CONCLUSION

Like any other living entity in the universe, language also is a synthetic unity. Like many scientific studies in other disciplines analysis is one of the oldest tool in linguistics also. Though linguistic studies had taken place prior to Pāṇini we know about them only through references by later scholars in this field.

Language is a medium of communication. So the aim of language practice is the transfer of ideas and emotions through oral or written media. Words are elements of the sentences used in this communication. What is used for this transit is sentence or a collection of sentences. The communication takes place through the meaning of the sentences. The meanings of a sentence is comprising of the meanings of individual words involved. But the way of
combining words is important in this whole process. So Pāṇini classified the words splitting each word into finer elements and studying the relations involved, so that it forms a meaning bearing entity. Thus semantics had an important role in the formulation of Pāṇinīya rules. Meanings serve as condition for the introduction of affixes and rules of kāraka classification rules serve to bridge the gap between semantic relations and grammatical expressions. Pāṇini nowhere makes a provision to the effect that a sentence which obeys his rules must be semantically appropriate. Chomsky also has a similar stand. (In this context it is interesting to compare Chomsky’s famous example for grammatically correct but meaningless sentence, ‘colourless green dreams slept ferociously’ and Pāṇini’s example, ‘agninā siṇcati puspāṇi’). Perhaps this was the reason to look at Pāṇinīyaṃ merely as a discipline dealing with the syntactic aspects. It took more than 1000 years to bring out its semantic contents by Bhartṛhari.
Theory of meaning or semantics in general is a branch of linguistics. Thus the review of the literature on the concept of meaning cannot be completely separated from that of linguistics in general. Therefore the first chapter is an introduction to the linguistics in general. It begins with quoting three stanzas from Dhammapada, the holy text of Buddhists. These stanzas say about words without meaning. Contrary to this, according to modern semantics and even according to Indian linguists of other philosophical schools, there are no words without meaning, though there may be sounds without meaning.

At the outset itself we mention the fundamental problems that make it difficult to include the concept of meaning in linguistics. As noted by Bloomfield, the statement of meaning is the weak point in language study and will remain so until human knowledge advances far ahead. In spite of great advances in science of information, information technology, artificial intelligence and
many other branches of computer science, scholars in the west are indebted to Pāṇini in the formal analysis of not only Sanskrit but languages in general. Even then the modern linguists including those of the east have not yet paid much attention to the Indian theories on semantics which have a history of more than thousands of years. A brief account of the history of semantics is also given in the introduction.

Śabda is the fundamental element of language or language is structured by śabda. One of the basic problems of philosophy is whether śabda is temporal or eternal. According to those who believe that śabda is eternal it is different from its dhvani and is the cause for śabda- dhvani. But according to the second group śabda is made as dhvanirūpās. The relation between word and meaning is also dealt with by different philosophical schools. This leads to the concept of śabdārtha pramāṇās in Indian philosophy discussed in the second chapter.
Śabda being a pramāṇa is central to the Indian epistemology since it becomes the basic to the transmission of knowledge. Each school of Indian philosophy has its own concept of śabda pramāṇa akin to its epistemology. The śabda pramāṇas according to Cārvākās, Baudhā-s, Jaina-s, Mimāṃsaka-s and Naiyāyika-s of Indian philosophy are also discussed in this chapter.

In the Buddhist theory of apoha, the essence of meaning is negative in character. The meaning of a word is a conceptual construction (vikalpa) and not an objective fact. The relation between the two is one of cause and effect. A word produces a purely subjective concept which is negative in nature in the sense of exclusion of other concepts to make it distinct. What is surprising about this apoha theory is the dialectical approach in which there is nothing illogical in a single word bringing about two notions one positive and the other negative.

The first precise definition of a sentence is found in
the mīmāṃsā sūtra of Jaimini. As mentioned above, according to mīmāṃsaka system word is sacred and eternal and hence not produced or created. They are only expressed or manifested. Kumārilabhaṭṭa introduced the concept anuvṛtti and vyāvṛtti, the meaning of words involves both universal and particular determined by anuvṛtti and vyāvṛtti respectively. Regarding the nature and constitution of sentential meaning there are two powerful schools among mīmāṃsakās themselves- abhīhitānvaya of Kumārilabhaṭṭa and anvitābhidhāna of Prabhākara. In both these theories the relational aspect of word meanings in a sentence is a significant factor represented by ākāṅkṣā, yogyatā, sannidhi etc. Prabhākara goes to the extent of stating that although words are real, sentence is a prerequisite to convey the word meaning. Thus he makes a clear distinction between the lexical meaning of a word and its contextual meaning in a sentence. The roots of abhīhitānvaya can be traced to Yāska and Audumbarāyaṇa. The nyāya and vaiśeṣika schools
support the *khaṇḍapākṣa* according to which the meaning bearing
unit is *pada*. According to nyāya, meaning is *vāstavārtha*, that
which forms the object of a remembrance caused by the knowledge
of the relationship between a morpheme and its reference. According
to Vaiśeṣika-s there are five steps in the process of apprehending a
sentential meaning. The fourth step involves the tātparya of the
speaker. Regarding nyāya-school there is lack of clarity about this
fourth step. Thus there is a view that for Nyāya school there is no
forfold level of speech but only the forth level of *vāk - vaikhari.*

After describing the above concepts of *śabda* and theories of meaning
in the chapter, it continues with discussion on śabda pramāṇās in
Indian philosophy. Each school of Indian philosophy has its own
concepts of śabda pramāṇa akin to its epistemology. The pramāṇās
according to Sāṃkhya, Nyāya, Vaiśeṣika, Mīmāṃsaka, Lokāyata
and Jaina philosophers are discussed. Some aspects of epistemologies
of Jainās and Lokāyatās are also discussed in this section. A
remarkable aspect of all these discussions on meaning is the recognition of all these schools of thought that language is objective.

Art and literature are media of communication. Aesthetics is the science of extracting meaning with all its characteristics like rasa, dhvani etc. from artistic and literary forms. Thus a discussion on meaning will not be complete without aesthetics. Bharata’s discussions are centred round rasās related to visual arts. He uses the discussion on literature mainly to enrich the aesthetics to nātya. Thus though Bharata initiated the discussion on literary theories, he did not proceed further. Bharata observes that word is the cause of everything and all types of śabdās have their own characteristics in application including those in nātya.

Kāvya śāstra is a major part of aesthetics. For the first time Bhāmaha initiated the discussion on śabdārtha in poetics as kāvya is originated by the combination of śabda and artha.
Kāvyasastraśra-s were in search of the soul of kāvy through alaṅkāra, guṇa, rīti, dhvani, vakrōkti, aucitya, anumāna and rasa theories. The soul of kāvyā is rasa. Controversy existed regarding rasanīṣṭattī, rasānubhūtiprakriya and the mode of transit of rasa. By the time of Ānandavardhana according to whom rasa is dhvani and dhvani is kāvyā the discussions on rasa changed its direction to the modern linguistics and during this period it became matured with scientific stature. It is to be noted that in Sanskrit the terms like poetics, literary criticism etc. were introduced only in the 16th century by Bhoja.

There are reasons to believe that Bharata precedes Pāṇini chronologically as we can see references to Bharata in Pāṇiniyam. Bharata asserted the primacy of words and its importance in nātya. This led him to deep search for the finer elements of śabdās like dhātus and its different forms.

The kāvyalaṅkāra literature has started with
Bhamaha. In his Kavyālāṅkāra he has dealt with kāvya, alankāra, kāvyadoṣa, nyāya and padās. By his time kāvyāstra had developed to deal with poems scientifically. He has discussed the essential qualities of a kavi and this discussion was continued in the works of Mammaṭa, Daṇḍi, Kuntaka, Samudragupta and Abhinavagupta.

About kāvya, Bhāmaha says the excellence of the disposition of words is the beauty of a poem and the meanings have only a secondary role. In poems, words should not be used with obvious meaning. We can see elements of śabdārtha siddhānta also in his Kavyālāṅkāra. Pāṇinīya grammar and Patañjali’s Bhāṣya found place in the last chapter of Kavyalaṅkāra. He divides the words into two classes. They are the words which could and could not be used in poems.

According to Daṇḍin sound is the lamp and its light is meaning. The body of kāvya is the collection of words enriched by deep and beautiful meanings. Kāvya is classified into
four as Saṃskṛta, Prākṛta, Apabhramśa and Miśra. Though kāvyā was not defined in Kāvyādarśa, this together with Bhāmaha’s Kāvyalaṅkāra became a basis for alaṅkāraśāstra.

Naiyāyikā’s definition of pada is ‘śaktam padam’ and thus the relation between śabda and artha is discussed in śabdaśakti. Dhanika and Dhanañjaya have discussed the relation between rasa and śabdaśakti. Śabda possess only two šaktis namely abhidhā and lakṣanā. For some those who accept tātparyārtha they include tātparya śakti also as the third capacity.

According to Tarkasaṅgraha the essential nature of a word lies in significative power or sakti which is defined as the will of god (īśvarēcchā saktīḥ) relating a word to its meaning. This relation is supposed to be permanent and is called abhidhā. When the relation is not permanent but is established by the will of man it is called paribhāṣā. Homophones and homonyms are the different classes of words. The concepts of ākāṅkṣā, yogyatā, saṃnithi and
tātparya are also discussed in this chapter.

The relation between śabda and artha is latent in Pāṇinīya grammar. In this sense śabdārtha relations find place in grammatical studies from Pāṇini or even prior to him. More over the sphota theory which is central to Indian theories of meaning is based on grammar. Hence the grammar at length is being discussed in chapter four. Patañjali was the first grammarian to discuss dhvani.

Dhvani is embodied in śabda but all sources of dhvani are not śabda. An acceptable definition according to Abhidhānarājendrakośa is that śabda is an ordered dhvani of phonemes perceptible to our ears and the meaning arises spontaneously. While Bhartṛhari considers śabdārtha as an indivisible unit, Jainās consider śabda as that which embodies vācyārtha. Jainās say that linguistic sounds once generated will never die and it will remain as waves in space for ever. Naīyāyikās, sānkhyās and Baudhās accept the temporal nature of śabda. But Mīmāṃsakās and Vaiśesikās while accepting the wave
form of sound but they insists the theory that śabda is beginningless and eternal. This difference can be seen in the relation of the word and meaning accepted by these two classes.

There had been many grammarians and grammatical schools before and after Pāṇini. But Pāṇini excels all of them by his unique scientific approach. Before Pāṇini, Yāska the author of Nirukta had put forward the theory that the origin of all nāmās are from dhatūs. This was made the foundation of the Pāṇinīyan programme. There is a series of texts associated with Pāṇini’s Aṣṭādhyāyi though not forming a part of it. Some of them are discussed in this chapter. Pāṇini did not go deep into the details of phonetic’s discussion though he presupposed knowledge of such details. In spite of these it is possible to extrapolate his views from his rules. It is generally agreed that there is only one Pāṇinīyan rule which directly deals with phonetic details. Pāṇini’s own statements have made clear the principles he observed in stating morpho-
phonemic alterations.

The notion of kārakā is basic to Pāṇini’s derivational system. There have been considerable discussions in modern linguistics regarding the precise status of kāraka categories. Meaning serves as a condition for the introduction of affixes and kārakā classification rules serve to bridge the gap between semantic relation and grammatical expressions.

Apart from Pāṇini there are several works on grammar by different scholars before and after him. These are broadly classified as Non-Pāṇinīan grammars. This chapter also contains a discussion on these Non-Pāṇinian grammars based on Prakriyāsarvaswa of Melputhūr Nārāyaṇa Bhāṭṭatiri.

Though sphoṭa siddhānta was first proposed by Sphotāyana its present form is due to Bhartṛhari. The term sphoṭa is mentioned in Patañjali’s Mahābhāṣya also. All audible sounds and
varṇās are defined as dhvani by grammarians. They are called dhvani because they have dhvanitva, they implied the extra sensory and fundamental sphaṭa or in other words they are sphaṭa vyāṇjakaś. We discuss sphaṭa in the chapter four.

Thus grammarians have accepted sphaṭa as a śabdatvā. In the process of śabdabodha thus the theory of sphaṭa plays the most significant role whether it is pada or vākya the duration of the sphaṭa process is same. When the śabda is expressed by dhvani the sphaṭa is formed by different means for its perception. It is to be noted that much before Bhartṛhari, Patañjali had distinguished between two aspects of words - the sphaṭa and the dhvani. Pāṇini also mentions the name of Sphoṭāyana who is believed to be the original expounder of this theory. The distinction between sphaṭa and dhvani is supposed to have been made first by Vyādi.

It is to be noted that the sphaṭa concept contains
the elements of modern scientific approach. What *sphoṭa* asserts is that the meaning arises not merely from the meanings of component words in a sentence but their mutual relations. The grammatical analysis contains the details of the characteristics of each of these words and how they are related to each other.

The next chapter deals with the development of western linguistics and the relevance of Indian theories of meaning to it. As in the east, in the west also linguistics has its roots deep in the early Greek philosophy. But the great advances in natural sciences pushed it to the back yards and it got a new impetus by the late 18th century when William Jones drew the attention of the Europeans to the treasures of Sanskrit literature especially Pāṇinīyam. This marked the beginning of the comparative philology which was the forerunner of comparative linguistics and modern linguistics. The development of modern linguistics starting from de Sassure’s structuralism to the Sanskrit computational linguistics forms the cruxes of this chapter. While in early
days linguistics was primarily confined to its theoretical aspects, the last century found great advances in its applications to different branches of knowledge especially computer science. In fact this development in linguistics has contributed to various branches of artificial intelligence including machine translation, summarisation etc.

It was Bloomfield who first noted the necessity of application of mathematical methods in linguistics. In fact the revolutionary changes in mathematics by the second half of 19th century made logic as the foundation of mathematics and the developments in linguistics in 20th century owes a lot to this. The last chapter deals this in detail.

Another development was the beginning of two new branches of applications of computer science namely computational linguistics and language computing. By nineteen sixties some scholars had observed that the Sanskrit grammar could contribute to natural language processing (NLP) but it was during the nineteen eighties that a
more detailed study of Sanskrit by computer scientists began. A paper by NASA scientist Rig Briggs brought to the notice of both computer scientists and Sanskrit scholars the interpretation of Sanskrit as a language fit for developing operating systems. Though this was an exaggeration, it triggered great enthusiasm among Sanskrit scholars which contributed to the formation of a new branch of study called Sanskrit Language Computing (SLC). This has given a new interpretation to the Pāṇinian grammar also. We conclude the chapter pointing out the limitations of SLC in extracting fully the semantic aspects.

Now thesis is concluded with the following observations

1. Unlike the western, the eastern studies of languages have a continuity starting from the vedic period.

2. Though linguistics had shown different characters during its evolution, it was only because of the stresses given on different
aspects of languages at different times. At times it was aesthetics, at some other time it was grammar and yet another time it was philosophy.

3. There are reasons to believe that comparative linguistics had started much before the beginning of Christian era. Buddhist vihāras were centres of language studies. Till 6th century AD the universities of Nālanda and Takṣaśila were existing as centres of studies in all branches of science including linguistics.

4. We observe that the traditional method of research by Indian scholars continued till 16th century culminating in the works of Bhoja and NāgeśaBhaṭṭa. The next century is remarkable by the work of Melputhūr Nārayaṇa Bhaṭṭatiri who summarised the then existing literature including the Apāṇiniya vyākaraṇās. This continuity was carried further by the works initiated after the famous speech of William Jones in the 18th
century. The comparative linguistics started by Jesner and Philippos as in the west was carried forward by including Sanskrit also from the beginnings of 18th century. The later developments in comparative linguistics both in east and west till day can be considered as a continuation of the thoughts initiated by the earlier scholars in Sanskrit.

To end with, the present scholar stresses the point that semantics is a branch of language which is not amenable to scientific analysis because of its contextual factors involved. The most difficult parts of vākyās which escape analysis are rasa and dhvani. It takes a long time and great strides in the field of artificial intelligence to make them amenable for analysis. Thus at present the computational linguistics or language computing has found limited success, that also in automata or programming languages which are devoid of these factors.