

# A critical study about the *Nyāya-Vaiśeṣika* theory of atomism

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## ABSTRACT

British scientist John Dalton is familiar to us as he had developed the atomic theory in modern times. But actually Indian sage Kanada formulated the atomic theory far before. It is known to us that the *Vaiśeṣikas* have admitted nine substances- earth, water, fire, air, ether, space, time, spirit and mind. Among these nine substances ether, space, time and soul or spirit are regarded as eternal and all-pervading. Mind is also regarded as eternal, but it is atomic. Other four substances may have two forms- eternal and non-eternal. The atoms of these four substances are eternal, but the compound objects are non-eternal. *Vaiśeṣikas* say that all compound objects have parts. They have origination as well as destruction. Compound objects are produced by the conjunction of atoms and when the conjunction is disturbed, compound objects are destroyed. Here some important questions may be raised: How the partless atoms are combined? Whether the atoms are enough to create the varieties of objects of the world, or some external power is necessary to do the same? In the present paper I shall explain the above problems from the *Nyāya-Vaiśeṣikas'* standpoint. In this connection, the opinions of some other schools of Indian philosophy have also explained here.

**Keywords:** *Aṇu*, *paramāṇu*, *dyad*, *triad*, *adr̥ṣṭa*.

## 1

**Introduction:** In Indian philosophy, we find two words '*aṇu*' and '*paramāṇu*' which are used to denote atoms. Various schools of Indian philosophy used the term '*aṇu*' in the sense of 'minutest particle'. The *Nyāya-Vaiśeṣikas* were the strong supporters of atomism. To explain the origin of the world, they had developed the atomic theory which is also known as *Paramāṇu-Kāraṇa-Vāda*. According to the *Nyāya-Vaiśeṣikas*, all worldly objects are composed of parts and these parts are again composed of smaller parts. That means, the gross objects of the world are divisible and if this process of division goes on, at last we find some atoms which are indivisible.

Etymologically, the word '*paramāṇu*' is a combined form of two words- '*param*' which means 'the highest degree' and '*aṇu*' which means 'minutest particle'. Generally, the English word 'atom' is used for '*paramāṇu*'. We find the term '*aṇu*' in the *Vaiśeṣikasūtra* of Kanada. "There we find the word *aṇu*, but not the word *paramāṇu*, in the senses of an 'atom' as well as 'very small'". (Gangopadhyay, 1980) Prasastapada described the origin and destruction of physical things with the help of atoms. "*Ihedaṇīm caturṇāmahābhūtānām sṛṣṭisamhāradhiruccyate.*" (Prasastapada: *Padārtha-Dharma-Saṁgraha*, 2.2.4, Cited by Mandal, 2004) Many scholars think that the term '*dyad*' or '*dvaṇuka*' was first used by Prasastapada to define the first product of atom.

## Explanation:

## 2

Gautama, in his book *Nyāyasūtra* said that absolute non existence of all things is impossible as atoms remain in the end. "*Na pralayoanubhāvāt.*" (Gautama: *Nyāyasūtra*, 4-2-16, Cited by Gangopadhyay, 1980) The implications of Gautama's opinions were substantiated by Vatsyayana in his *Nyāyabhāṣya* where he also explained his own ideas and arguments. Vatsyayana defined atom as a partless entity. "*Niravayavatvaṁ tu paramāṇovibhāgeopalparaprasaṅgasya yato nālpīyastatrāvasthānāt.*" (Vatsyayana: *Nyāyabhāṣya*, 4-2-16, Cited by Gangopadhyay, 1980) He has justified the use of the term '*paramāṇu*' for atom.

We have come to know that in Indian philosophy the term '*aṇu*' is used for atom to mean small and the term '*paramāṇu*' is also used for atom to mean absolutely small. Small things are separate from 'great' things. Everybody accepts the existence of infinitesimal atoms and it requires no proof. It may be said that we find the conception of atom if we apply the idea of the infinitesimal to the matter. "The smallest thing that is perceived in the sun-beam [coming] through a lattice-window is something that has parts; for it is a visual substance like a cloth." (Bhattacharya, 1994) "*Jālasūryamarīcisthaṁ sūkṣmatamaṁ yat raja upalabhyate tat sāvayavam, cākṣuṣadravyatvāt patavat.*" (Annambhatta: TARKASAMGRAHA O TARKASAMGRAHA DĪPIKĀ, Text No. 13. Cited by Mukherjee, 1986)

The four material elements of *Vaiśeṣikas* are earth, water, fire and air. Corresponding to these four types of material elements, there are four types of atoms. "We have seen that the first four *dravyas* have a two-fold

form as atoms and as discrete objects originating from them.” ( Hiriyanna, 1987) In respect of quality, the atoms differ from one another. The twenty four qualities of *Nyāya-Vaiśeṣikas* were divided into two groups- general qualities or *sāmānya guṇa* and specific qualities or *viśeṣa guṇa*. *Viśeṣa guṇas* reside in one substance only, but the *sāmānya guṇas* reside in more than one substance. Conjunction, disjunction, number etc. are *sāmānya guṇas* or general qualities and color, small, taste etc. are *viśeṣa guṇas* or specific qualities. One atom differs from another atom only in respect of specific quality. Smell, taste, colour and touch are the specific qualities of earth, water, fire and air atoms respectively.

According to the *Nyāya-Vaiśeṣikas*, by the force of motion *adrṣṭa* unites one atom with another and forms various kinds of things at the time of creation. “At the time of creation, Īśvara wishes to create and this desire of Īśvara works in all the souls as *adrṣṭa*.” (Dasgupta, 2004) At the time of production, at first a dyad is produced by the combination of two atoms and by the combination of three dyads a triad is produced. This triad is the smallest visible substance. Two atoms of different kinds cannot form a dyad, but two atoms of the same kind only can form a dyad. Thus, two earth atoms can produce an earth dyad and not one earth atom and one water atom can produce an earth-dyad or water- dyad.

### 3

The problem of the conjunction of atoms is the most important problem before the atomists. Conjunction is possible only among the things that have parts. As the atoms are partless, so they cannot be conjoined with each other. The *Vaiśeṣikas* thought that conjunction is a quality. The quality may be of two kinds- pervading and non-pervading. The quality which pervades the whole substance where it inheres, is called pervaded quality. For example, colour etc. On the other hand, the quality which is otherwise, i.e. which does not pervade the whole substance is called non-pervaded quality. Conjunction is one type of non-pervaded quality as it does not pervade its whole substratum. The conjunction of a monkey and a tree may occur in the branch of the tree, but not in all parts of the tree. In the case of conjunction of atoms, we should apply the same formula. That means, if we talk about the conjunction of atoms, we should say that the conjunction presents in some parts of it, and does not present in some of its other parts. In that case we are not able to say that the atoms are partless.

Now the *Nyāya- Vaiśeṣikas* have to accept that the combination of atoms is not possible and thus they have to reject their atomism. Creation is possible after dyads are formed by the conjunction of two atoms and triad by the conjunction of three dyads and so on. But in that case, we have to accept that the atoms have parts. In this way, *Mahājāna Buddhists* have criticized the atomism of the *Naiyāyikas*. Vasubandhu in his book *Vijñaptimātratāsiddhi* also criticized the atomism in this way. “*Ṣaṭkena yugapadyogāt paramāṇoh ṣaḍamśatā/ Ṣannām samānadeśatve pindah syādaṇumātrakah/*” (Vasubandhu, *Vijñaptimātratāsiddhi*, verse no.12, Cited by Gangopadhyay, 1980)

Gautama in his *Nyāyasūtra* tried to solve the above problem and his commentators classified his position. Annambhatta said that the *avayavi* is produced by the *avayavas*. The *avayavas* or parts are the inherent cause of the *avayavi* as the whole or *avayavi* is produced by the *avayavas* and subsists in them (*avayava*) through the relation of inherence. “*Yat samavetaṁ kāryamutpadyate tat samavāyikāraṇam*” (Annambhatta: TARKASAMGRAHA O TARKASAMGRAHA DĪPIKĀ, Text No. 13. Cited by Mukherjee, 1986 ) The non-inherent cause of the *avayavi* is the particular conjunction of the *avayavas*. “*Kāryeṇa kāraṇena vā saha ekasmin arthe samavetaṁ sat kāraṇam asamavāyikāraṇam.*” (Annambhatta: TARKASAMGRAHA O TARKASAMGRAHA DĪPIKĀ, Text No. 13. Cited by Mukherjee, 1986.) To produce the *avayavi*, the conjunction of *avayavas* play important role. But the *avayavi* is different from the *avayavas*. It has a separate existence of its own as it is not only a collection of the *avayavas*.

Here it can be said that the partlessness of atom is nothing but a logical necessity. To explain the production of things one may admit the mutual conjunction of the partless atoms. Beside this, we may think about the two types of divisions- real division or division due to the possession of parts and the division due to the determinants which is not a real division. When we divide space as occupied by chair, table etc., then it is the division due to determinants as space is actually undivided, one and all-pervading. We can accept the apparent division of atoms due to space around them as they are partless. With reference to the particular space points conjunction of atoms is non-pervasive.

The *Jainas* say that in our ordinary experience we look that when some drops of water fall upon the particles of barley-meal, they form a lump. In the same way, the viscid and dry atoms may combine together. Though atoms are homogeneous in nature, yet some atoms are more viscid and some are more dry than the others. “*Snigdharūkṣatvāt bandhaḥ.*” (Umaswami: *Tattvārthasūtra*, verse no. 5-32, Cited by Gangopadhyay, 1980.) The atoms are active and so they can attract themselves and form material objects. “*Guṇasāmye*

*sadrśānām.*" (Umaswami: *Tattvārthasūtra*, verse no. 5-34, Cited by Gangopadhyay, 1980.) That means, all of them have the characteristics of viscosity and dryness and their differences are due to the degree.

Buddhist Subhagupta said that the atoms have some inherent potency through which they may gather together and form an object. The worldly objects were created in this way. Close proximity is the cause for which the atoms can influence themselves and undergo transformations. All atoms have not the same degree of potency. By the power of *Mantra* or incantation we can bind up an evil spirit, snake etc. Similarly, due to the power of substances some atoms may combine with one another. "Piśācasarpaprabhṛtermantraśaktyā graho yathā/ Sangacchanteaṇavaḥ kecid dravyaśaktyā parasparam//"  
(Śubhagupta: *Bāhyārthasiddhi*, Verse no. 58, Cited by Gangopadhyay, 1980.)

#### 4

The early *Nyāya-Vaiśeṣikas* thought that *adrśta* or unseen power is the cause of motion of atoms. Uddyotakara thought that as the *adrśta* is unconscious, so it is not possible for *adrśta* to be the cause of motion of atoms. So he said that God had created the universe with the help of atoms after determining the *adrśta* of living beings. We find differences of opinions in this regard between the early *Nyāya-Vaiśeṣikas* and the later *Nyāya-Vaiśeṣikas*. The later *Nyāya-Vaiśeṣikas* used the term '*adrśta*' in the sense of merit and demerit (*dharmādharma*). As *adrśta* belongs to self only, so it is a specific quality of the individual self. But it is a later modification of the term *adrśta*.

Literally '*adrśta*' means 'unseen'. It is such type of cause the exact nature of which is not determined, though its presence is necessary to explain certain effects. Kanada illustrated that this *adrśta* operates both in physical and non-physical spheres. He said that the movements of atoms become possible due to *adrśta*.

#### Conclusion:

#### 5

As there is no dependable literature of the *Cārvāka* philosophy, we cannot say certainly whether they were atomists, or not. The *Jainas* were atomists because they had defined atom and its qualities in their texts. *Hīnāyāna* Buddhists were the supporters of atomism. They believed that the external world is real and the external objects are formed by atoms. The *Mahāyāna* Buddhists opposed this view. *Yogācāra* system strongly criticized the atomic theory. *Vedānta* system did not accept atomism. Generally the *Sāṃkhya* philosophers were not supporters of atomism, though some modern scholars tried to show them as atomists. But most of the scholars of *Sāṃkhya* system were against the atomic theory. Samkara criticized both the *pradhāna-kāraṇa-vāda* of *Sāṃkhyas'* and the *paramāṇu-kāraṇa-vāda* of *Nyāya-Vaiśeṣikas'*.

Some scholars thought that the *tanmātras* of *Sāṃkhyas'* are equivalent with the *paramāṇus* of the *Nyāya-Vaiśeṣikas*. But this interpretation is not acceptable. *Nyāya-Vaiśeṣikas* admit that the physical world was originated from the atoms, while the *Sāṃkhyas* admitted that the physical world was originated from *Prakṛti*. It may be accepted that both the *tanmātras* and the *paramāṇus* are same as both are very subtle. But there is a fundamental difference. The *Nyāya-Vaiśeṣikas* admitted that the *paramāṇus* are the ultimate cause of this world, they are indestructible and they remain at the time of dissolution also. But the *tanmātras* of *Sāṃkhyas'* are nothing but combinations of three *guṇas*, are not the ultimate cause of this world and do not remain at the time of dissolution. At the time of dissolution, the *tanmātras* recede back into *Prakṛti*. The theory of causation of *Sāṃkhya* is known as *Satkāryavāda* which says that the effect pre-exists in its material cause before its production. On the other hand, the *Naiyāyikas* thought that the effect really originates at the time of production and so their theory of causation is known as *asatkāryavāda*. The *Sāṃkhyas* told that the cause is more extensive than the effect. This may be called the large-to-small causation. But the *Naiyāyikas* said that the minute atoms form the longer and longer things. Here atoms are causes and longer things are effects. So, this may be called the small-to-large causation. Thus, we find the here diversity of opinions between them about the modes of transition from cause to effect.

Samkar pointed out many logical inconsistencies against the atomic theory. We do not find any reference about atoms in the *Vedas*. So it may be said that the atomic theory is non-*Vedic*. Supporters of Samkar claimed that the teachings of *Upaniṣadas* are true. *Nyāya-Vaiśeṣikas* were not able to quote any *Vedic* passage to support atomism.

Kapila also rejected atomic theory and said that it goes against scriptures. Supporters of *Sāṃkhya system* said that though at present we do not find any scriptural statement to support the opinion of the *Sāṃkhyas'*, yet we can assume that in ancient time such a statement was there. To prove the non-eternality of atoms, they have quoted a verse of *Manusmṛhitā* where it is said that the atoms are non- eternal. "*Anvyo mātṛā vināśīnyo daśārddhānām tu yāḥ smṛtāḥ/ Tābhiḥ sārddhamidam sarvaṃ sambhavatyanupūrvaśaḥ//*" (*Manusmṛhitā*, 1-27, Cited by Bandyopadhyay, 2004.) In all his writings *Manu* followed the decisions of

scriptures. So they assume that in many years ago the scriptures told something about the non-eternality of atoms, which has been lost in course of time.

But the above explanation is not acceptable. Both Kanada and Gautama had accepted the authority of the *Vedas* and they claimed that the atoms are eternal. Now if we assume on the basis of Kapila's explanation about some lost texts of the scriptures where it was mentioned that the atoms are not eternal, then in the same way, we may assume some lost texts of the scriptures where the eternity of atoms were mentioned.

Some scholars thought that *Nyāya-Vaiśeṣikas'* atomism was a synthesis of *Upaniṣadic* and *Buddhistic* speculations, just like the atomism of Democritus was a synthesis of two different views of Heraclitus and Parmenides.

Thus, we find a synthesis between absolute momentariness and absolute permanence in the atomism of the *Nyāya-Vaiśeṣikas*. Here some thinkers may argue that such a synthesis may be found in the concept of *Pradhāna* of *Sāṃkhya's'* and so there is no necessity to accept atomic theory. *Pradhāna* is formless, limitless, undifferentiated, first cause of the world and at the same time it is ever-dynamic. *Pradhāna* manifests itself through the various forms of the world at the stage of evolution.

The *Buddhists* and the *Nyāya-Vaiśeṣikas* thought that there are qualitative differences among the worldly elements. From *Sāṃkhya's'* standpoint we cannot explain the diversity of the physical world as they said that everything is the manifestation of *Prakṛti*.

From the character of indivisibility of atom, we may derive the idea of its indestructibility. According to Kanada, an existent thing will be regarded as eternal if it has no cause. Here the word 'cause' is used in the sense of *samavāyī kāraṇa*. The parts through which an object is composed are its *samavāyī kāraṇa*. Thus, we may say that if an object has no component parts, then it has no cause. Destruction means disjunction of component parts and as the atoms are partless, they are indestructible. *Nyāya-Vaiśeṣikas* admit that through the division of parts, we may arrive at atom. Everything reduced to atoms at the time of dissolution or *pralaya*.

At last, we may say that if the philosophers accept the reality of the external world, then they are bound to offer some explanations about its origination. Larger objects are produced through smaller objects and smaller objects again are produced from atoms.

It is natural that those philosophical schools will oppose the atomic theory who had denied the reality of the external world. The Jainas and the Buddhists have accepted the reality of the external world yet their religious outlook forbids them to give much importance on the matters concerned with this world, such as atomic theory etc.

The *Nyāya-Vaiśeṣikas* have not explained the religious matters seriously. They have followed a scientific line of thought unbiasedly (impartially). So, they strictly established the atomic theory by fighting with the idealists. As a result, most of the scholars think that though there are some difficulties, yet the atomic theory of the *Nyāya-Vaiśeṣikas'* is more acceptable than the others.

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