Chapter 10

Buddhism, Nyaya and Vaisesika

10.1 Buddhism

The age following the epic period in India can be considered as a period of tremendous philosophical ferment. Most notable is the advent of Buddha (563 - 483 B.C.). It was clear to many scholars and thinkers that the pure philosophy of the Upanishads must not reside in forest retreats or mountain caves but must be brought down to a more practical level so that it can be practiced by the people at large. We see such an attempt first made in the synthesis expounded by the *Bhagavadgītā*. However, as is usually the case with the passing of time, either the teachings get buried or modified and the pristine purity of the original thought evaporates. Such was the case at the time of Buddha. The pure philosophy of the Upanishads and the practical philosophy of the four yogas as expounded in the Gita became buried and replaced by esoteric and meaningless rituals. In time, people had even forgotten the Upanishadic portion of the Vedas and came to believe that the rituals current at the time were the essence of the Vedas. Society, as it were, became stifled and a caste system of privilege became entrenched. At this time, several systems of philosophy rose to meet this challenge to liberate society from the shackles of priestcraft. These systems can be grouped into two: heterodox and orthodox.

The heterodox systems formally reject the Vedas and try to build a philosophy anew. Under this heading are included the Carvaka philosophy, Jainism and Buddhism. The orthodox systems return to the Vedas and try to renew the vitality of the Upanishads. Under this heading are listed the six systems

of philosophy: Ny$\bar{a}$ya (logic), Vaisesika (atomic theory), S$\bar{a}$mkhya (evolutionary dualism), Yoga (disciplined meditation), P$\bar{u}$rva Mim$\bar{a}$ms$\bar{a}$(earlier interpretations of the Vedas) and Uttara Mim$\bar{a}$ms$\bar{a}$(Ved$\bar{a}$nta or later interpretations of the Vedas). All of these systems, the heterodox and the orthodox, have their validity provided we understand the standpoint from which each one is expounded.

The life of the Buddha is a source of inspiration for further study. Buddha was born as Prince Siddhartha and the astrologers predicted a life of a mendicant and a great world teacher. The king was alarmed at this prediction and so to make sure this wouldn't happen, he ensured that Siddhartha was kept within the confines of the royal palace and inundated with all the worldly pleasures. So the young prince came to believe that life is one immense pleasure garden. In his late teens, he was married to a beautiful princess and they had a child. The king felt joyous that he had outwitted the astrologers and their predictions that his son was to become a mendicant. He had foiled the plans of the gods, he mused. However, the young prince was always wondering what lay beyond the palace walls. One day, Siddhartha with his friend ventured out of the palace secretly and they came across a funeral procession. He asked his friend, "What is this?" "It is a dead body, sir, " replied his assistant. "Death is the end of every human body." As they walked further, they came across a lame old man with a wrinkled face. "Why is this man walking so?" "The man is old and not well," replied the friend. "Sickness, disease and aging are also a part of life." Siddhartha became thoughtful. As they walked further, they came across a monk, with a shaven head, a saffron garb, and a serene countenance. "Who is that?" Siddhartha asked. "He is a monk. He lives the life of a recluse." Then the prince stopped the monk and asked him why he had adopted such a life. The monk replied, "To be free of misery." With these encounters, the prince returned to the palace, his mind preoccupied with existential questions. The words of the monk haunted him. Human misery was a fact of life. "Is there a way out?" he pondered. He could no longer be distracted by the song and dance of the palace. That night, he decided to renounce his royal splendour, his beautiful wife, his lovely child, and more importantly, the security of his regal power, and take up the garb of the mendicant. At the dead of midnight, he rode off on a horse, throwing off his princely robes. He disappeared into the wilderness of the forest. He was twenty-eight at the time.

The next day he joined a group of ascetics who believed that the control of mind is the way out of human misery and this control can be achieved through progressive fasting. Young Siddhartha attempted this technique only to find that the craving for food returned with doubled force after the period of fasting was over. He concluded that self-mortifcation was not the way for achieving this control of the mind. By this experiment, he discovered the "middle path." Neither by indulgence in sensual pleasures nor by austerities of self-denial is the control of mind attained. It is by the equilibrium of these two that the control

is gained. These findings echo the teaching of the Bhagavadgītā where Krishna teaches Arjuna:

yuktāhāra vihārasya yuktacestasya karmasu
yuktasvapnāva bodhasya yogo bhavati duhkhahā (6.17)

For one who is temperate in food and recreation, restrained in his actions, with sleep and waking regulated, there ensues a discipline which destroys all sorrow.

Thus Siddhartha discovered for himself the middle path which required *control* of the mental tendencies, not their suppression, a point later emphasized in Patanjali's Yoga philosophy. This control was to be combined with reasoning and meditation. His brother monks had abandoned him, thinking he had strayed away from the path, whereas in actuality, he had found it. With firm resolve, Siddhartha walked alone to the outskirts of a town called Bodh Gaya. The thought in his mind was to later find expression in the *Dhammapada*: "If you do not find a companion, intelligent, one who associates with you, who leads a good life, lives soberly, walk alone like a king who has renounced his kingdom or like an elephant roaming at will in the forest. It is better to live alone rather than have the companionship of a fool. Let a man walk alone with few wants, like the elephant roaming in the forest."[1] The elephant is a recurrent symbol in Buddhism symbolising strength and endurance.

On reaching Bodh Gaya, he seated himself under the Bo tree with a firm resolve that he would not rise until he had solved the mystery of life and found a way out of human suffering. His first discovery was that in order to concentrate the mind and take it to higher levels, he should not have any ill-will towards any being. *Ahimsa*, or non-injury by thought, word or deed was the foundation of his meditation. It is the foundation of other systems too, most notably, Jainism, the Yoga system of Patanjali and Vedanta. This is again an echo of the teaching of the Gita: *advesta sarva bhūtānām maitrah karuna eva ca ... yo madhbhaktah sa me priyah*[2]. "He who has no ill-will to any being, who is friendly and compassionate, ..., he is said to be My great devotee."

Thus Siddhartha began his meditation under the Bo tree with a meditation of peace for all living things. Thus, he silenced his senses and slowly, silenced his thoughts. As he progressed deeper and deeper into meditation, he realised the extent of the sorrow and suffering in the world. He realised that the way the world deals with this issue is by intoxicating itself with pleasure. But pleasure and pain are intertwined. Our pleasures are through attachments. We may

[1] Dhammapada, Verses 329-330 in Chapter 23 entitled 'The Elephant.'
[2] Bhagavadgita, Chapter 12, Verse 13.

think that a person we love will give us happiness. It may be so for a while, but a change comes. Perhaps he or she dies, or has a change of heart. The world will not revolve according to our desires and wishes. Reasoning thus, Siddhartha realised the first noble truth: "Everything in this universe is changing, nothing is permanent. Pleasure, alas, is not permanent. By the same logic, pain too is not permanent."

This may mean that we should take a pragmatic view of life: be happy when things go our way, and bear with it when they don't. But this means that our life is reduced to that of a piece of driftwood moving aimlessly in the river. To be in control of all external events is an impossibility. However, one can be in control of our internal reactions. Pleasure and pain are both caused by desire, or craving (*tanha*) and this is the second noble truth. The conclusion is now inevitable. To remove misery, one must eliminate craving, and this is the third noble truth. How can we eliminate craving? This is the fourth noble truth: the eightfold way.

What is the eightfold way? It is a process by which the mind is gathered inwards and concentrated: *samyag drishti, samyag samkalpa, samyag vāk, samyag karmanta, samyag ajīva, samyag vyayamā, samyag smriti, and samyag samādhi*, wholesome view, wholesome willing, wholesome speech, wholesome action, wholesome vocation, wholesome effort, wholesome mindfulness, wholesome meditation. In many translations, the word *samyag* is translated as 'right'. However, the Sanksrit root indicates that this translation is incomplete. A more accurate rendering of the word is as we have given it 'wholesome, total, balanced.'

As the young prince went deeper and deeper into his meditation, he came across the thought of 'I.' When he examined this notion of 'I', the 'I' disappeared into *nirvāna*. For seven weeks, he was absorbed in this state of illumination. Siddhartha had become the Buddha, the awakened. After returning to normal consciousness, it is said that he sat silent. He had just discovered the greatest treasure of the universe. He wanted to share it with humanity, but then, who will understand? The whole world was engrossed in the sensory plane. Here he had discovered higher planes of consciousness. Then the idea arose that perhaps his brother monks he had left behind in Sarnath will understand the reality of these higher dimensions. So he walked from Bodh Gaya to Sarnath, a distance of 144 miles and gave his first sermon to his five brother monks about the eightfold path.

If we examine carefully, we find that the eight-fold path is nothing other than the four-fold yoga. Buddha had re-discovered the teaching of the Bhagavadgītа, not intellectually, but as a matter of personal experience. Buddha was averse

to argumentation. He advocated every individual to think for himself. "Believe not because some old manuscripts are produced, believe not because it is your national belief, because you have been made to believe it from your childhood, but reason it all out, and after you have analysed it, then, if you find that it will do good to one and all, believe it, live up to it, and help others to live up to it." Buddha's silence on the nature of the supreme Being has often been interpreted as atheism. But the fact of the matter is that he knew it cannot be reasoned out. He was averse to argumentation. "Be good and do good, " he taught, "and you will get to freedom and whatever Truth there is." Buddha's emphasis was always on love and service. He earned the name of the Compassionate Buddha and lived to a ripe old age of eighty, it is said, serving humanity till his last days. He had extraordinary methods of teaching.

One day his brother monks gathered around to hear a sermon from him. He noticed that one was missing and asked where he was. They replied that he was sick in bed and suffering much. Buddha immediately rose and went to the bedside of the ailing student and inquired of his welfare. He realised the student had fever and after speaking to him a few gentle words, began to fan him until the ailing student slipped into slumber. An hour thus passed and Buddha got up. One of his students reminded him of the sermon he was supposed to give. "The sermon ?" asked Buddha. "I believe we just had it."

On another occasion, a distraught woman came crying to the Buddha because her son had passed away. Her mind knew no rest. She came to Buddha and asked him to revive her son. Instead of giving her a lecture that death is an inevitable part of life, he simply asked her first to go into the town and fetch a few mustard seeds from a house in which no one has died. So she went running and inquired at every house for a few mustard seeds. When she asked if the house was free from death, no one could say that it was not. In every house, some death had occurred over the years and thus she returned to the Buddha with empty hands and her mind at peace, for she learned that she was not alone in her misery.

The teachings of the Buddha take up the thoughts of the Upanishads and give them a new orientation. Formally, he rejects the Vedas since by that time the pristine teachings of the Upanishads were forgotten and ceremonials had taken over. It is in such a period of history that Buddha arose. It is clear that he was a marvellous combination of head, heart and hand and represented the ideal sage described by the Bhagavadgītā. "Just as the mountain is not agitated by the wind, so also is the wise man, undisturbed by honour or dishonour. To conquer one's lower mind is a greater victory than to conquer thousands in battle."[3]

[3]The Teaching of Buddha, p. 187, 1966, Kosaido, Tokyo, Japan.

In course of time, Buddha's life and teachings were interpreted in various ways. One group insisted on individual struggle as the means to *nirvana*, the state of Buddha. Another insisted that it was a life of service. The latter became known as Mahay$\bar{a}$na Buddhism and the former H$\bar{i}$nay$\bar{a}$na Buddhism, the words mahay$\bar{a}$na and h$\bar{i}$nay$\bar{a}$na meaning "great raft" and "little raft" respectively. Viewed from the perspective of the four yogas, we can see that the H$\bar{i}$nay$\bar{a}$na path is a combination of jn$\bar{a}$na and r$\bar{a}$ja yogas. The Mahay$\bar{a}$na is a combination of karma and bhakti yogas. Over the wide span of centuries, a sharp division arose between these two schools. The H$\bar{i}$nay$\bar{a}$na school was strictly monastic and also assumed the name of the Therav$\bar{a}$da, or the way of the elders. One can trace the monastic traditions of the world to the Therav$\bar{a}$da school. In time, these wandering monks were also well-versed in healing and the English word, "therapeutic" is derived from *theraputra*, or the sons of the Therav$\bar{a}$das. Both of these schools of thought spread in their own way across southeast Asia, and northeastward to China, Japan and Korea. Buddhistic thought also spread to Egypt and westward through Persia and then to Greece. Buddhism, in its multifarious forms pervades the Asian continent today and the source of their inspiration can be traced back to that one moonlit night, when Siddhartha attained illumination under the Bo-tree.

10.2 Nyaya and Vaisesika

The Ny$\bar{a}$ya system is a philosophy of logic. Though it was first formally written down by Gotama in the third century B.C., its history extends over twenty centuries as the original writings were expanded upon by subsequent writers and commentators. The word *ny$\bar{a}$ya* literally means that by which the mind is led to a conclusion. We are led to conclusions by reason and by argument. The popular usage of the word *ny$\bar{a}$ya* means "right" and so Ny$\bar{a}$ya as a system has come to mean the science of correct reasoning.

According to Ny$\bar{a}$ya, there are four methods of gaining knowledge: direct perception (*pratyaksa*), inference (*anum$\bar{a}$na*), comparison or analogy (*upam$\bar{a}$na*) and verbal knowledge or testimony (*sabda*).

Some years ago, several of my students have asked me to explain how one does research. I realised that the art of research is really the art of asking probing and relevant questions. So I tried to write down some general methods by which one may generate such productive questions. I ended up by writing down eight methods by which we may generate questions and gain some knowledge. These were: survey of relevant literature, observation of patterns, conjecturing theorems, re-interpretation of existing theorems, finding analogies, transfering ideas from one area to another, induction and checking converse propositions.

Apart from the accidental acronym of 'socratic' suggested by these methods, it is easy to see that each of these really falls into one of the four methods outlined by the Nyāya system. Indeed, the method of survey is part of verbal knowledge. Observation is part of direct perception. Conjecture, induction, checking converse propositions are part of the process of inference. Finding analogies and transferring ideas are part of the process of analogy. Finally, re-interpretation is a combination of direct perception and inference.

Examples can be enumerated for each of these methods of knowledge in any particular field. Here are striking episodes from the history of science. In 1859, Dmitri Mendeleev was twenty-five and was a poor school teacher in Siberia. The knowledge of chemistry was meager at that time and the natural elements were slowly being classified. Mendeleev decided to organize these elements according to their properties and atomic number, that is, the number of protons in the nucleus. As he began to place the elements in columns, he discovered a periodicity in their properties and could correlate them to their atomic number. Mendeleev had stumbled on a mathematical key to the chemical elements. It was a moment of "Eureka" because at the time of Mendeleev, only sixty-three out of 92 natural elements were known and it was inevitable that there would be gaps in his listing. "The conception of gaps or missing elements was a scientific inspiration. It expressed in practical terms what Francis Bacon had proposed ... the belief that new instances of a law of nature can be guessed or induced in advance from old instances. ... In science we do not simply march along a linear progression of known instances to unknown ones. Rather, we work as in a crossword puzzle, scanning two separate progressions for the points at which they intersect: that is where the unknown instances should lie in hiding. Mendeleev scanned the progression of atomic weights in the columns, and the family likenesses in the rows, to pinpoint the missing elements at their intersections. By doing so, he made practical predictions, and he also made manifest (what is still poorly understood) how scientists actually carry out the process of induction."[4] Thus, this episode is a good illustration of a combination of survey, observation, conjecture and induction methods applied to gain knowledge.

An excellent example of the method of transfer is given by an episode in the life of Archimedes. As he stepped into the bath tub, he observed that a certain amount of water was displaced proportional to his own weight. He conjectured what is now called the principle of buoyancy. The moment he realised he could transfer this idea to the problem the king had given him of determining whether the goldsmith had cheated the king of his gold when he made the crowns without destroying the crowns, it is said that Archimedes ran naked through the streets of Syracuse shouting "Eureka," for he had indeed found the solution to the problem he was thinking about.

[4] J. Bronowski, The Ascent of Man, p. 205.

A spectacular example of the method of re-interpretation is Einstein's theory of gravitation. In the Newtonian view, gravity was a force but for Einstein, it is the curvature of space. In Einstein's theory, space itself is warped by the nearby presence of a massive body. Thus, a massive body like the sun would distort the space around it and the smaller bodies, like the planets, would have to move along the curved space. Einstein then created the mathematical theory of tensor calculus and differential geometry (much like Newton created the differential and integral calculus for his theory of gravitation), to describe the precise equations of curvature of space-time. His theory includes Newton's theory but goes beyond it and explains observations that were inexplicable through the Newtonian model. For example, the anomalous advance of Mercury's orbit around the sun and the existence of black holes, both of which are due to the bending of light in large gravitational fields, are two instances of why Einstein's theory is now accepted.

A superb illustration of the method of analogy and converse is given by the discovery of electromagnetism. In 1813, the Danish physicist, Hans Christian Oersted wrote, "One has always been tempted to compare magnetic forces with the electric forces. The great resemblance between electrical and magnetic attractions and repulsions and the similarity of their laws necessarily would bring about this comparison. An attempt should be made to see if electricity has any action on the magnet as such."[5] What Oersted proved by his researches was that electricity produces magnetism. This led the British physicist Michael Faraday to ask if the converse was true: does magnetism produce electricity? He devised an experiment to show that this was indeed the case and this led to the mathematical theory of electromagnetism. Thus, we see how analogy and converse methods of inquiry can lead to profound discoveries.

There is another theme in the Ny$\bar{a}$ya philosophy that is worth highlighting before we conclude our brief survey of it. This concerns the relation between perception and language. When we see a cow, for example, we not only see the individual cow in front of us, but awaken within our mind the general shape or form of the cow and become aware of the class or genus of all cows. Thus, perception has this three-fold component to it. This is also the case even if the cow is not in front of us, but we say the word 'cow.' That is, even the usage of words in everyday language has this three-fold aspect: the individual word, the image or "shape" the word evokes, and the genus or universal suggested by both of these.

In verses 59-69 of Book 2, Chapter 2 of Gotama's Ny$\bar{a}$ya S$\bar{u}$tras, we find, "There is doubt as to what a word (noun) really means, as it invariably presents to us an individual, form and genus. Some say that the word (noun) denotes [only an] individual, because it is only in respect of individuals that we can

[5] S. Glashow, From Alchemy to Quarks, p. 333.

use [the demonstrative] "that." ... [But] a word (noun) does not denote an individual alone, because it is not restricted to the latter. What is denoted by the word 'cow' is not the mere individual by itself, without any qualifications, and as apart from the universal (to which it belongs), but the individual as qualified by (and along with) the universal. ... [Nor] is it the genus [universal] alone that is meant by a word (noun), because the manifestation of genus depends on the form and individual. The meaning of a word (noun) is, according to us, the genus, the form and the individual. An individual is that which has a definite form and is the abode of particular qualities. The form is that which [indicates or] is called the token of the genus. The 'universal' is the cause (or basis) of comprehension and cognition."[6]

Modern psychoanalysis has also come to a similar conclusion. In Jungian psychology in particular, we find the theory of archetypes. These 'archetypes' correspond to the 'universals' referred to in the Ny$\bar{a}$ya S$\bar{u}$tras. In his book on Jung, S. F. Walker writes, "The key to understanding the Jungian approach ... lies ... in the concept of *image*. By emphasizing the image over the word, Jungian psychology differentiates itself from Freudian, Lacanian, and other psychologies that stress the task of interpreting the *language* of the unconscious. The term first used by Jung to designate what he would later call an *archetype* of the collective unconscious was "primordial image." ... Since the term *archetype* designates an unconscious and unrepresentable element of the instinctual nature of the human psyche, the more proper term to use for one of the pictures of an archetype that the human mind is capable of representing is *archetypal image*. However, even though the term archetypal image proves useful in differentiating an unconscious archetype from an image or representation of it in human consciousness, both Jung and his followers frequently, though incorrectly, use archetype and archetypal image interchangeably."[7] It is interesting to see that in this ancient treatise of 300 B.C., a clear distinction is made between image and the universal.

The notion of forms and universals in the Ny$\bar{a}$ya philosophy is highly reminiscent of Plato's theory of ideas and forms. Just as Plato exalts the dialectic and ultimately arrives at the "Idea of the Good," the Ny$\bar{a}$ya system also tries to arrive at some notion of 'God' through logic. "From effects, combination, ... an everlasting omniscient Being is to be established."[8] This is the age-old "argument from design." Consequently, it can be seen as a "dualistic" view of the universe as opposed to the later systems like Ved$\bar{a}$nta, which present a "non-dualistic" view of the world.

The Ny$\bar{a}$ya S$\bar{u}$tras also devote a considerable portion to the art of debate

[6] S. Radhakrishnan and C. Moore, A Sourcebook in Indian Philosophy, pp. 369-370.
[7] S.F. Walker, Jung and the Jungians on Myth, pp. 3-4.
[8] S. Radhakrishnan and C. Moore, A Sourcebook in Indian Philosophy, p. 383.

and discussion. Since the goal of Nyāya was to sharpen the process of logical reasoning, minute attention was given to the subtleties of argumentation. In course of time, its finer observations regarding the theory of perception and its contributions to the theory of knowledge were over-shadowed by excessive attention to the art of debate and Nyāya philosophy became synonymous with argumentation. However, as can be seen from our brief survey, the Nyāya Sūtras are full of deep psychological insights and their study enhances our view of the universe.

The Vaisesika philosophy derives its name from *visesa* meaning 'particularity'. Its emphasis is on the theory of particulars, and thus is pluralistic in its view. It is older than the Nyāya school and was founded by Kanāda around 300 B.C. Essentially, it is an early attempt at an atomic theory of the universe and consequently does not mention 'God', but later commentators felt that the atoms by themselves could not have created an orderly universe so they postulated a 'God' regulating the activities of the atoms. Below, we will give a brief survey of the original sutras of Vaisesika.

Before we begin, it is important to understand that the tenor of the Vaisesika system is really the beginnings of the scientific method. The word 'science' can be traced back to two Latin words, *scire*, meaning 'to know' and to *scindere*, meaning 'to cut, to dissect, to analyse, to take apart.'[9] The word 'scissors' can be traced back to *scindere*. By contrast, the word 'religion' is derived from 'religio' meaning 'to bind, to put together, to unify'. Thus, from an etymological perspective, the words 'science' and 'religion' seem to be opposites. However, upon closer examination, we see that science refers to analysis and religion to synthesis. It is this view that is adopted in the approach of the Vaisesika theory. Both methods of analysis and synthesis are needed for an understanding of ourselves and the world around us. In the scientific method, we proceed by analysis, by subdivision, by refining our understanding of the component parts. At the same time, in science, we try to unify. But that unity is gained by a simultaneous perception of both the whole and its component parts.

The famous mathematician, Emil Artin tried to express this idea when he wrote, "We all believe that mathematics is an art. The author of a book, the lecturer in a classroom tries to convey the structural beauty of mathematics to his readers, to his listeners. In this attempt, he must always fail. Mathematics is logical, to be sure, each conclusion is drawn from previously derived statements. Yet the whole of it, the real piece of art, is not linear; worse than that, its perception should be instantaneous. We all have experienced on some rare

[9]The origins of *scindere* can be traced back to the Greek word *schizein* meaning 'to split' and this in turn can be traced to the Sanskrit word *chinatti* meaning 'he splits'. See http://www.biotech.wisc.edu/education/genwords.html for an interesting discussion relating 'science' and 'scissors'.

occasions the feeling of elation in realizing that we have enabled our listeners to see at a moment's glance the whole architecture and all its ramifications."[10] In its attempts to understand the nature of knowledge, the Vaisesika philosophy delineates "particulars" and at the end, uses the term *samavāya* or coherence, to refer to the instantaneous perception of the whole that Artin has referred to in the above passage.

This system divides the universe into six categories or *padārthas* called *dravya* or substance, *guna* or quality, *karma* or action, *sāmānya* or that which constitutes a genus, *visesha* or that which constitutes its uniqueness or individuality, and finally, *samavāya* or coherence. Each of these categories are again subdivided into further sub-categories. Without going into too much detail, we only indicate two of these sub-categories. For instance, substance is divided into nine sub-categories of earth, water, light, air, ether, time, space, self and mind (*manas*). The substances cannot exist without qualities of which there are seventeen: color, taste, smell, touch, number, extension or quantity, individuality, conjunction, priority, posteriority, thought, pleasure, pain, desire, aversion and will. The substances are affected by five kinds of action: upward motion, downward motion, contraction, expansion and movement from one spot to another. The first four qualities namely, color, taste, smell and touch are made up of indivisible atoms which have no dimension.

Let us begin by examining the six categories in some detail. Unlike the Nyāya system which gave a three-fold view of perception, Vaisesika gives us a six-fold view. Consider the example of Beatrice, the cow. When we see Beatrice, we see a cow (substance), we observe its color and shape (quality), we see it grazing (action) in the pasture. In addition, we are aware that Beatrice is a member of a larger family (genus) of cows, at the same time, we are aware of Beatrice's uniqueness (perhaps it has a beauty spot on its face) and finally, the unification of all these, a certain coherence.

In this brief overview, we will highlight some of the essential verses of Kanāda's Vaisesika. "Substance is not annihilated either by effect or cause,"[11] indicating that matter is indestructible, reducing everything to the atoms. In the subsequent chapters, it begins with an exposition of the theory of cause and effect. Then it proceeds to the manifold aspects of matter together with a detailed discussion of its qualities. From this, it proceeds to deduce the existence of mind. "The appearance and non-appearance of knowledge, on contact with the senses and the objects are marks of the existence of the mind."[12] In a remarkable verse, it deduces that there is only one mind: "From the non-simultaneity of volitions, and from the non-simultaneity of cognitions, it follows

[10] E. Artin, Collected Papers, p. 534, Reading, MA, Addison-Wesley, 1965.
[11] S. Radhakrishna and C. Moore, A Sourcebook in Indian Philosophy, p. 388.
[12] Ibid., p. 391.

that there is only one mind in each organism."[13] After indicating that there can only be one mind, in subsequent verses, the treatise deduces the existence of the self or *ātman* from the action of the life breath. All of this, it says, is *adrista*, unseen or invisible. "The circulation of water in trees is *adrista*. The sun's rays and their action on convection of wind is *adrista*. However, the action of air and fire is explained by the action of the earth. The action of the mind is explained by the action of the hand."[14] Finally, in verses that seem to echo the Bhagavadgītā, we find, "Pleasure and pain result from the contact of the self, senses, mind and object. Non-origination of that follows on the mind becoming steady in the self; after it, there is non-existence of pain in the embodied self. This is that *yoga*."[15]

Though the analysis is brilliant in that the treatise reduces ultimately to atoms, it finds itself in a quandary. Where does the knowledge of the combinations of atoms reside? This is its ultimate question. "Unique particularities reside in the ultimate substances. They are the factors that make for ultimate distinctions among these substances."[16]

Another feature of the treatise is how time, space, *ātman* and *manas* are classified under substance. Several sections of the writing are devoted to inquire into the nature of time and space. In a sequence of statements of impeccable logic, it deduces the existence of "an intelligent agent." "As from the motion of the chariot, we infer the existence of an intelligent guiding agent in the shape of the charioteer, so also we infer an intelligent guiding agent for the body. ... The intelligent agent is also inferred from the actions of breathing. ... From the fact of the wounds of the body being healed up, we infer the existence of the agent who would be like the master of a house repairing it."

What is impressive about the work is its attention to detail concerning very abstract concepts. We have already mentioned how the notions of time and space are discussed. Another chapter is devoted to the discussion of the concept of 'number' and how the mind apprehends such an idea.

In conclusion, the Vaisesika system indicates the beginnings of a scientific method both in investigating the external world and the internal world of the mind. In later systems, this attitude is expanded and amplified.

[13]Ibid., p. 392.
[14]Ibid., p. 393.
[15]Ibid., p. 393.
[16]Ibid, p. 399.