text{ॐ(Power)} \Rightarrow \text{ॐ(Sovereignty)}$$

(2) Sovereignty is an upakarana (component) of a state. The state is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
State	Population, territory, power and sovereignty

Tab. 5.29

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the state and at the same time the cause of sovereignty. On the other hand, the state is the cause of sovereignty and is related to sovereignty. Writing in sign language is as follows:

$$\text{ॐ(Karma)} \Downarrow \text{ॐ(State)} \Downarrow \text{ॐ(Sovereignty)}$$

(4) Now let us analyze sovereignty in the light of jnanatattva.

Sovereignty is a component of a state. State is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Sovereignty can be taken as a category, it has a specific name and let us think that this name is sovereignty. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the sovereignty is added, then we can say that the sovereignty is positive. Again, if the sovereignty is subtracted, then we can say that the sovereignty is negative. If it is on the right side of the number line, the sovereignty will be positive. Again, if it is on the left side of the number line, the sovereignty will be negative.

Every object in this universe is three-dimensional. Sovereignty is not out of it. Sovereignty is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, sovereignty may be in the north or south, it may be in the east or west, or it may be in the up or down. Sovereignty can be measured as a solid object. Each sovereignty has four quantities. These four quantities are force, mass, space and time.



There is force and mass in sovereignty. Again sovereignty is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Sovereignty
Assertion	Positivity	Sovereignty inclusion
	Negativity	Sovereignty exclusion
Dimension	North	Sovereignty is in the north-south
	East	Sovereignty is in the east-west
	Up	Sovereignty is in the up-down
Quantity	Force	There is force in this sovereignty
	Mass	There is mass in this sovereignty
	Space	This sovereignty is in a space
	Time	This sovereignty is in a time

Tab. 5.30

(5) Sovereignty follows the cross rule. There are three laws of sovereignty from the cross rule and these three laws are,

**Law 1** At constant population  $\bar{r}$  and territory  $\bar{l}$ , the sovereignty  $\bar{s}$  of a state varies directly with its power  $\bar{p}$ . That is,

$$\bar{s} (\text{Sovereignty}) \propto \bar{p} (\text{Power})$$

**Law 2** At constant population  $\bar{r}$  and power  $\bar{p}$ , the sovereignty  $\bar{s}$  of a state varies directly with its territory  $\bar{l}$ . That is,

$$\bar{s} (\text{Sovereignty}) \propto \bar{l} (\text{Territory})$$

**Law 3** At constant territory  $\bar{l}$  and power  $\bar{p}$ , the sovereignty  $\bar{s}$  of a state varies inversely with its population  $\bar{r}$ . That is,

$$\bar{s} (\text{Sovereignty}) \propto 1/\bar{r} (\text{Population})$$

### 5.5.11 Interpretation of Rectangle Rule for State

Let us explain the laws of rectangle rule for state. The components of a state are four namely population, territory, power and sovereignty. These four components are at the four angular points of the rectangle. The two components on the diagonal will vary in inverse proportion to each other if the other two components remain constant. On the other hand, the two components located on a horizontal or vertical line will change proportionally if the other two components remain constant. Six laws are available under this rule. For example, if the population and sovereignty of a state are fixed, the territory and power will change in opposite proportion. That is, if the territory is doubled, the power will be halved and if the territory is halved, the power will be doubled. On the other hand, if population and territory remain constant, power and sovereignty will change proportionally. That is, if power is doubled, sovereignty will be doubled and if power is halved, sovereignty will be halved. The stability of a state can be ensured through these laws. If one component of the state is more or less, how the other

component will be controlled is found through these laws. A state is like an organism. The organism needs a moderate diet. Eating more or less is inappropriate for the organism. Again, the coordination and balance of the various organs of the organism is necessary. If not, disharmony and lack of balance will be observed in the organism. The same goes for the state. Geometric objects have a mathematical beauty. We can retain the mathematical beauty of the state by placing the four components of the state at the four angular points of the rectangle.

## 5.6 Worldiomics

### 5.6.1 World

This world is made up of all the countries of the earth, seas, oceans, mountains, hills, etc. The main difference between the earth and the world is that the earth is a planet and the world is all the human associated regions of this planet. The earth does not only mean the surface of this planet but also everything inside. The world generally means the surface of the earth to take all the territories and resources necessary for the human race.

After the Second World War, the world was divided into three parts on the basis of political ideology. These three worlds are the first world, the second world and the third world. The first world refers to the capitalist and industrialized countries led by the United States and NATO. The second world refers to the countries led by the Soviet Union and the Warsaw Pact that are industrialized or less industrialized but ruled by the communist or the socialists. The third world refers to the countries that are underdeveloped or developing outside the NATO and Warsaw Pact. The idea of the first world, the second world, and the third world was during the Cold War, but with the collapse of the Soviet Union, the idea of the three worlds became obsolete.

After the First World War, the League of Nations was born with the goal of establishing peace on earth and ensuring the existence of states. But in 1939, when the Second World War broke out, the tomb of the League of Nations was built. After the Second World War, the heroes of the victorious party, with the goal of establishing lasting peace in the world, thought of establishing an organization so that the horrors of war would be removed from the earth forever and the stability and certainty of every state would be ensured. To this end, US President Franklin Roosevelt, British Prime Minister Winston Churchill and Soviet Union leader Joseph Stalin met at a historic conference to set out the basic principles of the United Nations or the UN Charter. On the basis of these basic principles, the United Nations Organization was established on October 24, 1945, with the determined efforts of the great powers to establish lasting peace in the world.

The United Nations Organization has six organs. These six organs are (1) the General Assembly, (2) the Security Council, (3) the Trusteeship Council, (4) the Economic and Social Council, (5) the International Court of Justice and (6) the Secretariat.

### 5.6.2 Generancy Theory about World

Generancy theory about world is discussed below.

(1) The partial model of world derived from main theory is,

ॐ<sup>o</sup>(World)ॐ

ॐ(Life)⇒ॐ(Environment)⇒ॐ(Authority)⇒ॐ( Development)⇒ॐ( Peace)

(2) World is an akara (form) of karma. The upakaranas (components) of world are life, environment, authority, development and peace. Arranged in the form of a table, we get,

Tattva	Akara	Upakarana
Karma	World	Life, environment, authority, development and peace

Tab. 5.31

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of the upakaranas of the world. On the other hand, the world is the cause of the upakaranas of the world and is related to the upakaranas of the world. That is, the world is the cause of its components life, environment, authority, development and peace and is also related to these components. Writing in sign language is as follows:

ॐ (Karma) ↓

ॐ<sup>०</sup>(World)↘

ॐ(Life)⇒ॐ(Environment)⇒ॐ(Authority)⇒ॐ(Development)⇒ॐ( Peace)

(4) State and world are bound by the inherent relationship. There is an inseparable and eternal relationship between state and world. State is in the world. World stays connected to state. World cannot exist without state, but state can exist without world.

(5) Now let us analyze world in the light of jñanatattva.

Karma is a tattva. World is a form of karma. Life, environment, authority, development and peace are the components of world. Again, jñana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

World can be taken as a category, it has a specific name and let us think that this name is world. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the world is added, then we can say that the world is positive. Again, if the world is subtracted, then we can say that the world is negative. If it is on the right side of the number line, the world will be positive. Again, if it is on the left side of the number line, the world will be negative.

Every object in this universe is three-dimensional. World is not out of it. World is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, the world may be in the north or south, it may be in the east or west, or it may be in the up or down. World can be measured as a solid object. Each world has four quantities. These four quantities are force, mass, space and time. There is force and mass in world. Again the world is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	World
Assertion	Positivity	World inclusion
	Negativity	World exclusion
Dimension	North	World is in the north-south
	East	World is in the east-west
	Up	World is in the up-down
Quantity	Force	There is force in this world
	Mass	There is mass in this world
	Space	This world is in a space
	Time	This world is in a time

Tab. 5.32

(6) The decision of world derived from the main theory is ‘world is related to life, environment, authority, development and peace.’ That is

$$\text{ॐ}(\text{World}) \Rightarrow \text{ॐ}(\text{Life}) \Rightarrow \text{ॐ}(\text{Environment}) \Rightarrow \text{ॐ}(\text{Authority}) \Rightarrow \text{ॐ}(\text{Development}) \Rightarrow \text{ॐ}(\text{Peace})$$

### 5.6.3 Life

Before discussing the life or jivan, it is necessary to know what a living thing is. A living thing is an object that is alive now or was once alive. And a non-living object is an object that has never been alive. There are some characteristics of living things. For example, living things respond to the environment. It changes for growth and development. They breed and produce offspring like them. All living things are made of one or more cells. They breathe for survival. Despite changes in external environment, the living thing keeps its internal environment within a certain range, i.e., it maintains homeostasis.

Life is a characteristic that separates an organism from inanimate matter and the dead. Activities such as food intake, metabolism, reproduction, movement, etc. indicate the presence of life. Most scientists use the eight life traits to determine whether something is alive or not. These traits or characteristics are cellular organization, metabolism, reproduction, homeostasis, genetics and heredity, response to stimuli, growth and change, adaptation through evolution.

All living things are made up of one or more cells. A cell is the basic unit of structure and function of all organisms. Living things are made up of large and complex molecules. To survive they have to pass through many complex chemical reactions. All living things must have the ability to reproduce. Living things make more creatures like themselves. Reproduction can be either sexual or asexual. Organisms keep their internal environment within a certain range despite changes in the external environment. This process is called homeostasis. Another important characteristic of the living organism is heredity. Because of heredity, genetic information is transmitted from parents to their offspring. Living organisms respond to changes in the environment. For example, trees can bend to the source of light, climb fences and walls, or respond to touch. All living things grow and change. Monocellular organism enlarges its cell

and multicellular organisms enlarge themselves through cell division. Populations of living organisms can pass through evolution. The genetic traits of a population changes over time.

#### 5.6.4 Generancy Theory about Life

Generancy theory about life is discussed below.

(1) The partial model of life derived from main theory is,

$$\text{𑂔𑂱 (World) \Downarrow}$$

$$\text{𑂔 (Life) \Rightarrow 𑂔 (Environment) \Rightarrow 𑂔 (Authority) \Rightarrow 𑂔 (Development) \Rightarrow 𑂔 (Peace)}$$

(2) Life is an upakarana (component) of a world. The world is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
World	Life, environment, authority, development and peace

Tab. 5.33

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of life. On the other hand, the world is the cause of life and is related to life. Writing in sign language is as follows:

$$\text{𑂔 (Karma) \Downarrow 𑂔𑂱 (World) \Downarrow 𑂔 (life)}$$

(4) Now let us analyze life in the light of jnanatattva.

Life is a component of a world. World is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Life can be taken as a category, it has a specific name and let us think that this name is life. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the life is added, then we can say that the life is positive. Again, if the life is subtracted, then we can say that the life is negative. If it is on the right side of the number line, the life will be positive. Again, if it is on the left side of the number line, the life will be negative.

Every object in this universe is three-dimensional. Life is not out of it. Life is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, life may be in the north or south, it may be in the east or west, or it may be in the up or down. Life can be measured as a solid object. Each life has four quantities. These four quantities are force, mass, space and time. There is force and mass in life. Again life is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Life
Assertion	Positivity	Life inclusion
	Negativity	Life exclusion
Dimension	North	Life is in the north-south
	East	Life is in the east-west
	Up	Life is in the up-down
Quantity	Force	There is force in this life
	Mass	There is mass in this life
	Space	This life is in a space
	Time	This life is in a time

Tab. 5.34

(5) Life follows the symmetrical distribution rule. There are four laws of life from the symmetrical distribution rule and these four laws are,

**Law 1** At constant environment  $\text{ॐ}$ , authority  $\text{ॐ}$  and development  $\text{ॐ}$ , the life  $\text{ॐ}$  of a world varies directly with its peace  $\text{ॐ}$ . That is,

$$\text{ॐ (life)} \propto \text{ॐ (peace)}$$

**Law 2** At constant environment  $\text{ॐ}$ , authority  $\text{ॐ}$  and peace  $\text{ॐ}$ , the life  $\text{ॐ}$  of a world varies inversely with its development  $\text{ॐ}$ . That is,

$$\text{ॐ (Life)} \propto 1 / \text{ॐ (Development)}$$

**Law 3** At constant environment  $\text{ॐ}$ , development  $\text{ॐ}$  and peace  $\text{ॐ}$ , the life  $\text{ॐ}$  of a world varies inversely with its authority  $\text{ॐ}$ . That is,

$$\text{ॐ (Life)} \propto 1 / \text{ॐ (Authority)}$$

**Law 4** At constant authority  $\text{ॐ}$ , development  $\text{ॐ}$  and peace  $\text{ॐ}$ , the life  $\text{ॐ}$  of a world varies directly with its environment  $\text{ॐ}$ . That is,

$$\text{ॐ (Life)} \propto \text{ॐ (Environment)}$$

### 5.6.5 Environment

The environment is a widely discussed issue in recent times. Environment pollution is a social problem. Environmental balance existed at the beginning of human society. But this situation did not last long. The environment is endangered today due to industrialization, urbanization, population growth, increase in the number of vehicles, increase in global warming etc. As a result, housing problems, traffic jams, poverty, drinking water problems, etc. are appearing. Excessive pressure is being exerted on sewerage systems, waste systems, gas, electricity and fuel. Biodiversity is declining drastically and the environment is losing its balance.

Environmental problems may be different. For example,

(1) Air is being polluted due to various types of motor vehicles, brick kilns, construction work, unplanned industries etc.

(2) Water is being polluted due to toxic chemicals, radioactive substances, domestic organic waste, silt from soil erosion, pesticides, shipping oil, etc.

(3) The ground is being polluted due to plastic materials, medical waste, polythene, pesticides, excreta etc.

(4) Forests are being deforested due to human settlement, expansion of agricultural land, extraction of fire wood and construction materials, etc.

Weather is the state of the temperature, clouds and humidity of a place at a particular time. Climate is the overall pattern of weather or the average of a few years. Climate change is having a negative impact on society. Sea levels rise and land in many areas becomes deserted. Ozone layer depletion is obtained. Many species of animals and plants have become extinct. Food production decreases, hunger and malnutrition increase.

Natural disasters are organized like the whims of nature, over which man has no hand. There are different forms of natural disasters. Cyclones are one of the natural disasters. It is a very strong and destructive airy storm. When the sea water comes to the ground under the influence of the cyclone, it is called tidal wave. Earthquakes are one of the natural disasters. The tidal wave caused by an earthquake is called a tsunami. Floods and droughts are also called natural disasters. Desertification is a kind of natural disaster.

### 5.6.6 Generancy Theory about Environment

Generancy theory about environment is discussed below.

(1) The partial model of environment derived from main theory is,

$$\text{ॐ}^\circ(\text{World}) \Downarrow \\ \text{ॐ}(\text{Life}) \Rightarrow \text{ॐ}(\text{Environment}) \Rightarrow \text{ॐ}(\text{Authority}) \Rightarrow \text{ॐ}^\circ(\text{Development}) \Rightarrow \text{ॐ}^\circ(\text{Peace})$$

(2) Environment is an upakarana (component) of a world. The world is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
World	Life, environment, authority, development and peace

Tab. 5.35

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of environment. On the other hand, the world is the cause of environment and is related to environment. Writing in sign language is as follows:

$$\text{ॐ}^\circ(\text{Karma}) \Downarrow \text{ॐ}^\circ(\text{World}) \Downarrow \text{ॐ}(\text{Environment})$$

(4) Now let us analyze environment in the light of jnanatattva.

Environment is a component of a world. World is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Environment can be taken as a category, it has a specific name and let us think that this name is environment. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the environment is added, then we can say that the environment is positive. Again, if the environment is subtracted, then we can say that the environment is negative. If it is on the right side of the number line, the environment will be positive. Again, if it is on the left side of the number line, the environment will be negative.

Every object in this universe is three-dimensional. Environment is not out of it. Environment is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, environment may be in the north or south, it may be in the east or west, or it may be in the up or down. Environment can be measured as a solid object. Each environment has four quantities. These four quantities are force, mass, space and time. There is force and mass in environment. Again environment is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Environment
Assertion	Positivity	Environment inclusion
	Negativity	Environment exclusion
Dimension	North	Environment is in the north-south
	East	Environment is in the east-west
	Up	Environment is in the up-down
Quantity	Force	There is force in this environment
	Mass	There is mass in this environment
	Space	This environment is in a space
	Time	This environment is in a time

Tab. 5.36

(5) Environment follows the symmetrical distribution rule. There are four laws of environment from the symmetrical distribution rule and these four laws are,

**Law 1** At constant life ष, authority ॠ and development ॡ, the environment ऌ of a world varies inversely with its peace ॢ. That is,

$$\text{ऌ (Environment)} \propto 1/ॢ \text{ (Peace)}$$

**Law 2** At constant life ष, authority ॠ and peace ॢ, the environment ऌ of a world varies directly with its development ॡ. That is,

$$\text{ऌ (Environment)} \propto ॡ \text{ (Development)}$$

**Law 3** At constant life ष, development ॡ and peace ॢ, the environment ऌ of a world varies inversely with its authority ॠ. That is,

$$\text{ऌ (Environment)} \propto 1/ॠ \text{ (Authority)}$$



**Law 4** At constant authority ॐ, development ॐ and peace ॐ, the environment ॐ of a world varies directly with its life ॐ. That is,

$$ॐ (\text{Environment}) \propto ॐ (\text{Life})$$

### 5.6.7 Authority

Authority is a kind of legitimate power that is entrusted in a person or a group and applied to another. Authority is the capacity with which one can control another. However the element of legitimacy is very important for the concept of authority. This element of legitimacy distinguishes authority from the general notion of power. Power in general is an entity that controls or directs others. On the other hand authority is the formal title that gives an equipment to an individual or a group that can influence others in an organization. So power is required for authority but there may be power without authority. Simply authority is nothing but the powers with executives which an organization provide them (executives) to achieve its common goals.

Here can be mentioned five important characteristics of authority. They are legitimacy, dominance, informality, rationality and accountability. Authority must have the power to be defended with reason or justice. Legitimacy is the main basis of authority. A person or group with authority exercises dominance over another person or group. The order of authority is usually the order of superior to an inferior. According to Fredrick 'Authority is not a power but something that accompanies power'. So it has an informality of power. Rationality is another characteristics of authority. He who has authority has something like that he can explain his rationality when applying it to others. Accountability makes the authority answerable for the work it performs. The person or group in authority is responsible to the higher authority for its actions.

The United Nations Organisation is a global organisation where the problems of the member countries are resolved peacefully. It was established in 1945. The reason for the formation of the UNO is to stop disputes between countries in a peaceful way. The aims and objectives of the United Nations are security, human rights, justice and welfare. The United Nations can authorize a peaceful solution to the problems of the states of the world. In this case, the United Nations can be a good authority.

### 5.6.8 Generancy Theory about Authority

Generancy theory about authority is discussed below.

(1) The partial model of authority derived from main theory is,

$$ॐ (\text{World}) \Rightarrow ॐ (\text{Life}) \Rightarrow ॐ (\text{Environment}) \Rightarrow ॐ (\text{Authority}) \Rightarrow ॐ (\text{Development}) \Rightarrow ॐ (\text{Peace})$$

(2) Authority is an upakarana (component) of a world. The world is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
World	Life, environment, authority, development and peace

Tab. 5.37

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of authority. On the other hand, the world is the cause of authority and is related to authority. Writing in sign language is as follows:

कर्म (Karma) ↓ विश्व (World) ∞ अधिकार (Authority)

(4) Now let us analyze authority in the light of jnanatattva.

Authority is a component of a world. World is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Authority can be taken as a category, it has a specific name and let us think that this name is authority. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the authority is added, then we can say that the authority is positive. Again, if the authority is subtracted, then we can say that the authority is negative. If it is on the right side of the number line, the authority will be positive. Again, if it is on the left side of the number line, the authority will be negative.

Every object in this universe is three-dimensional. Authority is not out of it. Authority is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, authority may be in the north or south, it may be in the east or west, or it may be in the up or down. Authority can be measured as a solid object. Each authority has four quantities. These four quantities are force, mass, space and time. There is force and mass in authority. Again authority is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Authority
Assertion	Positivity	Authority inclusion
	Negativity	Authority exclusion
Dimension	North	Authority is in the north-south
	East	Authority is in the east-west
	Up	Authority is in the up-down
Quantity	Force	There is force in this authority
	Mass	There is mass in this authority
	Space	This authority is in a space
	Time	This authority is in a time

Tab. 5.38

(5) Authority follows the symmetrical distribution rule. There are four laws of authority from the symmetrical distribution rule and these four laws are,

**Law 1** At constant life  $\mathfrak{B}$ , environment  $\mathfrak{A}$  and development  $\mathfrak{O}$ , the authority  $\mathfrak{H}$  of a world varies inversely with its peace  $\mathfrak{P}$ . That is,

$$\mathfrak{H}(\text{Authority}) \propto 1/\mathfrak{P}(\text{Peace})$$

**Law 2** At constant life  $\mathfrak{B}$ , environment  $\mathfrak{A}$  and peace  $\mathfrak{P}$ , the authority  $\mathfrak{H}$  of a world varies inversely with its development  $\mathfrak{O}$ . That is,

$$\mathfrak{H}(\text{Authority}) \propto 1/\mathfrak{O}(\text{Development})$$

**Law 3** At constant life  $\mathfrak{B}$ , development  $\mathfrak{O}$  and peace  $\mathfrak{P}$ , the authority  $\mathfrak{H}$  of a world varies inversely with its environment  $\mathfrak{A}$ . That is,

$$\mathfrak{H}(\text{Authority}) \propto 1/\mathfrak{A}(\text{Environment})$$

**Law 4** At constant environment  $\mathfrak{A}$ , development  $\mathfrak{O}$  and peace  $\mathfrak{P}$ , the authority  $\mathfrak{H}$  of a world varies inversely with its life  $\mathfrak{B}$ . That is,

$$\mathfrak{H}(\text{Authority}) \propto 1/\text{life } \mathfrak{B}$$

### 5.6.9 Development

Development is the process by which the economic, environmental or demographic components of a society or a state grow, progress or change positively. The goal of development is to create employment opportunities and increase the living standards of the people without harming the environment. Something or someone is further improved as a result of development. Development can be of different types, namely- social development, political development, economic development, human development, environmental development etc.

Social development improves the welfare of every person in the society so that they can reach their full potential. The development of society is linked to the welfare of every citizen. Social development is about investing in people. As many obstacles need to be removed in the path of social development so that all citizens can journey with confidence in the path of their dreams.

Political development refers to how politically united the people of a country are and how much they participate in politics. The more politically conscious people take part in political activities in a country, the more political development can be said to have taken place in that country. In a politically developed country, democracy has an institutional basis and ensures the welfare of the people, human rights and equitable distribution of resources.

Economic development refers to the extent to which a country has advanced in the overall economy, that is, in the micro-level and macro-level. Economic development improves the living standards of the people of a country and moves a country from poor economy to rich economy.

Human development means the expansion of human freedom and opportunities and the improvement of their well-being. Human development is about expanding the richness of human life and trying to make their opportunities and choices a reality. In reality, it means developing people's skills and giving them the opportunity to use them.

Environmental development is the direct result of investment in infrastructure, scenic surroundings, green areas and public spaces. Environmental development is very important because environment plays an important role in living a healthy life.

### 5.6.10 Generancy Theory about Development

Generancy theory about development is discussed below.

(1) The partial model of development derived from main theory is,

$$\text{ୱ(World)} \text{୩} \\ \text{ୱ(Life)} \Rightarrow \text{୩(Environment)} \Rightarrow \text{ୱ(Authority)} \Rightarrow \text{ୱ(Development)} \Rightarrow \text{ୱ(Peace)}$$

(2) Development is an upakarana (component) of a world. The world is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
World	Life, environment, authority, development and peace

Tab. 5.39

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of development. On the other hand, the world is the cause of development and is related to development. Writing in sign language is as follows:

$$\text{ୱ(Karma)} \downarrow \text{ୱ(World)} \text{୩} \text{ୱ(Development)}$$

(4) Now let us analyze development in the light of jnanatattva.

Development is a component of a world. World is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Development can be taken as a category, it has a specific name and let us think that this name is development. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the development is added, then we can say that the development is positive. Again, if the development is subtracted, then we can say that the development is negative. If it is on the right side of the number line, the development will be positive. Again, if it is on the left side of the number line, the development will be negative.

Every object in this universe is three-dimensional. Development is not out of it. Development is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, development may be in the north or south, it may be in the east or west, or it may be in the up or down. Development can be measured as a solid object. Each development has four quantities. These four quantities are force, mass, space and time. There is force and mass in development. Again development is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Development
Assertion	Positivity	Development inclusion
	Negativity	Development exclusion
Dimension	North	Development is in the north-south
	East	Development is in the east-west
	Up	Development is in the up-down
Quantity	Force	There is force in this development
	Mass	There is mass in this development
	Space	This development is in a space
	Time	This development is in a time

Tab. 5.40

(5) Development follows the symmetrical distribution rule. There are four laws of development from the symmetrical distribution rule and these four laws are,

**Law 1** At constant life  $\text{ब}$ , environment  $\text{म}$  and authority  $\text{ह}$ , the development  $\text{०१}$  of a world varies directly with its peace  $\text{०१}$ . That is,

$$\text{०१ (Development)} \propto \text{०१ (Peace)}$$

**Law 2** At constant life  $\text{ब}$ , environment  $\text{म}$  and peace  $\text{०१}$ , the development  $\text{०१}$  of a world varies inversely with its authority  $\text{ह}$ . That is,

$$\text{०१ (Development)} \propto 1/\text{ह (Authority)}$$

**Law 3** At constant life  $\text{ब}$ , authority  $\text{ह}$  and peace  $\text{०१}$ , the development  $\text{०१}$  of a world varies directly with its environment  $\text{म}$ . That is,

$$\text{०१ (Development)} \propto \text{म (Environment)}$$

**Law 4** At constant environment  $\text{म}$ , authority  $\text{ह}$  and peace  $\text{०१}$ , the development  $\text{०१}$  of a world varies inversely with its life  $\text{ब}$ . That is,

$$\text{०१ (Development)} \propto 1/\text{life ब}$$

### 5.6.11 Peace

Peace usually means the absence of violence in all kinds. Peace is a concept that means social harmony and friendship and the absence of terrorism and war. It refers to the state of society where the mind is free from annoyance, confusion, anxiety, etc., that is, the mind has tranquillity and purity. Peace is a condition where a person can live with dignity and honour.

Peace is a comprehensive and broad concept. Peace at the macro-level, is the absence of conflict and war. Peace at the micro level is subjective, depending on the inner state of the body, mind, and perceptions. Peace as a whole depends on social, political, economic, cultural and

religious systems. The balance of international power is very important for peace. The pre-requisite for peace is the absence of war and conflict.

Now let's explain this matter mathematically. Two motor vehicles are running parallel in the same direction on the same road. There is no conflict in it. So it can be said that there is peace.

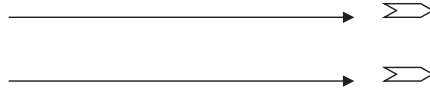


Fig. 5.3

In the same way five motor vehicles are running parallel in the same direction on the same road. There is no conflict too. In this case, it can be said that there is peace.

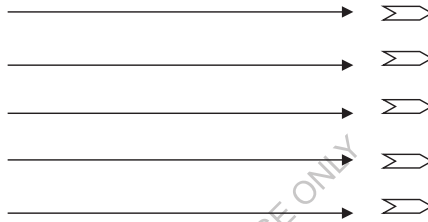


Fig. 5.4

Again, if a motor vehicle from the opposite direction runs in the same line, there will be a collision between them. If there is a clash, there will be unrest. So it can be said that peace will be disrupted there.



Fig. 5.5

### Shanti Mantra

om bhadram karnebhih srunuyama devah  
 bhadram pasyemaksabhiryajatrah  
 sthirairangaistustuvagmsastanubhih  
 vyasema devahitam yadayuh  
 svasti na indro vrddhasravah  
 svasti nah pusa visvavedah  
 svasti nastarksyo aristanemih  
 svasti no brhaspatirdadhatu  
 om santih santih santih

### Translation

Om! O gods, may we hear auspicious words with the ears;  
 While engaged in yagnas,

May we see auspicious things with the eyes;  
 While praising the gods with steady limbs,  
 May we enjoy a life that is beneficial to the gods.  
 May Indra of ancient fame be auspicious to us;  
 May the supremely rich (or all-knowing) Pusa (god of the earth)  
 Be propitious to us;  
 May Garuda, the destroyer of evil,  
 Be well disposed towards us;  
 May Brihaspati ensure our welfare.  
 Om! Peace! Peace! Peace!

**Gayatri Mantra - A Universal Prayer**

Om Bhur Bhuvah Swah  
 Tat-savitur Varenyam  
 Bhargo Devasya Dheemahi  
 Dhiyo Yonah Prachodayat

**General meaning:**

We meditate on that most adored Supreme Lord, the creator, whose effulgence (divine light) illumines all realms (physical, mental and spiritual). May this divine light illumine our intellect.

**Word meaning:**

Om: The primeval sound; Bhur: the physical body/physical realm; Bhuvah: the life force/the mental realm; Suvah: the soul/spiritual realm; Tat: That (God); Savitur: the Sun, Creator (source of all life); Varenyam: adore; Bhargo: effulgence (divine light); Devasya: supreme Lord; Dhimahi: meditate; Dhiyo: the intellect; Yo: May this light; Nah: our; Prachodayat: illumine/inspire.

**5.6.12 Generancy Theory about Peace**

Generancy theory about peace is discussed below.

(1) The partial model of peace derived from main theory is,

$$\text{ॐ}(\text{World})\text{॥}$$

$$\text{ॐ}(\text{Life})\Rightarrow\text{ॐ}(\text{Environment})\Rightarrow\text{ॐ}(\text{Authority})\Rightarrow\text{ॐ}(\text{Development})\Rightarrow\text{ॐ}(\text{Peace})$$

(2) Peace is an upakarana (component) of a world. The world is the akara (form) of karma. Arranged in the form of a table, we get,

Akara	Upakarana
World	Life, environment, authority, development and peace

Tab. 5.41

(3) Tattva is the cause of akara and also the cause of upakarana. Thus, karma is the cause of the world and at the same time the cause of peace. On the other hand, the world is the cause of peace and is related to peace. Writing in sign language is as follows:

कर्म (Karma) ↓ दुःख (World) ∞ शान्ति (Peace)

(4) Now let us analyze peace in the light of jnanatattva.

Peace is a component of a world. World is a form of karma. Karma is a tattva. Again, jnana is a tattva. It has four forms namely, category, assertion, dimension and quantity. There is a component of the category and that is the name. There are two components of assertion and that is positivity and negativity. Dimension has three components and they are north, east and up. There are four components of quantity and that is force, mass, space and time.

Peace can be taken as a category, it has a specific name and let us think that this name is peace. Each category can be asserted in two ways. These two ways are positivity and negativity. The opposite of positivity is negativity. If the peace is added, then we can say that the peace is positive. Again, if the peace is subtracted, then we can say that the peace is negative. If it is on the right side of the number line, the peace will be positive. Again, if it is on the left side of the number line, the peace will be negative.

Every object in this universe is three-dimensional. Peace is not out of it. Peace is also three-dimensional. These three dimensions are north, east and up. Again, each dimension can be positive or negative. Therefore, peace may be in the north or south, it may be in the east or west, or it may be in the up or down. Peace can be measured as a solid object. Each peace has four quantities. These four quantities are force, mass, space and time. There is force and mass in peace. Again peace is in space and time. Arranged in the form of a table, we get,

Akaras of jnana	Components of akara	Example
Category	Name	Peace
Assertion	Positivity	Peace inclusion
	Negativity	Peace exclusion
Dimension	North	Peace is in the north-south
	East	Peace is in the east-west
	Up	Peace is in the up-down
Quantity	Force	There is force in this peace
	Mass	There is mass in this peace
	Space	This peace is in a space
	Time	This peace is in a time

Tab. 5.42

(5) Peace follows the symmetrical distribution rule. There are four laws of peace from the symmetrical distribution rule and these four laws are,



**Law 1** At constant life  $\mathcal{B}$ , environment  $\mathcal{M}$  and authority  $\mathcal{H}$ , the peace  $\mathcal{O}$  of a world varies directly with its development  $\mathcal{D}$ . That is,

$$\mathcal{O} (\text{Peace}) \propto \mathcal{D} (\text{Development})$$

**Law 2** At constant life  $\mathcal{B}$ , environment  $\mathcal{M}$  and development  $\mathcal{D}$ , the peace  $\mathcal{O}$  of a world varies inversely with its authority  $\mathcal{H}$ . That is,

$$\mathcal{O} (\text{Peace}) \propto 1/\mathcal{H} (\text{Authority})$$

**Law 3** At constant life  $\mathcal{B}$ , authority  $\mathcal{H}$  and development  $\mathcal{D}$ , the peace  $\mathcal{O}$  of a world varies inversely with its environment  $\mathcal{M}$ . That is,

$$\mathcal{O} (\text{Peace}) \propto 1/\mathcal{M} (\text{Environment})$$

**Law 4** At constant environment  $\mathcal{M}$ , authority  $\mathcal{H}$  and development  $\mathcal{D}$ , the peace  $\mathcal{O}$  of a world varies directly with its life  $\mathcal{B}$ . That is,

$$\mathcal{O} (\text{Peace}) \propto \mathcal{B} (\text{Life})$$

### 5.6.13 Interpretation of Pentagon Rule for World

Let us explain the laws of the pentagon rule for the world. The components of the world are five namely life, environment, authority, development and peace. These five components are at the five angular points of the pentagon. Let the pentagon be arranged in such a way that it has one horizontal, two vertical and two adjacent sides along the vertex. This pentagon has five diagonals where one diagonal is horizontal. The two components on each diagonal except the horizontal diagonal will vary in inverse proportion to each other if the other three components remain constant. Again two components on adjacent arms along the vertex will vary in opposite proportion to each other if the other three components remain constant. On the other hand, two components on a horizontal or vertical line will change proportionally if the other three components remain constant. Ten laws are available under this rule where six laws will vary inversely and four laws will vary proportionally. For example, if life, environment and authority are constant in a world, development and peace will change proportionally. That is, if development is doubled, peace will be doubled and if development is halved, peace will be halved. On the other hand, if life, environment and development are constant, authority and peace will change in opposite proportion. That is, if authority is doubled, peace will be halved and if authority is halved, peace will be doubled. The stability of a world can be ensured through these laws. If one component of the world is more or less, how to control another component is found through these laws. This world is like an organism. Just as living beings need moderate food, the components of this world also need to be moderated. Just as every organ of a living being needs coordination and balance, so this world also needs coordination and balance of every component. Too much or too little of one component can cause other components to lose coordination and balance. Geometric objects have a mathematical beauty. We can retain the mathematical beauty of the world by placing the five components of this world at the five angular points of the pentagon.

## CHAPTER 6

Samanwayatics

6.1 Cause

6.2 Relation

6.3 Rule

6.4 Operation

### 6.1 Cause

The cause is an event that comes immediately before the action. No action can be created without cause. The cause is essential for producing action. Any irreversible previous event of the action cannot be called a cause. Only the immediate, unconditional and invariable antecedent to the effect can be called the cause. So, in short, a cause is an immediate, unconditional and invariable antecedent to the effect. There are three characteristics of the cause. These three characteristics are,

- (1) Immediate antecedent to the effect,
- (2) Unconditional antecedent to the effect and
- (3) Invariable antecedent to the effect.

The doctrines on the relationship between cause and effect are discussed in detail in chapter 3 of my book 'Modelling of Generancy A Logical Solution'. These doctrines can be briefly mentioned again. First of all, the doctrines of the origin of action can be divided into two parts, namely, asatkaryavada and satkaryavada. According to asatkaryavada, the cause does not exist in cause before the action originates. Again according to satkaryavada, action is rooted in cause before it originates. Satkaryavada is again of two types viz., parinamavada and vivartavada. According to parinamavada, when an action is produced from a cause, the cause actually becomes the action. On the other hand, according to vivartavada, when a work is produced from a cause, the cause does not actually become an action, it is only reflected in the form of action. Apart from parinamavada and vivartavada, there is another form of satkaryavada. This form is numberism. Numberism is discussed in chapter 3 of my book 'Modelling of Generancy A Logical Solution'. In short, according to numberism, cause is form (bhuti) and action is glorious form (vibhuti). All numbers in mathematics are the glorious forms of the number one. All composite numbers are the glorious forms of the number one and fractions are also the glorious forms of the number one.

Four causes can be mentioned in this discussion. These four causes are,

- (1) Efficient cause,
- (2) Material cause,
- (3) Objective cause and
- (4) Qualitative cause.

Efficient cause is the master whose efforts produce the action. Material cause is the material with which the action is produced. Objective cause is the object due to which knowledge is generated. Qualitative cause is the quality due to which the object is useful.

For example, the potter made pot with the help of clay in his efforts. Here, potter is the efficient cause, clay is the material cause, pot is the objective cause and quality of pot (e.g. color, size, weight etc.) is the qualitative cause.

On the other hand, the weaver made cloth with the help of yarn in his efforts. Here, weaver is the efficient cause, yarn is the material cause, cloth is the objective cause and quality of cloth (e.g. color, size, weight etc.) is the qualitative cause.

Now I would like to mention the figure 2.39

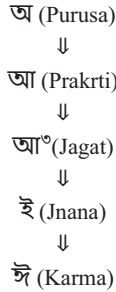


Fig. 6.1

We get four decisions from the figure.

**Decision 1.** Purusa is the efficient cause, prakrti is the effect.

**Decision 2.** Prakrti is the material cause, jagat is the effect i.e., Purusa and prakrti are the cause, jagat is the effect.

**Decision 3.** Jagat is the objective cause, jnana is the effect i.e., Purusa, prakrti and Jagat are the cause, jnana is the effect.

**Decision 4.** Jnana is the qualitative cause, karma is the effect i.e., Purusa, prakrti, jagat and jnana are the cause, karma is the effect.

Cause is a kind of samanwaya (adjustment).

अ (Category) ∽	Point rule ●	अ (Name) ⇒	Cause
अ°(Assertion) ∽	Balance rule 	उ (Positivity) ⇒	Cause inclusive
		उ (Negativity) ⇒	Cause exclusive
अ (Dimension) ∽	Left hand rule 	उ (North) ⇒	Cause is in the north- south.
		उ (East) ⇒	Cause is in the east-west.
		ग (Up) ⇒	Cause is in the up-down.
अ°(Quantity) ∽	Cross rule 	उ (Force) ⇒	There is force in this cause.
		अ (Mass) ⇒	There is mass in this cause.
		अ (Space) ⇒	This cause is in a space.
		अ (Time) ⇒	This cause is in a time.

Tab. 6.1

## 6.2 Relation

A relation between two sets is defined as the collection of ordered pairs in which the ordered pair is contained one object from each set. Let the object  $x$  from the first set  $X$  and the object  $y$  from the second set  $Y$ , then the set of ordered pairs  $R = \{(x, y)\}$  is an example of relation. A function is a special type of relation.

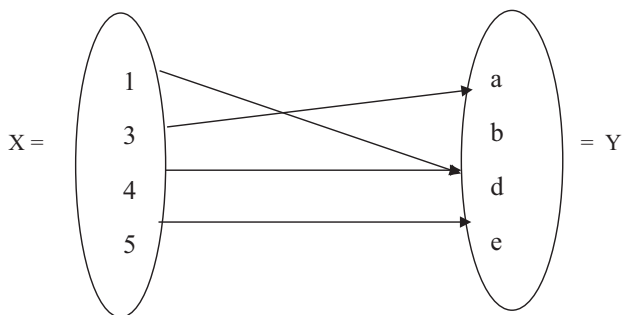


Fig. 6.2

The set  $X$  is called the domain of  $R$  and the set  $Y$  is called the co-domain or range of  $R$ . The relation  $R$  over the sets  $X$  and  $Y$  is

$$R = \{(1, d), (3, a), (4, d), (5, e)\} \text{ and}$$

$$\text{Domain } X = \{1, 3, 4, 5\},$$

$$\text{Range } Y = \{a, b, d, e\}$$

Here we can say 'x is related to y'. We denote it by  $xRy$ .

In mathematics the word 'relation' is used in the sense of relationship. The partial sentences like below are the examples of relations.

'is identical with'

'is transformed into'

'stay below', 'stay above'

'possesses'

'is a member of'

The above relationships can be identified separately in keeping with the partial sentences as; identity relation, transformational relation, positional relation, possessive relation and membership relation.

### 6.2.1 Identity Relation

Brahman is identical with Brahman. In other words, Brahman is related to itself only.

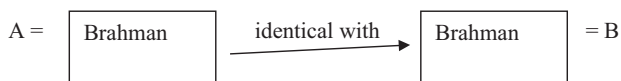


Fig. 6.3

Let the two sets A and B. Brahman contains in the set A. Brahman contains in the set B. A and B are the sets of one member and the member is Brahman. Brahman is identical with Brahman. Therefore, 'Brahman is identical with Brahman' is an example of identity relation.

**6.2.2 Transformational Relation**

Jada transforms in jiva. In other words, jiva is a transformation of jada.

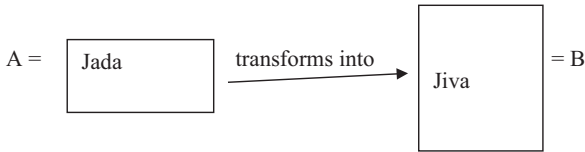


Fig. 6.4

Let the two sets A and B. Jada contains in the set A. Jiva contains in the set B. A is a set of one member and the member is jada. B is a set of many members of jada which is a jiva. Jada change into Jiva. Therefore, 'jada transforms into jiva' is an example of transformational relation.

**6.2.3 Positional Relation**

Prithvi stays below antariksa. In other words, antariksa stays above prithvi.

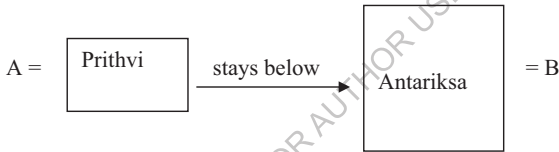


Fig. 6.5

Let the two sets A and B. Prithvi contains in the set A. Antariksa contains in the set B. A is a set of one member and the member is the planet prithvi. B is a set of many members of planets which is an antariksa. Prithvi stays down antariksa. Therefore, 'prithvi stays below antariksa' is an example of positional relation.

Antariksa stays below svarga. In other words, svarga stays above antariksa.

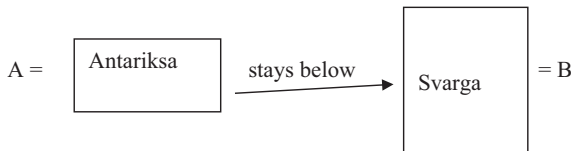


Fig. 6.6

Let the two sets A and B. Antariksa contains in the set A. Svarga contains in the set B. A is a set of one member and the member is the antariksa. B is a set of many members of antariksas

which is a svarga. Antariksa stays down svarga. Therefore, 'antariksa stays below svarga' is an example of positional relation.

### 6.2.4 Possessive Relation

Category possesses assertion. Assertion is two, positivity and negativity. Category is in positive and negative both assertions.

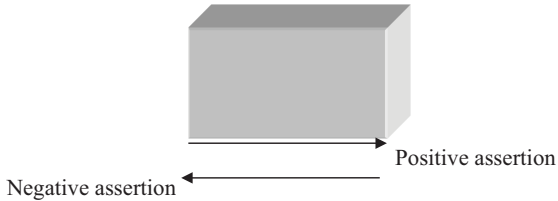


Fig. 6.7

Category can be both positive and negative in the Cartesian coordinates.

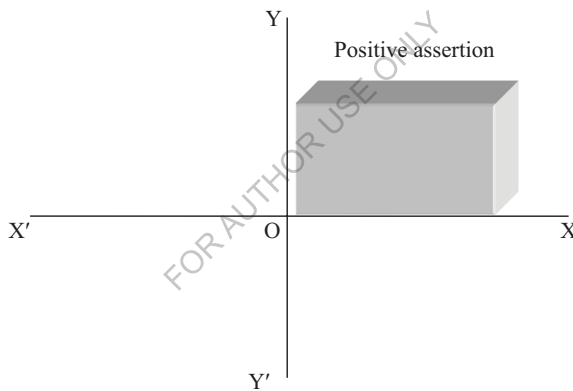


Fig. 6.8

Category possesses assertion. Category contained in A. Assertion i.e., positivity and negativity contained in B.

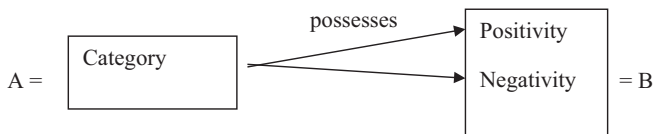


Fig. 6.9

Therefore, 'category possesses assertion' is an example of possessive relation.

Assertion possesses dimension. Dimension is three; north, east and up. Assertion have these three dimensions north, east and up.

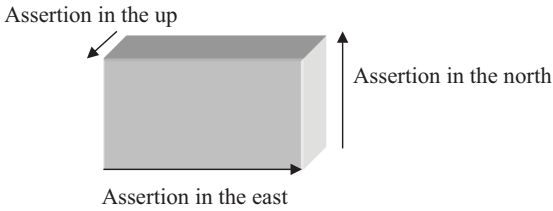


Fig. 6.10

In the Cartesian coordinate system, assertion are in three dimensions, north, east and up.

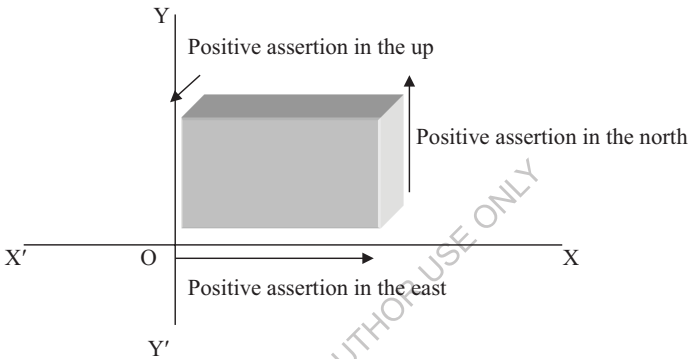


Fig. 6.11

Assertion possesses dimension. Assertion contained in A. Dimension i.e., north, east and up contained in B.

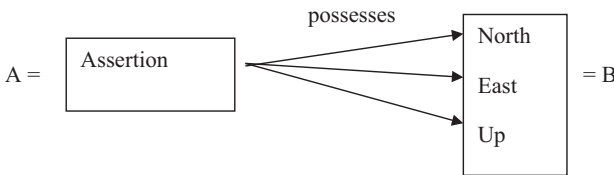


Fig. 6.12

Therefore, 'assertion possesses dimension' is an example of possessive relation.

Dimension possesses quantity. Quantity is four; force, mass, space and time. There are four quantities force, mass, space and time in the dimensions.

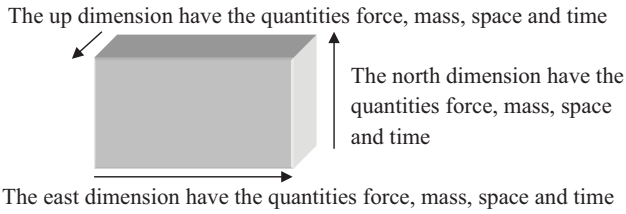


Fig. 6.13

In the Cartesian coordinate system, dimension contains the four quantities force, mass, space and time.

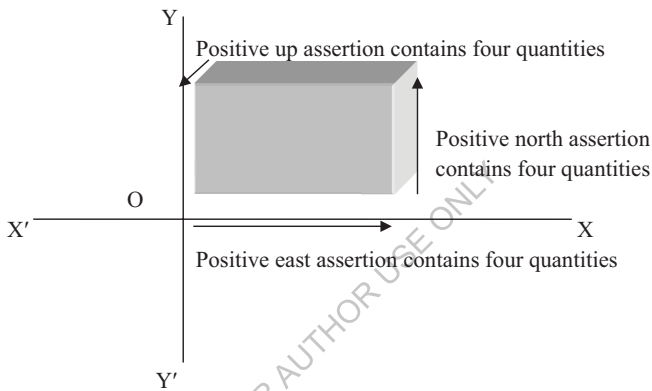


Fig. 6.14

Dimension possesses quantity. Dimension contained in A. Quantity i.e., force, mass, space and time contained in B.

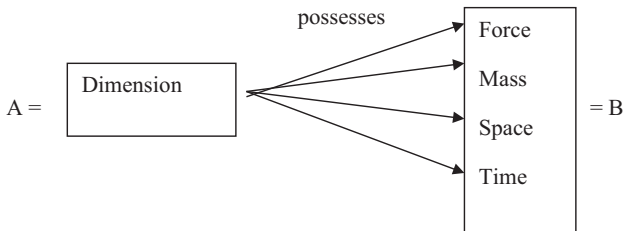


Fig. 6.15

Therefore, 'dimension possesses quantity' is an example of possessive relation.

### 6.2.5 Membership Relation

Person contains in family. In other words, person is a member of family.



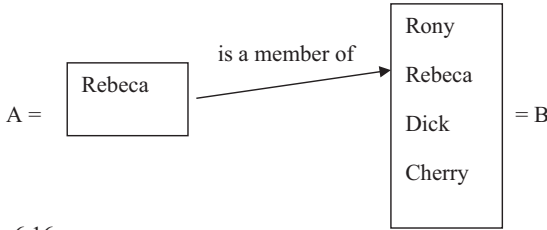


Fig. 6.16

Let the two sets A and B. Rebeca is a person and contains in the set A. Rony, Rebeca, Dick and Cherry contain in the set B. A is a set of one member of person. B is a set of many members of persons which is a family. Rebeca is a member of the set B. Therefore, 'Rebeca is a member of the set B' is an example of membership relation.

Family contains in society. In other words, family is a member of society.

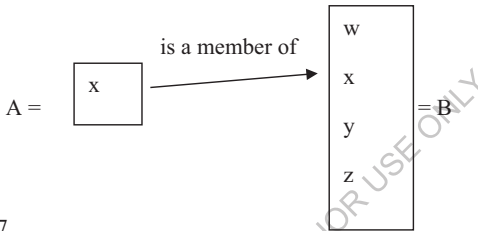


Fig. 6.17

Let the two sets A and B. Here A includes the family x i.e., x contains in the set A. B include the families w, x, y and z. A is a set of one member of family. B is a set of many members of families which is a society. The family x is a member of the set B. Therefore, 'x is a member of the set B' is an example of membership relation. Family is a member of a society, there exists a membership relation.

Society contains in state. In other words, society is a member of state.

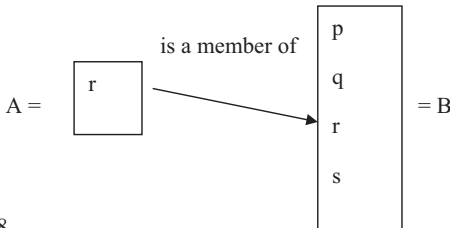


Fig. 6.18

Let the two sets A and B. Here A includes the society r i.e., r contains in the set A. B include the societies p, q, r and s. A is a set of one member of society. B is a set of many members of societies which is a state. The society r is a member of the set B. Therefore, 'r is a member of

the set B' is an example of membership relation. Society is a member of a state, there exists a membership relation.

State contains in world. In other words, state is a member of world.

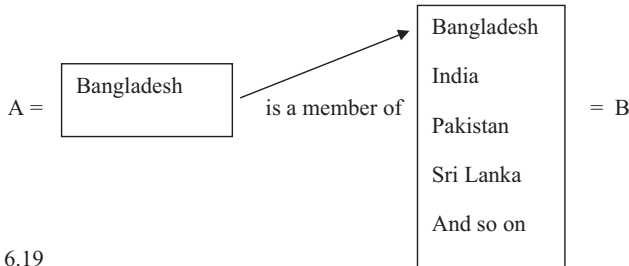


Fig. 6.19

Let the two sets A and B. Here A includes the state Bangladesh i.e., Bangladesh contains in the set A. B include the states Bangladesh, India, Pakistan and Sri Lanka and so on. A is a set of one member of state. B is a set of many members of states which is our world. The state Bangladesh is a member of the set B. Therefore, 'Bangladesh (contained in A) is a member of the set B' is an example of membership relation. Bangladesh is a member of this world, there exists a membership relation.

Relation is a kind of samanwaya (adjustment).

ঐ (Category) ⇓	Point rule ●	ঐ (Name) ⇒	Relation
ঐ° (Assertion) ⇓		ঐ (Positivity) ⇒	Relation inclusion
		ঐ (Negativity) ⇒	Relation exclusion
ঐ (Dimension) ⇓		ঐ (North) ⇒	Relation is in the north-south.
		ঐ (East) ⇒	Relation is in the east-west.
		ঐ (Up) ⇒	Relation is in the up-down.
ঐ° (Quantity) ⇓		ঐ (Force) ⇒	There is force in this relation.
		ঐ (Mass) ⇒	There is mass in this relation.
		ঐ (Space) ⇒	This relation is in a space.
		ঐ (Time) ⇒	This relation is in a time.

Tab. 6.2

### 6.3 Rule

A rule is a procedure or method by which one or more equations can be described. One or more equations can be easily remembered with the help of a rule. In the main theory there are five rules. These five rules are (1) point rule or identity rule, (2) balance rule or straight line rule, (3) left hand rule or triangle rule, (4) cross rule or X-rule or rectangle rule and (5) symmetrical distribution rule or pentagon rule. The rule is marked by the symbol ⇒. These

rules are discussed in detail in chapter 4 of my book 'Modelling of Generancy A Logical Solution'. Let us briefly discuss these rules here.

### 6.3.1 Point Rule or Identity Rule

A point is a position represented by a dot. It is a geometrical object and has a location only. It has no size or shape i.e., it does not have any length, width, or height. As it can be said all points are equal and unique. This is called the point rule or identity rule. Point rule can be shown with the help of the figure below.

P (.)

Fig. 6.20

In the interpretation of this rule it can be said that every unique object is only equal to it. For example, Isvara is equal to Isvara. The sun is equal to the sun.

From the point rule we get one law.

**Law 1.** P is equal to P, i.e.,

$$P = P$$

From the point rule in main theory we get a total of 5 laws. These laws are;

**Law 1.1** Isvara is equal to Isvara, i.e.,

$$\text{ॐ (Isvara)} = \text{ॐ (Isvara)}$$

**Law 1.2** Paramanu is equal to paramanu, i.e.,

$$\text{ॐ (Paramanu)} = \text{ॐ (Paramanu)}$$

**Law 1.3** Ksiti is equal to ksiti, i.e.,

$$\text{ॐ (Ksiti)} = \text{ॐ (Ksiti)}$$

**Law 1.4** Name is equal to name, i.e.,

$$\text{ॐ (Name)} = \text{ॐ (Name)}$$

**Law 1.5** Purusartha is equal to purusartha, i.e.,

$$\text{ॐ (Purusartha)} = \text{ॐ (Purusartha)}$$

### 6.3.2 Balance Rule or Straight Line Rule

As we know, there are two sides of a balance and these two sides are equal or proportional to each other. This is called balance rule or straight line rule. Suppose, P and Q are two sides. Then, balance rule can be shown with the following figure.



Fig. 6.21

Or,



Fig. 6.22

The balance has two endpoints. The locations of these endpoints are as follows;

**Location 1.** One is in the end of the left side.

**Location 2.** Other is in the end of the right side.

There is 1 sub rule in balance rule and the sub rule is;

**Sub Rule 1.** Any endpoint is proportional to the other endpoint.

The law according to the sub rule is as follows;

**Law 1.** P will be proportional to Q.

$$P \propto Q$$

From the balance rule in main theory we get a total of 4 laws. These laws are;

**Law 2.1** Deha will be proportional to prana, i. e.,

$$\text{Deha} \propto \text{Prana}$$

**Law 2.2** Jala will be proportional to agni, i. e.,

$$\text{Jala} \propto \text{Agni}$$

**Law 2.3** Positivity will be proportional to negativity, i. e.,

$$\text{Positivity} \propto \text{Negativity}$$

**Law 2.4** Reproduction will be proportional to marriage, i. e.,

$$\text{Reproduction} \propto \text{Marriage}$$

### 6.3.3 Left Hand Rule or Triangle Rule

The image that is found when the left hand grows at the right angles of thumb, index finger and middle finger is similar to the three-dimensional Cartesian coordinates. This is called left hand rule. This rule applies to any particular discussion. Suppose there are three axes OX, OY and OZ. Then it can be shown in the figure as

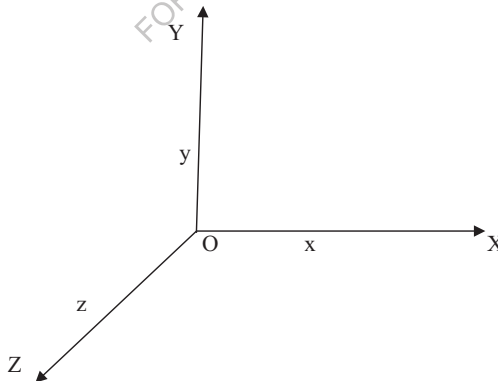


Fig. 6.23

In explaining the rule it can be said that the OY axis is standing at an angle of  $90^\circ$  with the OX axis. Similarly, the OZ axis is standing at an angle of  $90^\circ$  with the OX and OY axes.

These three axes have three endpoints. The locations of these endpoints are as follows;

**Location 1.** One is in the end of the X axis,

**Location 2.** Other is in the end of the Y axis,

**Location 3.** The third is in the end of the Z axis.

There is 1 sub rule in left hand rule. The sub rule is;

**Sub Rule 1.** If any one endpoint is fixed, the other two endpoints will change in opposite proportion.

The laws according to the sub rule is as follows;

**Law 1.** If x is fixed, y and z will be changed in inverse proportions. That is  $y \propto 1/z$

**Law 2.** If y is fixed, z and x will be changed in inverse proportions. That is  $z \propto 1/x$

**Law 3.** If z is fixed, x and y will be changed in inverse proportions. That is  $x \propto 1/y$

From the left hand rule in main theory we get a total of 9 laws. These laws are;

**Law 3.1** Keeping 𑖔 (Vayu) constant, 𑖑 (Akasa) is inversely proportional to 𑖕 (Atma),  
i. e.,

$$\text{𑖑 (Akasa)} \propto 1/\text{𑖕 (Atma)}$$

**Law 3.2** Keeping 𑖑 (Akasa) constant, 𑖔 (Vayu) is inversely proportional to 𑖕 (Atma),  
i. e.,

$$\text{𑖔 (Vayu)} \propto 1/\text{𑖕 (Atma)}$$

**Law 3.3** Keeping 𑖕 (Atma) constant, 𑖔 (Vayu) is inversely proportional to 𑖑 (Akasa),  
i. e.,

$$\text{𑖔 (Vayu)} \propto 1/\text{𑖑 (Akasa)}$$

**Law 3.4** Keeping 𑖛 (North) constant, 𑖜 (East) is inversely proportional to 𑖡 (Up), i. e.,

$$\text{𑖜 (East)} \propto 1/\text{𑖡 (Up)}$$

**Law 3.5** Keeping 𑖜 (East) constant, 𑖛 (North) is inversely proportional to 𑖡 (Up), i. e.,

$$\text{𑖛 (North)} \propto 1/\text{𑖡 (Up)}$$

**Law 3.6** Keeping 𑖡 (Up) constant, 𑖛 (North) is inversely proportional to 𑖜 (East), i. e.,

$$\text{𑖛 (North)} \propto 1/\text{𑖜 (East)}$$

**Law 3.7** Keeping 𑖛 (Education) constant, 𑖞 (Culture) is inversely proportional to 𑖟 (Cooperation), i. e.,

$$\text{𑖞 (Culture)} \propto 1/\text{𑖟 (Cooperation)}$$

**Law 3.8** Keeping 𑖞 (Culture) constant, 𑖛 (Education) is inversely proportional to 𑖟 (Cooperation), i. e.,

$$\text{𑖛 (Education)} \Rightarrow \propto 1/\text{𑖟 (Cooperation)}$$

**Law 3.9** Keeping 𑖟 (Cooperation) constant, 𑖛 (Education) is inversely proportional to 𑖞 (Culture), i. e.,

$$\text{𑖛 (Education)} \Rightarrow \propto 1/\text{𑖞 (Culture)}$$

### 6.3.4 Cross Rule or X Rule or Rectangle Rule

The English letter X or a cross has two arms at a  $90^\circ$  angle. These two arms have four endpoints. The locations of these endpoints are as follows;

**Location 1.** If any two points are horizontal, the other two points will be horizontal.

**Location 2.** If any two points are vertical, the other two points will be vertical.

**Location 3.** If any two points are angular, the other two points will be angular.

This is called cross rule or x- rule or rectangle rule. The X rule can be shown with the help of the following figures.

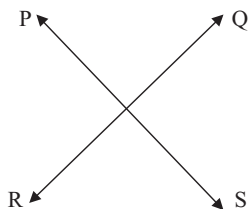


Fig. 6.24

There are 3 sub rules in cross rule. These sub rules are;

**Sub Rule 1.** If any two horizontal endpoints are fixed, the other two horizontal endpoints will change in direct proportion.

**Sub Rule 2.** If any two vertical endpoints are fixed, the other two vertical endpoints will change in direct proportion.

**Sub Rule 3.** If any two angular endpoints are fixed, the other two angular endpoints will change in opposite proportion.

The laws according to the sub rules are as follows;

**Law 1.** If P and Q are fixed, S and R will change in the direct proportion. That is  $S \propto R$

**Law 2.** If P and R are fixed, Q and S will change in the direct proportion. That is  $Q \propto S$

**Law 3.** If P and S are fixed, Q and R will change in the inverse proportion. That is  $Q \propto 1/R$

**Law 4.** If Q and R are fixed, P and S will change in the inverse proportion. That is  $P \propto 1/S$

**Law 5.** If Q and S are fixed, P and R will change in the direct proportion. That is  $P \propto R$

**Law 6.** If R and S are fixed, P and Q will change in the direct proportion. That is  $P \propto Q$

From the cross rule in main theory we get a total of 12 laws. These laws are;

**Law 4.1** Keeping  $\bar{\tau}$  (Force) and  $\bar{m}$  (Mass) constant,  $\bar{d}$  (Space) is directly proportional to  $\bar{t}$  (Time), i. e.,

$$\bar{d}(\text{Space}) \propto \bar{t}(\text{Time})$$

**Law 4.2** Keeping  $\bar{\tau}$  (Force) and  $\bar{d}$  (Space) constant,  $\bar{m}$  (Mass) is directly proportional to  $\bar{t}$  (Time), i. e.,

$$\bar{m}(\text{Mass}) \propto \bar{t}(\text{Time})$$

**Law 4.3** Keeping  $\bar{\tau}$  (Force) and  $\bar{t}$  (Time) constant,  $\bar{m}$  (Mass) is inversely proportional to  $\bar{d}$  (Space), i. e.,

$$\text{थ (Mass)} \propto 1/\text{द (Space)}$$

**Law 4.4** Keeping थ (Mass) and द (Space) constant, त (Force) is inversely proportional to थ (Time), i. e.,

$$\text{त (Force)} \propto 1/\text{थ (Time)}$$

**Law 4.5** Keeping थ (Mass) and थ (Time) constant, त (Force) is directly proportional to द (Space), i. e.,

$$\text{त (Force)} \propto \text{द (Space)}$$

**Law 4.6** Keeping द (Space) and थ (Time) constant, त (Force) is directly proportional to थ (Mass), i. e.,

$$\text{त (Force)} \propto \text{थ (Mass)}$$

**Law 4.7** Keeping र (Population) and ल (Territory) constant, ष (Power) is directly proportional to श (Sovereignty), i. e.,

$$\text{ष (Power)} \propto \text{श (Sovereignty)},$$

**Law 4.8** Keeping र (Population) and ष (Power) constant, ल (Territory) is directly proportional to श (Sovereignty), i. e.,

$$\text{ल (Land)} \propto \text{श (Sovereignty)}$$

**Law 4.9** Keeping र (Population) and श (Sovereignty) constant, ल (Territory) is inversely proportional to ष (Power), i. e.,

$$\text{ल (Territory)} \propto 1/\text{ष (Power)}$$

**Law 4.10** Keeping ल (Territory) and ष (Power) constant, र (Population) is inversely proportional to श (Sovereignty), i. e.,

$$\text{र (Population)} \propto 1/\text{श (Sovereignty)}$$

**Law 4.11** Keeping ल (Territory) and श (Sovereignty) constant, र (Population) is directly proportional to ष (Power), i. e.,

$$\text{र (Population)} \propto \text{ष (Power)}$$

**Law 4.12** Keeping ष (Power) and श (Sovereignty) constant, र (Population) is directly proportional to ल (Territory), i. e.,

$$\text{र (Population)} \propto \text{ल (Territory)}$$

### 6.3.5 Symmetrical Distribution Rule or Pentagon Rule

If the arithmetic mean, median and mode of a frequency distribution is equal to one another, then that frequency distribution will be symmetrical distribution. That is, arithmetic mean = median = mode. Notice the figure below;

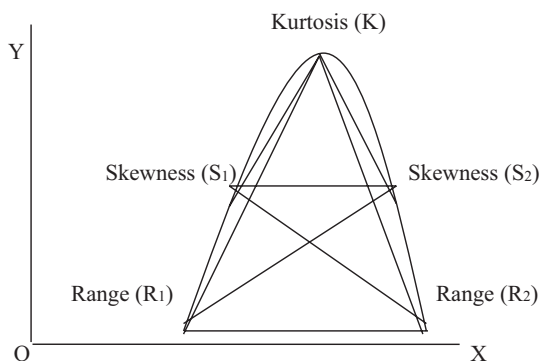


Fig. 6.25

We get five points in symmetrical distribution. These are kurtosis (K), skewness-1 ( $S_1$ ), skewness-2 ( $S_2$ ), range-1 ( $R_1$ ) and range-2 ( $R_2$ ).

A Pentagon can be seen in figure 6.25. An isosceles triangle ( $S_1KS_2$ ) can be seen at the top of this pentagon and a isosceles trapezium ( $R_1S_1S_2R_2$ ) at the bottom. The isosceles triangle has two equal sides  $S_1K$  and  $S_2K$ . The isosceles trapezium also has two equal sides  $R_1S_1$  and  $R_2S_2$ . An isosceles triangle combining the triangle and trapezium can be imagined. This is  $R_1KR_2$ . Now, there are five pairs of lines as follows;

**Pair 1.** There are two parallel lines of isosceles trapezium.

**Pair 2.** There are two unparallel lines of isosceles trapezium.

**Pair 3.** There are two diagonals of isosceles trapezium.

**Pair 4.** There are two equal lines of upper triangle.

**Pair 5.** There are two equal lines of combined triangle.

Clearly the pentagon has five endpoints. Each line contains two endpoints. This is called symmetrical distribution rule. There are 5 sub rules in symmetrical distribution rule. These sub rules are;

**Sub Rule 1.** The endpoints of parallel lines of isosceles trapezium will change in direct proportion if the other three endpoints are fixed.

**Sub Rule 2.** The endpoints of unparallel lines of isosceles trapezium will change in direct proportion if the other three endpoints are fixed.

**Sub Rule 3.** The endpoints of diagonals of isosceles trapezium will change in inverse proportion if the other three endpoints are fixed.

**Sub Rule 4.** The endpoints of equal lines of upper triangle will change in inverse proportion if the other three endpoints are fixed.

**Sub Rule 5.** The endpoints of equal lines of combined triangle will change in inverse proportion if the other three endpoints are fixed.

The laws according to the sub rules are as follows;





From the symmetrical distribution rule in main theory we get a total of 10 laws. These laws are;

**Law 5.1** Keeping ष (Life), स (Environment), and ह (Authority) constant, ०९ (Development) is directly proportional to ०९ (Peace), i. e.,

$$०९ \text{ (Development)} \propto ०९ \text{ (Peace)}$$

**Law 5.2** Keeping ष (Life), स (Environment), and ०९ (Development) constant, ह (Authority) is inversely proportional to ०९ (Peace), i. e.,

$$ह \text{ (Authority)} \propto 1/०९ \text{ (Peace)}$$

**Law 5.3** Keeping ष (Life), स (Environment), and ०९ (Peace) constant, ह (Authority) is inversely proportional to ०९ (Development), i. e.,

$$ह \text{ (Authority)} \propto 1/०९ \text{ (Development)}$$

**Law 5.4** Keeping ष (Life), ह (Authority) and ०९ (Development) constant, स (Environment) is inversely proportional to ०९ (Peace), i. e.,

$$स \text{ (Environment)} \propto 1/०९ \text{ (Peace)}$$

**Law 5.5** Keeping ष (Life), ह (Authority) and ०९ (Peace) constant, स (Environment) is directly proportional to ०९ (Development), i. e.,

$$स \text{ (Environment)} \propto ०९ \text{ (Development)}$$

**Law 5.6** Keeping ष (Life), ०९ (Development) and ०९ (Peace) constant, स (Environment) is inversely proportional to ह (Authority), i. e.,

$$स \text{ (Environment)} \propto 1/ह \text{ (Authority)}$$

**Law 5.7** Keeping स (Environment), ह (Authority) and ०९ (Development) constant, ष (Life) is directly proportional to ०९ (Peace), i. e.,

$$ष \text{ (Life)} \propto ०९ \text{ (Peace)}$$

**Law 5.8** Keeping स (Environment), ह (Authority) and ०९ (Peace) constant, ष (Life) is inversely proportional to ०९ (Development), i. e.,

$$ष \text{ (Life)} \propto 1/०९ \text{ (Development)}$$




**Law 5.9** Keeping स (Environment), ०९ (Development) and ०९ (Peace) constant, ष (Life) is inversely proportional to ह (Authority), i. e.,

$$ष \text{ (Life)} \propto 1/ह \text{ (Authority)}$$

**Law 5.10** Keeping ह (Authority), ०९ (Development) and ०९ (Peace) constant, ष (Life) is directly proportional to स (Environment), i. e.,

$$ष \text{ (Life)} \propto स \text{ (Environment)}$$

Rule is a kind of samanwaya (adjustment).

ঐ (Padartha) ⇨	Point rule ●	ঐ (Name) ⇒	Rule
ঐ°(Assertion) ⇨	Balance rule 	ঐ (Positivity) ⇒	Rule inclusion
		ঐ° (Negativity) ⇒	Rule exclusion
ঐ (Dimension) ⇨	Left hand rule 	ঐ (North) ⇒	Rule is in the north- south.
		ঐ (East) ⇒	Rule is in the east-west.
		ঐ (Up) ⇒	Rule is in the up-down.
ঐ°(Quantity) ⇨	Cross rule 	ঐ (Force) ⇒	There is force in this rule.
		ঐ (Mass) ⇒	There is mass in this rule.
		ঐ (Space) ⇒	This rule is in a space.
		ঐ (Time) ⇒	This rule is in a time.

Tab. 6.3

## 6.4 Operation

Calculating values using operands and operators is called an operation. Operation is a type of adjustment (samanwaya). Operator symbols contain predefined rules that must be applied to the operands. Anything used for operations is called an operand. The symbol used to represent an operation is the operator. The four operations discussed in this chapter are inclusion ( $\vee$ ), exclusion ( $\wedge$ ), construction ( $\diamond$ ) and destruction ( $\times$ ). Exclusion is the inverse operation of inclusion and destruction is the inverse operation of construction. Before discussing operations, it is necessary to have an understanding of component and member.

### 6.4.1 Component

Anything that expresses a meaning we can describe it as a component. It is the best to take a component as an undefined term. It is denoted by M. The following are the examples of components:

- (i) The letters of English alphabet, (ii) The integers and (iii) The students of a high school.

#### 6.4.1.1 Uniform Component

It is the component that having the same in all parts. It can be divided into parts and properties of any part are the same as that of original component. The following are the examples of uniform components:

- (i) A brick and (ii) A tile.

### 6.4.1.2 Multiform Component

It is the component that consists of many kinds. It cannot be divided into parts having the same properties. It will be considered as a whole. The following are the examples of multiform components:

- (i) A girl and (ii) A head.

### 6.4.2 Member

The collection of components is said to be a member. There may be used connectives and brackets to represent a member but for the sake of simplicity no connectives and no brackets to be used in this paper. It is denoted by  ${}^V M$ . The following are the examples of members:

- (i) AABC, (ii) 5673014 and (iii) Four heads i.e., HHHH.

#### 6.4.2.1 Unit Member

A component of a member is said to be a unit member. The following are the examples of unit members of the member ABCD:

- (i) A, (ii) B, (iii) C and (iv) D.

#### 6.4.2.2 Empty Member

A member having no component is said to be an empty member. It is denoted by  $\phi$ . The following is an example of an empty member:

- (i) The girl students of a boy's school.

#### 6.4.2.3 Simple Member

A member is said to be a simple member if and only if it cannot be divided into two or more unit members or two or more components. It is denoted by  ${}^1 M$ . The following are the examples of simple members:

- (i)  ${}^1 M = H = {}^1 H$ , (ii)  ${}^1 M \ni 5 = {}^1 5$  and (iii)  ${}^1 M = k = {}^1 k$

#### 6.4.2.4 Composite Member

A member  ${}^V M$  is said to be a composite member if and only if it can be divided into two or more members. It is denoted by  ${}^V M$  or  ${}^V \underline{M}$ . The following are the examples of composite member:

- (i)  ${}^2 \underline{M} = 23$ , (ii)  ${}^3 k = kkk$  and (iii)  ${}^6 \underline{M} = 314569$

#### 6.4.2.5 Homogeneous Member

A composite member is said to be a homogeneous member if and only if it is formed of all the same type components. It is denoted by  ${}^V M$ . The following are the examples of homogeneous members:

- (i)  ${}^3 H = HHH$ , (ii)  ${}^5 6 = 66666$  and (iii)  ${}^6 P = PPPPPP$

#### 6.4.2.6 Heterogeneous Member

A composite member is said to be a heterogeneous member if and only if it is formed of different types of components. It is denoted by  ${}^V \underline{M}$ . The following are the examples of heterogeneous members:

- (i)  ${}^3 \underline{M} = HTH$ , (ii)  ${}^4 \underline{M} = 2573$  and (iii)  ${}^5 \underline{M} = aabcd$

#### 6.4.2.7 Uniform Member

A member containing uniform components is said to be uniform member. The following are the examples of uniform members:

- (i) Two and a half bricks and (ii) Three tiles.

#### 6.4.2.8 Multiform Member

A member containing multiform components is said to be multiform member. The following are the examples of multiform members:

- (i) Four tails and (ii) One white ball and two red balls.

#### 6.4.2.9 Integral Member

A member that consists of one or more unit members and of no parts. The following are the example of integral members:

- (i) ABC, (ii) 7834, (iii) A triangle and (iv) 5 tiles.

#### 6.4.2.10 Partial Member

A member that consists of one or more unit members and of parts. The following are the examples of partial members:

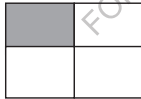
- (i) Half of a triangle



- (ii) Four tiles and a half of a tile



- (iii) One fourth of a quadrangle



#### 6.4.2.11 Degree of a Member

The number of components of a member is said to be the degree of a member. It is denoted by U, V, W etc. and situated at the upper left side of L, M, N etc.

Find the degrees of the following members:

- (i) HTTHHHT
- (ii) 257734189
- (iii) abbcd

We get

- (i) The degree of HTTHHHT is 7
- (ii) The degree of 257734189 is 9
- (iii) The degree of abbcd is 6.

#### 6.4.2.12 Similar Members

Two or more members are said to be similar members if they contain all alike components. The following are the examples of similar members.

- (i) HHH, HHHHH, HH, (ii) TTT, TTTT, TTTTTT and (iii) 6666, 66666, 6, 66

#### 6.4.2.13 Dissimilar Members

Two or more members are said to be dissimilar members if they are not similar members. The following are the examples of dissimilar members.

- (i) 2333, 25, 3, (ii) 777, 67, 53244 and (iii) kkl, kk, kl

#### 6.4.2.14 Greater Member

For two members  ${}^V M$  and  ${}^W N$ ,  ${}^V M$  is greater than  ${}^W N$ , denoted by  ${}^V M > {}^W N$  if and only if  ${}^W N \in {}^V M$

and  $V > W$

The symbol  ${}^V M \geq {}^W N$  means  ${}^V M$  is greater than or equal to  ${}^W N$  if and only if  ${}^W N \in {}^V M$

and  $V \geq W$

The following are the examples of greater members.

- (i) TTTT > TTT, (ii) HHTHTH > HHH and (iii) 555342 > 5534

#### 6.4.2.15 Smaller Member

For two members  ${}^V M$  and  ${}^W N$ ,  ${}^V M$  is smaller than  ${}^W N$ , denoted by  ${}^V M < {}^W N$  if and only if  ${}^V M \in {}^W N$

and  $V < W$

The symbol  ${}^V M \leq {}^W N$  means  ${}^V M$  is less than or equal to  ${}^W N$  if and only if  ${}^V M \in {}^W N$

and  $V \leq W$

The following are the examples of smaller members.

- (i) AAB < AABBCD, (ii) 22456 < 2245677 and (iii) abc < aabcb

#### 6.4.2.16 Equal Members

For two members  ${}^V M$  and  ${}^W N$ ,  ${}^V M$  is equal to  ${}^W N$ , denoted by  ${}^V M = {}^W N$  if and only if

${}^W N \in {}^V M$

and  ${}^V M \in {}^W N$

The symbol  ${}^V M = {}^W N$  satisfies the relation  $V = W$ .

The following are the examples of equal members.

- (i) BBCD = BBCD

- (ii) ijkk = ijkk

- (iii) 8890 = 8890

#### 6.4.2.17 Upper Ranked Member

For two members  ${}^V M$  and  ${}^W N$ ,  ${}^V M$  is upper ranked than  ${}^W N$ , denoted by  ${}^V M > {}^W N$  if and only if

$V > W$

The symbol  $V^M \succcurlyeq W^N$  means  $V^M$  is upper ranked or equi ranked to  $W^N$  if and only if  $V \geq W$ .

The following are the examples of upper ranked members.

- (i) 774456 > 77432, (ii) pqrst > qrstt and (iii) BBCCD > BCD

#### 6.4.2.18 Lower Ranked Member

For two members  $V^M$  and  $W^N$ ,  $V^M$  is lower ranked than  $W^N$ , denoted by  $V^M < W^N$  if and only if

$$V < W$$

The symbol  $V^M \preccurlyeq W^N$  means  $V^M$  is lower ranked or equi ranked to  $W^N$  if and only if  $V \leq W$ .

The following are the examples of lower ranked members.

- (i) ABC < DEEFF, (ii) ppqr < ppqrr and (iii) 34456 < 345678

#### 6.4.2.19 Equi Ranked Member

For two members  $V^M$  and  $W^N$ ,  $V^M$  is equi ranked to  $W^N$  denoted by  $V^M \approx W^N$  if and only if

$$V = W$$

The following are the examples of equi-ranked members.

- (i) ABC  $\approx$  BCF, (ii) ppq  $\approx$  prt and (iii) 24567  $\approx$  30567

#### 6.4.2.20 Affected Member

A member  $V^M$  is said to be an affected member if one or more components are dropped by exclusion from it. A dash '-' is introduced to represent the dropped components.

The following are the examples of affected members.

- (i) HT ---- H  
(ii) ---5678  
(iii) 24315 ----

#### 6.4.2.21 Left Way Affected Member

An affected member is said to be a left way affected member if the dropped components were located on left side.

The following are the examples of left way affected members.

- (i) ---ijk  
(ii) ---24532  
(iii) ----HHHH

#### 6.4.2.22 Mid Way Affected Member

An affected member is said to be a mid way affected member if the dropped components were located on middle side.

The following are the examples of mid way affected members.

- (i) HHT----HH  
(ii) 24 ---21  
(iii) kk ---j

### 6.4.2.23 Right Way Affected Member

An affected member is said to be a right way affected member if the dropped components were located on right side. The following are the examples of right way affected members.

- (i) HHH----
- (ii) ijkk----
- (iii) 56532---

As we usually included components in the right way, so we may or may not show the symbol '--' for the right way affected members.

### 6.4.3 Inclusion

The inclusion of two members  ${}^V M$  and  ${}^W N$ , denoted by  ${}^V M \vee {}^W N$  is the member  ${}^U L$  of all components taken orderly which belong to  ${}^V M$  or to  ${}^W N$  or to both  ${}^V M$  and  ${}^W N$ . We invent the symbol  $\vee$  used to be as a connective. Thus

$${}^V M \vee {}^W N = {}^U L$$

We can write

$${}^V M \in {}^U L \text{ as well as } {}^V M < {}^U L$$

$$\text{and } {}^W N \in {}^U L \text{ as well as } {}^W N < {}^U L$$

**Theorem 6.1** The inclusion of two or more members is the composite member  ${}^U L$  in which  $U$  is the sum of degrees of other members.

Include the following members:

- (i)  $HH \vee HHH$
- (ii)  $THT \vee HHTT$
- (iii)  $4532 \vee 890132$

The inclusions are given by

$$(i) HH \vee HHH = HHHHH \Rightarrow {}^2 H \vee {}^3 H = {}^5 H$$

$$(ii) THT \vee HHTT = THTHHTT \Rightarrow {}^3 \underline{M} \vee {}^4 \underline{M} = {}^7 \underline{M}$$

$$(iii) 4532 \vee 890132 = 4532890132 \Rightarrow {}^4 \underline{M} \vee {}^6 \underline{M} = {}^{10} \underline{M}$$

### 6.4.4 Exclusion

The exclusion of two members  ${}^V M$  and  ${}^W N$ ;  ${}^V M > {}^W N$ , denoted by  ${}^V M \wedge {}^W N$  is the member  ${}^U L$  of components taken orderly which belong to  ${}^V M$  and at the same time not belong to  ${}^W N$ . In other words  ${}^V M$  is the inclusion of the two members  ${}^U L$  and  ${}^W N$ . We invent the symbol  $\wedge$  used to be as a connective. Thus

$${}^V M \wedge {}^W N = {}^U L$$

We can write

$${}^V M = {}^U L \vee {}^W N$$

**Theorem 6.2** The exclusion of two members  ${}^V M$  and  ${}^W N$  where  ${}^V M > {}^W N$ , is the member  ${}^U L$  in which  $U$  is the difference of  $V$  and  $W$ .

Exclude the following members:

- (i)  $HTTHH \wedge TH$
- (ii)  $HTTHH \wedge HT$
- (iii)  $HTTHH \wedge H$



$$(iv) 3457 \wedge 5$$

$$(v) 122341 \wedge 1$$

The exclusions are given by

$$(i) HTTHH \wedge TH = HT-H \Rightarrow HT-H \vee TH = HTTHH$$

$$(ii) HTTHH \wedge HT = ---TTH \Rightarrow --TTH \vee HT = HTTHH$$

$$(iii) HTTHH \wedge H = HTTH-- \Rightarrow HTTH-- \vee H = HTTHH$$

It is wrong to write

$$HTTHH \wedge H = --TTHH$$

As  $--TTHH \vee H = --TTHHH$  which violates the law

$${}^V M = {}^U L \vee {}^W N$$

i.e.,  $HTTHH \neq TTHHH$

$$(iv) 3457 \wedge 5 = 34-7 \Rightarrow 34-7 \vee 5 = 3457$$

$$(v) 122341 \wedge 1 = 12234 \Rightarrow 12234 \vee 1 = 122341$$

### 6.4.5 Axioms for Inclusion

The following are the axioms of inclusion of members.

#### 6.4.5.1 Closure Law of Inclusion

The inclusion of two members  ${}^V M$  and **Error! Bookmark not defined.**  ${}^W N$  is a unique member  ${}^U L$  i.e.,

$${}^V M \vee {}^W N = {}^U L$$

Let the two members HHTH and TTH. Prove the closure law of inclusion.

$$\text{We get } HHTH \vee TTH = HHTHTTH \Rightarrow {}^V M \vee {}^W N = {}^U L$$

Here  ${}^U L = HHTHTTH$  is a unique member.

#### 6.4.5.2 Associative Law of Inclusion

The associative law of inclusion of three members  ${}^V M$ ,  ${}^W N$  and  ${}^U L$  is given by

$$({}^V M \vee {}^W N) \vee {}^U L = {}^V M \vee ({}^W N \vee {}^U L)$$

Let the three members 564, 245 and 8764. Prove the associative law.

$$\text{We get } (564 \vee 245) \vee 8764 \Rightarrow 564245 \vee 8764 \Rightarrow 5642458764$$

$$\text{Again, } 564 \vee (245 \vee 8764) \Rightarrow 564 \vee 2458764 \Rightarrow 5642458764$$

#### 6.4.5.3 Identity Law of Inclusion

The identity law of inclusion of a member  ${}^V M$  is given by

$${}^V M \vee e = e \vee {}^V M = {}^V M$$

The member  $e$  is called to be inclusive identity and it is nothing but the member  $\emptyset$  i.e., empty member.

Let a member  ${}^V M = 5461$ . Prove the identity law of inclusion.

$$\text{We get } 5461 \vee \emptyset = 5461 = {}^V M$$

$$\text{Again, } \emptyset \vee 5461 = 5461 = {}^V M$$

$$\text{Hence, } {}^V M \vee e = e \vee {}^V M = {}^V M$$

#### 6.4.5.4 Inverse Law of Inclusion

The inverse law of inclusion of a member  ${}^V M$  is given by

$${}^V M \vee {}^{\wedge} V M = {}^{\wedge} V M \vee {}^V M = e$$

Here for every member  ${}^V M$ , there is another member  ${}^{\wedge} V M$  called its inclusive inverse, such that

$${}^V M \vee {}^{\wedge} V M = e$$

$$\text{and } {}^{\wedge} V M \vee {}^V M = e$$

Let a member  ${}^V M = \text{HTTTHHT}$ . Prove the inverse law of inclusion.

We get  $\text{HTTTHHT} \vee {}^{\wedge} \text{HTTTHHT}$

$$= \text{HTTTHHT} \wedge \text{HTTTHHT} = \emptyset = e$$

$$\text{i.e., } {}^V M \vee {}^{\wedge} V M = {}^{\wedge} V M \vee {}^V M = e$$

### 6.4.5.5 Commutative Law of Inclusion

The commutative law of inclusion of two similar members  ${}^V M$  and  ${}^W M$  is given by

$${}^V M \vee {}^W M = {}^W M \vee {}^V M$$

Let the two similar members  ${}^V M = \text{TTT}$  and  ${}^W M = \text{TTTTT}$ . Prove the commutative law of inclusion.

We get,  $\text{TTT} \vee \text{TTTTT} = \text{TTTTTTTT}$

Again,  $\text{TTTTT} \vee \text{TTT} = \text{TTTTTTTT}$

Hence we get,  ${}^3 T \vee {}^5 T = {}^8 T$  and  ${}^5 T \vee {}^3 T = {}^8 T$

Thus,  ${}^3 T \vee {}^5 T = {}^5 T \vee {}^3 T$

By comparing axioms 6.4.5.1 to 6.4.5.5 we see that the members are a group with respect to the operation inclusion. Here the identity member is  $\emptyset$  and the inverse of a member  ${}^V M$  is the member  ${}^{\wedge} V M$ . The similar members make a commutative group.

### 6.4.6 Construction

The construction of two similar members  ${}^V M$  and  ${}^W M$  denoted by  ${}^V M \diamond {}^W M$  is given by  ${}^V M \diamond {}^W M = {}^{V \times W} M$

It is also said to be a similar construction. We invent the symbol  $\diamond$  as a connective.

The following are the examples of construction.

$$(i) \text{HHH} \diamond \text{HH} = \text{HHHHHH} \Rightarrow {}^3 H \diamond {}^2 H = {}^{3 \times 2} H = {}^6 H$$

$$(ii) 8888 \diamond 88 = 88888888 \Rightarrow {}^4 8 \diamond {}^2 8 = {}^{4 \times 2} 8 = {}^8 8$$

$$(iii) \text{KKKKK} \diamond \text{K} = \text{KKKKK} \Rightarrow {}^5 K \diamond {}^1 K = {}^{5 \times 1} K = {}^5 K$$

**Theorem 6.3** The construction of two or more similar members is the composite member  ${}^V M$  in which  $V$  is the product of degrees of other members.

#### 6.4.6.1 Uniform Construction

The construction of two or more uniform members is said to be uniform construction.

The following is the example of uniform construction.



$\Rightarrow$  a tile.

**6.4.7 Destruction**

The destruction of two similar members  $V_M$  and  $W_M$ , denoted by  $V_M \times W_M$  is given by  $V_M \times W_M = V/W_M$

where  $V$  is divisible by  $W$ .

In other words,  $V_M$  is the construction of the two similar members  $V/W_M$  and  $W_M$ .

That is  $V_M = V/W_M \diamond W_M$

It is also said to be a similar destruction. We invent the symbol  $\times$  as a connective.

The following are the examples of destruction.

- (i)  $55555 \times 555 = 55 \Rightarrow 65 \times 35 = 6/35 = 25$
- (ii)  $HHHHHH \times HH = HHH \Rightarrow 6H \times 2H = 6/2H = 3H$
- (iii)  $KKKKKKKK \times KKK = KKK \Rightarrow 9K \times 3K = 9/3K = 3K$

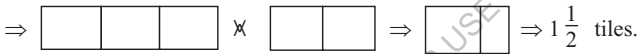
**Theorem 6.4** The destruction of two similar members  $V_M$  and  $W_M$  is the member  $U_M$  in which  $U$  is the quotient of  $V$  and  $W$ .

**6.4.7.1 Uniform Destruction**

The destruction of two uniform members is said to be uniform destruction.

The following is the example uniform destruction.

Three tiles  $\times$  two tiles



**6.4.8 Axioms for Construction**

The following are the axioms of construction of members.

**6.4.8.1 Closure Law of Construction**

The construction of two similar members  $V_M$  and  $W_M$  is a unique similar member  $U_M$  i.e.,  $V_M \diamond W_M = U_M$

Let the two similar members  $HHH$  and  $HHHH$ . Prove the closure law of construction.

We get  $HHH \diamond HHHH = HHHHHHHHHHHH$

$\Rightarrow 3H \diamond 4H = 12H \Rightarrow V_M \diamond W_M = U_M$

Here  $U_M = 12H$  is a unique similar member.

**6.4.8.2 Associative Law of Construction**

The associative law of construction of three similar members  $V_M$ ,  $W_M$  and  $U_M$  is given by

$(V_M \diamond W_M) \diamond U_M = V_M \diamond (W_M \diamond U_M)$

Let the three similar members  $TTT$ ,  $TT$  and  $T$ . Prove the associative law.

We get  $(TTT \diamond TT) \diamond T \Rightarrow TTTTTT \diamond T \Rightarrow TTTTTT$

Again,  $TTT \diamond (TT \diamond T) \Rightarrow TTT \diamond TT \Rightarrow TTTTTT$

Hence  $(V_M \diamond W_M) \diamond U_M = V_M \diamond (W_M \diamond U_M)$ .

**6.4.8.3 Identity Law of Construction**

The identity law of construction of a homogeneous member  $V_M$  is given by

$${}^V M \diamond M = M \diamond {}^V M = {}^V M$$

The member  $M$  is said to be constructive identity.

Let a homogeneous member  ${}^V M = {}^4 6 = 6666$ . Prove the identity law of construction.

We get

$$6666 \diamond 6 = 6 \diamond 6666 = 6666$$

$$\Rightarrow {}^4 6 \diamond 6 = 6 \diamond {}^4 6 = {}^4 6$$

$$\Rightarrow {}^4 M \diamond M = M \diamond {}^4 M = {}^4 M$$

Hence the identity law of construction.

#### 6.4.8.4 Inverse Law of Construction

The inverse law of construction of a uniform member  ${}^V M$  is given by

$${}^V M \diamond {}^V M' = {}^V M' \diamond {}^V M = M$$

Here for every uniform member  ${}^V M$ , there is another uniform member  ${}^V M'$ , called its constructive inverse, such that

$${}^V M \diamond {}^V M' = M$$

$$\text{and } {}^V M' \diamond {}^V M = M$$

Let a uniform member  ${}^V M =$  three tiles. Prove the inverse law of construction.

Suppose the uniform member is figured by



Three tiles

Then one third of a tile is figured by



And three of them is figured by



Refigured it we get as



i.e., a tile. Thus we have

$${}^3 M \diamond {}^3 M' = {}^3 M' \diamond {}^3 M = M$$

#### 6.4.8.5 Commutative Law of Construction

The commutative law of construction of two similar members  ${}^V M$  and  ${}^W M$  is given by

$${}^V M \diamond {}^W M = {}^W M \diamond {}^V M$$

Let the two similar members  ${}^V M = kk$  and  ${}^W M = kkkk$ . Prove the commutative law of construction.

We get

$$kk \diamond kkkk = kkkkkkkk \Rightarrow {}^2 k \diamond {}^4 k = {}^8 k$$

$$\text{Again, } kkkk \diamond kk = kkkkkkkk \Rightarrow {}^4 k \diamond {}^2 k = {}^8 k$$

$$\text{Thus } {}^2 k \diamond {}^4 k = {}^4 k \diamond {}^2 k \Rightarrow {}^V M \diamond {}^W M = {}^W M \diamond {}^V M$$

#### 6.4.8.6 The Distributive Law

The distributive law of three similar members  ${}^V M$ ,  ${}^W M$  and  ${}^U M$  is given by

$${}^V M \diamond ({}^W M \vee {}^U M) = ({}^V M \diamond {}^W M) \vee ({}^V M \diamond {}^U M)$$

Let the three similar members  ${}^V M = HH$ ,  ${}^W M = HHH$  and  ${}^U M = HHHH$ . Prove the distributive law.

$$\begin{aligned} &\text{We have } HH \diamond (HHH \vee HHHH) \\ &= HH \diamond HHHHHHH = HHHHHHHHHHHHHHHHH \end{aligned}$$

$$\begin{aligned} &\text{Again, } (HH \diamond HHH) \vee (HH \diamond HHHH) \\ &= HHHHHHH \vee HHHHHHHHH = HHHHHHHHHHHHHHHHH \end{aligned}$$

$$\text{Hence, } {}^2H \diamond ({}^3H \vee {}^4H) = ({}^2H \diamond {}^3H) \vee ({}^2H \diamond {}^4H)$$

By comparing axioms A6 to A10 we see that the uniform members are a commutative group with respect to the operation construction. Here the identity member is  $M$  and the inverse of a member  ${}^V M$  is the member  ${}^V M'$ .

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## CHAPTER 7

Humanity

7.1 Human Body

7.2 Rationality

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### 7.1 Human Body

#### 7.1.1 Deha

Deha or sarira is discussed in detail in chapter 3. This will be discussed briefly in this chapter. The English synonym for the word 'deha' is body. Indian philosophy mentions three types of body. These three types of body are, (1) sthula sarira or the gross body, (2) sukshma sarira or the subtle body and (3) karana sarira or the causal body.

##### 7.1.1.1 Sthula Sarira or the Gross Body

The gross body is the material mortal body that acts. It is produced by the karmaphalas of a person's past lives. The gross body is the instrument of the living being's experience and is influenced by the ego. The main characteristics of the gross body are birth, aging and death. The gross body is the non-self. The sthula sarira is composed of the panchamahabhutas, i.e., kṣiti, jala, agni, vayu, akasa. Sthula sarira consists of annamaya kosha.

##### 7.1.1.2 Suksma Sarira or the Subtle Body

The subtle body is the body of the mind and the vital energy, which keeps the physical body alive. Separating from the gross body after death and uniting with the causal body prepares the soul for transmigration to the body destined for the next birth. The subtle body dissolves in videha mukti or disembodied liberation. The subtle body is made up of eighteen compositions. These compositions are buddhi (the intellect), ahankara (ego sense), manas (the mind), pancha jnanendriyas (five organs of cognition), pancha karmendriyas (five organs of action) and pancha pranas (five vital breaths). Suksma sarira consists of pranamaya kosha, manomaya kosha and vijñanamaya kosha.

##### 7.1.1.3 Karana Sarira or the Causal Body

The causal body is the seed of gross body and subtle body. It has no function other than being the seed of the gross body and the subtle body. The functioning of the causal body begins after the other bodies are gone. It plays a role in the new life of the new body. The causal body

is not the soul, because it also has a beginning and an end, and it is subject of change. Karana sarira consists of anandamaya kosha

### 7.1.2 Indriyas

Indriya is a Sanskrit word that refers to the spiritual, sensory or phenomenal faculties. In traditional yoga philosophy, the human being is viewed as a building with ten doors, with five entrances and five exits. The five entrance doors are called jnanendriyas. Again the five exit doors are called karmendriyas.

#### 7.1.2.1 Jnanendriyas

Pancha jnanendriyas mean five sense organs of cognition. They are

1. Shotra (ears) sense organs of hearing
2. Chaksu (eyes) sense organs of sighting
3. Ghrana (nose) sense organs of smelling
4. Jivha (tongue) sense organs of tasting
5. Tvak (skin) sense organs of touching

#### 7.1.2.2 Karmendriyas

Pancha karmendriyas mean five sense organs of action. They are

1. Vak (mouth) sense organs of speaking
2. Pani (hands) sense organs of grasping
3. Pada (feet) sense organs of walking
4. Payu (tongue) sense organs of excreting
5. Upastha (genitals) sense organs of procreating

#### 7.1.2.3 Antarendriyas

Antarendriyas are four and these four are manas, citta, buddhi and ahamkara. Manas are the inner faculties of perception, understanding, and knowledge. Manas is the lower mind and through it the mind communicates with the external world and receives sensory impressions and data. Citta is the storehouse of memories and experiences. Chitta can cause a variety of difficulties if its function is not integrated with other antarendriyas. Buddhi is the higher aspect of mind and the door to inner wisdom. Buddhi has the ability to make decisions, make judgments, and make cognitive discriminations and distinctions. Buddhi is required for both knowledge and action. Ahamkara is the I-making entity. Ahamkara is the ego that thinks of itself as a distinct and separate entity. Ahamkara is what the self is doing and it refers to the sense of being a separate individual from everything else.

### 7.1.3 Pancha Koshas

Pancha kosha is the concept of Yoga philosophy and Vedanta philosophy which means five coverings or five layers around the human soul. The word comes from the Sanskrit pancha which means 'five' and kosha means 'sheath'. The pancha kosha consists of (1) annamaya kosha (physical sheath), (2) pranamaya kosha (vital energy sheath), (3) manomaya kosha (mental sheath), (4) vijnanamaya kosha (intellectual sheath) and (5) anandamaya kosha (blissful sheath).

### **7.1.3.1 Annamaya Kosha**

Annamaya kosha is the first and outer layer of the pancha kosha. It is translated as the food sheath. Anna means food and the source of this kosha is the food eaten by the parents. This layer is called the food layer not only because it is made up of food that we take from the soil, but also because it returns as food for other animals and plants after death. Annamaya kosha is made up of panchamahabhutas i. e., kṣiti (soil), jala (water), agni (fire), vayu (air) and akasa (ether). Annamaya kosha is greatly influenced by asana practice, dietary changes and sleeping quality. Annamaya kosha belongs to the sthula sarira or the gross body.

### **7.1.3.2 Pranamaya Kosha**

Pranamaya kosha is the second layer of the pancha kosha and closely connected to annamaya kosha. It is translated as the vital energy sheath. It is finer than the food sheath and is not visible to the average eye. This sheath is composed of the five pranas as well as the five organs of action. The five pranas are prana, udana, vyana, samana, and apana. The five karmendriyas are mouth, hands, feet, anus and genitals. Pranamaya kosha is greatly influenced by pranayama (breathing). Pranamaya kosha belongs to the suksma sarira or the subtle body.

### **7.1.3.3 Manomaya Kosha**

Manomaya kosha is the third layer of the pancha kosha and is the coordination between the mental and physical body. It is translated as the mental sheath. At this level we move from physical feelings to emotional feelings. Manomaya kosha is composed of the mind and the five organs of sense. The five organs of sense are eyes, ears, nose, tongue and skin. This sheath includes thoughts, emotions, feelings, imagination, memories etc. Manomaya kosha is influenced by yamas, niyamas and as well as the karma yoga. Manomaya kosha belongs to the suksma sarira or the subtle body.

### **7.1.3.4 Vijnanamaya Kosha**

Vijnanamaya kosha is the fourth layer of the pancha kosha and more subtle than the mental sheath. It is translated as the intellectual sheath. It is associated with awareness, insight and deeper states of consciousness. It is responsible for internal growth and authenticity. Manomaya kosha is composed of intellect and knowledge. This sheath also includes the ego. It can be strengthened through the jnana yoga and the study of spiritual texts. Vijnanamaya kosha is influenced by all aspects of yoga. Vijnanamaya kosha belongs to the suksma sarira or the subtle body.

### **7.1.3.5 Anandamaya Kosha**

Anandamaya kosha is the fifth and the final layer of the pancha kosha and is the most subtle of all the layers. Ananda means bliss. So it is translated as the bliss sheath. This is the bliss of the soul. This bliss is experienced when we fall into deep sleep. Although this sheath gives a sense of divine connection, one still endures the cycle of rebirth until this sheath is crossed. It is the closest sheath to the soul. This sheath consists of the vrittis called priya, moda and pramoda. Priya, moda and pramoda are the different levels of joy when we come in different levels of contact with the object of our choice. Priya is the joy one feels when looking at a favorite object. Moda is the great joy that one feels when one owns something that one loves.



Promoda is the greatest pleasure one feels after enjoying one's favorite object. Anandamaya kosha belongs to the karana sarira or the causal body.

#### 7.1.4 Sapta Chakras

Chakras mean the energy centers of the body. They are located in the subtle body. They are located along the spine and from its base to the crown of the head. The subtle body resides within our gross body. The subtle body cannot be seen or touched. That is why we can not see chakras. There are seven chakras. They are muladhara chakra, svadhisthana chakra, manipura chakra, anahata chakra, vishuddha chakra, ajna chakra and Sahasrara chakra.

The English name of muladhara chakra is root chakra. Its color is red and element is earth or kṣiti. Muladhara chakra is located at the end or lower part of the spine of the body. Balanced root chakra means physical identity, sense of safety, security and stability. It has four lotus flower petals.

The English name of svadhisthana chakra is sacral chakra. Its color is orange and element is water. Svadhisthana chakra is located in the lower abdomen and about four fingers below the navel. Balanced sacral chakra means positivity, creativity, pleasure and sexuality. It has six lotus flower petals.

The English name of manipura chakra is solar plexus chakra. Its color is yellow and element is fire. Manipura chakra is located in the upper abdomen in the stomach area and navel. Balanced solar plexus chakra means energy, confidence, vitality, emotions and higher consciousness. It has ten lotus flower petals.

The English name of anahata chakra is heart chakra. Its color is green and element is air. Anahata chakra is located in the center of chest, just in the heart region. Balanced heart chakra means love, compassion, motivation and optimism. It has twelve lotus flower petals.

The English name of vishuddha chakra is throat chakra. Its color is blue and element is ether. Vishuddha chakra is located in the throat. Balanced throat chakra means positive expressions, constructive communication, and feelings of satisfaction. It has sixteen lotus flower petals.

The English name of ajna chakra is third eye chakra. Its color is indigo and element is extra-sensory perception. Ajna chakra is located between the eyebrows. Balanced third eye chakra means intuition, imagination, inspiration and awareness. It has two lotus flower petals.

The English name of sahasrara chakra is crown chakra. Its color is violet and element is thought. Sahasrara chakra is located at the top or crown of the head. Balanced crown chakra means intelligence, enlightenment, inner peace and spiritual understanding. It has thousand lotus flower petals.

#### 7.1.5 Sapta Swaras

The sapta swaras are believed to have originated from the 'dumru' (musical instrument) of Lord Shiva. The first mention of sapta swaras is found in the Sama Veda. According to the Sama Veda, the sapta swara is the 'seven tones of the scale'. They are also mentioned in Bharat Muni's natyashastra, a treatise on the performing arts. Sapta means seven and swaras means musical notes. The sapta swaras are

1. Sa – Shadjama (tonic)
2. Ri – Rishabha
3. Ga – Gandhara

4. Ma – Madhyama
5. Pa – Panchama (perfect fifth)
6. Da – Dhaivata
7. Ni – Nishada

According to the Shruti, the notes Sa (tonic) and Pa (Perfect Fifth) are always fixed once as we have settled on the tonic. They are called ‘Prakriti Swaras’. The other five notes Ri, Ga, Ma, Da and Ni, have two variants each. So they are called ‘Vikruthi Swaras’. So we have  $2+(5 \times 2) = 12$  musical positions of notes.

Traditionally, swaras are believed to have originated from the sounds of animals and birds. Sa is associated with the sound of the peacock, Ri is associated with the sound of the bull, Ga is associated with the sound of the goat, Ma is associated with the sound of the dove, Pa is associated with the sound of the cuckoo, Da is associated with the sound of the horse, Ni is associated with the sound of the elephant. Significantly, the bird sounds are ‘Sa, Ma and Pa’ and the animal sounds are ‘Ri, Ga, Da and Ni’.

There is a link between sapta swaras and sapta chakras. The vibration of the note or swara activates its associate chakra and thus helps to keep the whole body balanced and healthy. Sa associates with the muladhara chakra. Ri associates with the svadhisthana chakra. Ga associates with the manipura chakra. Ma associates with the anahata chakra. Pa associates with the vishuddha chakra. Da associates with the ajna chakra. Ni associates with the sahasrara chakra.

### 7.1.6 Sapta Rang

The seven main colours (sapta rang) are red, orange, yellow, green, blue, indigo and violet. These seven colours are in the spectrum just as they are in the rainbow. The following table shows the connection of sapta rang (seven colours), sapta chakras and sapta swaras.

Sapta rang	Sapta chakras	Sapta swaras
Red	Muladhara chakra	Sa (Shadjama)
Orange	Svadhisthana chakra	Ri (Rishabha)
Yellow	Manipura chakra	Ga (Gandhara)
Green	Anahata chakra	Ma (Madhyama)
Blue	Vishuddha chakra	Pa (Panchama)
Indigo	Ajna chakra	Da (Dhaivata)
Violet	Sahasrara chakra	Ni (Nishada)

Tab. 7.1

### 7.1.7 Sapta Dhatus

Sapta dhatus are originally two Sanskrit words where sapta means seven and dhatus mean tissue. According to Ayurveda, the human body is mainly composed of these seven dhatus. These seven dhatus are responsible for the entire structure of the body. These dhatus are interconnected. Here a defect in any one dhatu can affect all other dhatus. Sapta dhatus are composed of five mahabhutas (five gross elements). Sapta dhatus maintain the function of various organs, systems and vital parts of the body. Sapta dhatus play an important role in the development and nutrition of the body. These seven dhatus are as follows.

1. Rasa dhatu (plasma)
2. Rakta dhatu (blood)
3. Mamsa dhatu (muscle)
4. Meda dhatu (fat)
5. Asthi dhatu (bone)
6. Majja dhatu (bone marrow)
7. Shukra dhatu (reproductive tissue)

Rasa dhatu nourishes and fills other tissues and organs of the body by taking nutrients and minerals from digested foods. This dhatu is supported by the kapha dosha. This dhatu is made up of water element.

Rakta dhatu is the basis of life and provides nutrients to all tissues and cells in the body. It provides energy to the body. This dhatu transports oxygen to all tissues and vital organs. This dhatu is supported by pitha dosha. This dhatu is made up of fire element.

Mamsa dhatu covers the delicate and vital organs of the body and enables the bones and joints to move. It increases the physical capacity of the body. It gives meda dhatu physical capabilities. Mamsa dhatu is supported by kapha dosha. This dhatu is made up of ksiti element.

Meda dhatu stores energy to provide energy to the body. This dhatu stores fat to maintain the lubrication of all body tissues. It gives stability to the body and nourishes the asthi dhatu. Meda dhatu is supported by kapha dosha. This dhatu is made up of water element.

Asthi dhatu includes all the bones and cartilage and gives the body good shape. It supports mamsa dhatu. It supports the structure of the body. It gives good body structure and stability. It nourishes the majja dhatu. Asthi dhatu is supported by vata dosha. This dhatu is made up of air and ether elements.

Majja Dhatu nourishes the body and maintains its function. It strengthens the body, fills the bones and nourishes the shukra dhatu. It fills bony spaces. Majja dhatu is supported by kapha dosha. This dhatu is made up of water element.

Shukra dhatu nourishes the reproductive power of a person. It contains sperm and ovum. It is responsible for reproduction. Male have sperm and female have ovum. Shukra dhatu is supported by kapha dosha. This dhatu is made up of water element.

### 7.1.8 Prana

The word 'prana' is a combination of two Sanskrit prefixes 'pra' and 'an', where 'pra' means constant and 'an' means movement. So the word prana means the constant flow of life force. This force lasts from our birth to death. It is the basic unit of universal life that causes the movement of respiration in an organism. It is the energy hidden inside every person and is everywhere around us. About 'prana' Prashna Upanishad 2.13 says, all that exists here is under the control of prana and also what exists in heaven. Protect us as a mother her sons; bestow upon us prosperity and wisdom. (translation by Swami Sivananda)

According to yogic tradition, prana vayu is of five types and they are- (1) prana vayu, (2) apana vayu, (3) samana vayu, (4) udana vayu and (5) vyana vayu. Each prana vayu has an important role to play and is integrated into the total system of life force. If we understand the role of each prana vayu, we can understand how prana vayu serves the whole person and how a slight disturbance in prana vayu leads us to illness and makes life miserable.

#### **7.1.8.1 Prana Vayu**

Prana vayu is the first and the main of the five life forces. It governs the lungs, larynx and thoracic area. Prana vayu is responsible for the functions of respiratory system and heart pumping. It resides in the ajna chakra. The element associated with it is air. Prana vayu can be thought of as forward moving air. Disturbance in prana vayu can cause the difficulties to breathe and eventually the body may die. Prana vayu in the human body can become better by practicing yoga asanas like bridge, camel and bow postures.

#### **7.1.8.2 Apana Vayu**

Apana vayu governs the small and large intestines, kidneys, anus and genitals. It is responsible for all urinary and reproductive functions. It resides in the muladhara chakra. The element associated with it is water. Apana vayu can be thought of as the air moving away which moves downward and outward. Disturbance in apana vayu can cause diseases like constipation, diarrhoea, piles etc. Apana vayu in the human body can become better by practicing yoga asanas like locust and tree postures.

#### **7.1.8.3 Samana Vayu**

Samana vayu governs the liver, stomach, pancreas, spleen, small and large intestines. It is responsible for digestion, metabolic functions and assimilation of nutrients into the body. It resides in the manipura chakra. The element associated with it is fire. Samana vayu can be thought of as the balancing air which moves from the periphery to the centre. Disturbance in samana vayu can cause diseases like abdominal discomfort, weak digestive fire, as well as overactive digestion leading to diarrhea. Samana vayu in the human body can become better by practicing yoga asanas like bound angle and tree postures.

#### **7.1.8.4 Udana Vayu**

Udana vayu governs the neck, face, throat and head region. In addition, it controls the limbs of movement, including the hands and feet. It is responsible for the smooth functioning of the nervous system and the all sensory organs. It resides in the vishuddha chakra. The element associated with it is ether. Udana vayu can be thought of as the upward-moving air which moves up and cause a transformative movement of life-force. Disturbance in udana vayu can cause diseases occurring in the throat, neck, and head. Udana vayu in the human body can become better by practicing yoga asanas like fish, shoulder stand and bridge postures.

#### **7.1.8.5 Vyana Vayu**

Vyana vayu governs the whole body, controls all the movements and co-ordinates the other prana vayus. It acts as the reserve energy for other pranas. It is responsible for carrying essential nutrients to every cell of the body. It resides in the anahata chakra. The element associated with it is ksiti. Vyana vayu can be thought of as the outward-moving air which moves from the center to the periphery. Disturbance in vyana vayu can cause systemic problems that travel throughout the body. Vyana vayu in the human body can become better by practicing yoga asanas like eagle and half-moon postures.

### 7.1.9 Nadis

Nadi is a Sanskrit word meaning channel or tube. It refers to a network of channels from which energy flows into our body. The human body has a network of 72,000 nadis that effectively distribute prana throughout the body. The 72,000 nadis originate from the three main nadis – ida, pingala and sushumna.

Ida nadi is known as the left channel, begins at the root chakra, flows to the left and weaves in and out of the chakras before ending in the left nostril. Pingala nadi is known as the right channel, also begins at the root chakra, flows to the right and weaving in and out of the chakras before ending at the right nostril. Sushumna nadi is known as the central channel, runs straight up the spine and through the chakras from just below the root chakra to the crown chakra.

### 7.2 Rationality

Rationality (yauktikata) is the quality or state of being rational on the basis of truth and reason. Rationality is firmly based on causal relationships. This applies to both theoretical and practical cases. In this section, rationality refers to the rationality of the human body. The rationality of the human body depends on three things. If these three things are appropriate, then the human body can be called rational. These three things are normalcy, wellness and balance. Rationality is the ideal of substance. Now let us discuss these three things. If a person's body is rational, his qualities and actions will also be rational. And if a person's body is irrational, his qualities and actions will also be irrational.

#### 7.2.1 Normalcy

Normalcy (svabhavikata) begins in the mother's womb. Normalcy is natural. The body that a child receives by birth is his natural state. This natural state is normalcy. Over time, the baby's body grows but its normalcy remains intact. In normal condition every part of the human body has harmony and intrinsic connection. The size and shape of each organ is natural according to need. In this condition, there is no excess or deficiency in the human body. People can do all the work successfully in it. If a person's body is normal then his qualities and actions will also be normal. And if a person's body is not normal, then his qualities and actions will not be normal.

#### 7.2.2 Wellness

In normal condition, the body maintains wellness and balance. Wellness and balance are essential components of a normal body. The human body is a kind of complex machine. Wellness (susthata) is a great blessing to the human body from God. In general, a person's wellness refers to his physical and mental well-being. Human wellness refers to a condition in which people feel good and happy physically and mentally, get motivated, are creative at any age and can prevent disease as much as possible. The opposite of wellness is sickness. We can never realize how precious wellness is until we get sick. If a person's body is well, his qualities and actions will also be well. And if a person's body is not well, then his qualities and actions will not be well.

#### 7.2.3 Balance

Balance (bharasamya) here refers to physical balance or stability of the body. A balanced body is a body in which every part of the body works with each other to create a stable person.

A balanced body is mentally, emotionally, and physically stable. Physical balance helps reduce body fat and increase strength. It also helps to increase body flexibility and reduce anxiety. Physical balance helps to significantly improve the speed of movement. Apart from this, it serves as a great indicator of increased vitality. A balanced body as a whole is essential for keeping a person healthy. If a person's body is balanced, his qualities and actions will also be balanced. And if a person's body is not balanced, his qualities and actions will not be balanced.

### 7.3 Equivalency

The word 'equivalency' is used in the context of equality. This word is used when it comes to comparability. The concept of equality is very old. Since ancient times, when people lived in groups, the idea of equality was created in people's minds. At that time, of course, people were busy collecting what they needed to survive. Later, when the desire to lead arose in the human mind, the ruling and exploited classes were created. In this situation, the concept of equality became relevant. An attempt is made here to explain the term equivalency mathematically. Here the help of equivalence relation of set theory has been taken. Equivalency is associated with three properties. These three properties are reflexivity, symmetry and transitivity. Now let us discuss these properties.

#### 7.3.1 Reflexivity

Reflexivity means self-reflection. It is the process of reflecting on your own values, life experiences and beliefs. But first, let us explain what the mathematical explanation of reflexivity is. In mathematics, the term 'reflexivity' is usually used on relations. When a relation is reflexive, it is said that there is reflexivity in the relation.

A relation  $R$  on a set  $A$  is called reflexive if every element of the set  $A$  is related to itself. For example, consider a set  $A = \{x, y, z\}$ . Then, the reflexive relation will be  $R = \{(x, x), (y, y), (z, z)\}$ . Therefore, a relation is reflexive if there exists  $(x, x) \in R$  for every element  $x \in A$ . If the element of the set does not relate to itself, then the relation is irreflexive. That is the relation  $R = \{(x, y), (y, x), (x, z), (z, x), (y, z), (z, y)\}$  will be the irreflexive relation.

How to explain whether a person is reflexive in personal life or whether a person has the characteristic of reflexivity? We know that every human being has many qualities. In this case, it can be said that a person is just a sum of countless qualities. A relationship is formed between two or more people. Let us assume that a person has qualities  $a, b, c, d, e$  etc. Then the man will be reflexive if each of his qualities is related to that quality. That is, a man will be reflexive if his every quality maps to itself. So, he has the relation  $\{(a, a), (b, b), (c, c), (d, d), (e, e)\}$ . Let us assume that a person has the quality of 'love'. Then he will be related to another person's 'love' quality. That is, he holds the relationship (love, love). If he does not hold the (love, love) relationship, he will be irreflexive. A society will be reflexive if every quality of it is related to itself that is every quality maps to itself.

#### 7.3.2 Symmetry

Symmetry means balanced proportions. It can be defined as a balanced and proportional similarity found in two parts of an object. This means that one half is a mirror image of the other half. But first, let us explain what the mathematical explanation of symmetry is. In mathematics, the term 'symmetry' is usually used on relations. When a relation is symmetric, it is said that there is symmetry in the relation.

A relation  $R$  on a set  $A$  is called symmetric if  $x$  is equal to  $y$  then  $y$  is equal to  $x$ , where  $x$  and  $y$  contained in the set  $A$ . For example, consider a set  $A = \{x, y, z\}$ . Then, the symmetric relation will be  $R = \{(x, y), (y, x), (x, z), (z, x), (y, z), (z, y)\}$ . Therefore, a relation is symmetric if there exists  $(x, y) \in R$ , then  $(y, x) \in R$ . Asymmetric relation is the opposite of a symmetric relation. That is a relation  $R$  on a set  $A = \{x, y\}$  is said to be asymmetric if and only if  $(x, y)$  contained in  $R$ , then  $(y, x)$  not contained in  $R$ , for all  $x, y$ .

How to explain whether a person is symmetric in personal life or whether a person has the characteristic of symmetry? Let us suppose that a person has the quality of 'love'. And he relates to the 'trust' quality of another person. Then the quality of 'trust' of the first person will be similarly related to the quality of 'love' of the second person. Mathematically speaking, the relation  $R = \{(\text{love}, \text{trust}), (\text{trust}, \text{love})\}$  for a set  $A = \{\text{love}, \text{trust}\}$  will be the example of symmetric relation. In this case it can be said that the first person has the property of symmetry i.e. the first person will be symmetric. A person is symmetric if and only if one of his first quality is related to a second quality, then the second quality is also related to the first quality in the same way. Similarly, a society will be symmetric if and only if one of its first quality is related to a second quality, then the second quality will also be related to the first quality in the same way.

### 7.3.3 Transitivity

Transitivity is the fact of being transitive. In addition, transitive is to make a transit or passage. Generally, transitivity refers to the involvement of a relationship between more than two things. But first, let us explain what the mathematical explanation of transitivity is. In mathematics, the term 'transitivity' is usually used on relations. When a relation is transitive, it is said that there is transitivity in the relation.

A relation  $R$  on a set  $A$  is called transitive if, for all elements  $x, y, z$  contained in  $A$ , such that  $R$  relates  $x$  to  $y$  and  $y$  to  $z$ , then  $R$  also relates  $x$  to  $z$ . For example, consider a set  $A = \{x, y, z\}$ . Then, the transitive relation will be  $R = \{(x, y), (y, z), (x, z)\}$ . Therefore, a relation is transitive, if there exists  $(x, y) \in R$  and  $(y, z) \in R$ , then  $(x, z) \in R$ . Intransitive relation is a relation on a set where the transitive property does not hold. That is a relation  $R$  on a set  $A = \{x, y, z\}$  is said to be intransitive, if there exists  $(x, y) \in R$  and  $(y, z) \in R$ , but  $(x, z) \notin R$ .

How to explain whether a person is transitive in personal life or whether a person has the characteristic of transitivity? Suppose, a person has the quality 'love' and his quality 'love' is related to the quality 'trust' of another person. Again, the quality of 'trust' of the second person is related to the quality of 'responsibility' of a third person. Then the 'love' quality of the first person will also be related to the 'responsibility' quality of the third person. Mathematically speaking, the relation  $R = \{(\text{love}, \text{trust}), (\text{trust}, \text{responsibility}), (\text{love}, \text{responsibility})\}$  for a set  $A = \{\text{love}, \text{trust}, \text{responsibility}\}$  will be the example of transitive relation. In this case it can be said that the first person has the property of transitivity i.e. the first person will be transitive. A person will be transitive if one his first qualities is related to a second quality and the second quality is related to a third quality, then the first quality will also be related to the third quality. Similarly, a society will be transitive if one of its first quality is related to a second quality and the second quality is related to a third quality, then the first quality will also be related to the third quality.

## **7.4 Harmony**

### **7.4.1 Translation**

Where all the points of a moving object move uniformly in the same direction is called translation or translatory motion. If the object undergoes translatory motion, it is observed that there is no change in orientation of the object relative to a fixed point. The object is simply moved from one position to another. Translatory motion can occur in one, two, or three dimensions. Translatory motion can be of two types, namely, rectilinear motion and curvilinear motion. The motion of an object along a straight line is called rectilinear motion. At such motion, an object follows a well-defined path. Rectilinear motion occurs in one dimension. A car moving in a straight line is an example of rectilinear motion. The motion of an object along a curved path is called curvilinear motion. At such motion, an object follows a known or fixed curve. Curvilinear motion occurs in two or three dimensions. Throwing a stone in the air is an example of curvilinear motion.

When a person walks down the street, his motion can be considered as an example of translatory motion. It may be mentioned here that not only the gross body of human being but also the subtle body has movements. Subtle body movements can also be divided according to the laws of mechanics. Human behavior also has movements and can be divided according to the laws of mechanics.

### **7.4.2 Rotation**

When an object rotates on its own axis, the motion of that object is called rotation or rotatory motion. The earth rotating around the sun on its own axis is an excellent example of rotatory motion. The motion of the wheels of a moving car and the motion of the steering wheel along its own axis are two other examples of rotatory motion.

The rotatory motion of a body can occur about an axis that passes through the body or an axis that does not pass through the body. Swinging in rings is an example of a gymnast's rotatory motion about an axis that does not pass through the body. The rotatory motion, on the other hand, can occur within the vertebral column of the human body, at pivot joints or ball-and-socket joints.

### **7.4.3 Periodicity**

If the motion of an object is such that it passes a certain point in its trajectory from the same direction for a certain period of time, then that motion is called periodicity or periodic motion. Periodic motion can be circular, elliptical, rectilinear or more complex. The motion of the earth around the sun, the rotations on a fan, a pendulum swinging, etc. are examples of periodic motion.

When the human body or any of its organs repeats its motion over a period of time, tends to follow the same path and has the ability to move back and forth repeatedly, it is called periodic motion of the human body or its organs. The human heart repeats its movements at regular intervals of time. Thus, the human heart is a good example of periodic motion.

### **7.4.4 Oscillation**

If an object in periodic motion moves in a particular direction for half of the period and in the opposite direction for the other half of the period, its motion is called oscillation or



oscillatory motion. The movement of a simple pendulum in a clock, the vibration of a guitar string, the movement of a spring, etc. are examples of oscillation or oscillatory motion. An object moves back and forth repeatedly in oscillatory motion. Whereas in periodic motion an object repeats a path after a regular interval of time. All oscillatory motion is periodic but not all periodic motion is oscillatory.

Now let us explain the oscillatory motion in our real life. A playground swing is a notable example of oscillatory motion. The swing is considered to be at its initial rest position when one moves on the swing without any motion. This is called the equilibrium state of the swing. This time if a push force is applied to the swing, the equilibrium will be disturbed and move in a certain direction. After going some length the swing will return to its initial position and go the same length in the opposite direction. This back-and-forth movement of the swing accurately demonstrates an oscillatory motion.

#### **7.4.5 Simple Harmonic Motion**

If the acceleration of an object is proportional to its displacement from a certain point and is always directed towards that point, then the motion of the object is called simple harmonic motion. Simple harmonic motion is a type of oscillatory motion.

Swings in the parks are also examples of the simple harmonic motion. The back and forth movement of the swing against the restoring force can be considered an example of simple harmonic motion. Hearing process is not possible without simple harmonic motion. Sound waves enter our ears and strike the eardrum causing vibrations back and forth. The information caused by vibration is then sent to the brain to convert the signals into complex sounds which we clearly understand. So the vibration of the eardrum is an example of simple harmonic motion.

### **7.5 Theory of Valuation**

#### **7.5.1 What is Value**

In daily life we observe different types of objects or events. In explaining these objects or events, we try to determine how appropriate and effective they are. We try to know how honest or dishonest, good or bad or beautiful or ugly these objects or events are. This attempt to know is made on the basis of some ideal. The name of such an ideal-based judgment of an object or event is value.

#### **7.5.2 Is Value Subjective or Objective**

Philosophers differ in determining the exact nature of value. Some think that value is purely subjective. Others believe that value is purely objective. A third group believes that value is both subjective and objective. The first group thinks that the existence of value depends not on the material but on the individual mind. The second group thinks that the existence of value depends on the material, not on the individual mind. Although a neutral discussion shows that value is not only subjective or only objective but both subjective and objective. The same thing or event appears subjective in some aspect and objective in some aspect.

### **7.5.3 Types of Value**

The main goal of philosophical discussion and truth-finding is to explain and evaluate the universe and life. Philosophers have to rely on certain criteria for this work. They explain different objects and events on the basis of these criteria. Object and value are inextricably linked to each other. Value is divided into two parts based on whether the object has its own value or not. These two parts are intrinsic value and extrinsic value. The value of an object that has its own value, that is, the object that is valuable for itself, is called intrinsic value. For example, truth, beauty and goodness. On the other hand, the value of an object that has no value of its own but plays a helpful role in making other objects valuable is called extrinsic value. For example, money.

### **7.5.4 Truth, Beauty and Goodness**

Thinking, feeling and willing are the three faculties of our mind. There are three ideals associated with these three mental processes of the human mind. These three ideals are truth, beauty and goodness. Truth, beauty and goodness have their own value. In view of these three ideals, people determine the value of various objects or events. The ideal life of man is the life of truth, beauty and goodness.

The ideal of thinking is called truth. The value of thinking depends on the truth of the thinking. A thinking that is true is valuable. Thinking without truth are worthless. Truth is associated with logic. The ideal of feeling is called beauty. The feeling that can express beauty is worth it. Beauty is both personal and material. Both individuals and objects contribute to the creation of beauty. Beauty is associated with aesthetics. The ideal of willing is called goodness. The work in which the expression of goodness is observed is as valuable as it is worth it. The value of action depends on the degree of manifestation of goodness in the action. The greater the manifestation of goodness in the work, the more valuable the work. Goodness is associated with ethics.

### **7.5.5 Sat, Chit and Ananda**

Sat-chit-ananda is a compound Sanskrit term used to indicate the nature of Absolute Reality (Brahman) or atman. The meaning of the individual words of sat-chit-ananda are as- sat means absolute being or existence, chit means consciousness or awareness and ananda means perfect bliss or pure happiness. Sat-chit-ananda is hence translated as existence consciousness bliss.

### **7.5.6 Ordinary Value**

If the value of an object or event is in a simple or normal state in the context of the environment, then the value of that object or event is called ordinary value. In fact, when we analyze anything in the world, we get an assembly of many qualities. That means the substance is only the reservoir of numerous qualities. In ordinary value the qualities of the object or event remain intact in the context of the environment. The expression of an object or event with an ordinary value is called an ordinary valued expression.

Suppose, plus 10 and minus 10 are two numbers. These two numbers are in ordinary value in the context of the environment. The expressions of these two numbers are +10 and -10, which are examples of ordinary valued expressions. A person is at ordinary value in the context of the environment. The expression of that person is ordinary valued expression. The drama

broadcasted on television is on an ordinary value in the context of the environment. The expression of that drama is ordinary valued expression.

### 7.5.7 Appropriate Value

If the value of an object or event that is in a simple or normal state in the context of the environment is appropriated by an action, then the value of that object or event is called the appropriate value. In other words, if the value of an object or event is appropriated by an action while being in ordinary value, then the value of that object or event is called appropriate value. Indeed, in appropriate value the qualities of that object or event are appropriated by action in the context of the environment. The expression of an object or event with an appropriate value is called an appropriate valued expression.

Suppose, +10 and -10 are two numbers. These two numbers are in ordinary value in the context of the environment. The appropriate values of those two numbers when modified by action are + (+10) and - (-10). That is, +10 and +10. The appropriate value of an object is indicated by bars on either side of the object. The appropriate value of an object is written as |obj|. Therefore,

$$\text{The appropriate value of } +10 = |+10| = +(+10) = +10$$

$$\text{The appropriate value of } -10 = |-10| = -(-10) = +10$$

Here, the appropriate valued expression of +10 is +10 and the appropriate valued expression of -10 is +10. A person is at ordinary value in the context of the environment. When that person is expressed by adding name, title and other adjectives, it will be appropriate valued expression. The drama broadcasted on television is of ordinary value in the context of the environment. If every event of that drama is modified in the context of the environment, it will be of appropriate value. Expression of events like this is called appropriate valued expression. Let us explain the matter more simply. Suppose, all of us in the family are watching a drama on television. It seems that we have become one with the drama. Suddenly a tiger roared on the screen. Then we should all be afraid. But immediately on the screen appeared this tiger is made of computer graphics. Then our fear was over. The presence of the tiger in this play with an explanation is an example of an appropriate valued expression.

### 7.5.8 Appropriateness

We have noticed that the value obtained by modifying an object or event with ordinary value in the context of the environment is called appropriate value. In fact, an object is only the receptacle of innumerable qualities. Therefore, the value obtained by eliminating numerous qualities of the object through action is called appropriate value. Now the question is how many qualities can we eliminate? Appropriateness is the percentage of elimination of numerous qualities of an object. The appropriateness of an object is written as App(obj).

Suppose an object has 100 qualities. Let us also assume that 50 qualities of that object can be eliminated. Then the appropriateness of the object will be -

$$\text{App(obj)} = \frac{50}{100} = 0.50$$

Remember again, an object has 70 qualities. If we can eliminate 70 qualities from there, then the appropriateness will be -

$$\text{App(obj)} = \frac{70}{70} = 1.00$$

When 0 quality is eliminated from 70 qualities, the appropriateness will be

$$\text{App}(\text{obj}) = \frac{0}{70} = 0.00$$

The value of appropriateness will be between 0 and 1.

### 7.5.9 Absolute Value and Absoluteness

The next step of appropriate value is absolute value. When the qualities of an object or event are eliminated as a whole or regardless of the environment, its value is called the absolute value. The absolute value is expressed by double bars on either side of the object or event. The absolute value of an object is written as  $\|\text{obj}\|$ . Absolute value is found in mathematical equations or theories and in art. Mathematical equations or theories hold true regardless of the environment and universally. Art also gives infinite joy to all regardless of the environment and universally.

The percentage of absolute value is called absoluteness. The next step of appropriateness is absoluteness. Absoluteness of an object is written as  $\text{Abs}(\text{obj})$ .

### 7.5.10 Amalgamation

Amalgamation means the combination of two or more objects or events. Amalgamation is a type of adjustment. Amalgamation is denoted by the symbol  $\text{Aml}(\text{obj})$ . Suppose that a, b, c, d and e are the five objects. Combining these five objects together we get amalgamation of these objects. Amalgamation can be of two types. These two types are suitable and unsuitable amalgamations. The amalgamation will be suitable if all the objects under the amalgamation are in appropriate value. And if all the objects under the amalgamation are not in appropriate value, that is, if some or all objects are in ordinary value, then the amalgamation will be unsuitable. That is,

$$\text{Aml}(\text{obj}) = |a| \vee |b| \vee |c| \vee |d| \vee |e| = \text{Suitable amalgamation}$$

$$\text{Aml}(\text{obj}) = |a| \vee b \vee c \vee |d| \vee e = \text{Unsuitable amalgamation}$$

All composite objects or events in this world are examples of amalgamation. State-to-state conflicts or wars and peace processes are examples of amalgamation. Conflicts or wars are examples of unsuitable amalgamation. The peace process is an example of suitable amalgamation. Suitable amalgamation results in peace. And unsuitable amalgamation results in chaos. Television dramas are examples of suitable amalgamation. Various cooked curries or salads are examples of suitable amalgamation. Let us explain the matter well. A curry has to be prepared with a combination of different vegetables. Suppose a curry is to be prepared with potatoes, brinjal, cabbage, cauliflower, sweet pumpkin etc. Here potatoes, brinjal, cabbage, cauliflower, sweet pumpkin etc. can be cooked raw and eaten in the context of the environment. But together with them raw kachu (edible root, a type of vegetable) cannot be eaten. Because raw kachu juice makes the throat itch. To cook curry with raw kachu, the kachu should be boiled and the water thrown away. Only then can it be cooked and eaten with other vegetables. The value obtained by boiling raw kachu is called appropriate value. On the other hand, the value obtained from raw kachu is called ordinary value. Curry cooked with the mentioned vegetables including raw kachu is unsuitable amalgamation. On the other hand, curry cooked with the mentioned vegetables along with boiled kachu is suitable amalgamation.

## 7.6 Game of Activity

An activity is a situation in which something is being done. This is the quality or condition of being active. It is a special type of behavior or action. All the actions that people do for human needs are human activities. For example, communication, leisure, recreation, production, war, exercise, sports etc. are human activities.

Sports are one of the sources of physical well-being, physical growth and mental pleasure. It is not only for entertainment but also sometimes considered as a tool for gaining knowledge. Sports are usually a bit different than work. Sports are organized with the objective of winning. Apart from this, these are organized to preserve history, tradition, sense of beauty and friendship. Sports can take place in either a single or a team form.

Game of activity is a special type of competition where an individual or team competes to achieve a specific goal. There can be two ways to achieve a good goal and these two ways are game or fight. To achieve a good goal one wants to surpass himself, one wants to surpass another, one country wants to surpass another country. Without competition, there is no mobility in any country or society. A specific goal can be achieved through competition. Because there is competition, society is moving forward, culture is moving forward. Otherwise, this society would have been like a pond surrounded by water-hyacinth where there is no mobility. Game of activity can be of different types, such as- parallel, anti-parallel and non-parallel.

### 7.6.1 Parallel Game of Activity

To know about parallel game of activity, it is necessary to know about parallel vectors first. If two vectors have the same direction, they are called parallel vectors. In other words, two vectors are said to be parallel if and only if the angle between them is 0 degrees. More precisely, any scalar multiple of  $\vec{a}$  is parallel to  $\vec{a}$ . For example, a vector  $\vec{a}$  and  $k\vec{a}$  are always parallel vectors where 'k' is a scalar (real number) and  $k > 0$ . Parallel vectors are also called colinear vectors because these vectors are always parallel to the same line and have the same direction. The parallel vector described here is also called likewise parallel vector.

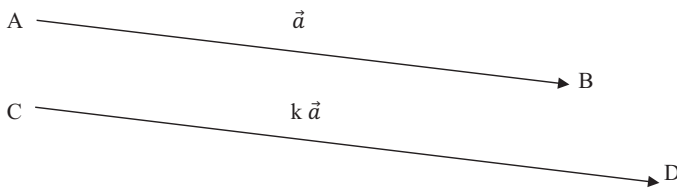


Fig. 7.1

In the figure above,  $\vec{AB}$  and  $\vec{CD}$  are two parallel vectors.

All games of activity that are completed in the same direction are called parallel game of activity or like game of activity. If two people run directly in a competition, it will be an example of a parallel game of activity. 100-meter dash, 400 meter dash can be mentioned as examples of parallel game of activity. Freestyle swimming races are also examples of parallel game of activity. In these events, one surpasses the other. There is no direct conflict with anyone. If the goal is the economic development of one's own country, then the journey towards

the economic development of two countries is an example of a parallel game of activity. If the target is specific, the journey of two people to meet the target will be a parallel game of activity. As such, any competitive examination can be considered as a parallel game of activity. In the parallel game of activity, there is no conflict, each of which has a definite path.

### 7.6.2 Anti-parallel game of activity

The parallel vectors whose directions are opposite instead of in the same direction are called anti-parallel vectors. In other words, two vectors are said to be anti-parallel if and only if the angle between them is 180 degrees. More precisely, any scalar multiple of  $\vec{b}$  is anti-parallel to  $\vec{b}$ . For example, a vector  $\vec{b}$  and  $k\vec{b}$  are always anti-parallel vectors where 'k' is a scalar (real number) and  $k < 0$ . Anti-parallel vectors are also called colinear vectors because these vectors are always parallel to the same line and have the opposite direction. Therefore, if we move forward on the path of fulfilling our respective dreams and if that dream is good for everyone, then we do not see any reason for any obstacle. Because, the path of fulfilling everyone's dream is different and precise and parallel to each other.

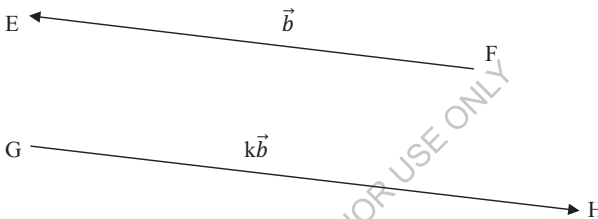


Fig. 7.2

In the figure above,  $\vec{FE}$  and  $\vec{GH}$  are two anti-parallel vectors.

All games of activity that are completed in the opposite direction with respect to each other are called anti-parallel game of activity or unlike game of activity. Wrestling, for example, can be considered as an anti-parallel game of activity. In the anti-parallel game of activity, one person has to move forward by removing another person. It has to be fought, one has to move forward by overcoming other people's obstacles. It is not possible to move forward without overcoming the obstacles of others. Any knockout game falls under the level of anti-parallel game of activity. Because, if someone loses in this phase, they have to leave the tournament. The games of knockout phase of football tournament, knockout phase of cricket tournament, knockout phase of hockey tournament are examples of anti-parallel game of activity. Ethnic riots, communal riots, the war between one state and another fall into the stage of anti-parallel game of activity. There is a direct conflict in the war and one has to win by inflicting enough damage on the other side. Anti-parallel game of activity can be of two types, namely- peaceful and non-peaceful. The peaceful anti-parallel game of activity includes the knockout phase games. And the non-peaceful anti-parallel game of activity includes ethnic riots, conflicts and wars etc.

### 7.6.3 Non-parallel Game of Activity

If two vectors are not parallel or anti-parallel to each other, they are called non-parallel vectors. Non-parallel vectors are in different directions rather than in the same or opposite direction and the angle between them is greater than zero but less than 180 degrees.

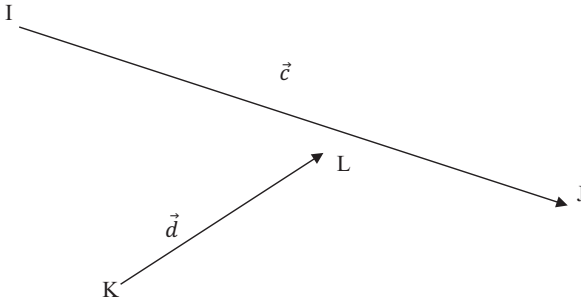


Fig. 7.3

In the figure above,  $\vec{IJ}$  and  $\vec{KL}$  are two non-parallel vectors.

All games of activity that are not parallel (like or unlike) are called non-parallel games of activity. So, if all the activities we do in the society or in the state are not parallel (like or unlike), then they can be called non-parallel games of activity. Suppose, in an office two people want to go to the post of a manager. One of them wants to become a manager through honesty and the other through manipulation. Then their trajectories will converge and collide at some point. By doing this, one (the latter person) can get unfair advantage which should not be done. So, this would be an example of non-parallel games of activity. Two grocers are doing business in the market. One of them is doing business through honesty and proper rules. The other is doing business by using unfair means. Then the trajectory of the two will meet at some point and take the form of a clash. That is, the first will be harmed by the actions of the second. Although this should not be done, it is often happening in society. This is also an example of non-parallel games of activity. Such incidents happen constantly in our society and state.

### 7.7 Purusartha

Purusartha refers to a person's necessary or desirable object. What a man or a person desires is called purusartha. Purusartha literary means object of human pursuit. The ultimate aim of human beings is the desired thing that one has nothing more to desire if he or she receives it. Indian philosophers generally recognize dharma (righteousness), artha (economic prosperity), kama (love or pleasure) and moksa (liberation) as purusartha. Of course, not all people have the same purpose in life. One may consider money or economic prosperity to be the main goal of life, while the other may consider moksa as the ultimate object of life. For this reason, according to the difference in human nature, four types of purusarthas have been mentioned. However, these four purusarthas are not separated from each other. It is generally said that artha and kama are the secondary purusarthas and dharma and moksa are the main purusarthas.

The organism is the sum of the body and the soul. The body of the living being (jiva) is two, sthula sarira (gross body) and suksma sarira (subtle body). The gross body is composed of the pancha mahabhutas (five great elements), while the subtle body is composed of the panchajnanendriyas (five organs of cognition), panchakarmendriyas (five organs of action),

panchapranas (five life forces), manas (mind), buddhi (intellect) and ahankara (ego sense). The creature wants the objects that are useful to the body and the creature does not want the objects that are not suitable for the body. That is why, kama is a purusartha of the creatures. Again, if the human being lives in the society, to survive in the society, he has to be able to attain money, resources, power and prestige. For this reason, artha is also one of the purusarthas of the jivas (living beings). Again, he has to get wealth and enjoy the wealth from the path of religion. So, dharma is also considered as a purusartha of the jivas. However, most Indian philosophers accepted moksa as the absolute purusartha of the creatures. Therefore, purusartha is a fundamental concept of Generancy philosophy.

### **7.7.1 Dharma**

The word dharma is derived from the Sanskrit root 'dhri'. Dhri means to hold together or to preserve. So dharma is what holds or holds something with the help of virtue or power. Dharma signifies the behaviors that are considered to be in accord with 'rta', where rta is the natural (svabhavika) course of events. In the conventional sense the word dharma in English means religion.

Dharma is the first purusartha and it has very vast and multitude of meanings. The word dharma was used in the Rig Veda to mean ritual sacrifice (yajna). Later any scriptural duties are included in the dharma. According to the Mimamsa philosophy, 'codana laksanortho dharmah' that is dharma is to perform one's duties according to the Vedic rules. That is the righteous deeds and the duties for the living beings. The Vedas indicate what duties need to be done and what needs to be avoided. Dharma signifies truthfulness, righteousness, wholesomeness etc. The action which is forbidden by the Vedas is adharma. That is why it is called 'Veda pranahito dharma'.

Dharma is the moral order that holds this universe. So dharma protects the creation. Protects everything in the creation. Dharma is the action that teaches people to protect and preserve everything in the creation. As a result of following religious precepts, living beings can be freed from the cycle of birth and death and can attain moksa or salvation.

Dharma is a broad concept that encompasses all kinds of human activities. Bhagavan Shri Krishna says in the Mahabharata 'Dharmo Rakshati Rakshitah' which means dharma protects those who uphold or protect dharma. He explains that dharma is created for the benefit of all creatures. He also says dharma is to refrain from doing evil to any creation.

Dharma is the right way of living. To be dharmik means to be aware of one's words, deeds and thoughts and being sensitive to the needs of others.

### **7.7.2 Artha**

Humans are social creatures. He has to earn artha (money) to survive in society. He has to rely on property, power and social status to live in society and enjoy the desired things. On the other hand artha or money is used as a medium of exchange. People cannot produce everything by themselves. But to collect his desirable items, he has to rely on artha or money. He collects artha or money in exchange for his own manufactured goods and later collects his desirable objects. For this he has to earn artha. Therefore, artha is one of the purusarthas in the life of a living being.

People's needs vary from person to person. Artha helps people meet all the needs. Artha connects people's lives with something that they can lead a full life. Artha falls within a human



quality so that he can meet the basic needs of the family. He has to follow righteousness while maintaining a family. He has to face various obstacles to survive in the society. To deal with these obstacles, he needs knowledge, skills, love, friendship, good health, etc. Artha brings him all this. Artha serves as the basis of righteousness and sensual pleasure. Dharma and kama become difficult without artha in individual life or social life. But you have to earn artha in a legal way from the path of righteousness.

### 7.7.3 Kama

Most of the Indian philosophers accept four purusarthas or desirable objects. Purusartha is a Sanskrit word which literally means 'object of human pursuit'. Kama is one of these four purusarthas. The other three purusarthas are dharma, artha and moksa. Dharma, artha, kama and moksa- these four are collectively called caturvarga. In the explanation of these four purusarthas or caturvarga, it can be said that dharma is righteousness or means moral values, artha is prosperity or means economic values, kama is pleasure or means psychological values and moksa is liberation or means spiritual values.

Kama is a Sanskrit word which signifies desire, wish, passion, emotions etc. The organism desires useful things to associate with its body and mind and wants to stay away from things that are not suitable for the body and mind. The desiration of the useful things to associate with is kama. It refers to all the desires of man for sense gratification and enjoyment.

### 7.7.4 Moksa

An organism (jiva) consists of a combination of body and soul. The soul that is in the body of the living being is called the individual soul or jivatma. There is one more soul besides the individual soul. That is Paramatma or Supreme soul. Paramatma is omnipresent. According to Generancy philosophy, salvation is the realization of the oneness of Paramatma with jivatma.

Jiva and Brahman are one and the same. Tat Tvam Asi - traditionally rendered as 'That Thou Art' (that you are), (Chandogya Upanishad 6.8.7 of the Sama Veda) and Aham Brahman Asmi - 'I am Brahman', (Brihadaranyaka Upanishad 1.4.10 of the Yajur Veda) - these two great sayings (mahavakyas) speak of the oneness of atma and Brahman. The soul is different from the body and mind. The soul is pure consciousness.

The soul is pure consciousness and joyful. The soul is eternal, irrespective, undivided and unborn. The soul is the only ultimate being, the body is not an ultimate being. And this soul is Brahman. In fact, Jiva and Brahman are one and the same. Man unknowingly imagines the distinction between the living being (jiva) and Brahman. By imagining this difference, the living being imposes various qualities on Brahman. But these differences are illusionary and apparent. Thus, even if the jiva and Brahman appear to be different, they are actually one and the same.

Due to ignorance, the individual soul considers itself identical with its body. This is the bondage of living beings. Because of this bondage, the living entity considers itself the doer, the consumer, and the knower, and the mundane pleasures and sorrows as its own. This bondage phase of the organism is due to the lack of proper knowledge of the soul. When ignorance is removed, the soul acquires knowledge of its true nature and then the soul is liberated. Moksa or salvation is being freed from the bondage of the soul. When self-knowledge is attained, the ignorance of the living being is removed, then the living being acquires knowledge about the true nature of the soul. The living being then realizes that there is no difference between the

living being and Brahman and there is no difference between jivatma and Paramatma. It is then that the living being is released or moksa is attained. This is one of the fundamental concepts of Generancy philosophy.

Moksa orukti of the living being is of two types, namely: jivan-mukti and videha-mukti. Jivan-mukti is the state of being spiritually liberated while alive. Jivan-mukti is a state in which one possesses unlimited knowledge, is free from sorrow and enjoys eternal happiness. One who has attained self-knowledge and self-realization while alive and has not yet died, is a jivan-mukta person. On the other hand, the state of moksa after death is called videha-mukti. The liberation that follows the destruction of the earthly and gross body after death is called videha-mukti.

### 7.8 Atma

The English synonym for atma is soul. Atma generally refers to an entity beyond the body that resides within each human being. Consciousness is an attribute of the soul. This soul governs the body and mind. For this soul the living being is knower, doer and consumer. It is the existence of this soul that implies self identity. The soul is a different entity from the mind. The mind is an internal sense organ. With the help of this internal sense organ the soul perceives various mental states.

Atma is of two kinds, namely, jivatma (individual soul) and Paramatma (Supreme soul). The Supreme soul or Paramatma is God who resides in the heart of all living beings. Jivatma is present in every living being. Every individual soul is a part of Supreme soul. The Supreme soul gives rise to individual soul that is responsible for life. The difference between God and the individual soul is that God exists in the body of all living beings, but the individual soul resides only in a body specific to him. Supreme soul is in every atom and every living being, stays with an individual soul in the material body. The soul or atma being discussed here is the individual soul or jivatma.

Atma is eternal and undying. Atma is the real being of the organism. Despite all the changes in the body and mind, there is no change in the soul (atma). This soul is pervaded throughout the body. So the living being (jiva) can feel that there is consciousness all over his body. Consciousness is the attribute or quality or laksana of the soul. The living soul is a conscious (cit) particle whose size is much smaller than that of an atom and these conscious particles are innumerable. These conscious particles are the main source of consciousness. The body is impermanent but the soul is indestructible.

The soul is never born or killed. The soul does not produce any other soul in the same way that children are produced through the body. The soul does not change as the inanimate body changes as a result of the influence of the soul. As a result of the union of husband and wife, the soul gets a new body and the soul with that body seems to be their child.

The soul is full of knowledge. Consciousness is the attribute (laksana) of the soul. Paramatma (Supreme soul) is omniscient. He is fully aware of the past, the future and the present in all situations. But jivatma (individual soul) is prone to forgetfulness. In the Bhagavad Gita, Bhagaban Shri Krishna says, the soul is unbreakable and incombustible; it can neither be dampened nor dried. It is everlasting, in all places, unalterable, immutable, and primordial.

The soul is one and unique. But the soul can be described from two perspectives. One of them is practical perspective and the other is spiritual perspective. In empirical point of view (vyavaharika drsti) the soul is many and in transcendental point of view (paramarthika drsti)

the soul one. The more the individual soul feels oneness with the Supreme soul, the happier he becomes in the happiness of the other and sadder in the sorrow of the other. If the individual soul does not develop a sense of oneness with the Supreme soul, then he cannot consider the happiness and sorrow of others as his own.

### 7.8.1 Oneness of Atma

Atma (the soul) is pure consciousness and self manifestation. The soul is one and unique. However, from the empirical point of view (vyavaharika drsti) the soul is many but from the spiritual point of view (paramarthika drsti) the soul is one. From the empirical point of view, different souls exist in different bodies. Mental states such as buddhi (intellect), sukh (joy), dukha (pain), ichcha (desire), desha (hatred) etc. are all qualities. These qualities reside in some substance or the other. This substance is the soul or atma. Now let us see how these many souls become one. In the spiritual point of view, atma is one. This atma is Paramatma or Supreme soul. Again, from the empirical point of view, atma is many. These many atma are jivatma. Let us explain the oneness of atma with the help of the following figure.

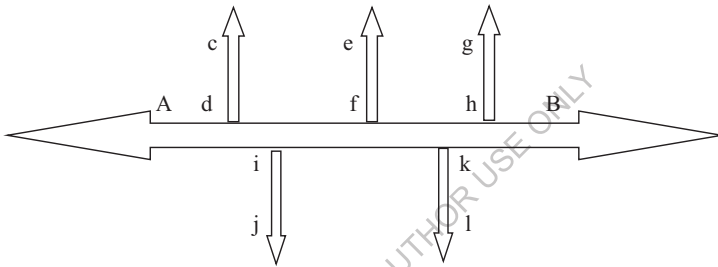


Fig. 7.4

In the above figure AB is the highway road segment. There are some connecting roads with this highway road. These connecting roads are cd, ef, gh, ij, kl etc. The connecting roads come from different ends and join the highway road. The highway road can be compared to Paramatma. The connecting roads can be compared to organisms. Every organism or living being has a soul. This soul is called jivatma. When the living being attains tattvajnana (theory of reality), his inner soul (jivatma) can merge into Supreme soul (Paramatma). But if the living being is engrossed in ignorance, then the union of the Supreme soul with his inner soul becomes difficult. Now if the connecting roads are unclean or full of jungle then no person or vehicle can enter the highway road. Again if the connecting roads are clean or transparent then any person or vehicle can enter the highway road. This is how the connecting roads meet with the highway road. Similarly, if the living being attains tattvajnana, his indwelling soul or jivatma can merge into Paramatma, just as a vehicle can get on the highway road through a transparent connecting road. Again, if the living being is engrossed in ignorance, his indwelling soul cannot unite with the Supreme soul, just as a vehicle cannot drive on a highway road through an unclean or forested connecting road.

Now let us explain how we can be happy in the happiness of a person or how we can be sad in the sorrow of a person. Suppose, the cd connecting road is transparent and clean. The highway road is already transparent and clean. So, anyone or any vehicle can enter the highway

road through the cd connecting road. Again the same person or vehicle can go through the highway road to any connecting road if that connecting road is transparent and clean. In this way, one jivatma can merge into another jivatma. If any connecting road is opaque and unclean, then the person who knows tattvajnana can go to the crossing of that road through the highway road. Standing at the crossing, the person can understand the condition of the road or the good and bad. That means a person who knows the theory of reality (tattvajnana) can feel the happiness and sadness of another person. In this way, we can be happy at one's happiness and sad at one's sorrow.

Now, how much can we feel each other's happiness and sadness? Suppose, one link road is 100 percent transparent and clean and another link road is 50 percent transparent and clean. Then, anyone or any vehicle from the first connecting road can go to the second connecting road through the highway road but this journey is not 100 percent easy. Because the second connecting road is 50 percent transparent and clean. So, this journey will be 50 percent easy and 50 percent difficult. In this way, a jivatma or individual soul can feel the happiness and sorrow of another jivatma with the help of Paramatma or Supreme soul. Thus, one person can easily or difficultly feel the happiness and sadness of another person.

### 7.8.2 Atmodel

The word 'atmodel' is a combination of the words 'atma' and 'model'. There are two types of atma: Paramatma and jivatma. Paramatma is Brahman or supreme soul. Jivatma is individual soul. The supreme soul is omnipresent but the individual soul resides in the body of an organism. Jiva and Brahman are one, but due to ignorance jiva thinks of himself as separate from Brahman. When the individual soul merges with the supreme soul, then the salvation of the living being takes place. The atmodel is a model expressing the unity of living beings (jivas) and Brahman or Paramatma. The relationship between jivatma and paramatma is mathematically expressed through atmodel. The postulates of Atmodel are as follows;

- (1) Atmodel has two parts, Paramatma and jivatma. Paramatma is at the center.
- (2) Jivatma revolves around the Paramatma.
- (3) Two forces are effective on jivatma. One is centripetal force which is the force of attraction of living being and Brahman. The other is that when the living being orbits Brahman in a circular path, a force equal to and opposite to the centripetal force is formed along the radius of the circular path on the living being. This is the centrifugal force.
- (4) The motion of an organism will be like the motion of a wave.
- (5) This journey (cycle of birth and death) of the living being continues till salvation is attained.

The figure below shows that Nirguna Brahman is at the centre of all. Through maya, Nirguna Brahman is transformed into Saguna Brahman. Therefore, Saguna Brahman or God is shown to be in the pervasive state of Nirguna Brahman. After God, the first layer shows the devatas (gods) and the second layer shows the avatars. Brahman, God, devatas and incarnations can be considered as a nucleus. The jiva revolves around this nucleus or the jivatma (individual soul) revolves around the Paramatma (Supreme soul). Paramatma is Brahman. This orbiting of the organism continues until the moksa (salvation) is attained. Then Jivatma meets Paramatma. In order to enjoy the fruits of karma, one has to be born again and again in samsara (world).

Salvation of the living beings is achieved through selfless deeds (nishkam karma). Selfish deeds (sakam karma) are an obstacle to the salvation of living beings. By doing nishkam karma the living being comes closer to Brahman. And by doing sakam karma, the living being moves away from Brahman. Nishkam karma creates centripetal force and sakam karma creates centrifugal force. Salvation is the attainment of Brahman, that is, realizing that the living being and Brahman are one. Therefore, if the individual soul (jivatma) meets the supreme soul (Paramatma), it can be said that moksha has been attained. The devatas and avatars are helpful in attaining salvation.

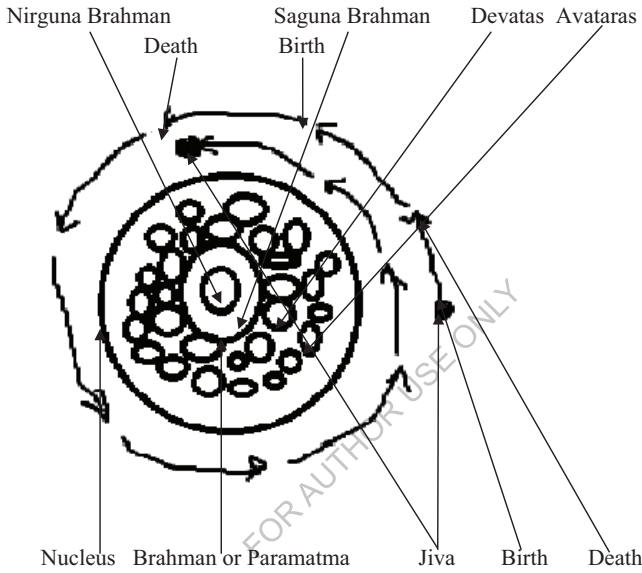


Fig. 7.5

The above figure is taken from my previous book ‘Modeling of Generancy A Logical Solution’. The figure is hand drawn. A computer drawn figure is inserted below.

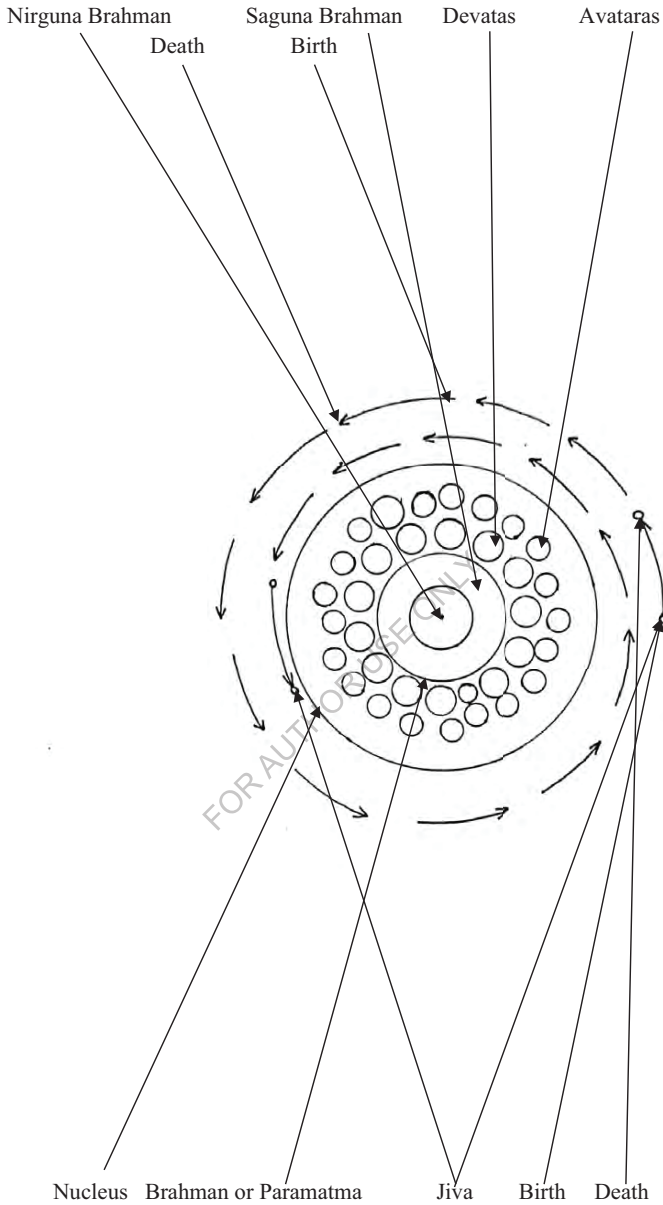


Fig. 7.6

## 7.9 Three Inevitable Facts of Living Beings

### 7.9.1 Janma

The termination of pregnancy is called janma or birth by the emergence of a baby from a woman's womb. The act or process of giving birth to a child from the mother's womb is called birth. Large mammals are usually pregnant with one child at a time, although they may give birth to two or more children occasionally. In large animals, the process of birth is similar to that of humans, but most offspring are precocial. This means that they are born in a better state than a human baby and can stand, walk and run shortly after birth. Humans usually produce single children at a time. The whole process from fertilization to birth takes about nine months. The birth of a human baby is usually 40 weeks after menstruation.

### 7.9.2 Karma

There are different types of actions. Organisms usually perform two types of actions. These are namely, sakam karma and nishkam karma. Sakam karma means action with desire. Nishkam karma means action without desire. The action that is done for the sake of fruit is called sakam karma. The action that is done without expecting fruit is called nishkam karma. Sakam karma create bondage and attachment to the objects, resulting in reincarnation. As a result of performing nishkam karma, there is no possibility of attachment to the objects and as a result, there is no possibility of rebirth.

Action can be divided in another way. There are three types of actions in this part, namely, nitya karma, naimittika karma and kamy karma. The action that is supposed to be done every day is called nitya karma or daily obligatory duties. For example, praying in the morning and evening is the daily obligatory duties. All these daily rituals are very important for self-purification. The action that is done on any particular occasion, is called naimittika karma or occasional obligatory duties. For example, during a lunar eclipse or a solar eclipse, bathing in the Ganges is the occasional obligatory duties. Religious ceremonies celebrated on birthdays or death anniversaries such as shradh rituals, grahana tarpana, etc., fall in this category. The action that is done in the hope of getting certain results is called kamy karma or optional duties. Optional duties are done to achieve someone's purpose. For example, the action that is done for the sake of heavenly bliss is optional duties or desirable duties. Nitya karma and naimittika karma is mandatory. Performing all these actions properly leads to the loss of pre-existing sins. The one who performs optional duties also has to perform daily obligatory and occasional obligatory duties because these duties are Vedic.

The spiritual release or salvation achieved while alive is called jivanmukti. The salvation that is obtained after the destruction of the gross and subtle body after death is called videhamukti. Even if the soul remains in the body after salvation, that soul has no desire or attachment to any mundane object. This is called jivanmukti (liberation during life). The accumulated (sanchita) karmaphalas of jivanmukta person is wasted and sanchiyaman karma does not bear any fruit as it is nishkam karma (action without desire). Therefore, as soon as the enjoyment of prarabdha karmaphalas is over, the gross and subtle body of the jivanmukta person is destroyed and as a result he is released.

Even if the living being is liberated, the living being continues to retain its body for some time. There are three types of human actions, namely: prarabdha karma (fructifying works), sanchita karma (accumulated works) and sanchiyaman karma (current works). Prarabdha karma

is the action whose results have already begun to take effect. Sanchita karma is the action that has been performed in the past, but has not yet produced results. Sanchiyaman karma is the action that is currently being done and its fruits are being stored. Knowledge of reality can destroy the sanchita and sanchiyaman karmaphalas but cannot destroy the prarabdha karmaphalas. The body is the result of prarabdha karma. When the result of prarabdha karma is exhausted, the body is destroyed. Therefore, if the knowledge of reality is attained before the results of prarabdha karma are exhausted, liberation occurs, but the body remains. This liberation is called jivan-mukti while still having the body. When the fruits of prarabdha karma ends, the gross body of the jivan-mukta person is destroyed and his videha-mukti occurs.

### 7.9.3 Mrityu

In the Bhagavad Gita, Bhagavan Sri Krishna says,

Jatasya hi dhruvo mrtyur dhruvam janma mrtasya ca,  
tasmad apariharye'rthe na tvam socitum arhasi. (BG-2.27)

#### Meaning

Death is certain for the born, and re-birth is certain for the dead; therefore you should not feel grief for what is inevitable.

One is born with a body according to his previous deeds. After staying in the material world for some time through that body, that body is destroyed and is reborn with a new body according to karma. Thus the soul continues to revolve in the cycle of birth and death until it is freed from inanimate bondage.

Death is a permanent, unchanging cessation of all biological functions that sustain a living being. Death is an inevitable, universal process that eventually occurs in all living things. Death is a total and permanent end of all vital activities of an organism. Death is the end of the life of an organism. Death is a state of condition when all physical activities such as respiration, food intake, circulation, etc. stop. When the cessation of consciousness occurs an organism is presumed to have died. Look carefully at the two figures below. In these two figures, birth and death are explained through the karma curve.

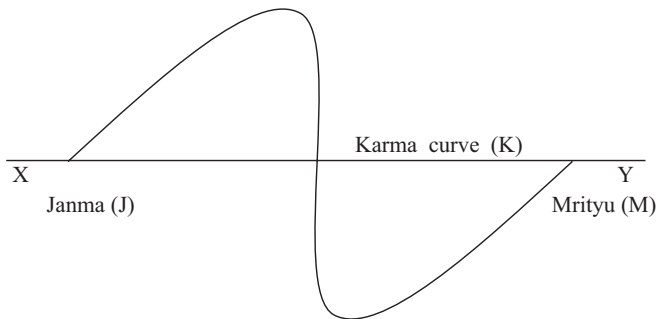
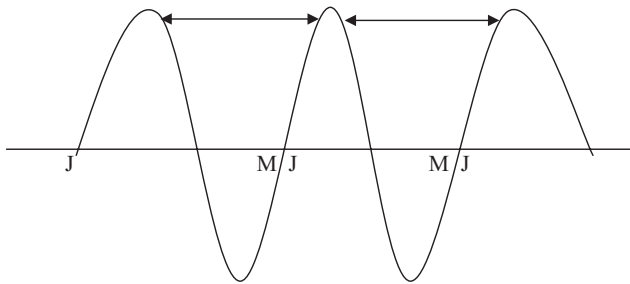


Fig. 7.7 Karma Curve





Karma curve (K)

Fig. 7.8 Karma Curve

If an organism dies naturally, its life can be compared to a wave. The beginning of the wave is birth and the end is death. Then the wavelength ( $\lambda$ ) is considered as the range of its life. The time period of the wave is calculated as the lifespan or age. Time period (T) is the time it takes for one complete oscillation. The equations for time period and wavelength are

$$T \text{ (period)} = 1 / f \text{ (frequency)}$$

$$\lambda \text{ (wavelength)} = c \text{ (wave speed)} / f \text{ (frequency)}$$

The area of a wave closed by the wavelength is called the karmaphala of that organism and the phase of the wave is called the karmaphalavog (enjoying the fruits of karma) of that organism. The actual state of motion of a particle that conducts waves at any given moment is called its phase. The actual state of motion here means the movement, velocity, acceleration, force etc. of the particle at a particular moment.

## 7.10 Karmavada

Karmavada (law of karma) is a moral concept of Generancy philosophy like other schools of Indian philosophy. According to karmavada, every human being has to enjoy the fruits of his deeds. Good, evil, sin and virtue are conserved through karmaphala (fruits of karma). For this reason, karmavada is called the law of conservation of moral values. Karmavada is a kind of moral causality. Karma (action) is the cause and phalabhog (enjoying fruit) is effect. People will enjoy the fruits of their labor. People have to enjoy virtue if they do good deeds and sin when they do bad deeds. Karma produces a kind of 'invisible power' which causes organisms to suffer happiness and sorrow in the future according to actions. The law of karma states that as you sow shall you reap.

### 7.10.1 Karmodel

The word 'karmodel' is a combination of the words 'karma' and 'model'. Karmodel shows geometrically the cycle of birth and death and how salvation can be achieved through action, knowledge and devotion. The postulates of karmodel are as follows;

- (1) The karmodel has two parts, namely, birth-death cycle and way to freedom.
- (2) There are two aspects to the birth-death cycle. On the one hand there are janma (birth), jnana (knowledge), ahankara (ego sense), bandhan (bondage), mrtyu (death). On the other hand,

there are janma (birth), karma (action), karma phala (fruits of action), karmaphalabhoga (enjoyment of fruits of action), mrtyu (death).

(3) There are two aspects to way to freedom. On the one hand there are janma (birth), yoga (meditation), abhedajnana (knowledge of identity), bhedajnana (knowledge of difference), vivekakhyati (knowledge born out of viveka or discrimination) and moksa (salvation). On the other hand, there are janma (birth), bhoga (enjoyment), sakam karma (attached involvement), nishkam karma (detached involvement), bhakti (devotion) and moksa (salvation).

(4) Karmodel is the combination of dravya (substance), guna (quality) and karma (action), where substance is the master or creature, quality is knowledge and action is the deeds that the creature does.

First let us discuss about the birth-death cycle. Indian philosophy believes in an ubiquitous natural and moral discipline. In the Vedas, this eternal inviolable worldly and moral discipline has been called 'Rta'. The etymological meaning of the word Rta is 'natural law of events'. All other Indian philosophical schools except the Carvaka philosophical school believe in the existence of this moral and natural discipline. In Indian philosophy, this Rta has been self-revealed in karmavada. According to karmavada, the person who performs the action will reap the same benefits. It is not possible for any organism (jiva) to escape from the enjoyment of karmaphala. One of the essential aspects of this karmavada is 'janmantaravada' or reincarnation. According to janmantaravada, if the organism does not enjoy the fruits of all its actions in one life, then it has to be born again to enjoy the rest of the karmaphala. This janmantaravada is beautifully explained in the following birth-death cycle.

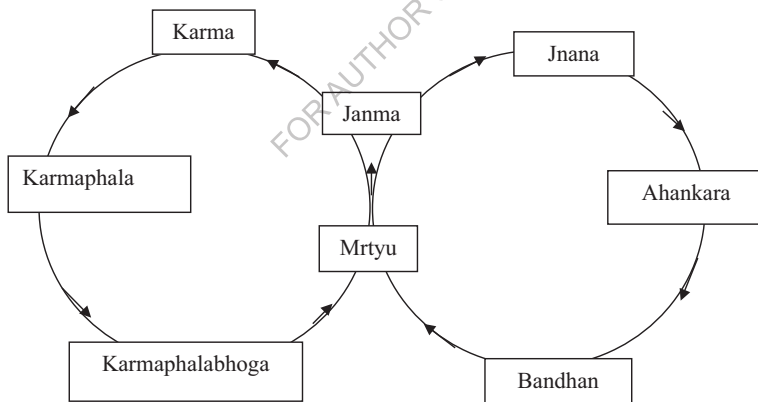


Fig. 7.9

This birth-death cycle is explained in two ways. On the one hand, janma (birth), karma (action), karmaphala (fruits of action), karmaphalabhoga (enjoyment of fruits of action), mrtyu (death) and later again janma (birth), on the other hand janma (birth), jnana (knowledge), ahankara (ego sense), bandhan (bondage), mrtyu (death) and later janma (birth) again. A causal relationship is found between these. The components of the birth-death cycle are discussed in detail in my previous book 'Modeling of Generancy A Logical Solution'.

Now let us discuss about way to freedom. The way to freedom is explained with the help of the following figure. In this figure, janma (birth), bhoga (enjoyment), sakam karma (attached involvement), nishkam karma (detached involvement), bhakti (devotion) and moksa (salvation) are shown on the one hand, and janma (birth), yoga (meditation), abhedajnana (knowledge of identity), bhedajnana (knowledge of difference), vivekakhlyati (knowledge born out of viveka or discrimination) and moksa (salvation) are shown on the other. The components of the way to freedom are discussed in detail in my previous book ‘Modeling of Generancy A Logical Solution’. Looking at the figure it is seen that it is a swastika sign (symbol of divinity and spirituality).

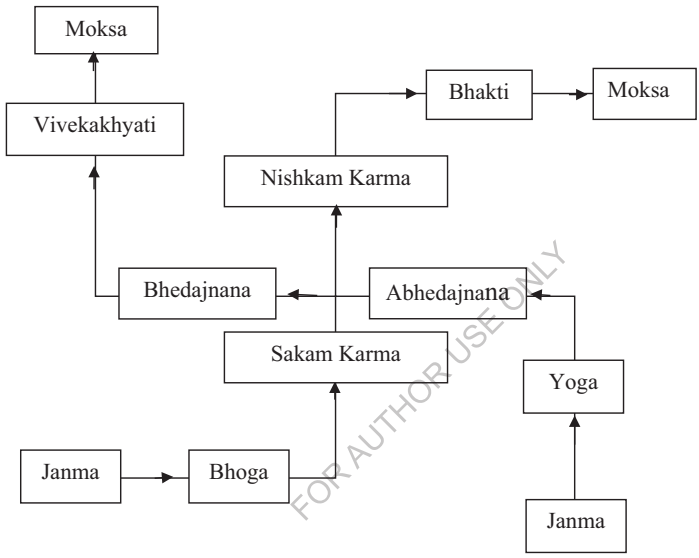


Fig. 7.10

Combination of birth-death circle and way to freedom is beautifully illustrated in the figure below. In the figure janma (birth), karma (sakam karma, action with desire), nishkam karma (desireless action), bhakti (devotion) and moksa (salvation) are shown on the one hand, and janma (birth), jnana (abhedajnana, knowledge of identity), bhedajnana (knowledge of difference), vivekakhlyati (knowledge born out of viveka or discrimination) and moksa (salvation) are shown on the other.

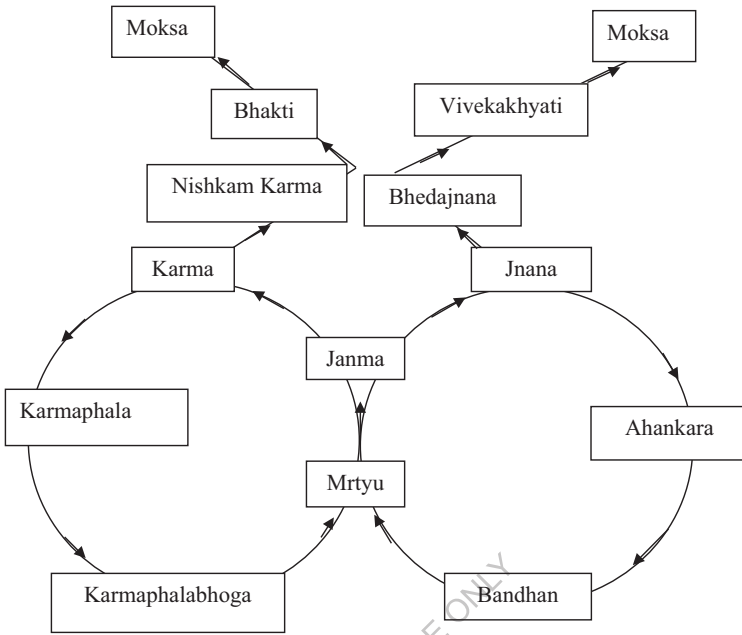


Fig. 7.11

### 7.10.2 Rebirth

Another fundamental concept of this philosophy is janmantaravada or rebirth. Janmantaravada is based on karmavada. If the fruits of all the activities that an organism does do not end in one life, then it will have to be born back into the world. Because the living being has to go through the fruits of karma. There is no destruction of the fruit of karma. The moral value of karmaphala, whether good or bad, is always conserved. In order to enjoy the fruits of one's deeds, one has to be born again and again in the world. This is janmantaravada or rebirth. According to janmantaravada, the living being is reborn after death in order to enjoy the fruits of karma, the soul abandons the old body and takes on a new body. Only the rebirth of the organism is required to reap the fruits of the sakam karma. Nishkam karma does not require the rebirth of the organism unless it has suffered the fruits of its previous action. Sakam karma keeps people confined to the world (samsara), but nishkam karma liberates people from the world (samsara). With the help of karmavada, Indian philosophers have united the past, the present and the future together. The past has established the present and the present will control the future. The past is the creator of the present and the present is the key to the future. In the Srimad-Bhagavad Gita, Lord Sri Krishna says, 'Just as a person gives up his worn-out garments and puts on new ones, so the soul leaves its worn-out body and takes on a new body.' This body transformation of the soul continues till salvation is attained. This is the essence of janmantaravada. Generancy philosophy believes in this janmantaravada or rebirth.

### 7.10.3 Scale of Rebirth

Karmavada is an independent and impersonal rule that gives results according to the actions of the organism. Karmavada makes the external world compatible with the moral world. The inevitable consequence of karmavada is janmantarvada or doctrine of rebirth. Janmantarvada is based on karmavada. According to janmantarvada, the soul or atma takes on a new body after death. If the fruits of all the actions that a living being does do not end in one life, then it has to be born to enjoy the remaining fruits. Jiva assumes subsequent bodies according to its actions. A living being is born in a suitable environment by assuming the next body according to its actions. Here he performs his duties and enjoys happiness or sorrow according to his deeds. In this life good deeds lead to his elevation and bad deeds lead to his decline. As a result of good deeds, he is born as a higher-level creature in the later life, or as a result of bad deeds, he is born as a lower-level creature in the later life.

The scale of rebirth is a graph showing the relationship of rebirth with the results of the actions. The following two figures show the relationship between a person's good deeds or bad deeds and his or her rebirth.

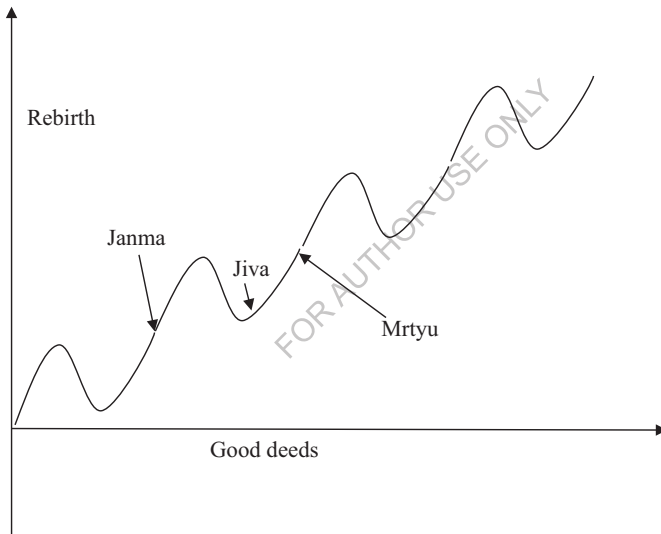


Fig. 7.12

The above figure shows that by doing good deeds one can take birth as a higher level jiva.

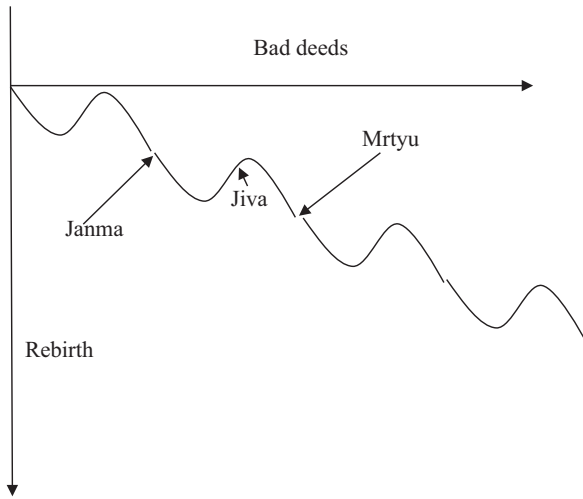


Fig. 7.13

The above figure shows that by doing bad deeds one can take birth as a lower level jiva. The boundaries of karmavada are limited to sakam karma. The above two figures show the relationship of rebirth with sakam karmaphala. A living being can attain liberation by performing niskam karma. Then let us show what the figure will look like. The figure 7.14 shows that the jiva depicted in the form of a wave will meet in a horizontal line at one point after consuming all the karmaphalas.

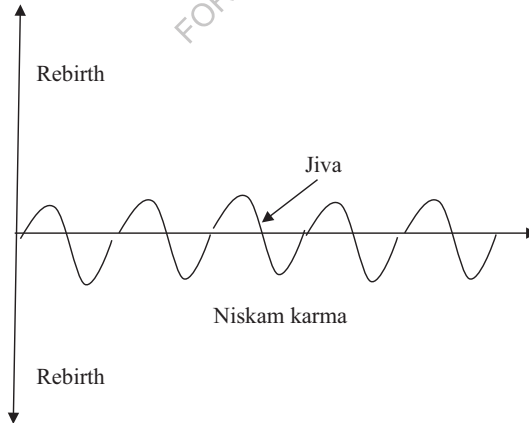


Fig. 7.14

## **7.11 Different Paths of Realization of the Supreme End**

Moksa or salvation is the supreme end. Like other systems of Indian philosophy, Gyaneraj philosophy describes three paths of realization of the supreme end. These three ways of gaining the supreme end are karma marga (path of action), jnana marga (path of knowledge) and bhakti marga (path of devotion).

### **7.11.1 Karma Marga**

Salvation cannot be achieved by rejecting all kinds of actions. We cannot refrain from social and moral actions even if we exclude other actions. So every person has to take action. The Vedas occupy an important place in the development of Indian philosophy. The Vedas (Chaturveda) can be divided into two parts, namely, karma-kanda and jnana-kanda. There are descriptions of various yajnas or rituals in the karma-kanda of the Vedas and performing this yajnas is called purusartha. The karmavadis think that it is possible to achieve heavenly bliss by performing the order given by the Vedas. According to them, heaven is the supreme end of creatures. On the other hand, in the Srimad Bhagavad Gita, Bhagavan Sri Krishna says that if the jiva acts in a non-attachment manner, indifferent to the karmaphalas (fruits of action) and surrendering all karmaphalas to God, then that karma brings liberation without creating the bondage of the jiva. If the purpose of the action is to desire the fruit of the action, then that action is sakam karma (action with desire). Sakam karma is not the path to salvation. Without any attachment to the fruit of karma, without engaging in work in the hope of reward or for fear of unwanted fruit, to perform one's duties unselfishly is nishkam karma (desireless action). Nishkam karma is helpful for salvation. The devotee of the path of action (karma marga) is indifferent to profit and loss and fame and disgrace and does undesirable good deeds.

### **7.11.2 Jnana Marga**

Salvation can be attained by pursuing the path of knowledge (jnana marga). Among the various paths to salvation, the path of knowledge seems to be the most difficult. The knowledge that jnana yoga speaks of for attaining moksa is the knowledge of the Supreme. The meeting of transcendence is the core of the path of knowledge (jnana marga). The seeker of the path of knowledge strives to gain philosophical knowledge about God, the universe and the soul. The jnanavadis (gnostic) believe that freedom is in knowledge, not in action, because action creates bonds of living beings. As a result of the action, the organism holds the body, and when the body is contained, the organism has to act. So they think that it is not possible to get rid of the bondage of action without self-knowledge. The jnanavadis think that avidya or ignorance is the main obstacle to attain paramartha or absolute end. People became involved in the actions by avidya or ignorance. After receiving the self-knowledge, the soul is free from the ties of action and the status of liberation is attained. The three steps to attain self-knowledge or Brahman-jnana are, respectively, sravana, manana and nididhyasana. Sravana refers to hearing the guru's teachings on Vedanta or true knowledge. Manana refers to reflecting upon and thinking about the teachings that have been heard. Nididhyasana refers to prolonged meditation on the self, which ends in samadhi. It is the culmination of the practice of sravana and manana.

### **7.11.3 Bhakti Marga**

Another path to salvation is the path of devotion (bhakti marga) or devotion to God. Among the various paths of salvation, the path of devotion is considered to be relatively easy and

blissful. Affection or love is a natural human emotion and the path of devotion is based on this natural emotion. The innate love that exists in man is associated with God through devotion. Bhakti yoga as a way of attainment refers to devotion to God, service to God, sacrifice of everything for God, and the sincere communion of the devotee with God. The **bhaktivadis** think that there is no relation between the karmayoga of Mimamsa philosophers and jnanayoga of Advaitins. Nirguna Brahman can not be described as the creator of the universe, and it is not possible for ordinary people to be established devotional affair with Nirguna Brahman. So Saguna Brahman or God has to imagine. According to the **bhaktivadis**, the relationship of a devotee with God is established through devotion. The wonderful combination of action, knowledge and devotion can be found in Srimad Bhagavad Gita.

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