

The concept of atom in Vaisesika Philosophy

Dr. Siddhartha Gupta, Principal, Bankura Zilla Saradamani Mahila Mahavidyapith, Natunchati, Bankura-722101, West Bengal, India

Abstract

According to the Vaiśeṣika School, the trasareṇu are the smallest mahat (perceivable) particles and defined as tryaṇukas (triads). These are made of three parts, each of which are defined as dvyaṇuka (dyad). The dvyaṇukas are conceived as made of two parts, each of which are defined as paramāṇu (atom). The paramāṇus (atoms) are indivisible and eternal, they can neither be created nor destroyed.[35] Each paramāṇu (atom) possesses its own distinct viśeṣa (individuality)

Keywords: Nirvikalpa, Philosophy

1. Introduction

Vaisheshika system developed independently from the Nyaya school of Hinduism, the two became similar and are often studied together. In its classical form, however, the Vaishesika school differed from the Nyaya in one crucial respect: where Nyaya accepted four sources of valid knowledge, the Vaishesika accepted only two.^{[2][3]}

The epistemology of Vaiśeṣika school of Hinduism accepted only two reliable means to knowledge - perception and inference.^[2]

The Vaisesika System takes, its name from visesa, which means 'difference' and the doctrine is so designated because, according to it, diversity and not unity is at the root of the universe. Vaisesika deals with the categories and to unfold its atomistic pluralism. A category is called Padartha and the entire universe is reduced to six or seven Padarthas. Padartha literally means 'the meaning of a word' or the object signified by a word. All objects of knowledge or all reals come under Padartha. Padartha means an object which can be thought (Jneya) and named (Abhidheya). The Vaisesika categories are different from

those of Aristotle, Kant and Hegel. Originally the Vaisesika believed in six categories and the seventh, that is abhava or negation, was added later on. The Vaisesika divides all existent reals which are all objects of knowledge into two classes- bhava (existence) and abhava (non-existence). Six categories come under bhava and the seventh in abhava

The impulse of the Vaisesika system is derived from its hostility to Buddhistic Phenomenalism, while the Vaisesika accepts the Buddhists view of the sources of knowledge, perception and inference, it argues that souls and substances are solid facts, and cannot be dismissed as fancy picture of a fairy tale, supposed to be enacted behind the scenes

Though the Vaisesika system is mainly a system of physics and metaphysics, logical discussions are skillfully joined into it in the later works. The Vaisesika and the Nyaya agree in their essential principles, such as the nature and qualities of the self and the atomic theory of the universe, yet the classification and characterisation of the categories and the development of the atomic theory give to the Vaisesika its distinctive interest and value.

Vaisheshika espouses a form of atomism, that the reality is composed of five substances (examples are earth, water, air, fire, and space). Each of these five are of two types, explains Ganeri,^[6] (paramāṇu) and composite. A paramāṇu is that which is indestructible, indivisible, and has a special kind of dimension, called "small" (aṇu). A composite is that which is divisible into paramāṇu. Whatever human beings perceive is composite, and even the smallest perceptible thing, namely, a fleck of dust, has parts, which are therefore invisible.^[6] The Vaiśeṣikas visualized the smallest composite thing as a "triad" (tryaṇuka) with three parts, each part with a "dyad" (dyaṇuka). Vaiśeṣikas believed that a dyad has two parts, each of which is an atom. Size, form, truth and everything that human beings experience as a whole is a function of paramanus, their number and their spatial arrangements.

Parama means "most distant, remotest, extreme, last" and *aṇu* means "atom, very small particle", hence *paramāṇu* is essentially "the most distant or last small (i.e. smallest) particle".

Vaisheshika postulated that what one experiences is derived from *dravya* (substance: a function of atoms, their number and their spatial

arrangements), *guna* (quality), *karma*(activity), *samanya* (commonness), *visheshha* (particularity) and *samavaya* (inherence, inseparable connectedness of everything).^{[7][12]}

2. Literature review

Vaisheshika or **Vaiśeṣika** (Sanskrit: वैशेषिक) is one of the six orthodox schools of Hindu philosophy (Vedic systems) from ancient India. In its early stages, the Vaiśeṣika was an independent philosophy with its own metaphysics, epistemology, logic, ethics, and soteriology.^[1] Over time, the Vaiśeṣika system became similar in its philosophical procedures, ethical conclusions and soteriology to the Nyāya school of Hinduism, but retained its difference in epistemology and metaphysics.

The epistemology of Vaiśeṣika school of Hinduism, like Buddhism, accepted only two reliable means to knowledge: perception and inference.^{[2][3]} Vaiśeṣika school and Buddhism both consider their respective scriptures as indisputable and valid means to knowledge, the difference being that the scriptures held to be a valid and reliable source by Vaiśeṣikas were the Vedas.

Vaisheshika school is known for its insights in naturalism.^{[4][5]} It is a form of atomism in natural philosophy.^[6] It postulated that all objects in the physical universe are reducible to *paramāṇu* (atoms), and one's experiences are derived from the interplay of substance (a function of atoms, their number and their spatial arrangements), quality, activity, commonness, particularity and inherence.^[7] Everything was composed of atoms, qualities emerged from aggregates of atoms, but the aggregation and nature of these atoms was predetermined by cosmic forces. Ajivika metaphysics included a theory of atoms which was later adapted in Vaiśeṣika school.^[8]

According to Vaiśeṣika school, knowledge and liberation were achievable by a complete understanding of the world of experience.^[7]

Vaiśeṣika darshana was founded by Kaṇāda Kashyapa around the 6th to 2nd century BC.^{[9][10][11]}

Prasastapada in 400 A. D., Sridhar in 1000 A.D. and Udayana also in 1000 A.D. discuss the theory of creation, According to them, creation of the world out of the atoms and dissolution of it into them,

Nyaya and Vaisesika for a long time had not been treated as the same. But the later works regard these systems as forming parts of one discipline. The Buddhist thinkers Aryadeva and Hari Barman did not look upon them as a system independent of the Vaisesika. In the Nyaya Bhasya of Vatsyayana, the two are not kept distinct. Vaisesika is used as a supplement of the Nyaya. Many of the Nyaya sutras presuppose the tenets of the Vaisesika. There is no doubt that the two systems united very closely yet there is a difference between the emphasis on the logical and the physical side. Nyaya gives us an account of the process and methods of knowledge of object. But Vaisesika develops the atomic constitution of things.

The earliest available commentary on Vaisesika-sutras is Vaisesika bhasya or padarthadharma-Sangraha by Prasastapada. There are four commentaries written on Prasastapada bhasya which are namely

- (1) Vyomavati by Vyomasivacaiya
- (2) Nyaya Kandali by Sridhara
- (3) Kirriavali by Udayanacarya
- (4) Lilavati by Vallabhacarya or Srivatsa.

Vyomavati is earlier but its date is not known. Samkara and Uddyotakara are familiar with the work of Prasastapada. Dharmapala and Paramartha also discuss Prasastapada's view. Sridhar's Nyayakandali was written in A.D. 991, and the author is familiar with the views of Kumarila, Mandana and Dharmottara. Lilavati and Kirriavali perhaps came immediately after Nyayakandali. Both Sridhara and Udayana admit the existence of God and accept the category of non-existence. Sivaditya's sapta Padarthi belongs to this period. It presents the Nyaya and the Vaisesika principles as parts of one whole. Laugaksi Bhaskara's Tarkakaumudi is another work based on Prasastapada's treatise.

Visvanatha in seventeenth century treats of Kanada's scheme in his Bhasaparccheda and the commentary on it called Siddhianta Muktavali. He was influenced in the modern School of Nyaya.

3. Pramāṇas

Hinduism identifies six *Pramāṇas* as epistemically reliable means to accurate knowledge and to truths.^[13] *Pratyakṣa* (perception), *Anumāna* (inference), *Upamāna* (comparison and analogy), *Arthāpatti* (postulation, derivation from circumstances), *Anupalabdhi* (non-perception, negative/cognitive proof) and *Śabda* (word, testimony of past or present reliable experts).^{[2][3][14]} Of these *Vaiśeṣika* epistemology considered only *pratyakṣa* (perception) and *anumāna* (inference) as reliable means of valid knowledge.^[15] Nyaya school, related to Vaiśeṣika, accepts four out of these six.^[2]

- ***Pratyakṣa* (प्रत्यक्ष)** means perception. It is of two types: external and internal. External perception is described as that arising from the interaction of five senses and worldly objects, while internal perception is described by this school as that of inner sense, the mind.^{[16][17]} The ancient and medieval texts of Hinduism identify four requirements for correct perception:^[18] *Indriyarthasannikarsa* (direct experience by one's sensory organ(s) with the object, whatever is being studied), *Avyapadesya* (non-verbal; correct perception is not through hearsay, according to ancient Indian scholars, where one's sensory organ relies on accepting or rejecting someone else's perception), *Avyabhicara* (does not wander; correct perception does not change, nor is it the result of deception because one's sensory organ or means of observation is drifting, defective, suspect) and *Vyavasayatmaka* (definite; correct perception excludes judgments of doubt, either because of one's failure to observe all the details, or because one is mixing inference with observation and observing what one wants to observe, or not observing what one does not want to observe).^[18] Some ancient scholars proposed "unusual perception" as *pramāṇa* and called it internal perception, a proposal contested by other Indian scholars. The internal perception concepts included *pratibha* (intuition), *samanyalaksanapratyakṣa* (a form of induction from perceived specifics to a universal), and *jñanalaksanapratyakṣa* (a form of perception of prior processes and previous states of a 'topic of study' by observing its current state).^[19] Further, the texts considered and refined rules of accepting uncertain knowledge from *Pratyakṣa-pranama*, so as to contrast *nirnaya* (definite judgment, conclusion) from *anadhyavasaya* (indefinite judgment).^[20]
- ***Anumāna* (अनुमान)** means inference. It is described as reaching a new conclusion and truth from one or more observations and previous truths by applying reason.^[21] Observing smoke

and inferring fire is an example of *Anumana*.^[16] In all except one Hindu philosophies,^[22] this is a valid and useful means to knowledge. The method of inference is explained by Indian texts as consisting of three parts: *pratijna* (hypothesis), *hetu* (a reason), and *drshtanta* (examples).^[23] The hypothesis must further be broken down into two parts, state the ancient Indian scholars: *sadhya* (that idea which needs to proven or disproven) and *paksha* (the object on which the *sadhya* is predicated). The inference is conditionally true if *sapaksha* (positive examples as evidence) are present, and if *vipaksha* (negative examples as counter-evidence) are absent. For rigor, the Indian philosophies also state further epistemic steps. For example, they demand *Vyapti* - the requirement that the *hetu* (reason) must necessarily and separately account for the inference in "all" cases, in both *sapaksha* and *vipaksha*.^{[23][24]} A conditionally proven hypothesis is called a *nigamana* (conclusion).^[25]

4. The Categories or Padārtha

According to the Vaisheshika school, all things that exist, that can be cognized and named are *padārthas* (literal meaning: the meaning of a word), the objects of experience. All objects of experience can be classified into six categories, *dravya* (substance), *guṇa* (quality), *karma* (activity), *sāmānya* (generality), *viśeṣa* (particularity) and *samavāya* (inherence). Later *Vaiśeṣikas* (*Śrīdhara* and *Udayana* and *Śivāditya*) added one more category *abhava* (non-existence). The first three categories are defined as *artha* (which can perceived) and they have real objective existence. The last three categories are defined as *budhyapekṣam* (product of intellectual discrimination) and they are logical categories.^[28]

1. *Dravya* (substance): The substances are conceived as 9 in number. They are, *pṛthvī* (earth), *ap* (water), *tejas* (fire), *vāyu* (air), *ākāśa* (ether), *kāla* (time), *dik* (space), *ātman* (self or soul) and *manas* (mind). The first five are called *bhūtas*, the substances having some specific qualities so that they could be perceived by one or the other external senses.^[29]
2. *Guṇa* (quality): The *Vaiśeṣika Sūtra* mentions 17 *guṇas* (qualities), to which *Praśastapāda* added another 7. While a substance is capable of existing independently by itself, a *guṇa* (quality) cannot exist so. The original 17 *guṇas* (qualities) are, *rūpa* (colour), *rasa* (taste), *gandha* (smell), *sparśa* (touch), *saṁkhyā* (number), *parimā*

na(size/dimension/quantity), *pr̥thaktva* (individuality), *saṃyoga* (conjunction/accompaniments), *vibhāga* (disjunction), *paratva* (priority), *aparatva* (posteriority), *buddhi*(knowledge), *sukha* (pleasure), *duḥkha* (pain), *icchā* (desire), *dveṣa* (aversion) and *prayatna* (effort).

To

these *Praśastapāda* added *gurutva* (heaviness), *dravatva* (fluidity), *sneha* (viscosity), *dharma* (merit), *adharmā* (demerit), *śabda* (sound) and *saṃskāra* (faculty).^[30]

3. *Karma* (activity): The *karmas* (activities) like *guṇas* (qualities) have no separate existence, they belong to the substances. But while a quality is a permanent feature of a substance, an activity is a transient one. *Ākāśa* (ether), *kāla* (time), *dik* (space) and *ātman* (self), though substances, are devoid of *karma* (activity).^[31]
4. *Sāmānya* (generality): Since there are plurality of substances, there will be relations among them. When a property is found common to many substances, it is called *sāmānya*.^[32]
5. *Viśeṣa* (particularity): By means of *viśeṣa*, we are able to perceive substances as different from one another. As the ultimate atoms are innumerable so are the *viśeṣas*.^[33]
6. *Samavāya* (inherence): *Kaṇāda* defined *samavāya* as the relation between the cause and the effect. *Praśastapāda* defined it as the relationship existing between the substances that are inseparable, standing to one another in the relation of the container and the contained. The relation of *samavāya* is not perceivable but only inferable from the inseparable connection of the substances.

Conclusion

The early Vaiśeṣika texts presented the following syllogism to prove that all objects i.e. the four *bhūtas*, *pr̥thvī* (earth), *ap* (water), *tejas* (fire) and *vāyu* (air) are made of indivisible *paramāṇus* (atoms): Assume that the matter is not made of indivisible atoms, and that it is continuous. Take a stone. One can divide this up into infinitely many pieces (since matter is continuous). Now, the Himalayan mountain range also has infinitely many pieces, so one may build another Himalayan mountain range with the infinite number of pieces that one has. One begins with a stone and ends up with the Himalayas, which is a paradox - so the original assumption that matter is continuous must be wrong, and so all objects must be made up of a finite number of *paramāṇus* (atoms).

References

1. Amita Chatterjee (2011), Nyāya-vaiśeṣika Philosophy, The Oxford Handbook of World Philosophy, doi:10.1093/oxfordhb/9780195328998.003.0012
2. DPS Bhawuk (2011), Spirituality and Indian Psychology (Editor: Anthony Marsella), Springer, ISBN 978-1-4419-8109-7, page 172
3. Eliott Deutsche (2000), in Philosophy of Religion : Indian Philosophy Vol 4 (Editor: Roy Perrett), Routledge, ISBN 978-0815336112, pages 245-248;
4. John A. Grimes, A Concise Dictionary of Indian Philosophy: Sanskrit Terms Defined in English, State University of New York Press, ISBN 978-0791430675, page 238
5. Dale Riepe (1996), Naturalistic Tradition in Indian Thought, ISBN 978-8120812932, pages 227-246
6. Kak, S. 'Matter and Mind: The Vaisheshika Sutra of Kanada' (2016), Mount Meru Publishing, Mississauga, Ontario, ISBN 978-1-988207-13-1.
7. [Jump up to:^{a b c} Analytical philosophy in early modern India](#) J Ganeri, Stanford Encyclopedia of Philosophy
8. [Jump up to:^{a b c} Oliver Leaman, *Key Concepts in Eastern Philosophy*](#). Routledge, ISBN 978-0415173629, 1999, page 269.
9. Basham 1951, pp. 262-270.
10. Jeaneane D. Fowler 2002, pp. 98-99.
11. Oliver Leaman (1999), *Key Concepts in Eastern Philosophy*. Routledge, ISBN 978-0415173629, page 269
12. J Ganeri (2012), The Self: Naturalism, Consciousness, and the First-Person Stance, Oxford University Press, ISBN 978-0199652365
13. M Hiriyanna (1993), Outlines of Indian Philosophy, Motilal Banarsidass, ISBN 978-8120810860, pages 228-237
14. P Bilimoria (1993), Pramāṇa epistemology: Some recent developments, in Asian philosophy - Volume 7 (Editor: G Floistad), Springer, ISBN 978-94-010-5107-1, pages 137-154
15. Gavin Flood, An Introduction to Hinduism, Cambridge University Press, ISBN 978-0521438780, page 225
16. Chattopadhyaya 1986, p. 170

17. [Jump up to:^a ^b](#) MM Kamal (1998), The Epistemology of the Carvaka Philosophy, Journal of Indian and Buddhist Studies, 46(2): 13-16
18. B Matilal (1992), Perception: An Essay in Indian Theories of Knowledge, Oxford University Press, ISBN 978-0198239765
19. [Jump up to:^a ^b](#) Karl Potter (1977), Meaning and Truth, in Encyclopedia of Indian Philosophies, Volume 2, Princeton University Press, Reprinted in 1995 by Motilal Banarsidass, ISBN 81-208-0309-4, pages 160-168
20. Karl Potter (1977), Meaning and Truth, in Encyclopedia of Indian Philosophies, Volume 2, Princeton University Press, Reprinted in 1995 by Motilal Banarsidass, ISBN 81-208-0309-4, pages 168-169
21. Karl Potter (1977), Meaning and Truth, in Encyclopedia of Indian Philosophies, Volume 2, Princeton University Press, Reprinted in 1995 by Motilal Banarsidass, ISBN 81-208-0309-4, pages 170-172
22. W Halbfass (1991), Tradition and Reflection, State University of New York Press, ISBN 0-7914-0362-9, page 26-27
23. Carvaka school is the exception
24. [Jump up to:^a ^b](#) James Lochtefeld, "Anumana" in The Illustrated Encyclopedia of Hinduism, Vol. 1: A-M, Rosen Publishing. ISBN 0-8239-2287-1, page 46-47
25. Karl Potter (2002), Presuppositions of India's Philosophies, Motilal Banarsidass, ISBN 81-208-0779-0
26. Monier Williams (1893), Indian Wisdom - Religious, Philosophical and Ethical Doctrines of the Hindus, Luzac & Co, London, page 61