CHAPTER- I

INTRODUCTION

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1.1 Sanskrit and Computer

1.1.1 Sanskrit for Computer

In July 1987 Forbes magazine published a news, which surprised even the Sanskrit Pandits. It said that, “Sanskrit is the most convenient language for computer software programming”. It filled the hearts of all those who love and study Sanskrit with great joy and enthusiasm as it opened the doors to new fascinating world of Sanskrit studies.

Sanskrit is extremely rich, powerful and expressive language. Its potentialities are gradually being appreciated all over the world, and its application is being extended in different fields. It has been proved that Sanskrit is so rich and resourceful that it is the only language in the world, which can express even the most intricate scientific knowledge clearly.

It is now a well known fact that the computer scientists, who were frantically searching for a befitting inter-lingua for instantaneous transliteration of any language of the world into another with the help of computers, found their answer in Sanskrit alone. Among the languages of the world, Sanskrit proved to be the most suitable, fulfilling all conditions demanded of a language to serve such a unique purpose. Here, it should be admitted that inspite
of these early tall claims, not much success could be achieved in this direction. The efforts are still on to achieve this distant goal. To mention a few, Indian Institute of Information Technology, (IIIT), Hyderabad is working on a project called Natural Language processing (NLP). The goal of NLP is to build computational methods of natural language for its analysis and generation. Similar work is going on at C-DAC, Bangalore, the project is called Natural Language Understanding (NLU).

1.1.2 Computer for Sanskrit

The association of Sanskrit with computer is constantly abridging the distance between the science of ancient world and the world of modern science. It is because of that the electronic data processing system has enabled us to speculate on the new dimension of knowledge and quick solutions to the problem.

Computer scientists and Sanskrit Pandits all over the world are trying to use the computer technology in the field of Sanskrit studies. Many such efforts have already started in India. In this regard Government of India has incited two major projects:
1) Technology Development for Indian Languages (TDIL)
2) Sansk-net project. (site name: http://www.sansk-net.org )

1.1.2.1 Technology Development for Indian Languages (TDIL)

The Indian Standard Code for Information Interchange (ISCII) was devised by C-DAC, for using any Indian Language in Word
Chapter- I Introduction

Processing, Data Processing and a host of other applications across platforms like DOS, WINDOWS, UNIX, Mac etc. This standard provides instant transliteration of texts among Indian languages and Roman script (with diacritics).

1.1.2.2 Sansk-Net project

The Project Sansk-net was proposed by Indian Heritage Group (IHG) and Real-Time Systems Group (RTSG), Center for Development of Advanced Computing (C-DAC), Bangalore, to be an initiative with Rashtriya Sanskrit Vidyapeetha (RSVP), Tirupati as the nodal center and C-DAC as the technical implementation agency. The scope and objectives of the project are as follows:

Objective

The basic objectives of the "Sansknet" program are the following:

1. To present the database available in different institutions in a Computer framework.

2. To assist the institutions to develop the hardware, software and the technical capability to place the information in the modern technical framework.

3. To develop computerized linkage among the different institution so that each institution can have access to the database available in the other institutions.
4. To make use of the principles and techniques available in Nyāya, Vyākaraṇa, Vedānta and Vedāṅga for developing new paradigms for the computer.

5. To develop packages for training for the faculties in the scientific work and śāstric world for making best use of the infrastructural facility.

6. To facilitate preservation of the information on rare manuscript, Vedic literature and śāstras.

1.1.3 Computer oriented Sanskrit Studies

At present computer oriented Sanskrit studies are heading in following directions.

1.1.3.1 Development of corpora of Sanskrit Text

Corpora, generally refers to the complete collection of writings in a machine-readable form, which have different uses in linguistics and its application, such as: preparation of lexicon, grammar, dictionaries, thesaurus, frequency list and the like. It would not only provide basic research facilities for studying linguistic features but also meet the practical need of translation, knowledge-based compilations and such other applications. Many institutions and persons have engaged themselves in the development of such corpora. Some such sites have already gone on line. Indian Heritage group under the Ministry of Human Resource Development (HRD), is building a corpora of ancient Sanskrit texts related to different areas like: Veda, Upaniṣad, Purāṇa, Epics etc.
Some institutions are working to build Corpora on various ancient texts under Indian Heritage Group (IHG). The name of the Institutions are as follows:

1) Chinmaya Foundation (CF), Cochin.
2) Purṇa Prajñā Saṃśodhana Mandiram (PPSM), Bangalore.
3) Academy of Sanskrit Research Melkote (ASRM), Melkote.
4) The Rashtriya Sanskrit Vidyapeetha (RSVP), Tirupati.
5) Ahobila Math Sanskrit College (AMSC), Madhurantakam

As a matter of fact, the following texts have been entered by these Institutions:

<table>
<thead>
<tr>
<th>Name of the Institutions</th>
<th>Name of the some texts</th>
<th>Number of the entered texts</th>
</tr>
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<tbody>
<tr>
<td>Chinmoy Foundation, Cochin</td>
<td>Tantravārttika Bharadvājagr̥hya Sūtra Upanishad – Śāṅkara Bhāṣya Isāvāṣya Upaniṣad Kena Upaniṣad Śābarabhāṣya etc.</td>
<td>33</td>
</tr>
<tr>
<td>Purṇa Prajñā Saṃśodhana Mandiram (PPSM), Bangalore.</td>
<td>Sūtra Dipikā Tattva Mañjarī Bhāva Dipikā Parabrahma Prakāśikā Nyāya Vivraṇam etc.</td>
<td>27</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Academy of Sanskrit Research Melkote. (ASRM), Melkote.</th>
<th>RgVeda</th>
<th>Yajur Veda</th>
<th>SāmaVeda</th>
<th>AtharvaVeda</th>
<th>Vedāṅgas etc.</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Rashtriya Sanskrit Vidyapeetha (RSVP). Tirupati.</td>
<td>Dhvanyāloka</td>
<td>Kuvalayānanda with Chandrika</td>
<td>Dharmavijaya Nāṭaka</td>
<td>Rukminipānigrahaṇa etc.</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Ahobila Math Sanskrit College (AMSC), Madhurantkāṃ</td>
<td>Vakroktijīvitam</td>
<td>Kāvyamīmāṃsā</td>
<td>Śrī Bhāṣyam</td>
<td>Vedānta Dīpa</td>
<td>Vedānta Sāra etc.</td>
<td>24</td>
</tr>
</tbody>
</table>

However, I have mentioned here the names of some texts. The detailed study of these texts can be seen from the following site:

[http://www.sansknet.org](http://www.sansknet.org)

**1.1.3.2. Machine-Aided Translation.**

Machine Translation means, the translation with the help of machine. It is an effective transfer of textual materials from one language to another language with the help of computer. This involves dictionary search, selection of equivalent terms, morphological
information and error corrections etc. Department of Computer science and Engineering, IIT, Kanpur, from 1983 onwards, has undertaken a project attempting to utilize the Sanskrit grammar structure and particularly, Pāṇini’s theory, for an interlingua-based machine translation system among pairs of Indian languages. This project has achieved considerable success by now, covering Hindi, Telugu, Kannada, Marathi etc.

1.1.3.3 E-Learning program for Sanskrit

Sanskrit is being taught from primary level to University level in different parts of the country in both traditional and general institutions. It is also being learnt in many foreign countries. However, the process of learning and the teaching is not up to the mark for various reasons. Besides, there is no facility for learning Sanskrit independently. Thus, there is a need to develop linguistic technique aided by audio-visual interactive media, which can take care of requirements of various learning groups. The work in this direction is already on in India and abroad. Saṁskṛta Bhāratī and Viśva Bhāratī have already prepared an E-learning program for basic Sanskrit. Similar work is also going on at the University of Pune, Department of Sanskrit in collaboration with C-DAC multimedia group. This E-learning and Expression project aims at preparing programs for different levels in addition to Sambhāsaṇa portal i.e. package for spoken Sanskrit.
1.1.3.4 Computer-assisted Śaśtric Teaching.

Sanskrit śastras are usually taught at higher level. The study of such śastras includes the study of main text along with its commentaries and sub commentaries. When one studies a particular śāstra, it is necessary to understand the ideas expounded in that particular śāstra in their proper prospective. For which one is required to go through a number of books, commentaries and dictionaries in order to collect all the scattered details. Without the help of modern technology it would be difficult to get all the relevant information, scattered over many texts or parts of single text. The computer can be used as an effective means of inputting, encoding and scanning the data. It can retrieve the desired information in a flash and can present it in a systematic way. We can thus develop a larger system of information, accessible through electronic network, to provide a better textual exposition.

Some such attempts have already been made. To mention a few, there is a package called ‘Gita Super’ developed by IIT, Kanpur, which presents text of Bhagavatagītā along with its two commentaries. Another package called the Mahābhārata developed by Bhandarakara Oriental Research Institute (BORI), Pune. However, such types of works are running not only in India but in abroad also. The detailed study of such works can be seen from the following websites: 1) http://sanskritindia.com 2) http://worldsanskrit.com
1.1.3.5 Computational analysis of Sanskrit

Computational analysis signifies an analysis of given text with the help of computational technique. The computational analysis of a Sanskrit text includes a number of procedures such as:

1) Keying the text in any editing software.

2) Analysing the text from syntactic and morphological point of view.

3) Preparing a detailed help program for grammatical analysis.

4) Developing programs for sorting, searching, and indexing, preparing concordance, creating hyperlinks for words, rules and verses.

5) Creating database for storing all the information.

Though, a variety of Natural Language interface tools like an Editor, creation of multi-lingual documents with transliteration between Indian languages and Roman, utilities for sorting, searching, indexing, concordance, various analyses like morphological, syntactic and semantic, lexical update, grammar help, hyperlinks to a variety of rule bases etc. are developed for this purpose, their effective application for producing better result is still a great challenge. Computational analysis of Sanskrit śāstras pose still greater challenge as it not only demands the knowledge of computer technology but also a thorough knowledge of the concerned text.
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A preliminary Natural Language Understanding (NLU) System for Sanskrit, Deśika, has been developed and is in use in universities and institutions.

Essentially, it generates/analyses Sanskrit Words/Sentences with the help of Pāṇīnian grammar rules, for valid word forms. Paraphrasing an input sentence, changing the voice, euphonic combinations and accented input (Vedic) processing are the other salient features of this system. Rule base trace is also provided.
1.2 About the work

The present thesis, entitled “Computational analysis of Brahmakāṇḍa”, is a step forward in the field of Computational analysis of śāstric text. It is an attempt to utilize computational skills for studying a traditional Sanskrit text called Vākyapadīya (VP.), devoted to the philosophy of language. The package, consisting a printed text along with CD-ROM, presents a detailed analysis of the Brahmakāṇḍa, an introductory chapter of Bhartṛhari’s VP.

1.2.1 Features

This unique package provides the user a facility to explore various details of Brahmakāṇḍa in a single interface. It has three main utilities: contents, search and about.

Following snapshot is added here for the user’s Convenience.
This utility provides users an opportunity to see the complete text of Brahmakāṇḍa containing 183 verses along with its anvaya, and the auto commentary called svopajñavrtti. It also gives an easy access to the English as well as Hindi translation of the text. The program is also equipped with other facilities such as: word index, verse index, and subject index, concept index and information about the text, author, and exhaustive Bibliography of the modern research on Vākyapādīya. From this one can have better understanding of the complex verses used in VP.

1.2.1.2 Search
This utility prompts the user to enter the sloka number, select word, and select sloka by which user can get the required information.
The snapshot is given below.

1.2.1.3 About

This utility provides all the information related to the package. This includes an instruction manual (help), scheme of transliteration, abbreviations etc.

1.2.2 Methodology

Considering the unique nature of the work, we have adopted a methodology that could take care of the technical as well as theoretical aspects of the work.
From the technical point of view following methods are adopted.

i) The actual format of the text is configured with the help of leap office and visual Basic.

ii) Applications are prepared for effective functioning of search engine.

iii) Hyperlinks are established for better display.

iv) Database is prepared for E-version of the text.

From the theoretical point of view following methods are adopted.

i) Text, English Translation, commentary, Hindi Translation is keyed in from authentic sources.

ii) All the 183 verses are analyzed and presented in prose form \((\text{anvaya})\)

iii) Each word compounded and uncompounded, is analysed and explained from the grammatical point of view.

iv) Various indices such as Word Index, Verse Index and Subject Index are prepared.

v) Some key concepts occurring in \textit{Brahmakāṇḍa} are explained in nine short articles.

The book form consists of three chapters, i.e. Introduction, Text with subject index and Concepts.

\textbf{Chapter-I Introduction}

This chapter deals with following points:
Chapter- I Introduction

1.1 Sanskrit and Computer
1.2 About the work
1.3 Pāṇini’s grammar
1.4 Development of Indian semantics
1.5 Bhartṛhari: A linguist-philosopher

Chapter- II Text with subject index

This chapter deals with the text of Brahmakāṇḍa with Subject index. The text is taken from the Vākyapadiya, which is critically edited by Wilhelm Rau.

Chapter- III Concept

This Chapter deals with nine concise and informative articles occurring in the Brahmakāṇḍa.

They are
1) Anumāna
2) Apabhraṃśa
3) Apoddhārapadārtha
4) Itikartavyatā
5) Kākaśakti
6) Dhvani
7) Śabda
8) Sphoṭa
9) Vāk

1.2.3 Conclusion

To conclude, the advanced computer technology has revolutionized almost all parts of human life and field of education is no exception.
This attempt of using the modern technology for analyzing the ancient works will be helpful to the scholastic community as a whole in learning, understanding and interpreting ancient Indian knowledge in a better way. Such package can also prove useful in teaching ancient Indian śāstric texts effectively and with more efficiency. It can also be used as supporting systems for research. Thus, there is an immense potentiality in this field, which needs to be explored further for a better result.
1.3 Panini’s Grammar

The *Aṣṭādhyāyī* (Aṣṭ.) of Pāṇini (5th century B.C.) is a monumental work, comprising about four thousand short aphorisms, best known for its technical excellence.

1.3.1 The nature of Pāṇini’s Grammar

Pāṇini’s work is devoted to the description of Sanskrit language. At the outset, it must be pointed out that, Pāṇini’s avowed goal was to provide an adequate descriptive grammar for Sanskrit and not to make a semantic analysis of the language. As a result, Pāṇini focussed only on deriving grammatically correct phrases and sentences, and not on the semantic aspect of it. He has given more stress on the derivational process involving number of syntactical, morphological and phonological operations. Thus, it is derivational grammar.

Pāṇini reduced almost all the grammatical notions to the level of morphemes. For instance, from Pāṇinian point of view, concept such as person, tense, and case are nothing but set of suffixes expressing these ideas. On account of this formal treatment of language, Pāṇini’s grammar is set to be formal rather than notional.
1.3.2 Pāṇinian Approach to Linguistic Philosophy

It is known that Pāṇini’s Ast. is not philosophical in nature. However, this does not mean that it totally lacks the philosophical import. Pāṇini’s Ast. is a storehouse of linguistic theories. Though Pāṇini did not write any theoretical treatise on language, his Ast uses and presupposes linguistic theories. Pāṇinian sūtras reveal that a strong and full-fledged system of linguistic concepts underlies them. Therefore, all the posterior linguistic philosophers and grammarians like Patañjali, Bhartṛhari etc. draw upon Pāṇinian sūtras and quote them as a proof for various kinds of linguistic theories and philosophical concepts. For example, Patañjali while discussing two-fold nature of the meaning as universal and particular quotes Pāṇini as authority behind his assumption. According to Patañjali, Pāṇini has accepted both the views i.e. universal and particular as the import of word. Pāṇini’s sūtra ‘jātyākhyāyāmekasmin bahuvacanamanyatarasyām’ (P.1.2.58) is based on the assumption that the primary sense of word is universal. On the other hand, the sūtra ‘sarūpāṇāmekeśa ekavibhaktau’ (P. 1.2.64) is based on the view that the primary sense of it is the particular.

Pāṇini imagines the language as a total and integrated system. He gives due importance to its parts as words existing in the total structure of language and not isolately or
independently. The sentence is the kernel item of derivational process in Pāṇīni. This process starts with sentence and ends in sentence-construction.

Pāṇīnian paddas also never stand in their absolute and isolated position, rather always in syntactic structure. He has concerned himself with the syntactical morphological, phonological description of Sanskrit. He has also given due consideration to accentuation, which are important aspects of any spoken language. However, semantics is one such branch of linguistics, which is left under-attended by him.

Patañjali in his Mbh., declares unambiguous terms that grammar is a science of words (śabdānuśāsanam). Meaning is not a subject matter of grammar, it is learnt from the worldly usage. Patañjali remarks that usage among people leads to the use of words in their proper senses; the science of grammar only determines the use of correct words with a view to achieve merit.\(^2\) Thus, we see that the consideration of meaning was on the backseat in the early days of Pāṇīnian grammatical tradition. Therefore, Pāṇīni was not led away by semantic considerations, but he used them in his grammar so far as they do not go against formal consideration. Thus, for instance, Pāṇīni provides rules to derive the verbal and nominal forms through affixation, conditioned in part by the semantic categories.
Panini made use of semantic aspects in his grammar in three main ways.¹

i) He used semantic concepts (e.g. *vartamāna* ‘present time’ *bahutva’ plurality’) as a starting point in his grammar to derive the corresponding phonological forms by a series of replacement rules.

ii) As far as it was possible, he used semantic concepts for grouping words and stems to form class system. (e.g. *varṇa* ‘colour words’).

iii) The shades of meaning is conveyed by the whole derived word (consisting of the root and suffixes) or compound.

In addition, Panini utilized semantic components or markers to distinguish members of groups of semantically related words when this is required for the correct description of the data.

i) Domestic animals (*paśu*) P.2.4.7

ii) Tree (*vrksa*) P.2.4.12

iii) Grain (*dhānya*) P.2.4.12

Thus, it can be said that Panini’s use of the semantic aspect of the word was limited to the derivation of correct forms, and therefore can be called as secondary.
Chapter- 1 Introduction

After a brief review of Pāṇini’s Grammar, from the point of view of treatment of various linguistic aspects, let us now take stock of the origin and development of semantics in ancient India up to the advent of Bhartṛhari’s VP.

1 tiṇastrīṇī trīṇī prathamamadhyamottamāḥ || P.1.4. 101 ||
vartamāne laṭ || P. 3.2.123 ||
vibhaktiḥ ca || P. 1.4. 104 ||

2 lokataḥ arthaprayukte śabdaprayoqge śāstreṇa dharmaniyaṃ ||
Mbh. 1.1, p.8

1.4 Development of Semantics in ancient India

1.4.0

The theory of signification of words, or study of meaning had no particular name in the early days of its origin. Some called it ‘Semasiology’ and other ‘Sematology’. Norean preferred to call it ‘Semology’, which can be derived from Greek word ‘sema, or ‘sematos’, having the sense of ‘sign’, rather than signification. Lady Welby suggested another name in ‘significus’, which, however is not accepted by linguists. It was Michel Breal,¹ who designated this branch of linguistic science as ‘semantics’ (semantique), from Greek word ‘semaino’, which has attained a unanimous recognition among the scholars.

1.4.1 What is semantics?

Language, the chief vehicle of communication in human civilization, has two aspects, form and content. In the first, i.e. form, we are concerned with the production and hearing of articulate sounds, which can be studied under different heads, viz. phonemic, morphemic and syntax. The content side, on other hand, is immediately concerned with meaning, which is studied under the heading of semantics, the study of meaning.²

Language can be studied either from the outward form or from the inner meaning. Jesperson says "...any linguistic phenomenon may be regarded either from without or from within,
either from the outward form or from the inner meaning. In the first case, we take the sound (of a word or some other part of a linguistic expression) and then inquire into the meaning attached to it; in the second case we start from the signification and ask ourselves what formal expression it has found in the particular language we are dealing with.

Meaning is an attribute not only to language, but also of all sign and symbol systems.

It was in the third decade of the last century, that a theory of signs or semiotic, as some scholars prefer to call it, was evolved. According to Stephen Ullmann a symbol is "a sign standing for whatever the speaker intends to convey."

"Semantikos" is a Greek word derived from 'sema' (sign) going back to the Indo-European ‘dhiet’ (to see), which is paralleled by ‘OIA dhyānam’ (introspection) and the reduplicated from Persian ‘didan’ (to see). A ‘sign’ in the sense implies the something, which attracts the eye. In language, it has come to mean a word, which is the symbol of expression, the symbol denoting an object. In this connection we can also compare the word ‘vartna’- which originally means ‘colour’ a sign, and then a sound or a letter. Semantics as a branch of linguistics deals with the word as a symbol, with its symbolic values or meaning. The nature of linguistic meanings, the historical mutations of meaning,
problems of translation, or of the conveyance of meaning from one linguistic medium to another, all these are problems of Semantics.

In the “Dictionary of Philosophy and Psychology” of Baldwin, Semantics is defined as the doctrine of historical word meanings, the semantic discussion of the history and development of changes in the meaning of words.”

Semantics may be classified under two main heads: **Synchronic** and **Diachronic** (terms used by Saussure).

1.4.2 The study of meaning in India

India has occupied the highest position in the field of semantics. The following statement of Prof. M. B. Emeneau may prove a source of encouragement and inspiration to many:
"Certainly in one other slowly awakening department of Linguistics, that is concerned with meaning the west still has to learn from India. Their grammarians, literary theoreticians and philosophers were all concerned with problems of meaning, and much was thought and written on the subject. Of this, the west is for all practical linguistic purposes innocent. The Hindu treatises are in a difficult style, and only a few in the west will be qualified to deal with them, as Sanskritists, Philosophers and Linguistic scholars. Yet, the results are likely to be worth the efforts: It is the subject that can be recommended to aspirants."

1.4.2.1 Vyākaraṇa and Semantics

The Sanskrit term ‘Vyākaraṇa’, which dissolve words into elements (stem and suffix) and thereby bringing out their exact meanings, is, in itself, an indication that grammar, etymology and semantics are intimately connected. The ancient Indian scholars have recognized grammar as one of the eight methods of learning the meaning of words: Other seven methods are:

i) Lokavyavahāra (Popular usage)
ii) Āptavākya (direct statement of trustworthy authority)
iii) Upamāna (analogy)
iv) Kośa (lexicon)
v) Vākyaśeṣa (the rest of the passage in the context)
vi) Vivṛti (explanation)

vii) Siddhapada-sānnidhya (syntactic connection with words already known)
Grammar explains what is a correct sentence. But semantics tells us the full significance of a sentence with all its implications. There are many languages, idioms and paraphrases which are grammatically incorrect but semantically most expressive.

As to the relationship between semantics and phonology, a Phonologist has to take into consideration the meaning of words under his investigation. He must not judge from the appearance alone. Similarly, a Semantician has to look in phonetic change for a right comprehension of meaning change. Word should be investigated phonologically, morphologically, syntactically, etymologically and semantically.

The ancient term, denoting a grammarian seems to have been \textit{vāgyogavid} \textsuperscript{8} i.e. who knows the connection and usage of words. The word \textit{śabda-śāstra} for grammar clearly suggests, how closely semantics and grammar are related. \textit{Ācārya Śaṅkara} explains that grammar, by division of words enables us to comprehend their meaning, and in the modern times, Jesperson in the philosophy of grammar believes that ‘for a clear understanding of grammar, a psychological study of language is most essential’.

1.4.2.2 Semantics before Bhartṛhari

Among the stalwarts of Indian linguistics and grammar, we may recount the names of Śākaṭāyana, Yāska, Pāṇini, 
Kātyāyana and Patañjali, along with that of Bhartṛhari, who summed up all the precious gains and gave a distinct individuality to the science of language as well as to the philosophy of grammar. A long path was already trodden in these fields, before Bhartṛhari arrived on the screen.

It will be worthwhile if we take into account some of those achievements, in order to get a clear picture of Bhartṛhari’s contribution in this field.

The study of meaning in India commenced with the attempt to give the etymology of Vedic words. At the times of the Brāhmaṇas, etymological explanation of Vedic words had made sufficient progress.

Thereafter, scholars like Yāska (8th century) and Pāṇini (6th century) expounded the scientific treatise on science of etymology and grammar. Both these seers have adopted a scientific methodology to explain the words as well as their meanings, while laying down the principles of etymology Yāska declared: ‘artho nityam parikṣeta’ i.e. ‘while giving etymology the meaning must be examined regularly’. Following this principle, he gives the etymology of the words keeping constant touch with their meaning. Pāṇini also, while giving the derivations of the words, concentrates upon their meanings.
Although both (Yāska & Pāṇīni) describe the semantic manifestation based on phonetic changes in the words, Pāṇiṇi does not attempt a derivation of the non-derivatives (avyutpanna).

Yāska declares in unambiguous terms that any query regarding words should start on the presumption that every word has some set of meaning. Śākaṭāyana held the view that all nouns originate from a verbal root, i.e. nāmānyākhyātajānīti Śākaṭāyana, Nir. 1.1), It may appear to be far-fetched for a few; but it has its deeper implication as well. It means in other words that every word originates from original sense.

Defending the theory of Kautsa, an argument was advanced, which was in itself the greatest rebuttal to the divine theory regarding the origin of language. It was in this context that the parity in the Vedic and folk languages, on the basis of their having the same words, was established along with the declaration that former amongst them is as much meaningful than the latter. Yāska summed up the whole argument and declared: ‘Where the meaning is not accompanying and the separation of ‘root’ and ‘suffix’ is not possible in normal way, even in those cases the query regarding the ‘root’ should be persisted with because every word is used only because of its sense. Thus, the theory of Śākaṭāyana was taken to its logical end.
Panini followed Sakatayana and Apisali in his search for finding out a ‘root’ of even almost every doubtful word, and read the Unadi section as separated from the general category. In the meantime, Mimamsa and Nyaya Schools of Indian philosophy, along with Bauddha and the like also developed their distinct theories regarding the nature of meaning and its resting in the word. It was here that the ‘direct’ and ‘indirect’ forms of meaning were discussed first, which later gave birth to the theory of the three kinds of word – powers i.e. abhidha (direct), lakshan (related), vyañjan (indirect).

Patanjali is the first grammarian of the Paninian School who had deeper concern for the linguistic problems. For him the simplest definition of meaning was ‘the cognition, which is received simultaneously with the utterance of the ‘word’

1.4.3 Bhartṛhari on meaning

Bhartṛhari, the Linguist-philosopher, is wellknown for his VP, based on Indian grammatical philosophy and several traditional schools of thought. According to Jan Gonda, “The extremely difficult VP. of this outstanding philosopher...proves to
be an intellectual achievement of considerable importance and though its author of course follows traditional lines of thought, of remarkable originality.” “The Vākyapādiya, is considered to be ‘the major Indian work of its time on grammar, semantics and philosophy of language”. (George Cardona, 1980)

1.4.3.1 Contextual Factors determining the meaning:
Bhartṛhari has recorded as many as fourteen contextual factors in determining the sense in doubtful cases. They are:

\[ saṁsarga \ vipragogaśca \ sāhacaryaṁ \ virodhitā \ \]
\[ arthaḥ \ prakaraṇaṁ \ liṅgaṁ \ śabdasyānyasya \ saṁnidhiḥ \ || \ Vk. 315\]
\[ sāmarthyamauciti \ desah \ kālo \ vyaktih \ svarādayāḥ \ | \]
\[ śabdārthasyānacchede \ viṣeṣasmrīṣhetavaḥ \ || \ Vk 316\]
i) Saṁsarga: Close connection of one individual object with another.

ii) Vipragoga: Separation as contrasted with saṁsarga

iii) Sāhacarya: Association; company

iv) Virodhitā: Contrary nature; dissimilarity; enmity as one

v) Artha: Purpose

vi) Prakaraṇa: Context

vii) Liṅga: Significant expression supplying the factor needed by another expression to complete its sense.

viii) Sannidhi: proximity with other words.

ix) Sāmarthya: Capability

x) Auciti: Propriety

xi) Deśa: A place where a particular word is uttered

xii) Kāla: The time factor notion of an individual object.
xiii) **Vyakti:** Person.

xiv) **Svara:** Accent

It is noteworthy that, six out of these fourteen contextual factors also figure in *Bṛhaddevatā kārikā:* These are

*artha* (purpose), *prakāraṇa* (the subject matter under discussion), *liṅga* (gender), *aucitya* (propriety), *deśa* (place) an indication from another places) and *kāla* (time). These are as the contextual factors for determining the meaning of the *Vedic* mantras or the expressions in the classical language.  

1.4.3.2 Two aspects of Meaning

Taking hint from a Paninian rule *svaṁ rūpaṁ śabdasyāśabdasarijñā* (P. 1.1.68), Bhartrhari developed the idea of twofold meaning. When a word is uttered it reveals two types of meanings:

1) Its phonetic form

2) An object for which it stands.

Thus it is said that, this twofold nature of word is compared with knowledge and light

“As the knowledge itself and its object are two inseparable aspects of ‘one and the same thing’, so are the two aspects of the word, i.e. word and meaning, inseparably united and belonging to one and the same things” “Light has two aspects: as a receptacle things itself, and as an instrument in reception of other things. In the same way, all the words have two aspects: they are receptacle
in their own forms, and they are instrumental in reception of the sense, lying behind themselves\(^{18}\).

### 1.4.3.3 The indivisibility of sentence meaning

Bhartṛhari’s conception of \( \text{sabda} \) is analogous to a certain extent to the modern concept of linguistic sign.\(^{19}\). A linguistic sign is considered to be a two-sided entity. Even for Bhartṛhari, \( \text{sabda} \) is related to the phonetic structure on one hand and to the semantic fact on the other hand.\(^{20}\) He says that the grammarians recognise two kinds of words: sound word and semantic word. The latter is not a material word but a physiological entity or mental equivalent of an articulate sound (\textit{buddhistha}).

Semantically speaking, the speech can not be divided into any ‘parts’. According to Bhartṛhari, the analysis of a sentence into words and of words into stem and suffix is made for the practical purpose and has no real value. The phonetic similarity and dissimilarity is the sole basis of such an analysis. Therefore, the individual words have no real meaning, sentence is the only meaningful unit of the language.\(^{21}\) The essence of these statements lies in the claim that the division of a sentence into parts is a result of grammatical analysis. It is a means for teaching the language for those who are ignorant.\(^{22}\) Worldly behavior depends on the capability of words and their meanings.\(^{23}\) Similarly, phoneme is a device, employed in analysing and understanding the correct pronunciation. It has its length measured only at the time of its pronunciation.\(^{24}\) Otherwise, even the phonemes make themselves
explicit only in the form of a plosion, the only mode of reception of speech. According to Bhartrhari, the sole purpose of speech is to help someone to express his own self. The word is the only medium of expression and its reception. Therefore, it is the desire for self-expression, which becomes the basic criterion for ascertaining the unit of speech or the semantic minimum. And, as this desire for ‘self-expression’ is indivisible into any parts, the ‘statement’ carrying this desire must also be indivisible. The expressional form of this very ‘statement’ is called ‘sentence’ or vākya, which thus proves to be indivisible into words or phonemes.

In other words, only a statement can convey any meaning, not the so-called parts of it. And ‘phoneme’ is nothing, but the smallest part of a sentence, having no distinct semantic value. It is interesting to note that as far as the Semantics is concerned, on one hand, varṇa or phoneme has no semantic value at all. But on the other hand even single varṇa or phoneme might make a complete statement in itself, if a certain semantic value is ascribed to it.

Some declare the ‘phoneme’ as a basic and compact semantic unit, generating the bigger semantic unit. The protagonists of the ‘sentence theory’ recognise sentence as the basic expressive unit. They are however, divided amongst themselves, about the definition, length and form of the sentence.

The ‘sphota’ theory, as propounded by the post Bhartrhari grammarians, leaves no room for recognition of either the ‘word’
or the phoneme as a semantic unit of speech. Though \( \text{spho} \text{\text{\`\`ota}} \) is equally the basic mode of reception for the phoneme, word or sentence yet, semantically this \( \text{spho} \text{\text{\`\`ota}} \) or explosion is dependent solely on the unit of the sentence.\(^{30}\) Hence only the sentence may be called as the true semantic minimum, or the unit of speech.\(^{31}\)

1.4.3.4 Semantic role of \textit{pratibh\`\`a}

The sentence \( \text{spho} \text{\text{\`\`ota}} \) of Bhart\`hari is unique in nature. According to Bhart\`hari, a sentence as a meaningful linguistic unit can not be sub-divided further into smaller significant units. A sentence has parts, which constitute its external structure. But all parts of a single integrated sentence do not convey the meaning of the sentence severally. The meaning of the sentence is something over and above the meaning of the parts. Thus, the meaning of the sentence is understood as a flash. According to Bhart\`hari it is \textit{pratibh\`\`a}.

When a speaker utters the sounds (\textit{dhvani}), they die away in the next moment revealing the \( \text{spho} \text{\text{\`\`ota}} \), which is an auditory impression of the sound. Immediately the \textit{pratibh\`\`a}, as flash, translates the impression of the sound into meaning. The gap between the flash and understanding of a sentence meaning is not noticeable. Due to this, people think that they are identical. Sometimes the meaning of a sentence is understood even before the sentence is auditorily perceived. Thus, the \textit{pratibh\`\`a} plays an important role in understanding the overall meaning of the sentence.
1.4.4 Summary

To sum up, the theory of indivisible sentence meaning can play pivotal role in Bhartrhari’s discussions on semantic issues. Besides this, Bhartrhari has discussed other important issues such as words and meaning relationship, the nature and expression of the meaning, problem of homonyms etc. The impacts of these theories are also visible on the works of subsequent thinkers such as Kaiyata, Nageśa Bhaṭṭa, Kauṇḍa Bhaṭṭa etc. Both ancient as well as modern scholars also receive semantic issues with great appreciation. Thus, Bhartrhari enjoys a unique position in the history of Indian linguistics. He is the first grammarian, who gave serious consideration to many linguistic issues, which were left untouched or unanswered by his predecessors. As it is quite well known, before Bhartrhari the main emphasis of the Sanskrit Grammarians was on the formal aspects of the language. The questions related to meaning were left at the mercy of Mīmāṃsakas and logicians. Bhartrhari changed the focus of his attention from the formal to the notional or philosophical aspect of language. He focused his attention on meaning and explored into its multiple dimensions. He collected ideas scattered in the works of Patañjali and the other śāstrakāras and developed out of them a theory, that grammarians could call their own. His VP. marks a beginning of the tradition that was solely devoted to arthaprakriyā (meaning analysis).
Thus, Bhartṛhari can be called the father of Indian Semantics in the significant sense of the term.

1 Semantic change in Sanskrit, J.L. Kamboj, Nirman Prakashan, p. 3

2 Semantic in the technical term used to refer to the study of meaning, Palmos, F. R. Semantic, P. 1

3 Jesperson, O., The Philosophy of Grammar, p.33

4 Ullmann, S. Semantics, P. 12.

5 Wilbur Marshal Urban: Language and Reality, 1939, p. 95


7 śaktigrahaḥ vyākaranopamānamakṣaśāptavākyāḥ vyavahārataśca
   vākyasya śesād vivṛter vadanti sānnidhyataḥ saṁdhapadasya vṛddhah
Keśava ramrao Joshi, NSM. P. 173, BORI, 1985

8 yastu prayuṅkte kuśalo viśeṣe śabdānyathāvadyavayavahārakāle
   Mbh.1.1, p.2


10 Arthavantaḥ śabdāṣaṁśānyāt || Nir. 1.1||

11 atha ananvite arthe aprādeśike vikāre arthanityaḥ parikṣeta || Nir.
   2.1

12 For detail. See ‘History of Sanskrit Grammar’ written by Pt. Yuddhiṣṭira Mimāṃsaka, part I.
Chapter- I Introduction


14 yenoccāritena sāsnālāṅūlakakudakhuraviśaṅināṁ sampratyayo bhavati sa ıabadhaḥ || Mbh.1.1,p.111

15 Connection, separation, association, opposition, meaning, context, indication, the presence of another word, suitability, propriety, place, time, gender and accent etc. these are the causes of determining the meaning of a word when there is no definiteness in it. Vk 315-316 The Vākyapadiya of Bhartṛhari, Chapter-II, English translation, K.A. S. Iyer, first edition, p.136-137.

16 Linguistic Thought in Ancient India, Pushpendra Kumar, Nag publisher, p. 103 )

17 "When a meta-linguistic item is mentioned in a rule for purpose of grammatical operation, then) the own (phonetic) form of the meta-linguistic item( is to be understood ), with the exception of a technical name for the meta-linguistic item. , The Aṣṭādhyaṭi of Pāṇini with Translation and explanatory Notes, by S.D. Joshi and J.A.F. Roodbergen, Vol.1, Sāhitya Akademi, p. 121

18 ātmārūpam yathā jñāne jñeyarūpam ca drṣyate |
artharūpam tathā śabde svarūpam ca prakāśate || Bk. 51||
grāhyatvaṁ grāhakatvaṁ ca dvī śaktī tejaso yathā |
tathaiva sarvaśabdānāmete prthagavasthite || Bk. 56||

19 This has been already pointed out by K.K Raja in "Indian Theories of meaning", p. 121.

20 dvāvupadānaśabdeṣu śabdau śabdavido viduḥ! eko nimittam śabdānāmaparo'rthe prayujyate || Bk.44||

21 Vk. 11-14
śabdasya na vibhāgo’sti kuto’rthasya bhaviṣyati

vibhāgaṁ prakriyābhedamavidvān pratipadyate || Vīkṣ. 13||

vyavahāraśca lokasya padārthaṁ parikalpitaiṁ

śāstre padārthaṁ kāryārthaṁ laukikaṁ pravibhajyate ||Pīk. 3. 88||

Bk.77

Vīkṣ. 10-16

pade na varṇā vidyante varṇesvavayavaṁ na ca ||

vākyātpadānāmatyantaṁ pravibhāgo na kāścana || Bk. 74||

yathā sāvayavā varṇā vinā vācyena kenacit ||

arthavantaṁ samuditaṁ vākyamapyevamāṁśyate || Vīkṣ. 54||

Vīkṣ. 40

Vīkṣ.41-43

nārthavattā pade vākye vākye caivaṁ viśīṣyate ||

abhyaśatprakramo ’nyastu viruddha iva drṣyate || Vīkṣ. 402||
1.5 Bhartṛhari – A linguistic-philosopher

Grammar has been considered to be a system of philosophy in India, in addition of being grammar proper, and an auxiliary discipline of the *Veda*. Mādhavācārya included the grammar in his *Sarvadarśanasamgraha*, in which he quotes the *VP.* of Bhartṛhari to describe the philosophical viewpoints. Bhartṛhari’s contribution to the philosophy of Language is very authentic and outstanding in nature. It would not be an exaggeration to say that, *VP* continued to be guidebook on the philosophical issues of grammar.

1.5.1 Bhartṛhari’s linguistic monism

The philosophy called *Śabdadvaita* ‘linguistic monism’ occupies a central position in Bhartṛhari’s *VP.*, even if the attention is, sometimes, more directed towards grammatical issues. T.R.V. Murti (1974, 328) remarks: ‘The school of grammar is an *Advaitavāda* (Absolutism) and has a shares in the virtues and difficulties of all Absolutism’. Bhartṛhari declares that the attainment of *Brahman* is the ultimate goal of the study of grammar. It is not the only goal to be attained, but also the ultimate source of the very thing. It is, therefore, the source of *vākya* (sentence) and *pada* the word, the two main subjects of the *VP*.

The first four verses of the *Brahmakāṇḍa* states the main idea of Bhartṛhari regarding the unity of *śabda* and *Brahman*. 
Besides these, many other verses of the VP, take over this idea and elaborate it. According to Pere Sarvesvara (1981, 75) “The whole of the VP. is to be understood on the basis of the first four kārikās”. According to Bhartṛhari, the nature of ultimate reality, the Brahman, is:

“Without beginning or end, is of the nature of word (Śabdatattva). All the objects as well as cosmos are manifested from it. This ultimate reality is one but manifests itself as many due to its various powers. Even though it is not different from its powers, it appears to be different. Among its many powers, time is the most important. It is one, but divisions are superimposed on it. All the different kind of changes depends on it. Which causes multiplicity in the Being. The ultimate, which is one, contains the seeds of all multiplicity. It manifests itself as the experiencer, the experienced one and the experience itself.”

Thus, Brahman itself is word–principle (Śabdatattva). According to Iyer (1969, 402) “The central idea in Bhartṛhari’s philosophy is that the ultimate Reality is the nature of the word which presupposes consciousness”

This can not be said to be the original idea of Bhartṛhari. It is rather inherited from the Vedic tradition. As per this tradition, the seers of the Veda proclaimed ‘the whole cosmos as manifestation of word (śabda) and that cosmos is evolved out of the Veda.’
The available *Vedic* literature, both the *Mantras* as well as the *Brāhmaṇas* is full of statements about nature of Vāk and *Brahman* in different contexts.

Some of them contain the idea that *Brahman* is the ultimate source of everything, while others convey the idea that Vāk is the ultimate source of everything. *Aīttareya Brāhmaṇa* 4.21.1 identifies *Brahman* with Vāk. *Brhadāraṇyaka Upaniṣad* 4.1.20 echoes the same thought ‘the speech (vāk) truly, is *Brahman*’ (Vāg vai *Brahman*). The *Vṛtti* also quotes some passages from the Veda supporting Bhartrhari’s statement Vāk is source of everything. It is the experiencer as well as the experienced. For instance RV .10.125, where Vāk identifies itself as everything in universe and implying that it is the Vāk, which manifests itself as everything.

Some of the non-*Vedic* texts are also quoted as the authority behind this notion and these are said to be taken from *Purākalpa*. Thus, it is quite obvious that the idea about the unity of the word and the *Brahman* has its root in the *Vedic* tradition. Nevertheless, Bhartrhari’s original contribution in this regard lies in the rational framework provided by him in order to support the above-mentioned assumption. His arguments, in this respect, are as follows
“Our knowledge of everything in the cosmos is interwoven with word. A knowledge, which is not, so would not be Knowledge at all. We cannot cognise an object through the word unless we cognise the word first. We find that all the manifestations of the Brahman are intertwined with the word and, therefore, their root cause, Brahman, must be of the nature of the word. In other words, it must be Śabdatattva. The object is really not different from the word. It is the word, which has become the object. As the object-figures are formulated in words, the conclusion is that, they are products of the word. Consciousness of the word forms a part and parcel of our knowledge of objects. Their knowledge depends upon the word. Therefore, their ultimate source concerns with the nature of the word (Śabdatattva).

Bhartṛhari lays great stress on the idea that Brahman, being the word-principle, manifests all phenomena and objects in the form of a word. Therefore, all thoughts and whole knowledge are intertwined with the word. The universe consists of an infinite number of phenomena arranged in a temporal and spatial sequence and of the words, which are expressive of them. The universals of these phenomena can not enter worldly usage unless the particulars reveal them and the word-principle has to emerge from it. They emerge because the universals of the objects and the words inherent in them are distinct from one another and stand towards one another in the relation of the
expressed (vācya) and the expressive word (vācaka). In this way the word principle is the ultimate source of the universe consisting of the vācya and the vācaka.

All the things, which emanate from the Brahman (Śabdatattva) are concerned with the manifestation of the vācya and vācaka. In other words, they are concerned with the artha and the śabda. Bhartṛhari declares that there are no worlds beyond the sphere of language. As a window to the worldly knowledge, language comprehends the whole world and at same time, it is beyond the world. The language we use shapes our knowledge of reality. Bhartṛhari identifies the phenomenal universe in all its diversity with the ultimate principle, which according to him is paśyantī, in which stage there is no difference between the word and meaning.

This whole theory about the unity of the speech and Brahman also provides the basis for Bhartṛhari’s advocacy of indivisible sentence theory. According to Bhartṛhari, the sentence and sentence meaning are indivisible. For him, sentence is the minimum meaningful unit of speech. He observed that people do not speak in individual words. The knowledge of language is not merely the knowledge of the meaning of individual words. Though, Bhartṛhari speaks about the phoneme and the individual word as the meaning-bearing
units, he advocates the reality of indivisible sentence. The sentence meaning is a flash of insight or intuition (Pratibhā).

While establishing his own view, Bhartrhari refutes mainly the views of the Mimāṃsakas, upholders of the view regarding the reality of the pada (word). Mimāṃsakas hold that the sentence and the sentence meaning are the result of joining together smaller units called words and word meaning.

After explaining the concept of Śabdabrahman in the first chapter and the theory of the indivisibility of sentence and the sentence meaning in the second, in the third chapter Bhartrhari takes up some grammatical notions for discussion. They are Jāti (universal), dravya (substance), sambandha (relation), guṇa (quality), dik (direction), kriyā (action) sādhana, (participants in action), kāla (time), saṃkhyā (Number), puruṣa (grammatical Person), liṅga (grammatical gender), upagraha (meaning of ātmanepadaṁ and parasmaipadaṁ endings) and vṛtti (complex formation). It is interesting to note that, on the one hand Bhartrhari talks of the uniform and indivisible reality, while on the other hand the philosopher is engaged in analyzing the same reality to arrive at the above mentioned categories. Unlike Pāṇini, Bhartrhari deals with these notions from the philosophical standpoint. In the spirit of accommodation, he tries to make the definitions also acceptable to the philosophers. Sometime, he takes a notion
from the philosophers in order to explain a form of the Sanskrit language. In the jātisamuddeśa, he expounds the view that all words and even parts of words denote jāti (the universal).

*Dik, sādhana, kriyā and kāla* have been grouped together because Bhartṛhri looks upon them as a kind of power (śakti) existing in substantial entities.

\[ \text{dik sādhanaṁ kriyā kāla iti vastvabhidhāyinaḥ} \]
\[ \text{śaktirūpe padārthānāmatyantamanavasthitāḥ} \parallel \text{Pk. 3.11} \]

While defining ‘means’ as understood by the grammarians the views of the Vijñānavādins, the Vaiśeṣikas, the Mīmāṃsakas, the Advaitins and the Sāmkhyas on the same subject have also been briefly explained. Sādhana as power is a general notion. There is no limit to the number of powers of a thing but they have been brought under six headings beginning with karma, with the addition of śeṣa seven powers are recognized.

*Kriyā (action)* is an important notion because it is the meaning of the most important among other words obtained by analysing the sentence, namely, verb. The notion of ‘means’ or accessory also presupposes action, because what is a ‘means’, is so because it helps in its accomplishment.

In the section on time (kālasamuddeśa), Bhartṛhari records various views about time, current in those days. A
Sanskrit verb always expresses an action qualified by time. The notion of time as expressed by the verb is directly subordinate to action. The notion of number and person are also subordinate to action, not, so directly as the notion of time and aspect are, but indirectly through the ‘means’ sādhana of which they are properties. Thus, Bhartrhari has explained all these grammatical notions from the philosophical point of view.

It is noteworthy that, when he speaks about jāti, dravya, sādhana, kriyā etc. Bhartrhari always connects these ideas with the Śabdabrahaman. Thus being a philosopher, he is always in search of reality that runs through various diversities of the language.

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1 Bk. from Verse 1 to 4
2 Bk. 124
3 K.A. S. Iyer, Bhartrhari, p. 185
4 Bk. 131