

Systems Philosophy in Ancient Jaina Texts

Dr. Narayan Lal Kachhara

1 Introduction

A substance has infinite attributes some of them may be contradictory. Jains recognized the multiple nature of reality; they propounded a theory of substance and its modes and attributes. The modes and attributes impart the substance a multidimensional character. The modes and attributes have a common substratum, the substance, and therefore their spatial and temporal variations are interrelated. The interrelationship between different modes of the same substance is basic to Jain philosophy. A system therefore has a unique characteristic; it cannot be solely determined by the individual characteristics of its parts. Jains developed a system of philosophy in the form of *naya* and *pramana* to describe this feature of reality. *Pramana* describes the 'whole' nature of reality and *naya* describes the 'part' in a particular context or aspect. The way in which the whole is divided in parts is important, it must express some natural relational aspect of the system, and is therefore not purely arbitrary.

One problem with scriptures is their language, it is difficult to understand and interpret it in the right context, and the words many times have multiple meanings and contexts. The philosophy of *naya* and *pramana* helped the scholars to search for the right meaning of the sutras of scriptures. It, along with the philosophy of *Anekanta* and *Syadvada*, also helped them to reconcile between the conflicting ideas in different systems of Indian philosophy. This assigns Jain philosophy a unique position; it establishes relativity of thoughts eliminates contradiction of views and promotes harmony between different schools of philosophical thoughts.

Modern science has proceeded on a different assumption of reality. Since Descartes, the "scientific method" had progressed under two related assumptions. A system could be broken down into its individual components so that each component could be analyzed as an independent entity, and the components could be added in a linear fashion to describe the totality of the system. Biologist von Bertalanffy in 1928 proposed that both assumptions were wrong. On the contrary, in the General Systems Theory proposed by him, a system is characterized by the interactions of its components and the nonlinearity of those interactions. In 1951, von Bertalanffy extended systems theory to include biological systems and three years later, it was popularized by Lofti Zadeh.

It has been found that linguistic pattern determine how an individual perceives and thinks about the world. This relativistic view is consistent with general systems theory. Our culture and experience define our understanding of all systems. The fact that systems theory recognizes the relativity of perception, may in itself, serve to expand

our understanding of our role in the universe. It provides a framework for us to examine and understand our environment.

A systems approach provides a common method for the study of societal and organizational patterns. It offers a well-defined vocabulary to maximize communication across disciplines. Rather than being an end in itself, systems theory is a way of looking at things, it is an internally consistent method of scholarly inquiry that can be applied to all areas of social science. Systems theory is the emerging paradigm.

We briefly review the basic concepts of systems theory first and then study the development of Jain theories of *Anekantavada*, *Syadvada*, *Naya* and *Pramana* in this article. While making a comparison between the two schools of thoughts it would be found that the terms *pramana* and *naya* of Jaina are almost equivalent to the terms system and parts of the modern era. The philosophy of systems theory is not new; it was widely used by Jains for describing the nature of reality and resolving the conflicts between different systems of philosophical thoughts.

2. Systems Theory

2.1 Holism

Holism is the theory, which makes the existence of "wholes" a fundamental feature of the world. The "whole" are not entirely resolvable into parts; in one degree or another they are wholes which are more than the sum of their parts, and the mechanical putting together of their parts will not produce them or account for their character and behaviour. The so-called parts are infact not real but largely abstract analytical distinctions, and do not properly or adequately express what has gone to the making of the thing as a whole.

Holism is therefore a view point additional and complementary to that of science, whose keywords are continuity and mechanism. The ideal of science is continuity, and its method is based on the analysis of things into more or less constant elements or parts, the sum of whose actions account for the behaviour of these things. Things, thus become mechanisms of their parts; and the interactions of their variable parts in a homogeneous time and space according to the rules of mechanics are sufficient to account for all their properties.

What is involved in the concept of a whole? In the first place, in so far as a whole is considered as consisting of parts or elements, they cannot be fixed, constant, or unalterable. To be parts in a whole they must be pliant, flexible and mouldable. Their adjustment in a whole implies their flexibility and adjustability. In the second place, in so far as the elements or parts cohere and coalesce into the structure or pattern of a whole, the whole must itself be an active factor or influence among than, otherwise it is impossible to understand how the unity of a new pattern arises from its elements. Whole and parts mutually and reciprocally influence and modify each other; the one is pliant to and molded by the other. The adjective, directive, controlling influence of the whole is just as real as the whole which the parts play in the make-up of the whole.

2.2 Systems Theory

Systems theory is the Trans disciplinary study of the abstract organization of phenomena, independent of their substance, type, or spatial or temporal scale of existence. It investigates both the principles common to all complex entities, and the (usually mathematical) models which can be used to describe them.

A system is defined as an. organized purposeful structure regarded as a 'whole' consisting of interrelated and interdependent elements (components, entities, factors, members, parts). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system in order to achieve the common purpose the 'goal' of the system. All systems have (a) inputs, outputs, and feedback mechanisms, (b) maintain an internal steady state (called homeostasis) despite a changing external environment, (c) display properties that are peculiar to the whole, called emergent properties, but are not possessed by any of the individual element, and (d) have boundaries that are usually defined by the system observer. Emergent properties are the property of the whole, not the parts, and thus cannot be analyzed; they are the product of interactions among the parts. The notion of interaction signifies a dynamic process. In other words, the emergent phenomenon is a time dependent state reproduced continuously online and real time. Every system is part of a larger system, is composed of subsystems, and shares common properties with other systems that help in transferring understanding and solutions from one system to another. Systems obey rules which cannot be understood by breaking them into parts, and stop functioning (or malfunction) when an element is removed or altered significantly. Together, they provide a coherent and unified way of viewing and interpreting the universe as a meta system of interlinked wholes, and of organizing our thoughts about the world. Although different types of systems (from a cell to the human body, soap bubbles to galaxies, ant colonies to nations) look so very different on the surface, they have remarkable similarities. At the most basic level, the systems are divided into two categories (1) Closed systems; theoretical constructs, which have solid boundaries and where only the components within the system are assumed to exist in a self-sufficient state. All other influences or variables from outside the system are considered to be non-existent or insignificant for the purpose of the system analysis (2) Open Systems: The 'real world' systems that have permeable boundaries through which they continually exchange energy, material, and information with their external environment, the larger system in which they exist.

A system can be said to consist of four things. The first is objects-the parts, elements, or variables within the system. These may be physical or abstract or both, depending on the nature of the system. Second, a system consists of attributes – the qualities or properties of the system and its objects. Third, a system had internal relationships among its objects. Fourth, systems exist in an environment. A system then, is a set of things that affect one another within an environment and form a larger pattern that is different from any of the parts. The fundamental systems-interactive paradigm of organizational analysis features the continual stages of input, throughput

(processing), and output, which demonstrate the concept of openness/closed ness. A closed system does not interact with its environment. It does not take in information and therefore is likely to atrophy, that is to vanish. An open system receives information, which it uses to interact dynamically with its environment. Openness increases its likelihood to survive and prosper. Several system characteristics are: wholeness and interdependence (the whole is more than the sum of all parts), correlations, perceiving causes, chain of influence, hierarchy, suprasystems and subsystems, self-regulation and control, goal-oriented, interchange with the environment, inputs/outputs, the need for balance/homeostasis, change and adaptability (morphogenesis), and equifinality: there are various ways to achieve goals.

Systems theory provides an internally consistent frame work for classifying and evaluating the world. There are clearly many useful definitions and concepts in systems theory; it provides a universal approach to all sciences. As von Bertalanffy points out, "there are many instances where identical principles were discovered several times because the workers in one field were unaware that the theoretical structure required was already well developed in some other field. General systems theory will go a long way towards avoiding such unnecessary duplication of labour."

Systems thinking is the process of understanding how things influence one another within a whole. Systems thinking is not one thing but a set of practices within a framework that is based on the belief that the component parts of a system can best be understood in the context of relationship with each other and with other systems, rather than in isolation. Consistent with systems philosophy, systems thinking concern an understanding of a system by examining the linkage and interactions between the elements that compose the entirety of the system. System thinking is increasingly being used to tackle a wide variety of subjects in fields such as computing, engineering, epidemiology, information science, health, education, manufacture, management, and the environment.

Before we describe the Jain philosophical developments with systems approach, it is in order to make some observations on the concepts of system and holism as described above. Care must be exercised to interpret the emergent properties of the system. According to Jainism the system cannot possess any property that is not the property of its elements. What actually happens is that some properties of the elements that are not expressed in the isolated state are expressed in their system mode. A system made of matter can only possess properties of matter, like its elements, and cannot possess the properties of *Jiva*, such as consciousness, or other substance. Jain philosophy denies the concept of epiphenomenalism, where consciousness is supposed to emerge from combination of matter.

We illustrate the above point from a simple example of game of cricket. Each player knows the game but cannot play it alone. The system, team, consisting of players exhibits the property of the cricket game, which none of its elements, players, can manifest in isolated state. System expresses the property, skill, possessed by its

elements, players, and cannot express anything that is not possessed by the players. The system is an interconnected whole, the performance of the team is determined by the performance of the individual players and the performance of each player is influenced by the performance of at least one more player, who is playing with him, and the performance of the whole team in some measure. The performance of the team is also influenced by the environment- the opposite team, coach, umpires, managers etc. It is the systems approach, and not only the individual skills, that enables a successful assessment of the performance of the team But the system cannot exhibit any skill which is not possessed by its members, it is possible that that skill manifests only when playing in a group like team.

The assumption that parts are not real in the theory of holism is not endorsed by Jain philosophy, which claims that the parts are as real as the whole. Non-absolutist Jains endorse neither absolute separateness nor absolute inseparableness - neither absolute unity nor absolute multiplicity - but explain both these apparently opposite extremes as real with reference to different aspects of the same physical reality. In the Jain view, the classical notion that the independent 'elementary parts' are the fundamental reality is as much far from the whole truth as the modern notion that the whole universe is the fundamental reality. Neither of these rival aspects of the world of experience can be adopted as absolute truth in isolation from the other. Parts are as much real as the whole and neither the whole nor the parts are absolutely independent of the other. We may summarize the non- absolutist Jain position as under:

"Is Reality", ask the Jains, "One or many, unity of whole or multiplicity of parts and if it is both, how are they connected?"

"The world", replies the Jain "must be an orderly whole or system. To be a system at all, it must be the development or expression in detail of a single principle (Reality). Therefore, it cannot be a medley of independent elements which somehow luckily happen to form a coherent collection. But again, because it is a system, it cannot be a mere unit; it must be the expression of a single principle in and through a multiplicity of parts or constituents. Not only must it be one and many, but it must be many precisely because it is truly one, and one, because it is truly many. In a complete system, no single part can be missing or be other than it is. Also the number of distinct parts may be actually endless while the law of construction is perfectly determinate. And again the individual elements themselves may turn out to be systems of infinite complexity. Thus the unity of ultimate principle, in no way, excludes its possession of a wealth of detail infinitely infinite."

Jains take a further important step forward. In the all embracing systematic whole physical reality, the unity and the multiplicity are equally real and each is real through the other.

3 Jain Philosophical Developments

3.1 *Naya* (Non-absolutistic stand point)

Knowledge is acquired from two sources: sensuous consciousness and transcendental consciousness. Thinking is related to sensuous consciousness but in transcendental consciousness there is vision and introspection but no thought. According to the Jain doctrine, the knowledge gained from sensuous consciousness is a partial, and not complete, knowledge of a substance. A person possessing sensory consciousness knows the part of the substance. That partial knowledge becomes the subject of controversy. Five individuals gain knowledge about five different aspects of any one substance and each of them believes their own knowledge to be perfect and true and that of the others to be untrue. In Jain philosophy an effort has been made to change this approach and understand truth through right vision; this is called "*Nayavad*".

Naya is a point of view, a vision, and a way of thinking. However, according to Siddhasen Diwakar - there are as many *naya* as there are ways of speaking. This extensive approach makes the areas of contemplation very difficult. It becomes problematic for the listener or the learner to come to any tangible conclusion. In order to ease up this problem the Jain Acharyas have described two separate areas for the thought.

1. *Dravyarthik naya* (the substantial point of view) - That means describing a thing with respect to its ultimate substance i.e. its persistence or permanence.
2. *Paryarthik naya* (the modal point of view) - That means describing a thing with respect to its modification i.e. its origination - cessation or impermanence.

These two views have been delineated for the convenience of contemplation and veritable ruling. In fact the thoughts cannot be made veritable by dividing them in permanent and impermanent. For exposition of persistence the substantial view point was adopted and for exposition of change the modal point of view was adopted. Both points of views are relative. Nowhere is persistence completely independent of change and vice versa. Yet, in order to get a holistic understanding of existence this arrangement was deemed fit. The substantial point of view analyses persistence of oneness, but does not completely rule out change, as every view point has its own limitations. It does not believe in polemics of the subject matter. Relativity means that there is nothing absolute. One *naya* only analyses a portion of the whole, so naturally the remaining portion too remains allied to it. This perception clarifies the theory of relativity.

This relativity is also expressed in the sentence- as many viewpoints exist in as many ways of thought. The basis of this argument is its mode. Modes are innumerable hence view points too are innumerable. Only does the combination of innumerable parts enable us to realize the substance in totality. This is not a correct perception to believe that one mode constitutes the whole. *Naya* is absolutism, but it is in no way the false angle to perception. It bears no eagerness to perceive wholeness in a portion; it is not an exposition of absolute truth.

Divergence and identity are two broad area of contemplation. Identity does not affect the behaviour. Divergence becomes the cause for conflict and disharmony. When dwelling on philosophical ideas it is divergence which gives rise to conflict.

The Jain philosophers have endeavored to amalgamate identity and divergence and reduce ideological conflict. According to the *anekanta*, a multi-faceted viewpoint or non-absolutism, school of thought of total identity and total divergence is an absolutist approach. With this approach truth cannot be explained properly.

Jain Acharyas have described seven main types of *nayas*.

1. Synthetic *Naya*, (*Samagraha naya*) - That view point, which apprehends only the general or universal (i.e. common character) disregarding the specific one.
2. Analytic *Naya* (*Vyavahara Naya*) - That viewpoint, which apprehends the particular, takes cognizance of the character of a real as it is understood by common people.
3. Pantoscopic (figurative or conventional, *Naigama Naya*)
 - a. The view point which takes stock of both difference and identity
 - b. The viewpoint which is cognizant of the intention of the speaker.
4. The Momentary *Naya* (*Rjusutra Naya*, straight and direct approach) - That view point which takes cognizance of the actually present mode.
5. The Verbal *Naya* (*Sabda Naya*) - That view point in which the literal aspect is more significant than the aspect of meaning (or purport).
6. The Etymological *Naya* (*Samabhirudha Naya*) - That viewpoint which makes difference even in the synonyms on the basis of differences in their etymological meanings.
7. The Functional *Naya* (*Evambhuta Naya*, Actualistic standpoint) - That viewpoint which accepts only the employment of that word which actually exercises the activity connoted by it; e.g., the teacher is only one who is actually employed in the activity of teaching.

The Synthetic & Analytic viewpoint and Pantoscopic view point fall under the category of substantial viewpoint and the Momentary, Verbal, Etymological and Functional view points constitute the category of modal view point. According to another system classification the first four view points which are mainly concerned with the ontological aspect of a thing are called the ontological view point (*Arthanaya*). The remaining three, being mainly concerned with the linguistic aspect, are called the verbal viewpoint (*Sabda naya*).

The nature of a thing (substance) is sometimes determined with reference to its intrinsic nature or the material cause (*upadana karana*) while on other occasions it is determined with reference to modes arising from extraneous sources. In the former case the viewpoints may be called transcendental (*Niscaya naya*) and in the latter the empirical (*Vyavahara naya*).

The doctrine of non-absolutism falls under two divisions, viz., complete comprehension through *pramana* and partial assessment through *naya*. The entire

object is revealed by the *pramana*, whereas only a particular aspect is determined by the *naya*. The entire object comprehended through the principle of non-absolutism is analyzed in parts by means of the system of *nayas*. A view point (*naya*) is limited in its activity to the presentation of its own subject - matter. It is called a *naya* so long as it does not refute the rival viewpoint. As soon as the refutation of a rival view point is attempted; it falls in the category of pseudo-*naya* (*durnaya*) on account of its being absolutistic in character. An absolutistic view point that asserts its own validity independently of any other view point gives rise to controversy whereas the relativistic view point or a coordinated viewpoint gives rise to reconciliation or absence of controversy.

Based on viewpoints (*naya*) there are eight rules of thought

1. Substance is real, Based on it thoughts have been developed.
2. A thought without substance is impractical. It cannot be given more importance than imagination. A word whose meaning is explicit in its action cannot be regarded as merely imagination.
3. Substance cannot be known in entirety. Our knowledge does not have the capacity to know altogether all the different modes of substance.
4. We can only know the whole substance through perspective of identity.
5. It is not possible to know the substance face to face. It can only be known through modes.
6. One can know only one mode at a time.
7. It is not possible to explain the innumerable modes of the future just by the knowledge of one mode. So it is advisable to analyze relative truth.
8. Existence is an absolute truth. It can be assumed on the basis if its mode but its direct knowledge cannot be gained.

3.2 Meaning of *Anekanta*

The term *anekanta* yields two meanings when interpreted etymologically. The popular meaning refers to the plurality of determinants in a real. But this position will be found common nearly to all the pluralistic systems of philosophy. The Jaina concept of *anekanta* implies something more than the mere plurality of components in a real. It is very often said that the distinctive feature of the *anekanta* theory lies in the affirmation of opposites in the same real. Reality does not merely admit of multiple forms of existence; but it is, at the same time, a substrate of opposite elements. The other meaning of the term *anekanta* may be taken as the antithesis of *ekanta*, i.e., absolutism. Absolutism affirms one uniform character of reality, and the non-absolutism denies such an affirmation. Vidyanandin says, "*Anekanta* means the negation of the absolutism of existence, non-existence, permanence and commentaries." If reality is held to be absolutely permanent as in Vedanta, the non-absolutism of the Jaina denies the very contention. If reality is held to be absolutely transitory as in Buddhism, the non-absolutism of the Jaina refutes this position also. The Jaina in the denial of the former affirms the latter and vice versa; and he is able to maintain such a position consistently

only by resorting to the non-absolute way of thinking. The position held by the Jaina amounts to the contention that a real is a substrate of opposing elements. This brings us face to face with the problem of negation or *abhaava* which constitutes a vital part of the Anekanta theory of existence.

3.3 Jaina Dialectic

We have seen that the structure of reality consists of both unity and diversity at the same time. It can be further analyzed into attributes, modes and traits. The relational nature of reality makes its structure all the more complicated. On the other hand human capacity for comprehension is so limited that it cannot know a thing in its totality. Thus the *Anekanta* theory of existence and the discursive nature of human thinking necessitate the formulation of the doctrine of *Syadvada* or the Jaina dialectic, which is mainly concerned, as W.T. Stace thinks, with "the correct joining and disjoining of ideas". It aims at finding a suitable explanation for the fragmentary advance of our thought and comprehension. It also aims at seeking the type of consistence which such an advance of knowledge will evince.

Another spirit which the doctrine of *Syadvada* shows is that nothing can be affirmed of a real in an absolute way. Samantabhadra remarks that *Syadvada* is a way of comprehension of an entity by renouncing the absolute views about it. *Syadvada* emphasizes the fact that no predicate affirmed of a real is able to yield the whole truth about it. It gives us only a partial view of the real and such a view is affected by isolating some of the elements from the totality of the real. It means that the *Syadvada* doctrine is based on an analysis of reality into its constituent elements. "*Syadvada* effects a division or analysis of reality and the *naya* enlightens the particularity of the divided elements. *Syadvada* is the theory of fragmentary or partial comprehension and the *nayas* embody the principles by which the process of such a comprehension is governed. The possibility of an analysis of reality just shows that the process of comprehension based on such an analysis cannot be merely a subjective imposition. There must be something in the structure of the real itself to affect a partial comprehension about it. If it is said that the universe is permanent or transitory, the universe must contain something to correspond to such comprehensions. We have seen how the traits like position and negation, unity and difference, and permanence and impermanence are united in a real. Thus the subject-matter of *naya*-knowledge has an ontological validity. At the same time such characteristics cannot be affirmed of a real in the same context; this will involve contradiction. The world cannot be permanent in the same context in which it is held to be impermanent. Hence the application of contexts or reference systems is also an ingredient of the theory of *Syadvada*. The main function of the Jaina dialectic comes out to be the selection of a proper context and the discernment of the truth implied in it. Devanandi says: "A consistent comprehension of a particular element in reality having many determinants by assigning a proper reason (i.e., context) is the *naya*." Again "that particular view-point of the knower, which comprehends a part of the real (by throwing the rest into relief) and which has become the subject-matter of the

sruta pramana, is the *naya*. Dr. Radhakrishnan also observes: "A *naya* is the stand-point from which we make a statement about a thing." The idea underlying these expositions is that the *naya* knowledge depends upon an analysis of a real affected from a particular view-point of the knower.

3.4 The Pramana Type of Knowledge and its Essential Nature

The *naya* is not the only form of knowledge. "Knowledge is accomplished", says Umasvati, "by means of *pramanas* and *nayas*." Generally we come across two types of knowledge. Firstly, there is a type which follows the fragmentary process of comprehension and touches only a slice of reality. The other type of knowledge aims at giving a comprehensive view of a real. The *pramana* and the *naya* types of knowledge are mutually distinguished for their total and partial approaches to a real. Devanandi says: "A *pramana* takes the whole of a real as its subject-matter." Vimaladasa also mentions: "A total comprehension of reality is the knowledge of the *pramana* type." This may appear to lead to the impossibility of the *pramana* type of knowledge. Our experience testifies to the fact that we are never able to comprehend the totality of reality. Samantabhadra, therefore, has well said: "The knowledge of reality which enlightens the whole of it simultaneously is the *pramana*. Thus perfect knowledge or the *kevalajnana* alone can be designated as the *pramana* type of knowledge; and in the lower stages of existence a *pramana* cannot be experienced. But in the Jaina works along with the *Kevalajnana* sensuous knowledge, scriptural knowledge, clairvoyance and telepathy have also been enumerated as yielding *pramana* type of knowledge, though they never apprehend reality as a whole. The totality common to all the aforesaid types of knowledge must not be taken to mean the all inclusive totality of reality whose comprehension is held to be possible only in the perfect stage. So all the *pramana* types of knowledge except the perfect knowledge as enumerated by the Jaina comprehend reality only partially; and the total comprehension of reality does not form the criterion for the *pramana* type of knowledge, Hence in the *pramana* type of knowledge the meant totality is not vitiated by the fact that it does not comprehend reality as a whole. It also leads to the conclusion that the *pramana* knowledge is possible in spite of the fragmentation it may involve. The Jaina will have to give a similar meaning to the term *sakaladesa* which is taken to be the differentia of the *pramana* knowledge. *Pramana* knowledge must not presuppose a totality in the sense of all-inclusiveness, as the term *sakaladesa* may suggest, but it must be the totality of a system. When we aim at an isolation of one or the other aspects from a system presented as an object, we get *naya* knowledge; and when such isolation is not aimed at we get *pramana* knowledge. *Kevaljnana* comprehends the entire system of the universe, and the lower and smaller systems are comprehended by other *pramanas*. The totality of a system should not be taken to mean the aggregate of its constituents. So also an aggregate of partial comprehensions cannot yield a *pramana*. Rajamalla opposes the view that a *pramana* is an aggregate of the *nayas*. "A *pramana* has a different taste (essence) from the aggregate of *nayas*." "Negation is preceded by affirmation and affirmation by negation.

The knowledge which comprehends the union of the two is the *pramana*". Joachim also maintains a similar view. He observes: "To treat science as a sum, aggregate, collection or class of single truths, each of which is what it is in its singleness and remains unchanged in the collection is utterly inadequate as a theory of knowledge. A *pramana* may include the *nayas* but is not identified with them; it always transcends the aggregate of the *nayas*. The totality of the *nayas* gains in essence which is lost when a surgical analysis of a *pramana* is affected. This special essence is suggested by assigning a different taste (*rasa*) to the *pramana*. In the bits of sensuous knowledge the entity presented to the senses is comprehended as a whole and no isolation is meant therein, so this type of knowledge is classed with the *pramanas*.

Pramana is mainly of two types:

- 1 Direct Perception or Perceptual Cognition (*Pratyaksa*). This is of two types;
 - (a) Sensual perception- perception made through senses, directly or through instruments
 - (b) Non-sensual perception. This is of three sub-types;
 - (i) Perception through clairvoyance
 - (ii) Perception through telepathy
 - (iii) Direct perception by soul or perception of Omniscient
- 2 Indirect Perceptions. This is of three types
 - (a) Inductive reasoning or Logic or Inference (*Anumaan*). Existence or absence of a thing is decided on the basis of existence or absence of another thing, causality. Many of the scientific observations, which are effects of a phenomenon, fall in this category.
 - (b) Analogy or Comparison (*Upamaan*)
 - (c) Scriptures, written records of the teachings of the Omniscient (Agama)

3.5 Relation between the *Naya* and the *Pramana* Types of Knowledge

If reality is not completely comprehended by the *naya* and also by some of the *pramanas* the question of their validity needs consideration. The problem is what kind of validity the Jaina would like to assign to the partial comprehensions. We have seen that the determination of the partial comprehensions is also based on something ontologically true in the structure of the objects, so also the *pramanas* that fail to comprehend reality as a whole must proceed on a similar ground. The *nayas* as well as the *pramanas* yield a valid type of knowledge. "A *naya* comprehension is also valid as it yields a right cognition of its subject-matter." A *naya* is not admitted as an antithesis of a *pramana* because it embodies a type of knowledge. It is a part of the *pramanas*. A *naya* is neither a *pramana* nor an antithesis of *pramana*, being free from contradiction. Vidyananda also establishes a relation between the *nayas* and the *pramanas* by saying that the former are the parts of the latter. At the same time the Jaina would like to emphasize the fact that a *pramana* transcends the totality of the *nayas* by gaining a different essence. The *pramana* does not remain the same as it was in isolation. In this sense alone we can say that *nayas* lose their existence when they enter into a system to

yield a *pramana*. A *pramana* is an integrated system of the *nayas*; and it is a system in which as Blenshard holds, "integration would be so complete that no part could be seen for what it was without seeing its relation with the whole, and the whole itself could be understood only through the contribution of every part.

4 Concluding Remarks

Scientific theories which treat the whole as a linear combination of parts are satisfactory for the non-living physical world. But they fail to comprehend the reality in cases like biological, societal, organizational etc. systems which are characterized by non-linear interactions of their parts. Such complex systems are best described by systems theory which advocates that the whole is more than the sum of its parts. The parts are not independent entities; a relationship among them makes their combination non-linear. The systems theory has found wide application in a large range of fields of human activity and is seen as the emerging paradigm.

Jain philosophy views both the parts and the whole as real and admits interrelation between the parts. It asserts that integration of parts in a system cannot emerge a property which is not present in the constituent parts. However, it is possible that a property that is not expressed in isolation is expressed in the system, and this may be called as the emergent property. Jains devised a scheme of *nayas* and *pramanas* to describe the philosophical systems and to reconcile the conflicting ideologies propagated by different philosophical schools. The theories of *anekanta*, *Syadvada*, *naya* and *pramanas* are powerful means to describe the multiple nature of reality. This scheme enables total comprehension of the reality within the framework of the cognitive limitations of the observer.

The modern systems theory using mathematical models is able to describe the input-output relationship of the systems taking into account the feedbacks and environmental influences, and in this respect it is advancement over the Jaina theories. However, the Jains were aware of the problem of dealing with complex systems and they developed theories to resolve conflicts between different schools of philosophical thoughts and comprehend the reality in its true form.

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