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Propositional Structure of Oriya Verb: A Pāninian Kāraka Analysis

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in partial fulfillment of the requirements for
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MASTER OF PHILOSOPHY

TULASI DAS MAJHI



CENTRE OF LINGUISTICS AND ENGLISH
SCHOOL OF LANGUAGE, LITERATURE AND CULTURE STUDIES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067

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CENTRE OF LINGUISTICS & ENGLISH
SCHOOL OF LANGUAGE, LITERATURE & CULTURE STUDIES
जवाहरलाल नेहरू विश्वविद्यालय
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067 INDIA

CERTIFICATE

This dissertation entitled “**Propositional Structure of Oriya Verb: A Pāṇinian Kāraka Analysis**” Submitted by **Tulasi Das Majhi**, Centre of Linguistics and English, School of Language, Literature & Culture Studies, Jawaharlal Nehru University, New Delhi for the award of the degree of **Master of Philosophy** is an original work and has not been submitted so far in part or in full for any other degree or diploma of any other University.

This may be placed before the examiners for the evaluation for the award of the degree of Master of Philosophy.

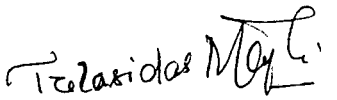
Prof. Vaishna Narang
(Chairperson)

Professor Vaishna Narang
Chairperson
Centre of Linguistics & English
School of Language, Literature
& Culture Studies,
Jawaharlal Nehru University
New Delhi-110067

Prof. K. Kapoor
(Supervisor)

Declaration

This dissertation entitled “**Propositional Structure of Oriya Verb: A Pāṇinian Kāraka Analysis**” submitted by me for the award of the degree of Master of Philosophy, is an original work and has not been submitted so far in part or in full, for any other degree or diploma of any University.


Tulasi Das Majhi

प्रधानं च षट्स्वङ्गेषु व्याकरणम्।

प्रधाने च कृतो यत्रः फलवान्भवति।

— महाभाष्यम् I.1. —

"Of the six auxiliary sciences, the most important one is the science of Grammar. Effort made in regard to the most important one surely yields fruit".

-Mahābhāṣya. I.1.-

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Tulasidas Majhi

Abbreviation

Adj.	Adjective
Adv.	Adverb
N.	Noun
V.	Verb
P.	Pāṇini's Aṣṭādhyāyī
Mb.	Mahābhāṣya
VP.	Vākyapadiya

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INTRODUCTION

*Kāra*ka theory, first formulated by Pāṇini in his *Aṣṭādhyāyī* is recognised by modern linguistics and modern philosophy including western philosophy as an explanatory construct that can sufficiently account for not only the semantic controls of linguistic behaviour but also for the abstract structure of human thought. The *Kāra*ka theory of *Aṣṭādhyāyī* has been expounded and commented upon by major grammarians in different linguistics periods. Patañjali's *Mahābhāṣya* (2nd century B.C), Bharṭṛhari's *Vākyapadiya* (5th Century A. D.) and Bhaṭṭoji Dikṣita's *Siddhānta Kaumudī* (7th Century A.D) are important landmarks in this tradition. However, there has been a continuous elaboration of all refinement of the *Kāra*ka theory.

The *Kāra*kas are recognised by most scholars as basic semantic notions which are essential for sentence construction. Because in the tradition of the grammarians a sentence is a basic cognitive unit. Panini's *Kāra*ka theory is essentially a semantico-syntactic relation. In the tradition, *Kāra*ka is defined by different grammarians considering the noun-verb relations. In *Mahābhāṣya*, Patañjali defines *Kāra*ka in relation to the *Kriyā* or action. Again, commenting on the *sūtra* '*Kāra*ke' (P. 1.4.23) S.C.Vasu opines 'anything that helps towards the accomplishment of an action is *Kāra*ka. Bharṭṛhari in his *Vākyapadiya* discusses the *Kāra*ka theory displaying the power or *Sakti* of objects which can participate in an action represented by the sentence.

All semantic models share the concept of verb centrality. With the verb as nucleus, it is possible to specify the close relationship between the sentence patterns and particular classes of verbs. Such type of sentences are represented in propositions which defines the number of nominal expressions that co-occur with the verb and the nature of the relationship they bear to the verb.

It is well known that Chafe's generative semantics, Fillmore's Case Grammar, the Relational Grammar and the European Valence grammar are the chief models that concern themselves with the noun-verb relations. But, they do not agree on the number and nature of relations required to specify the propositional structures of languages.

Kāṛaka theory constitutes linguistic universals and represents conceptual universals very closely. It shows how human knowledge about the world at large is organised in terms of some fundamental relations. Such type of relations are represented in the nominal and verbal configuration of any propositional structure. Moreover, it reveals the internal logic by which people order their thoughts. As a whole, Pāṇini's *Kāṛaka* theory is an appropriate theory for a semantic model based on noun-verb relations, appropriate because this theory treats all nominals as means for accomplishing events. So, on the basis of the above model, we have investigated the nature of propositional structure of language through an intensive analysis of Oriya, an Indo-Aryan language of the North-East of India.

In the tradition, *Kāṛaka* is analysed by different grammarians considering the semantico syntactic relations of language. An in depth the study of *Kāṛaka* relations in propositional structure has been made by Prof. Kapil Kapoor, (1985) in his 'Semantic structure and the verb' with reference to Panjabi language. So, the semantic model adopted by him is considered as the model for the present analysis of Oriya verb.

Kāṛaka theory has been analysed and interpreted by the grammarians like Patañjali, Bhartr̥hari, Bhaṭṭoji Dikśita, Nāgeśa Bhaṭṭa and others. The present study deals with the source of the theory, *Aṣṭādhyāyī*. But, the semantic model, evolved in the philosophy of language is applied on Bhartr̥hari's *Sādhana* section of *Vākyapadiya*, *Kāṇḍa* third. In the case

of Oriya analysis, since I am a native speaker of Oriya, I have used the 120 base verbs and other sentences.

Besides the introduction and conclusion, the present work has been structured in chapters. The first chapter deals with an extensive analysis, raising different issues i.e., philosophical, grammarian, naiyāyika, morphological, morphophonemic, syntactic and semantics of *Karaka* theory. Firstly, how *Kāraka* is defined, by philosophers, grammarians naiyayikas and what is the nature of *Kāra*kas from their point of view? Secondly, how all linguistics aspects, i.e., morphological, morphophonemic, syntactic and semantics are reflected in the *Kāraka* theory?

In the second chapter, we discuss the following issues of semantically based grammars:

1. What is the nature of underlying propositional structure?
2. What is the status of the verb in relation to the propositional structure?
3. What canonical notion of obligatory is involved in deciding the number of elements in the propositional structure?

Based on the above issues, the discussion revolves round a search for criteria and ends with the analysis of 120 Oriya verbs that we have chosen as a representative sample of our work. The presence of the number with the verb or without the verb marks the serial number of our list.

In the third chapter, the other aspect of propositional structure, i.e., the nature of relations is discussed. The basic issues discussed in the chapter are:

1. What is the list of and what is the nature of relations expressed in the propositional structure?
2. How do these relations combine to form propositional types?

Here, we pick up the threads of Indian Grammatical Tradition and take as our theoretical basis, the six *Kāraṅka* relations of Pāṇini. At the end of the chapter, we have specified the propositional structure of 120 Oriya verbs.

Chapter - I
KĀRAKA ANALYSIS

Introduction

The *Kāraka* is introduced in Pāṇini's *Aṣṭādhyāyī* as *Kārake*¹ It is read as an *adhikāra sūtra* 'head rule'. The word *Kāraka* is derived from the verbal root √*kr* 'to do' in the following derivational processes. There are two meanings² of the verb √*kr* : one is in *tanādigaṇa* - no 1473 and the other is in *svādigaṇa* section -no 1254 of the *dhātupāṭha*

One meaning is

*dukṛñ karane*³

dukṛñ
↓
Root

karane
↓
Meaning

karoti/kurute.
↓
Form

In Pāṇinian grammar, three rules are applied for the etymological meaning of the verb √*kr*.

(i) *adirññitūḍavah*⁴

'The initial *ññi tu*, and *du* are *it*'.

(ii) *tasya lopah*⁵

'The terms which are included in the word *it*, will be elision'.

(iii) *halantyam (upadeśe it)*⁶

'In *upadeśe*, the final consonants of roots and *c* is *it*'.

¹ P.1.4.23.

² J.L. Shastri, "dhātupāṭha", Motilal Banarsidass, 1984, p.32 and 38.

³ Ibid., p.38

⁴ P.1.3.5.

⁵ P.1.3.9.

⁶ P.1.3.3.

dukṛñ----- root



krñ



kr----- *karane* 'to do'

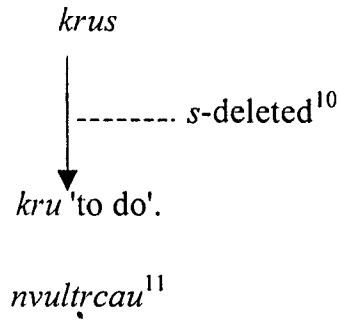
----- *du* deleted⁷

----- *s* deleted⁸

The other meaning of the root √*kr* is

<i>krus</i>	<i>hisayam</i>	<i>krunoti</i> ⁹
↓	↓	↓
Root	Meaning	Form

Here, only one *sūtra* is applied to get the meaning of the root √*kr*



'The affixes *nvul* (*ak*) and *trc* (*tr*) are placed after all verbal roots, expressing the agent'.

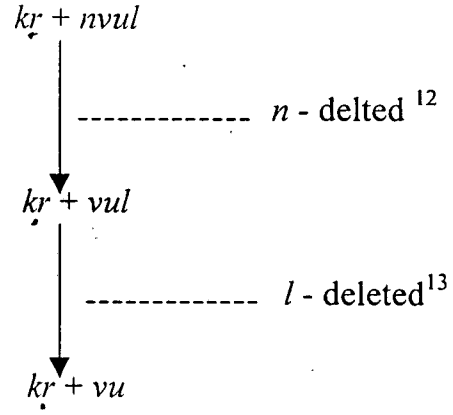
⁷ P.1.3.5.

⁸ P.1.3.3.

⁹ J.L. Shastri op.cit. P. 32.

¹⁰ P.13.3.

¹¹ P.3.1.133.



But Pāṇini states:

*Yūboranākau*¹⁴

'For *yū* and *vū* (nasalised) in an affix, are substituted respectively for *an* and *ak*.'

kr+ak

But *aco ṅṅiti*¹⁵ denotes:

'Before the affixes, having an indicatory *ṅ* or *ṅ*, *vṛddhi* is substituted for the end vowel of a stem'.

'The *sūtra uraṇ rparah*¹⁶ states that when a letter of a *pratyāhāra* comes as a substitute for *it*, is always followed by a *r*'.

So *r* becomes *ar*.

k + ār + ak

kār + ak

kāraka

¹² P.1.3.7.

¹³ P.1.3.3.

¹⁴ P.7.1.1.

¹⁵ P.7.2.115.

¹⁶ P.1.1.51.

What is *karaka*?

Since Pāṇini, other grammarians and philosophers like Patañjali, Bharṭṛhari, Nāgeśa etc. have interpreted the *Kāraka* in their own ways following the sūtra *Kārake*. Patañjali, the great commentator (in 2nd Century.B.C.) has clarified *Kāraka* as *karotīti kārakam, samānyabhūta kriyā bartate, tasya nirbtaraka kārakam*.¹⁷ It is the *bhāṣya* of Pāṇini which means, 'who helps for the accomplishment of the action is *Kāraka*'.

As,

sah gr̥ham gachati

'He goes to home'

Here, both *sah* 'he' and *gr̥ha* 'home' as *kartā* and *karma* respectively, help for the accomplishment of the action *√gam* 'to go'.

Patañjali in other instance states:

drabhyam kriyābhiniḥti pratim sadhana bhābamupaiti.¹⁸

'That which is the means (*Sādhana*) for the accomplishment of the action is *Karaka*'.

Bharṭṛhari (5th Century A.D.), the representative philosopher of the *Vaiyākaraṇa* school, states:

*kriyānabhiniṣpatau sāmāthyam sādhanam biduh*¹⁹

The means (*Sādhana*) for the accomplishment of the action is *Kāraka*.

Nageśa Bhaṭṭa defines *Kāraka* as *tatra kriyāniṣpadakatyam kārakatyam*.²⁰

'Which helps for the accomplishment of the action is *Kāraka*'.

Bhaṭṭoji Dīkṣita (7th Century .A.D.), the other commentator of the Pāṇiniyan school, in his '*Siddhānta Kaumudī*' defines *Kāraka* as

¹⁷ Mb. on P.1.4.23.

¹⁸ Mb on P. 3.1.67

¹⁹ VP. III. 7.1.

²⁰ Lokamani Daal. "parama laghumanjusa of Nagesa Bhatta. Varanasi: 1991. P. 191.

'Any thing that helps towards the accomplishment of an action is a *Kāraaka*'.²¹

Besides the Indian traditions, the western linguistics has introduced the notion 'Case Grammar' (translated version of the *Kāraaka*) which states: 'The sentence in its basic structure consists of a verb and one or more noun phrases, each associated with the verb in a particular case relationship'.²²

To sum up the different interpretation a definition of the *Karaka* can be linguistically formulated as follows: The obligatory nominal stems with the case affix in a sentence are called *kāraaka*. That means, the relationship of the nominal stem with the verbal stem reflected by the formal agreement in a sentence brings out the notion of *Kāraaka*.

For instance,

ramah odanam sthālyam agninā cūlikayah swa gurabe pacati.

'Ram cooks rice in a vessel by the fire from the furnace for his master'.

Here, various objects contribute to the accomplishment of the action 'to cook'. But, the final act 'cooking' is a culmination of a series of actions. As Ram himself thinks about the act of cooking, brings cooking utensils and others to the kitchen, connects fire from the furnace etc. But the objective of all the events is to prepare food. To finish the work 'cooking', the involved substance are assigned the different roles of the *Karaka*. Like, 'Ram' performs the activity, 'food' is the object, 'vessel' is the locus where activity is done, 'fire' is the means to prepare the food 'furnace' is the source of the energy and 'master' is benefitted by it. As a whole, all the relationships between the nominals or the things and the verb in a speech act are recognised as *Kāraaka*.

²¹ S.C. Vasu (trans), 'The Siddhanta Kaumudi of Bhattoji Diksita, vol.1, Motilal Banarsidass, p.327.

²² C.J. Fillmore, 'The case for case', P.21.

Kāraka in Aṣṭādhyāyī:

The *Kāraka* relations are introduced in thirty three rules in Book 1, chapter IV (rule 22-55) of the *Aṣṭādhyāyī*.²³ Patañjali in his Great commentary has written extensive expository notes on 20 of these rules (excluding 33-36, 38-41, 43-47) which ostensibly are self explanatory and therefore, need no elucidation. In his expository notes, Patañjali has incorporated and refuted fifty seven otherwise unavailable *vārttikas* of Kātyāyana.²⁴ Bhartṛhari (5th c.A.D.), in his authoritative text *Vākyapadīya*, *kāṇḍa* 3 explains the seven noun-verb relations including the genitive.²⁵ But, in contrast to the Pāṇini's categorization of the *Kāraka*, Bhaṭṭoji Dīkṣita, in his “*The Siddhānta Kaumudī*” has shifted the *sutra* p.1.4.44 from *karaṇa kāraka* to the *sampradāna kāraka*.²⁶

The *Kāraka* relations are (in the order in which they are introduced in Pāṇini rules):

1. *apādāna* or ‘ablation’ (P.1.4.24)
2. *sampradāna* or ‘dative’ (p.1.4.32)
3. *karaṇa* or ‘instrument’ (p.1.4.42)
4. *adhikarṇa* or ‘location’ (p.1.4.45)
5. *karma* or ‘object’ (p.1.4.49)
6. *kartā* or ‘agent’ (p.1.4.54).

But Panini has arranged the *vibhakti* (case-ending) in different section, i.e., P.2.3.1 - P.2.3.73). By a separate rule (p.2.3.50), *Sambandha* (genitive) is introduced. Since this relation doesn't hold the noun-verb relations, so it is not treated as *Kāraka*.

²³ S.C. vasu, (trans), ‘*The Astadhyayi of Panini*’ 1962, PP.177-192.

²⁴ Yudhister Mimamsaka, 1973: 11. 457-510.

²⁵ K.A.S. Iyer, (trans); ‘*The Vakyapadiya of Bhartrhari*’, Chapter II, P. I, 1971, P.147-243.

²⁶ S C. Vasu, (ed and trans), *op. cit.* PP. 326-384.

Philosophy of *Kāraka*:

The *Kāraka* theory, which plays a pivotal role in language is a clear reflection of the linguistics and non-linguistics manifestation of the world. The theory inquire into: (i) What is the nature of the *Kāraka*? (ii) What are the constituents of the *Kāraka*? (iii) whether it is independent or dependent in its existence (iv) what is it's effect?

(i) Nature of the *Kāraka*:

The grammarian and philosopher, Bhartṛhari, in *sādhana samudeśa* section of his most authoritative text '*Vākyapadīya, Kāṇḍa 3*, has examined at length and depth the philosophy behind the *kāraka* theory. He says, "A doer (*Kāraka*) is that which helps in the accomplishment of an action by assuming different forms.²⁷ But, here the question arises about the locus and the manifestation of the *Kāraka*. The *Kāraka* lies in the substance (*dravya*) holding different powers, which acts as the agent for the accomplishment of the action. This power is called *Sādhana* or means.²⁸

The universe has bundles of powers but only six of them i.e. *kārta*, *karma* etc. are reflected in the linguistic constructions for the presentation of the external reality.²⁹ The power acts as the intermediary force between the substance (*dravya*) and the verb.

For instance,

(1) *bālah gṛham gachati*

'The boy goes home'.

(2) *Vṛksāh gṛham gachati*

'The tree goes home'.

In sentence (1) *bālah* 'boy' and *gṛha* 'home' are assigned *kartā* and *karma* *Kāraka* respectively where as *vṛksāh* and *gṛha* 'home' are assigned

²⁷ VP III. 7.24.

²⁸ VP III. 7.1.

²⁹ VP.III. 7.2.

kartā and *karma karaka* respectively in sentence (2) But, sentence (1) is acceptable and grammatical where as sentence. (2) is unacceptable and ungrammatical. Both the sentences have the minimum constituents to form a sentence i.e. substance, power and verb. The power which lies with *bālaka* 'boy' has the ability to fulfill the basic criteria of the very *√gam* 'to go'. But the power behind the *vrksā* 'tree' violates the basic nature of the verb *√gam* i.e. the agent of the verb should be an animate being. In other sense. verbs represent the activities of the external world. Though, in sentence (2), the basic constituents i.e., substance, power and verb are co-indexed with each other, but it doesn't reflect the external reality.

The power of the substance, called means, acts as a binding force between the substance and the verb. This is means, which brings the substances into consideration for the accomplishment of the *kriya* (action).

As.

sah brāhmaṇāya gām dadāti

'He gives the cow to the Brahmana'

In the above sentence, apart from the verb *dadāti*, 'to give', there are three substances: *sah* 'he' *gam*, 'cow' *brāhmaṇāya* 'brahmin' assigned as *Kartā*, *karma* and *sampradāna kāraka* respectively. Here, to accomplish the verb *√dā* 'to give', all the three substances are considered as the complements of the verb. That means, all the four constituents are conjoined to produce an activity. If one of them is absent or missing, the result will lead to ungrammaticality or unacceptability. That's why, the verb and the substance are constituted by power or *sakti* and all things are power to each other by the verb.

(ii) Constituents of *Kāraka*:

From the philosophical point of view, *Kāraka* is constituted by *dravya* (substance) and *sakti* (power). But, the question that strikes our mind is, how the power is perceived which is very much reflected in the abstract level of the speaker. Bhartrhari says, 'the contact between the sense, the object, the mind and the agent sometimes constitute the means i.e. the power'.³⁰

Substance like axe can function as two *Kāraka* i.e. *kartā* and *karāṇa*

For example;

1. *paruśah vṛksām chinatti*

'The axe cuts the tree'.

2. *bālah parśuna vṛksām chinatti*

'The boy cuts the tree by the axe'.

The use given above indicates that power is not only decided by the object or the verb, but the mind of the speaker or the knowledge of the substance is taken into consideration. As a result, the substance, which remains the same is manifested as different objects through different means. And this means is the result of the speaker's intuitive power of that object and its association with the external world.

(iii) Independent or dependent in its existence:

The *Kāraka* doesn't have its own existence, until and unless it is accompanied by the verb. The relationship that holds among the *Kāraka* and the verb can be broadly divided into *kartā* group the non-*kartā* group, where verb can be divided into major and minor.

For instance,

1. *rāmah sthālyā odanam pacati.*

'Ram cooks food by the vessel'.

The above presented sentence can be analysed into three sentences;

³⁰ VP.III. 7.12.

2. *rāmah pacati*

'Ram cooks'.

3. *odanam pacyate*

'The food cooks'.

4. *sthālī pacati*

'The vessel cooks'.

In sentence. (1) 'Ram' 'food' and 'the vessel' are assigned as *kartā*, *karma* and *karaṇa kāraka* respectively. But, in (2), (3), and (4) 'Ram' 'food', and the 'vessel' are *kartā kāraka*. So far as the semantics is concerned, sentence. (1) and the culmination of sentence. (2), (3) and (4) are equivalent. But, in the later part, all the agents are assigned as *Kartā kāraka*. The *kārta kāraka*, which is independent in regard to the minor action can become dependent in regard to the main action. Out of the six *Kāraka*'s, three *Kāraka*'s excluding the *kartā* itself can be *karta* or the agent i.e., *karma*, *karaṇa* and *adhikaraṇa*. The rest two *kāraka* i.e., *sampradāna* and *apādāna* don't fall into the *kartā* category.

(iv) *Kāraka*'s effect:

So far we discussed the status of power or *sakti* in the substance. Power is an inborn tendency of the object which resides with the object. As long as it lies in the external world, it remains powerless. But, when it comes across with the verb, it modifies its form and functions as a *Karaka*.

As.

bālah pustakam paṭhati

'The boy reads the book'.

In the above sentence, *pustaka* 'book' is assigned as *karma Karaka* and becomes the source of knowledge. But prior to the syntactic construction, *pustaka* is symbolised as a substance. As a whole, the effect can be displayed by the configuration of the substance and the verb.

Grammarians, Philosopher/Naiyāyikas view about *Kāraṅka*:

The notion of the constituents and functions of *Kāraṅka* has been defined by different scholars like Patañjali, Bhartṛhari, etc. in different schools of thought. Apart from philosophers like Bhartṛhari, the logicians (*Naiyāyikas*) and the grammarians (*vaiyākaraṅas*) put different view points for the interpretation of the *Kāraṅka*. 'The Naiyāyikas are artha-*pramāṅakah* 'those who regard things and events authority' as opposed to '*sabda-pramāṅakah*' by the grammarians. They are interested in the way the world is (or is supposed to be), not particularly in how people speak about it'.³¹ Grammarians define that any thing i.e. configuration of substance and case ending, which helps for the accomplishment of an action is *Kāraṅka*.³² To philosophers, like Bhartṛhari, case endings are defined as power. But Grammarians are not concerned about the proximity of the power with the substance. Rather, they are concerned about how the words represent the world. From their view points, stem and suffix are represented by the thing and power respectively.

The Nyāya school states that there are six types of relations of nouns to the verbs in a sentence.³³ These six specific connections are grouped under the head rule, *Kāraṅka*. The concept of *kāraṅka* is very much dominant in the sentence. This school believes in the plurality of causes for the accomplishment of the action and only one of such causes would be a *kāraṅka*. In a broad sense, these *kāraṅkas* can be *kāraṅkas*. All the events are the result of many causes. Nyāya doesn't specify that these six relations are the only relations in a language. But, philosophers categorize the power of the world as six kinds and *kartā* is manifested by different names under different circumstances.

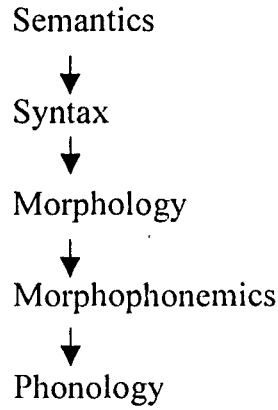
³¹ B.K. Matilal, 'The words and the world', Oxford University Press, P. 42.

³² VP.HI.7.15.

³³ B.K. Matilal, 'Language, Thought and Reality' Delhi, P.194.

Classification of *Kāraḱa*:

Language, the means of the reflection of the world, is divided into categories and sub-categories. And these categories and sub-categories are intimately interrelated and interact with one another. To formulate the categories of Panini's grammar, J. D. Singh has demarcated two circles: the inner circle and the outer circle.³⁴ The inner circle may comprise formal features (Phonological, morphological, syntactic) and the outer circle successively may denote semantic content of language and events of the real world. But, these circles are not the true demonstration of grammar. The semantics as the outer circle is very much deeply interrelated with other sections of grammar, which is shown in the below.



The above diagram shows the hierarchical order of any grammar. Though semantics is at the top of the levels, but it is an integral part of each and every level. Even Pāṇini has considered the semantics level at all categories of grammar.

Before going into the major criteria for the classification of the *Kāraḱa*, it will be better to discuss the major types of *Kāraḱa* and the dominant concepts involved in the formulation of the *Kāraḱa* theory.

Types of *Kāraḱa*:

Nāgeśa Bhaṭṭa's aphorism says:

³⁴ J.D. Singh, *Panini's Theory of Karaka* IJDL: July 1974, P.314.

*karta karma ca karanam sampradānam tathaiva ca
apādānādhi karanāmityahuhh kārakāṇi saṭ*³⁵”

There are six *Kāra* relations which are denoted by the terms *kartā*, *karma*, *karaṇa*, *sampradāna*, *apādāna* and *adhikaraṇa*.

The *kartā* is defined as *svatantrah kartā*,³⁶ which means the principal or the independent agent is *kartā*.

Karma is denoted by *kartur, ipsitatamam karma*³⁷. 'The most desired thing of the *kartā* is the *karma*'. For instance,

sah grāmam gacchati

'He goes village'.

In the above sentence, gramam 'village' is not only the most desired but also the goal of the *Kartā*. So *karma* can be defined the most desired, turned to be the goal of the *Kartā*.

The *karaṇa kāraka*'s nature is defined by the *sūtra sādhatamam karaṇam*.³⁸

That means, 'the means for the accomplishment of the action is *Karaṇa*'.

e.g.

devadattah parśuna kāsṭham chinatti.

'Devadatta splits wood with an axe'.

Here, *paraśu* 'axe' is the means to achieve the goal by the agent.

'The thing approached by the *kartā* by means of *karma* is the *Kāraka* called *sampradāna*', denoted by Pāṇini's rule as.

*karamaṇā yamabhiprati sa sampradānam*³⁹

³⁵ Lokamani Dahal, *op.cit.* P.191.

³⁶ P.1.4.54.

³⁷ P.1.4.49.

³⁸ P.1.4.42.

³⁹ P.1.4.32.

Though, in the above *sūtra*, the specific verb has not been mentioned, but it is only applicable to the verb √*dā* 'to give'. Because, *sampradāna* is derived from the verb root √*dā*.

As,

brāhmaṇāya gāṃ dadāti.

'He gives the cow to the brahmana'.

The recipient *brāhmaṇa* is assigned as the *sampradāna* *kāraka*.

*dhrubamapāye pādānam.*⁴⁰

'The departed substance from a fixed point is assigned as *apadāna* *kāraka*'.

e.g.

ṛkṣāt paṇam patati

'The leaf falls from the tree'.

The stem *ṛkṣa* 'tree' is assigned as *apadāna* with the relation of the verb √*pat* 'to fall'.

The *samjñā sūtra* tells about the *adhikarṇa* *kāraka* as

*ādihārodhi karaṇam.*⁴¹

For instance,

sah sthālyām pacati

'He cooks in the pot'.

In the above example, 'the pot' looks as an instrument. But, it is the locus, where the cooking action is performed.

⁴⁰ P.1.4.24

⁴¹ P.1.4.45

Major concepts in the *Kāra*ka:

- (i) **Governors:** Though the verb plays the central role in the formulation of the *Kāra*ka theory, but Pāṇini has not ruled out other factors involved in this theory. So far the government is concerned; *kāra*ka can be divided into two ways: *kāra*ka *vibhakti* and *upapada vibhakti*. But, this division is based on the *vibhakti* 'case marker' marking. e.g.

sah brāhmaṇāya gāṃ dadāti.

'He gives the cow to the Brahman'.

In the above sentence, the verb 'dadāti' 'to give' is co-indexed with three nominal stems as 'sah', 'gā', 'brāhmaṇa' and assigned as *kartā*, *karma* and *sampradāna kāra*ka respectively.

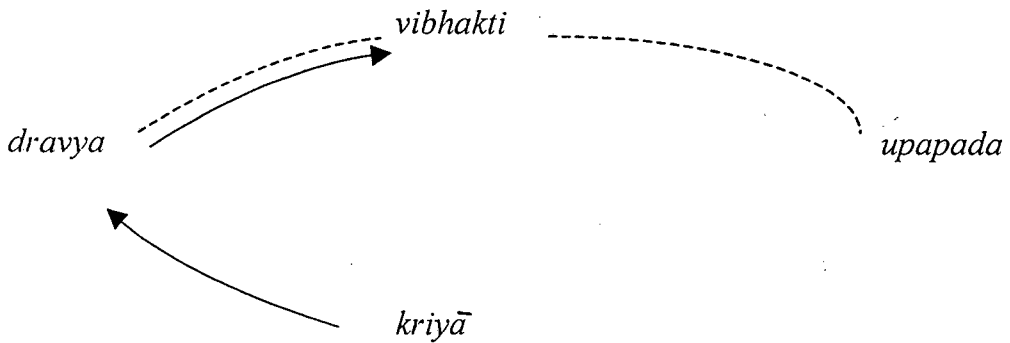
But, on the other side, when a noun takes a certain case affix, such as *dīṭīya*, by virtue of its being in composition with some other word used in proximity with, is called an *upapada vibhakti* – *apāpādana* – *upocastitam padam*, 'a word pronounced in close proximity'.⁴²

As,

bhaktah viṣnum prati

'devotee towards Visnu'

Here *prati* 'towards' governs Visnu'



⁴² C.D. Shastri, *Panini Re-Interpreted*, Motilal Banarsidass: 1990, P.43.

In the above diagram, there are two noteworthy things reflected in Pāṇinian rules. On the one side, every *Kāra* rule is clarified by the *Vibhakti* rule.

As,

*kartur īpsitatam karma*⁴³

'The most desired thing of the agent is *karma*'.

*karmani dvitīya*⁴⁴

The second triplet is assigned for the *karma kāra*.

On the other side, *upapada vibhakti* specifies the *vibhakti* position which is indirectly co-related with the *dravya* 'substance'.

For instance,

upa harim surah

The Gods are inferior to Hari.

Here, *upa* is the *karmapravacanīya*⁴⁵ for which Hari is assigned the *dvitīyā vibhakti*⁴⁶ and leads the *karma kāra*.⁴⁷

To sum up, *kāra vibhakti* is directly related with the verb, where *upapada* is indirectly related with the verb through the *dravya*. So *kāra vibhakti* is much more stronger than *upapada vibhakti*.

(ii) *Kāra* vs *Vibhakti*:

The nominal endings, named in Western linguistics as case marker are seven sets having three numbers, namely singular, dual and plural and accounts 21 in number. Besides the *sasthi* as non-*kāra* – category, the rest 6 *kāras* are to be defined in the following discussion.

*sanjnākārabodhyītrī vibhaktih*⁴⁸

⁴³ P.1.4.49

⁴⁴ P.1.2.23

⁴⁵ P.1.4.87.

⁴⁶ P.2.3.8

⁴⁷ P.2.2.3.

⁴⁸ _____

That means the number and the case marker of the *kāraka* are called *vibhakti*.

Pāṇini enunciates that *vibhaktis* are attached to a nominal stem unless they are marked by the verbal stem. All the six *Kāraka* rules are co-indexed with six *vibhakti* rules. Like,

*kartur ipsitatamam karma*⁴⁹

Karmaṇi dvitīyā,⁵⁰

The first rule defines *karma kāraka* where as the second specifies the linguistics representation of the *karma* by the second triplet. Similarly, 3rd⁵¹, 4th⁵², 5th⁵³, and 7th⁵⁴, *vibhaktis* correspond to *karaṇa*, *sampradāna*, *apadāna* and *adhikaraṇa* respectively. But, there is no one to one correspondence between the *Kāraka* and the *Vibhakti*. A *Kāraka* can be expressed by more than one *vibhakti* and a *vibhakti* expresses more than one *Kāraka*.

The *karma* is expressed by the 2nd,⁵⁵ 3rd,⁵⁶ and 4th,⁵⁷ *Vibhaktis*

e.g.

- (i) *rāmah kaṭam karoti*
'Ram makes a mat'.
- (ii) *pitā or pitaram samjanite*
'He knows his father'
- (iii) *grāmāya gacchati*
'He goes to the village'

⁴⁹ P.1.4.49.

⁵⁰ P.2.3.2

⁵¹ P.2.3.18

⁵² P.2.3.13

⁵³ P.2.3.28

⁵⁴ P.2.3.36

⁵⁵ P.2.3.2

⁵⁶ P.2.3.22

⁵⁷ P.2.3.14

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In the above instances, *kaṭa* 'mat', *pitā* 'father', *grāma* 'village' are assigned the *karma kāraka*.

Similarly *karāṇa* is represented by 3rd⁵⁸ and 5th⁵⁹

The 3rd and 4th *vibhaktis* denote two *Kārakas* each: 3rd for *kartā* and *Karāṇa*⁶⁰ and 4th for *karma* and *sampradāna*.⁶¹ *Katā* and *Karāṇa* represented by the 3rd *vibhakti* is presented in the following instances;

devadatta in

(i) *devadattena vedah pathyate*

'Veda is studied by Devadatta'

(ii) *devadattah paraśunā vṛkṣam chinatti*

'Devadatta cuts the tree with an axe'.

(iii) *abhihita* Vs *anabhihita*:

On the basis of verbal endings, *Kāraka* is of two kinds. ⁶² *abhihita* 'already expressed' and *anabhihita* 'not yet expressed'.

The verbal endings – *ti* and – *te* denote *kartā* and *karma*

e.g.

(i) *ti* in √*srja* 'to create'

devo lokam sṛjati

'God created the world'

(ii) –*te* in √*srja* 'to create'

devena lokah sṛjyate

'The world is created by God'.

The verbal endings – *ti* and – *te* are represented for third person, singular, present tense and one for *parasmaipada* and other for *ātmanepada*. Besides

⁵⁸ P.2.3.18

⁵⁹ P.2.3.33

⁶⁰ P.2.3.18

⁶¹ P.2.3.2. and P.2.3.13

⁶² VP. III. 7.45

the *kartā* and *karma*, no other *Kāra* holds such a relation with the verbal endings.

(iii) *Pada, kāra and Vākya:*

pada 'inflected word' is defined by the *sūtra* as
*suptinntam padam*⁶³

'That which ends in *sup* (case-affix) or *tin* (tense affix) is called a *pada* or inflected word'.

All *padas* are not *Kāras*. Because, *pada* can be *kriyā* 'verb'. Even all the *nāma* 'nominal' *padas* are not *Kāra*. Though nominal stems ending with *saṣṭhi vibhakti* are *namas*, but it doesn't hold direct relationship with the verb.

vākya 'sentence' is denoted by *eka tin vākya*.

There should be atleast one verbal⁶⁴ form in a sentence. In other sense, *vākya* can be described as the configuration of the *kāra* and the *kriyā* 'verb'.

(v) *Kāra* as language Universal vs language specific:

All the six *kāras*, defined by the *saṁjñā sūtra*, are language universals. Because, the relations hold between nominals and verbals are prevalent in all languages. But the additional and the exceptional rules are language specific. These features are socially and culturally confined in a particular geographical area. In other sense, besides the six rules, other rules are deeply rooted into the Sanskrit language.

As,

dāsyā samyācchate kāmukah

'The profligate gives to the slave to entice her'.

⁶³ p.1.4.14.

⁶⁴

In spite of the verb √*dā* 'to give', the recipient gets the *karāṇa kāraka*. Because, in Indian culture, there is a difference between the wife and the other lady, termed as legitimate and illegitimate act.

Major Classifications of *Kāraka* Theory:

Pāṇini in his grammatical treatise has not specifically classified the criteria for the *Kāraka* theory. But there are clear indication that some categories are involved behind his formulation of the theory which can be levelled as categories and sub-categories. The major classifications can be morphology, morphophonemics, syntax and semantics, as discussed below:

(1) Morphology:

Though morphology explicitly deals with the structure of the word, it paves the way for the language construction. In Pāṇini's *Kāraka* theory, the domain of morphology plays the central role for the noun and verb configuration i.e., noun-verb and case affix in a sentence. The force of a case-affix is generally denoted' by any of the following. ⁶⁵

- (a) the conjugational affix *tin*
- (b) the primary affix *krt*
- (c) the secondary affix *taddhita*
- (d) the compounds *samāsa*

(a) The conjugational affix *tin*:

The rule *lasya*⁶⁶ in place of *L'* brings 18 affix elements by the rule⁶⁷

<i>tip</i>	<i>tas</i>	<i>jhi</i>
<i>sip</i>	<i>thas</i>	<i>tha</i>
<i>m\ip</i>	<i>vas</i>	<i>mas</i>

⁶⁵ S.C. Vasu (trans) *op.cit.* P.329.

⁶⁶ P.3.4.77

⁶⁷ P.3.4.78

ta ātām jha
thās āthām dhvam
iḍ vahi mahiñ

The above are the *tin pratyayas* in which the top 9 are *parasmaipada* affix⁶⁸ and the bottom 9 are *ātmanepada* affix.

And different markers are used in different contexts by the following aphorism:

*lah karamaṇi cā bhāve cākarmake bhyah*⁶⁹

Professor Bothling translates this *sūtra* as 'A finite verb expresses the agent as well as the object; but the intransitive verbs denote; in addition to that, the impersonal idea of the action'.⁷⁰

The *ti*-and *-te pratyayas* are attached with the verb for *kartā* and *karma kāraka* respectively.

For instance;

(i) *rāmah patram likhati*

Ram writes a letter

(ii) *rāmeṇa patram likhyate*

A letter is written by Ram.

In the above sentences (i) and (ii), the verb holds the *kartā* and *karma*. So far in the Paninis concept *anabhihite*⁷¹, that which is already specified should not be mentioned in elsewhere. So *rāma* and *patra* are expressed as the *prātipadika* in both the sentences.

Moreover, somebody can look into the agreement point of view for the above categorization. In Sanskrit language, a verb stem always agrees with one nominal stem in a sentence. As a result of which verb expresses *kartā* in the active sentence and *karma* in the passive sentence. Here, somebody

⁶⁸ P.1.3. 78

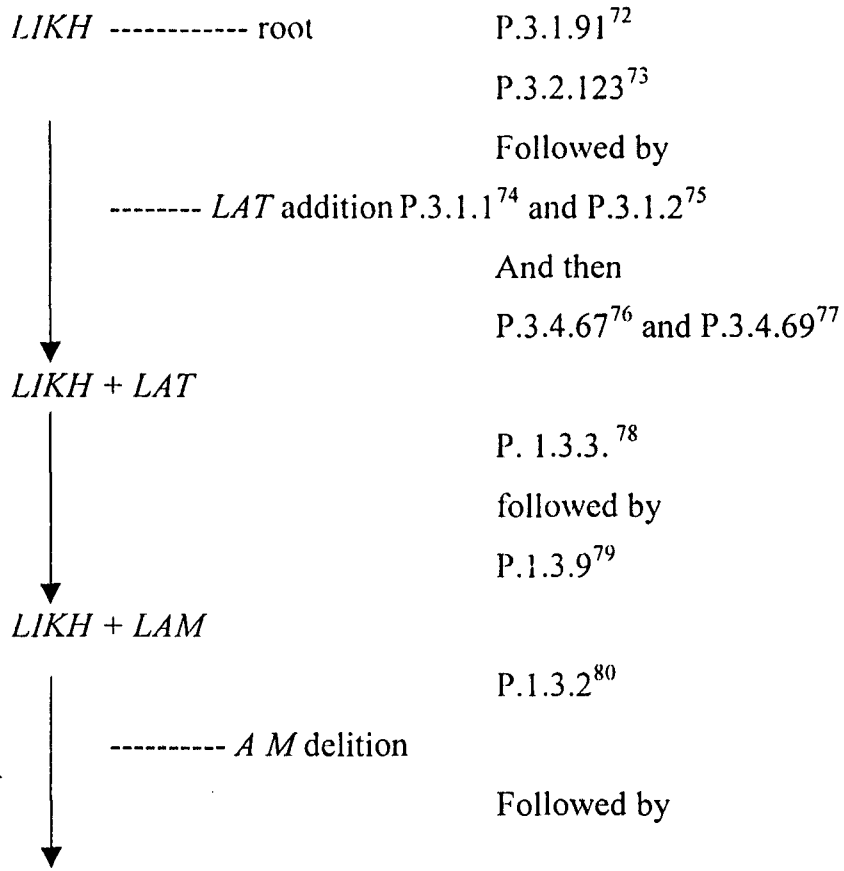
⁶⁹ P.3.4.69

⁷⁰ S.C. Vasu, (trans) *op.cit.* P. 585.

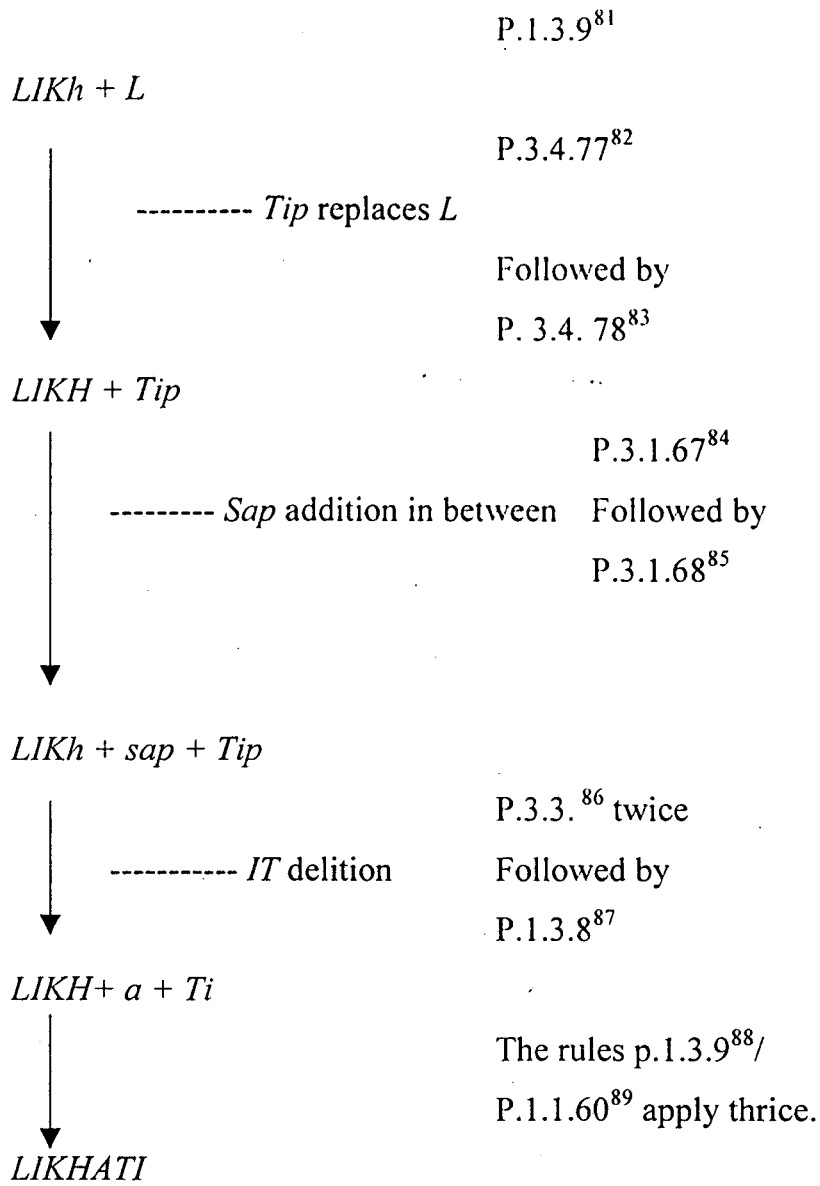
⁷¹ P.2.3.1

can argue that why verb encompasses only *kartā* and *karma*. It happens so because, there are two *Kārakas* involved in the transformation of the sentences from active to passive and then to impersonal passive. In other sense, these two are directly related with the noun-verb relations in a sentence.

In the sentence, *rāmah patram likhati*, *likhati* is derived in the following processes from the verb √*likh* 'to write'.



⁷² *dhatoh*
⁷³ *vartamane lat.*
⁷⁴ *pratyaya*
⁷⁵ *parasca*
⁷⁶ *kartari krt*
⁷⁷ *lah karmani ca bhava cakarmake bhyah*
⁷⁸ *halantyam*
⁷⁹ *tasya lopah*
⁸⁰ *upadeseajanunasika it*



81 *tasya lopah.*
82 *lasya*
83 *Tiptasjhi*
84 *sarvadhatuka*
85 *kartare - sap*
86 *halantyam*
87 *lasakvataddhite*
88 *tasya lopah*
89 *adarsanam lopah*

(b) The Primary affix *kṛt*:

The term *kṛt* is used in the grammars of *Pāṇini* and others for affixes applied to roots to form verbal derivatives. Which is stated as *kṛdatiṅ*⁹⁰

Besides the *tin pratyaya* in the verbal stem, others are summed up as *kṛt* or primary suffix. *Pāṇini* has clarified the domain of the application of *kṛt* in *Kartari kṛt*⁹¹

'The *kṛt* is used in the sense of the agency i.e., with the agent'.

For instance,

The suffixes *nval* (=aka) and *trc* (=tr) are added to verbal roots to denote *kartā*

As,

kṛ - nvul > kār - vu > kāraka (one who does)

Besides the markers with the agent, it has some exceptions as a result of which *karma*, *karaṇa*, *sampradāna*, *apadāna* and *adhikaraṇa* relations are expressed by the *kṛt* suffix.

The *sūtra karmaṇi stran*⁹² states: 'the suffix *stran* denotes the *karma* after the verb *√dhā* 'to feed'.

e.g. *dha - stran > -tra > dha-trai* (from a nurse whom the children suck)

'The affix *stran* (=tra) with the sense of the instrument comes after the verbs *√da* 'to cut', *√no* 'to lead', *√sas* 'to kill', *√yu* 'to join' *√yuj* 'to join', *√stu* 'to praise', *√tud* 'to inflict pain', *√si* 'to bend', *√sic* 'to sprinkle'. *√nib* 'to injure', *√pat* 'to fall', *√das* 'to bite' and *√nab* 'to bind'.⁹³

As, *da-stran > da-tra* 'a sickle'

⁹⁰ P.3.1.93

⁹¹ P.3.4.67

⁹² P.3.1.181

⁹³ P.3.2.182

(that with which one cuts)

the *sūtra dasagodhanau sampradāne* denotes: 'the affixes of the word 'dasa' and 'godhana' express the idea of the dative or the recipient'.⁹⁴

'dasa' is formed by adding 'ac' affix to the root √*dasr* 'to give'

Thus *das -ac > das-a* (to whom something is given)

By the rule *bhomadayoapadane*,⁹⁵

'The word *bhima* and *c.* are irregularly formed and by *Unādi* affixes denote ablation'.

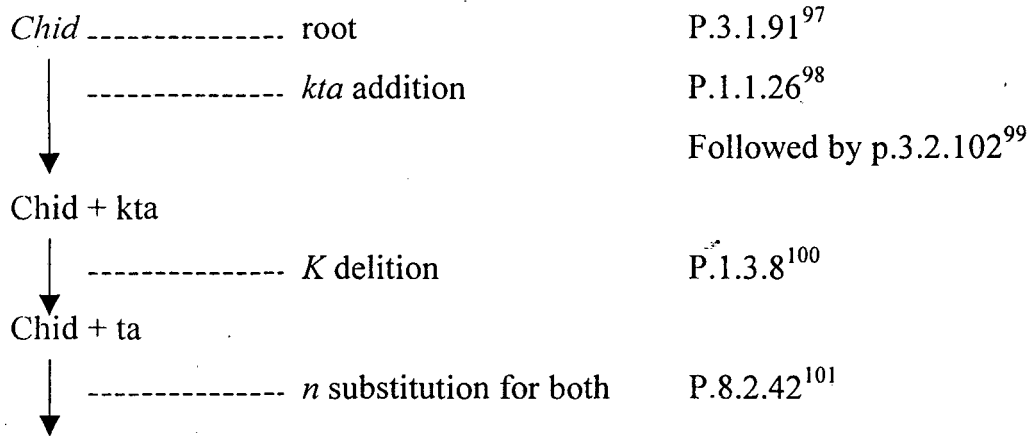
As *bhi + ak > bhima*.

'The suffix *cta (=ta)* added to the verbal roots meaning, 'stability, motion and eating' denotes *adhikaraṇa*'.⁹⁶

e.g. *as-cta > as-i-ta > asita*

'the place where one sit'

The derivational processes the word *chinnam* 'to be cut' follows from the root √*chid* 'to cut' in the following processes:



⁹⁴ P.3.4.73

⁹⁵ P.3.4.74

⁹⁶ P.3.4.76

⁹⁷ *dhatoḥ*

⁹⁸ *ktayvatu nistha*

⁹⁹ *nistha*

¹⁰⁰ *lasakbstaddhite*

¹⁰¹ *ratabhyam nisthato nah purvasya ca dah*

Chin+na



chin +n+am



Chinnam

----- *a* deletion and *am* addition P.1.2.46¹⁰²

Followed by

P.4.1.2¹⁰³ and p.7.1.24¹⁰⁴

P.6.1.107¹⁰⁵

(C) The Secondary affix *taddhita*:

Pāṇini has used the word *taddhita* not for words, but for the suffixes which are added to form such words at all places. In fact, he has begun the enumeration of *taddhita* affixes with the rule *taddhita*.¹⁰⁶

The term *taddhita* appears to be actually used for words derived from nouns by secondary affix along with the word *kṛt* which also means words derived from roots.

Though Pāṇini has not indicated in any rule about the *taddhita* suffixes in *Kāraka* relations explicitly, but there are few instances which reflect the *Kāraka* relations.

In the *sūtra*

*tena raktam rāgāt*¹⁰⁷

'The affix will be attached to the word in the instrumental case in a syntactic construction representing the word *tena* 'by which'.

As,

¹⁰² *krhitasamasasca*

¹⁰³ *sup*

¹⁰⁴ *ato am*

¹⁰⁵ *ami purbah*

¹⁰⁶ P.4.1.76

¹⁰⁷ P.4.2.1

kāṣāyena raktam bastram

= *kasayam*

‘kaṣāya is a cloth coloured
by kashya’

(D) The Compounds *Samāsa*:

Compound formation is governed by the general dictum:

*Samāsatha: padabidhih*¹⁰⁸

And these constructions are generally syntactically related. There are few instances in which compounds are related with the *Karaka* theory.

A word ending with the 3rd case affix, when it denotes the agent or the instrument is compounded diversely with what ends with a *ḥrt* affix; and the compound so formed is called *tatpuruṣa*.¹⁰⁹

As,

ahināhatah = ahihatah

‘killed by the snake’

‘A nominal occurring in the 2nd *vibhakti* is compounded with *śrita* ‘gone to’, *atita* ‘gone by’ *patita* ‘fallen’, *gata* ‘gone’, *atyasta* ‘passed’, *prāpta* ‘obtained’ and *āpanna* ‘reached’.¹¹⁰

As

kaṣṭam + śritah = kaṣṭaśrith

‘who has had recourse to trouble’:

‘A word ending with the 5th case affix is optionally compounded with the word *bhaya* ‘fear’ and the compound is *tatpuruṣa*.¹¹¹

As,

caurabhayam ‘fear from thieves’

¹⁰⁸ P.2.1.1

¹⁰⁹ P.2.1.32

¹¹⁰ P.2.1.24

¹¹¹ P.2.1.37

Morphophonemics:

Morphophonemics is the analysis and classification of the phonological factors which affect the appearance of morphemes in words. In Sanskrit, *pratyaya*¹¹² 'affix' pass through the morphophonological processes. The word *pratyaya* or affix is used in the sense of realisation, in which case the root 'i' in the word *tyaya* means 'knowing according to the maxim

*sarve gatyartha jñāarthah*¹¹³

'it comes or places after the *dhātu* 'root' or *prātipadika* or crude form'.¹¹⁴

There are six main kinds of *pratyayas* 'affixes' given in the grammar: *suppratyaya*, *tiṅpratyaya*, *kr̥tyapratyaya*, *taddhitapratyaya*, *dhatupratyaya* *strīpratyaya*:

'Before the attachment of the *sup pratyaya* with nominal stems, first the base is converted into *prātipadika*'.¹¹⁵

Sanskrit has three genders: masculine, feminine and neuter and three numbers: singular, dual and plural. On the basis of 7 cases (including genitive) and three numbers, the collective name *sup* consists of 21 case affixes,¹¹⁶ which is given below:

¹¹² P.3.1.1

¹¹³ Nir 1.15

¹¹⁴ P.3.1.2

¹¹⁵ P.1.2.45

¹¹⁶ P.4.1.2

	Singular	Dual	Plural
1 st	<i>su</i>	<i>au</i>	<i>jas</i>
2 nd	<i>am</i>	<i>aut</i>	<i>śas</i>
3 rd	<i>tā</i>	<i>bhyām</i>	<i>bhis</i>
4 th	<i>ṇe</i>	<i>bhyām</i>	<i>bhyas</i>
5 th	<i>ṇasi</i>	<i>bhyām</i>	<i>bhyas</i>
6 th	<i>ṇas</i>	<i>os</i>	<i>ām</i>
7 th	<i>ṇi</i>	<i>os</i>	<i>sup</i>

Subanta or declension is for the sake of convenience divided into two classes¹¹⁷:

- (i) Bases ending in vowels.
- (ii) Bases ending in consonants.

Every word in the table given below will be considered as a model and words alike in form are treated similarly to it. But, besides the model form, there are some irregular bases present in Sanskrit.

¹¹⁷ R.C. Kale, 'A Higher Sanskrit Grammar', Bombay: 1931, P.34.

Classification of nominal bases on the basis of ending:

Nouns ending in	Masculine	Feminine	Neuter
a	<i>Rāma</i> 'Rama'		<i>jñana</i> 'knowledge'
a	<i>gopā</i> 'a cow herd'	<i>ramā</i> 'the Goddess of wealth'	
l and u	<i>hari</i> 'hari' <i>gurū</i> 'perceptor'		<i>bari</i> 'water'
l and u	<i>banaprami</i> 'an antelope as fleet as the wind'	<i>nadī</i> 'river' <i>badhū</i> 'bride'	
r	<i>dhātṛ</i> 'the creator'	<i>śvaśura</i>	<i>dhātṛ</i> 'the creator'
r and l	<i>kartṛ</i> 'doer'		
e and ai	<i>se</i> 'wealth'	<i>se</i> 'wealth'	
O and au	<i>go</i> 'cow' <i>glau</i> 'the moon'	<i>go</i> 'cow'	
r, i and n	<i>kamal</i> 'Goddess of wealth'	<i>kamal</i> 'Goddess of wealth'	<i>kamal</i> 'Goddess of wealth'
K,kh, g,gh t th, d, dh,t, th, d dh, p, ph, b,bh	<i>sarbasak</i>	<i>samidh</i> 'a holy stick'	<i>Susamidh</i> 'a holy stick'
c,ch,j,jh,s,s,s,		<i>vāc</i> 'speech' <i>saj</i> 'shining'	

The following instance will provide the derivational processes of *rāmah* from *rāma*

<i>rama</i> ----- <i>pratipadika</i>	P.1.2.45 ¹¹⁸
↓	P.1.246 ¹¹⁹
----- <i>su</i> -addition	P.4.12 ¹²⁰
↓	
<i>rama + su</i>	
↓	
----- <i>u</i> deletion	P.1.3.2 ¹²¹ and
↓	P.1.3.9 ¹²²
<i>rama + s</i>	
↓	
----- <i>s</i> replaced by	P.8.2.66 ¹²³
↓	
<i>rama + r</i>	
↓	
----- <i>r</i> replaced by :	P.8.3.34 ¹²⁴
↓	
<i>ramah</i>	

Syntax:

In *Aṣṭādhyāyī* of Pāṇini, *Kāraṅka* theory is the only section which deals with the syntactic representation of the language. The basic syntactic notions presented are:

- (1) word order;
- (2) order of the *Kāraṅkas* in the sentence;
- (3) types of sentences;
- (4) deep structure and surface structure;
- (5) Agreement;
- (6) Derivational sentences.

¹¹⁸ *arthabaddhaturpratyayah pratipadikam*

¹¹⁹ *kṛddhitasamasasca*

¹²⁰ *sup*

¹²¹ *Upadeseanumasik it*

¹²² *tasya lopah*

¹²³ *sasjuso ruh*

¹²⁴ *bisarjaniasya sah*

(1) Word Order:

It is not surprising that the grammar doesn't specify the word order in a sentence. Being an inflected language, Sanskrit has a free word order. First, all the nominal stems are converted into *prātipadika*¹²⁵ and then they are assigned by the *supratyayas*. These morphological and syntactic correlations can be clearly understood from the following sentences.

- (i) *rāmah kaṭam karoti*
'Ram makes the mat'.
(ii) *rāmeṇa Kaṭah kṛtyate*
'Mat is made by Ram'

Both the sentences represent the active and the passive sentence having two nominal stems, *rām* 'Ram' and *kaṭa* 'mat' and one verb stem √*kṛ* 'to do or make'. Because of the case marking, the *karaka* doesn't put question mark for its identity. Like in (i), the verbal suffix – *ti* reflects *rām* as *kartā* and –*am* for *karma* in *kaṭa*. The same thing also happens in (ii), where –*yak* and –*na* suffix assign the *karma* and *karna* for *kaṭ* and *rām*. Even, the arrangement of the nominal stems can be put in different order, but the semantic value of the sentence will remain the same.

(2) Order of the *Kāraḥas* in the sentence:

Pāṇini describes the *karakas* in the order of *apādāna*, *sampradāna*, *karaṇa*, *adhikaraṇa karma* and *kartā*. So far we have said, the verb plays the central role in the distribution of *Kāraḥas*. But the assignment of different *karakas* in the verb. Which is not in the *Aṣṭādhyāyī* can be predicted from the following examples;

¹²⁵ P.2.4.5

- (i) *sah kaṭam karoti*
'He makes mat'
- (ii) *sah kaṭam gr̥he karoti*
'He makes mat at home'
- (iii) *sah kaṭam bālakena gr̥he karoti*
'He makes mat at home by the boys'

In the above instances, *sah*, *kaṭa*, *gr̥ha*, *bālaka* are assigned as *kartā*, *karma*, *adhikaraṇa* and *karaṇa* respectively. All the sentences have the configuration of the verb with the nominals. It seems that *karta* is the closest nominal of the verb followed by *karma*, *adhikaraṇa*, *karaṇa* etc. To hypothesize, Pāṇini has adopted the closest or proximity of the nominal stems associated with the verb. In other sense, the closest associates which help in the accomplishment of the action is the order of the *Kāraka* of a particular verb.

(3) Type of sentences:

Sanskrit has three types of sentences : (i) *kartr vacya* 'active sentence, (ii) *karma vācya* 'passive sentence' and (iii) *bhāba vācya* 'impersonal passive'.

(i) *kartr vācya*:

When the agent performs the activity independently or through the other accessories, the sentence is called *kartr vācya*.

e.g.

ramah gr̥ham gachati

'Ram goes home'

Here, ram accomplishes the action 'gam' 'to go' through the object *gr̥h* 'home'

(ii) *Karma vācya*:

When the activity of the main agent is not meant to be expressed and *karma* is given more emphasis, it is called *karma vācya*. Such constructions happen only, in the case of verbs made from roots which are *karmasthabhavaka* or *karmasthakrīyā*.

There are two conditions have to be fulfilled before a *karma* can become *karma –kartā* ‘object agent’¹²⁶ (a) the activity of the main agent should not be meant to be expressed, (b) the object should be presented as independent.

e.g.

odanah pacyate

'Rice cooks'

In the above instance, the object *odana* ‘rice’ acts independently and becomes *karma kartā*.

(iii) *bhāva Vācya*:

When the performed action doesn't have any physical change, it is called *bhāva vācya* ‘impersonal passive’.

e.g.

mayā supya te

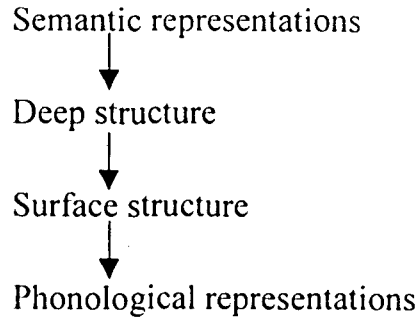
'I sleep'.

(4) Deep structure and surface structure:

The major controversy has been, whether Pāṇini's *Kāraka* theory is semantic or syntactic or both. Kiparsky and Stall notes, Pāṇini's grammar is a system of rules for converting semantic representations of sentences into phonetic representations, of via two intermediate levels which may be respectively compared with the levels of deep (underlying) structure and surface structure in a generative grammar'.¹²⁷

¹²⁶ VP. 3.7.56.

¹²⁷ P.K.Parsky, "Syntactic and Semantic Relations in Panini", Modern Studies in Sanskrit, New Delhi: 1988, P.136.



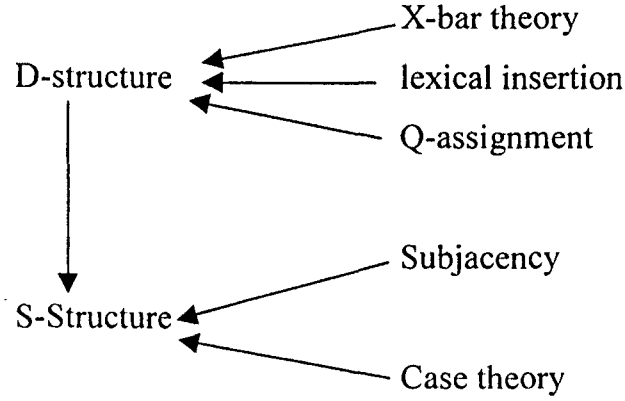
In the latest book, he states, 'In a grammatical derivation, the *Kāraḱas* mediate between meaning and morphosyntactic surface structure'.¹²⁸ As a result of which there are some explicit roles for the interpretation of the semantically and morphosyntactically. The basic principles governing the relation between *Kāraḱas* and morphosyntactic surface structure are

- (a) Every *Kāraḱa* must be 'expressed (*abhihita*) by a morphological element.
- (b) No *Kāraḱa* can be expressed by more than one morphological element.
- (c) Every morphological elements must express something.

Before moving ahead, it would be noteworthy to discuss the notion and domain of D-structure and S-structure. D-structure is the level that directly reflects lexical properties where the recipients of Q-role are in their original position and S-structure an intermediate level case theory and subadjacency apply.¹²⁹

¹²⁸ P.K.Parsky, 'The Architecture of Grammar', CIEFL, Hyderabad: 2002, P.16.

¹²⁹ E.P. Stabler, "the Logical Approach to Syntax", MIT: 1992, P.2.



The D-structure or the underlying structure confines itself with the semantic relations of the constituents of the sentence, whereas S-structure is the grammaticality of the sentence derived from the underlying structure.

For instance;

rāmah kaṭam karoti

'Ram makes mat'

ramēṇa kaṭah karayate

'Mat is made by Ram'

In the underlying structure of the above sentences, *rāma*, *kaṭa* act as agent and object respectively of the verb *√kr* 'to make'. But, when the grammaticality question comes i.e., S-structure, all the three constituents are morphologically marked for agreement and case. Unlike morphological representation, all the constituents in the underlying remain the same like the S-structure. So, Pāṇini's *Kāraṇa* theory can be formulated as the syntactic representation of the semantic structure.

(5) Agreement:

In many languages, the constituents of a particular syntactic construction are said to 'agree' or be 'in concord' with respect to such features as 'gender', 'number', 'case', 'person' etc.¹³⁰ Like wise Sanskrit

¹³⁰ J.Lyons, 'Introduction to theoretical Linguistics', Cambridge University press: 1969, P.239.

has three agreement patterns¹³¹: (a) concord of the verb with the subject; (b) concord of the adjective with the substantive; and (c) concord of the Relative with its Antecedent. (But now the case agreement will. follow the discussion).

(a) The verb must agree with its subject in number, gender and case. The *karṭṛ vācya* 'active sentence', *karma vācya* 'passive sentence' and *bhāva vācya* 'impersonal passive' show the subject verb agreement in the following manner:

(i) *rāmah odana -m pac - a-ti*

Ram Nom rice -Acc Cook-Isg.

'Ram cooks rice'.

(ii) *rāmeṇa odanah pac-ya-te*

Ram Inst rice Nom Cook-pass - Isg.

'Rice is cooked by Ram'.

mayā sup-ya-te

I Inst sleep-pass-Isg.

'I sleep'.

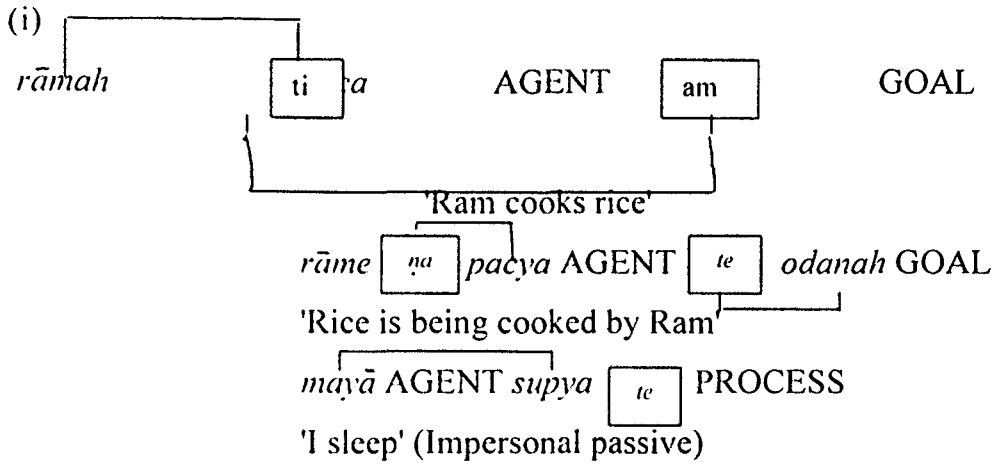
Here, the verbs agree with *rām* 'Ram' *odana* 'rice' and *aham* 'i' in sent (i), (ii) and (iii) respectively.

P-Kiparsky states that the finite verb ending 'expresses' one of the three things¹³²: (1) the Agent; (2) the Goal or (3) the process.

¹³¹ R.C. Kale, *op.cit.* P.471.

¹³² P.Kiparsky, *op.cit.* P.20.

These are shown in the relational structure as the given below sentences;



In the above sentences, the verb endings express the role of the first, second or the third person.

When there are more than one subject and connected by *bā* 'or' and all are singular, the verb agrees with one of them.

As,

rāma or hari in

rāmah harih bā gachati

'Ram or Hari goes'

When the verb agrees with two or more subjects of different persons connected by 'and', the first person has preference over the second or third, and the second over the third.

e.g.

tvamaham ramasyaitat karisyāmah

'Ram, you and I shall do this'.

(5) An adjective, participal or qualitative must agree with the substantive, it qualifies in number, gender and case.

As,

rupaban puruṣah

'a handsome man'.

- (b) The relative agrees with its antecedent in gender, number and person, the cases of the relative and its antecedent being determined by their relation to their respective classes.

As,

yasyāsti bhutam sa narah kulinah

'He who has wealth has noble family'.

(6) Derivational Sentences:

Pāṇini's derivational sentences can be represented in two ways: (a) *Kartari* – *Karmaṇi*: 'Active passive'; and (b) non-causal – causal

(a) *kartari-Karmaṇi* : 'Active-Passive'

Consider the following pair of sentences.

(i) *rāmah kaṭam karoti*

'Ram makes the mat'.

(ii) *rāmeṇa kaṭah kriyate*

'A mat is made by Ram'.

In the above sentences, the nominal stems *rāma*, 'Ram' *kaṭa* 'mat' act as *kartā* and *karma* respectively with the verb *√kr* 'to do or make'.

But, the two sentences have different morphological arrangements. The verbal ending *ti* – in sentence (i) expresses *Kartā* and *Karma* takes 2nd *vibhakti*, while *te* expresses *karma* and *kartā* gets 3rd *vibhakti* in sentence (ii). Though the surface realizations of the two sentences differ, but the identical *Kāraka* relations retain the same meaning.

(b) non-causal – causal:

The agent of the non-causal verb becomes the *karma* of the causal verb when the verb has the sense of 'to move', 'to know', 'to hear' or 'to teach' or is an intransitive verb.¹³³

Consider the following pair sentences.

¹³³ P.1.4.52

None-causal

causal

(i) *śatabah suargam agahanc* (ii) *ṛamah śātrūn agamayat svargam*

'The enemies went to Heaven' 'Ram sent the enemies to Heaven'.

Both the sentences exhibit the same act which ultimately leads as 'The enemies went to Heaven'. But, in (i), 'the enemies' is *kartā* and carries out the activity on his own accord; while in (ii) *kartā* is prompted by 'Ram'. Syntactically, the *kartā śatabah* 'the enemies' of the verb *√gam* 'to go' in its primitive sense is put in the *karma kāraka* in the causal but the object 'svarga' 'Heaven' remains unchanged.

Semantics:

The Indian theories of meaning have developed by different scholars in different schools ie. The *Vaiyākaraṇas* the *Naiyākas*, the *Buddhist*, the *Jains* etc) in different ways. All theories of meaning inquire into, as Prof. K. Kapoor puts,¹³⁴ (i) whether a particular relation really holds between the 'word', *śabda* and its meaning; (ii) the nature of reference, i.e., does the word directly refer to objects in real life, or to a mediating mental image of the object; (iii) the equation that holds between the object 'meant' by the word and the corresponding object in real life, and (iv) the movement from lexical meaning to sentential meaning.

In the Indian philosophical systems, *Nyāya* and *Vaiśeṣika* both are known as the Realists schools of thought. For them, the world of our experience is real and not any projection of mind.¹³⁵ The hearer/reader remembers the meaning only if he/she knows the relationship (*vṛtti*) which holds between a *pada* and its meaning (*padārtha*). This relationship is direct, real and

¹³⁴ Kapil Kapoor, "Bhartrhari on Lexical Meaning", *Linguistics AT Lorge*, Hyderabad: 1991, P.64.

¹³⁵ R.K. Mishra, "Buddhist theory of Meaning and Literary Analysis" New Delhi: P.41.

positive.¹³⁶ In the Jaina system of thought word (*sabda*) is synonym of *pudgala* (matter).

In addition to the above note, Dr. R. Mishra, categorizes three views regarding the nature of word meaning relationship:¹³⁷

1. relation of identity (*tādātmya*)
2. relation of origination (*utpatti*)
3. relation of signifier and signified (*Vācya-vācaka*)

The Buddhist theory of meaning is known as *apoha* (differentiation) which asserts that a word denotes what the object is not. It is only the conceptual construct/mental image of the object, which is designated by the word.¹³⁸

This mental image is purely subjective and momentary. The grammarians, Vaiyākaraṇas, (the major thinker, Bhartṛhari) says, 'The meaning belongs to the word'¹³⁹. But besides, VP II.53, he correlates the relationship between the word the meaning by classifying three categories¹⁴⁰ as

- (1) their own form – *svarūpam*;
- (2) an object (*padārtha*) which is a mean to fulfill a certain purpose;
- (3) the intention of the speaker.

Form reference combine to form *abhidhā*, the primary denotative meaning. But, now the doubt arises between the perception of the meaning and the speaker's intention. Prof. K. Kapoor stresses four aspects to resolve this doubt¹⁴¹ - (i) the speaker's desire to forces on one or the other aspect; (ii) the natural capacity of words to communicate one aspect or the other; (iii) the general nature of denotation and (iv) the process of mental mediation in the communication of meaning.

¹³⁶ Ibid., P. 41.

¹³⁷ Ibid., P. 41.

¹³⁸ Ibid., P. 41.

¹³⁹ VP II. 53.

¹⁴⁰ VP III. 3.1.

¹⁴¹ Kapil Kapoor, *op.cit.* P.66.

Words, expressed by the verbal communication don't reflect the total reality. As Bhartṛhari says, 'verbal communication relates only to a part of an aspect of reality to the determination by means of an external factor or to a reversal of reality or to an absence of it.'¹⁴²

For instance,
Ram is blind.

Here the adjective 'blind' only represents one physical aspect of Ram. But, it doesn't convey whether Ram is boy or girl, short or tall, black or white etc. Thus, a word doesn't express the meaning of the everything of an object. It only manifests the partial reality.

The sentence, which is the sequence of words is stated as; 'Each individual word, by itself, can't express the sentence meaning which is in the nature of a connection between the meanings of individual words'.¹⁴³ But 'the meaning of a sentence is the meaning of the individual words in it as systematically connected with one another'.¹⁴⁴ This sentential meaning can't be located in the individual words in isolation. For instance;

Ram is tall.

The above sentence is constituted by three words; 'Ram', 'is', 'tall', which have only fixed word meaning. When they are combined together i.e., In a syntactic configuration, refer to a type of 'Ram'. In the same context. Prof. K. Kapoor puts an analogy of a mathematical number 389.¹⁴⁵ The value of the individuals; 3,8,9 differ from the value in other sequences of the same units – 983, 893, 398.

The word meaning and the sentential meaning are manifested in the *Kāṛaka* theory. In the preceding sections, we have already discussed the

¹⁴² VP.III. 3.52.

¹⁴³ VP.II.54.

¹⁴⁴ VP. II. 55.

¹⁴⁵ VP.III. 7.35.

morphological and syntactic represents of the *Kāraka* theory. The relation that holds between the karaka and the verb is power or *sakti*. Bhartrhari enumerates these powers as six in all things as *kartā, karma, karaṇa* etc.¹⁴⁶

Karma:

Karma is defined as 'that which especially desired by the agent to be accomplished by the action'. The most desired thing of the agent is of three kinds.¹⁴⁷ Production (*nirvartya*), modification (*vikārya*) and destination (*Prāpya*). Out of the three kinds, product and modification are based on the non-existent and existent thing. That non-existing thing which comes into existence or that existing thing which manifested by its birth, is the *karma* called product.¹⁴⁸ the dichotomy of existent and non-existent is in between internal reality and external reality. Unless, the substance (*dravya*) is in the internal reality, it can't be produced in the external reality by the agent. It is one type of the transformation of one form to other.

As,

bālahakāḥ ghaṭam karoti

'The boy makes the jar'.

In the above instance, *ghaṭa* 'jar' already exists in the speaker's mind, which was absent in the external reality. But, by making it '*ghaṭa*' gets manifested as the product.

The object which existed before and is manifested by its birth is called modification.¹⁴⁹ Unlike product, it is the transformation of one object to another by the agent. This modification can be the complete destruction of the original object or simply the transformation of one to another. Like, when the wood burns, it turns into ashes reflecting the complete destruction of the wood. But, in the case of gold into ornament, it is a simple different modification.

¹⁴⁶ VP.III. 7.47

¹⁴⁷ VP. III. 7.49

¹⁴⁸ VP. III. 7.49.

¹⁴⁹ VP. III. 7. 50.

When the result of an action is not seen, but directly perceived of the object of that action is called destination.¹⁵⁰

e.g. 'veda' in the expression

vedam adhite.

'He studies the veda'.

In addition to the above *Samñna - sũtra* of *Karma*, from the semantics point of view. Pāṇini has presented some additional and exceptional *sũtras* for the analysis of the *Karma kāraka*. These are discussed in the below:

'The object, not most desired by the agent or not most affected by the act, but when connected with the act is called karma *kāraka*'.¹⁵¹

e.g. *ṛna* in

gramam gacchan ṛnam sprśati

'While going to the village, he touches the grass'.

Here, the act of touching 'the grass' is very much indifferent to the agent.

'The disliking of the agent is also assigned the *karma - kāraka*'.¹⁵²

Like, cora, in

coram paśyati.

The thief enters.

'The *kāraka*, which doesn't come under any other *kāraka*, but helps in the accomplishment of the action, is *karma*'.¹⁵³

For instance; *patha* in *māṇabakam pathānam pṛcchati*

'He asks the boy (which is) the road'.

'The person against whom anger (etc) is expressed, is called *karma* when the verbal stem is preceded by prepositions'.¹⁵⁴

Thus we have the expression;

devadattam abhikṛudhyati.

¹⁵⁰ VP. III. 7.50.

¹⁵¹ P.1.4.50.

¹⁵² P.1.4.51.

¹⁵³ P.1.4.38.

¹⁵⁴ VP.III. 7.68

'He is angry with Devadatta'.

There are instances in which an agent has two *karmas*. These can be enumerated as internal and external or primary secondary. For example;

māsam odnam pacati.

'He cooks rice for one month'

In the above instance, *odana* 'rice' is directly connected with the verb and the agent. But, *māsa* 'month' is coindexed with the verb through the object '*odana*'. Because, the time taken to cook the rice depends on the quality of rice. That's why Bharṭṛhar in this context, stresses, 'Action becomes connected with the main object first-and then only with the secondary object'.¹⁵⁵

On the basis of *karmas*, verbs can be divided into *sakarmaka* (transitive) and *akarmaka* (intransitive).

Basically, the presence and absence of the *karma* in a verb lead to *sakarmaka* and *akarmaka* verb respectively. But, in Sanskrit, some intransitive verbs have *karma*, but it doesn't violate the status of the transitive verbs. For instance;

māsam āste

'He stays for a month'.

Here, the staying period one month acts as a *karma*, but which is not a *karma*. Besides the objects in the form of a thing (*dravya*), all the others, i.e. time, place etc. are external *karma*. Whenever, the verb has a *dravya* as *karma*, it is *sakarmaka Kriyā*.

The role of the *karma* can be defined as it's original status as *karma* and other is the *karma - kartā* or the object-subject. Now, the question to be focussed, how the *karma* becomes the agent. Sometimes the involvement of the agent for the accomplishment of the action is not expressed in the

¹⁵⁵ P.1.3.67 and P. 3.1.87.

syntactic constituents of the sentence. Then the agent's role is filled up by the *karma* and it becomes *karma - kartā*. In other sense, when the *karma* is not dependent for its achievement, then it turns to be *kartā*.

As,
odana in
Odanah pacyate
'Rice cooks'.

Kartā:

'The *kartā* or agent has been defined as independent'.¹⁵⁶ The agent is free from other *kāraṅkas* and has the capacity to accomplish the action. In other sense, it employs other accessories for the motion of action and brings them under control. It's basic expression is denoted by the instrumental case.¹⁵⁷ Because to complete the action, the agent itself becomes the instrumental

e.g.
'*devedatta*' in
devadattena kṛitah
'It is done by Devadatta'
or
'Devadatta makes it'.

Though the agent acts for from the original action, but every sentence must have an agent. Because, it plays the role of the coordinator among the other accessories of the action. The independent nature of the agent depends on the speaker's intention, for which *karma*, *kaṛaṇa* and *adhikaraṇa* can also act as *kartā*.¹⁵⁸

'The *kartā* is also expressed by the active voice of the verb'.¹⁵⁹

¹⁵⁶ P.1.4.54.

¹⁵⁷ P.2.3.18.

¹⁵⁸ VP. III. 7.18.

¹⁵⁹ P.1.3.78 and P.3.1.68.

For instance;

bālahah pacati

'The boy cooks'.

In the above case, the agent is expressed by the affix - *a*, which is attached to the verbal root *pac* - forming *paca-*

'The agent can also be expressed by a nominal compounds'.¹⁶⁰

e.g.

caurahatah > caureṇa hatah

'killed by a thief'.

Karaṇa:

'The *karaṇa kāraka* is the most accessory for the accomplishment of an action'.¹⁶¹

The word 'most' is used here, because it is the only *Kāraka* which accomplishes the action directly. Even *kartā*, being independent doesn't involve himself/herself for the completion of the action. It acts as the coordinator for bringing other *Kāraṅkas* into the action.

As,

bālahah dātrna lunati.

'The boy cuts with a sickle'.

Here, 'the boy' i.e. the agent, brings 'the sickle' into the activity 'cut'. As compared to other *Kāraṅkas*, it is the highest degree of means for the completion of the action. The decision to make any *Kāraka* as *karaṇa* depends on the speaker's intention. Like,

(1) *sthālyam pacati*

'He cooks in the pot'.

(2) *sthālyā pacati*

'He cooks with the pot'.

¹⁶⁰ P.2.1.32.

¹⁶¹ P.1.4.42.

In the above sentences, the *sthāli* 'pot' acts as the *adhikaraṇa kāraka* and *karaṇa kāraka* in (1) and (2) respectively. To make a point, no *Kāraka* is predetermined as *karaṇa*. On the basis of the speaker's emphasis, the *karaṇa* can also be *Kartā*. For instance;

asiś' chinatti

'The sword cuts'.

In the above expression, *asiś* 'sword' is the instrument but acts as the agent independently and emphasizing more for the completion of the action.

Sampradāna:

'The basic expression of the *sampradāna* is the recipient of the verb √*dā* 'to give'.¹⁶² Basically in such expressions, the agent, the accusative and the dative help for the completion of the action. But besides the relations of accusative and dative in syntactic level, sometimes on the basis of semantic condition, the dative itself is co-indexed with the agent and the verb.

'In case of the verb √*rue* 'to like', the person or thing that is pleased is called *Sampradāna*'.¹⁶³

e.g.

devadatta in

modakah devadattāya rocate.

'The sweet ball pleases Davadatta'.

'The thing desired of the verb √*spṛih* 'to desire' is called *Sampradāna*'.¹⁶⁴

e.g. *puṣpa* in

puspevyah spṛhayati.

'He desires flowers'.

¹⁶² P.1.4.32

¹⁶³ P.1.4.33.

¹⁶⁴ P.1.4.3.

'In relation to the verbal stems meaning, 'be angry', 'injure', 'envy' and 'detract', the person against whom anger etc. is directed is called *sampradāna*'.¹⁶⁵

e.g. *hari* in
haraye kṛudhyati.

'He is angry upon Hari':

Generally, *sampradāna* is assigned in the transitive verb. But, whenever the verb becomes the *karma*, even if, it is intransitive, then *sampradāna* is connected with the action's connected thing.

For instance;

Patye śete
'She sleeps for her husband'.

Here, '*pati*' and '*sayana*' get *Sampradāna* and *karma* respectively.

Even in semantic criteria, the *karma* and *sampradāna* are used optionally. 'The verbs expressing motion, i.e. the place to which motion is directed, assign the 2nd and 4th case to the object'.¹⁶⁶

e.g.
see *grāma* in
grāmam or *grāmāya gacchati*,
'He goes to the village'.

Apādāna:

'A fixed point from which something departs is termed as *apādāna*'.¹⁶⁷ This fixed or starting point is of three kinds:¹⁶⁸ that in relation to which a movement is mentioned, that in relation to which the verb expresses the movement only partly and that in relation to which some movement is required.

A series of additional rules provide the semantic criteria for the expression of *apādāna*. In relation with the verbal stems meaning 'fear', 'protection from danger', the source of fear is called *apādāna*.¹⁶⁹

¹⁶⁵ P.1.4.37.

¹⁶⁶ P.2.3.12.

¹⁶⁷ P.1.4.24.

¹⁶⁸ VP III. 7.136.

¹⁶⁹ P.1.4.25.

e.g.

caura in

caurebhyo bibheti

'He is afraid of the thief.'

In case of the verb *paraji* 'to be tired or weary of', that becomes unbearable is called *apādāna*.¹⁷⁰

e.g.

adhyayanā 'study' in

adhyayanāt parājayate

'He finds study unbearable.'

Moreover, in other meanings, it governs a *karma kāraka* as in

śatrūn prājayate.

'He conquers the enemies.'

'The desired object is in *apādāna* in relation to the verbal stems meaning 'preventing'.¹⁷¹

e.g.

yava 'barley' in

yavebhyo gām vārayati

'He prevented the cow from the barley field.'

'In the sense of concealment, the person whose sight one wishes to avoid is called *apādāna*'.¹⁷²

e.g. *upādhyāya* 'teacher' in

upādhyāyad nilīyate.

'He avoids the sight of the teacher.'

Also, 'the teacher gets *apādāna* for the case of formal teaching'.¹⁷³

As, *updhāyay* 'teacher in

upādhyāyād adhite.

'He learns from the teacher.'

¹⁷⁰ P.1.4.26.

¹⁷¹ P.1.4.27

¹⁷² P.1.4.28.

¹⁷³ P.1.4.29.

The prime cause of the agent of the verbal stem *jan - ' to be born'* and the source in case of the *kartā* of the verb *bhu 'to become'* get *apādāna kāraṅka*.¹⁷⁴

e.g. *himalaya iṅ himalayād gaṅgā prabhavati*.

The Ganga originates from the Himalys.

Adhikaraṇa:

"The locus of the performed act is *adhikaraṇa*".¹⁷⁵ It indirectly helps the agent and the object to accomplish the action. On the basis of *adhāra* 'abode' and *upasleśa* 'contact', *adhikaraṇa* is of three kinds.¹⁷⁶

a) Where the contact is not at all points. It is *samyoga*.

e.g.

kate āste

He sits on the mat.

b) *Samavāya:*

Here, the contact is at all points.

As,

tilesu talam

'Oil in the seeds'.

(c) *Vaiśayika*

Vaiśayika is the contact which holds in the abstract level i.e. mental.

As *gurau vasati*

'He lives with the guru'.

¹⁷⁴ P.1.4.30. and p.1.4.31.

¹⁷⁵ P.1.4.45

¹⁷⁶ VP. III. 7.149

Chapter - II
**PROPOSITIONAL STRUCTURE AND
THE VERB**

The *Kāraka* which holds the relations between nominals and verb was discussed in the preceding chapter. But, how such type of relations are applicable in the propositional structure follow the discussion. The basic questions to be discussed the relations are: (1) what is proposition?; (2) propositional structure and actual sentence; (3) semantics in propositional structure; (4) propositional structure and generative semantics; (5) propositional structure and *Kāraka* theory; (6) verb in syntactic configuration; (7) status of the verb in a sentence; (9) propositional structure and the verb; and (10) verb and its nominals.

What is Proposition?

In the mid' 70s, Modern (=western) linguistics looked into a semantically based grammar. This shift was motivated by an increasing recognition of the fact that a sentence is understood not in terms of its surface structure alone, and that crucial to this understanding are the relations that hold between nouns and verbs in the deep structure of language.¹ The idea of underlying or deep structure comes from the port-Royal grammarians.² The port-royal grammarians divided the sentence into two aspects: the inner aspect and the outer aspect. The inner aspect is the reflection of the forms of thought and the port -royalists represent this inner form in the format of prOpositional logic. Now, the question comes: what is a proposition? The term 'proposition' like 'fact' has been the subject of considerable philosophical controversy. Some authors think of propositions as purely abstract, but in some sence objective, entities, and others regard them as subjective or psychological and there are certain logicians who avoid them entirely. Despite all the controversy, Lyons has defined

¹ K. Kapoor, 'Semantic structure and the verb', New Delhi: 1985, p.4.

² Ibid., p.5.

proposition as; “A proposition is what is expressed by a declarative sentence when that sentence is uttered to make a statement.”³

Though proposition is an abstract entity but it is unreal. It exists in the mind of the speaker when he/she produces the sentences. And it holds the relationships between semantics level of the sentences.

The constituents of the elementary propositions are termed as subject and the predicate. The term 'subject' is used in the analysis of grammatical functions to refer to a major constituent of sentence or clause structure, traditionally associated with the 'doer' of an action.⁴ But the term 'predicate' is used in the analysis of grammatical functions, to refer to a major constituent of sentence structure, traditionally associated with a two part analysis in which all obligatory constituents other than the subject are considered together.⁵

For example,

rāmō ghōrōku gōlā
ram went home.
Ram went home.

Here, subject and predicate are marked by *rāmō* 'Ram' and *ghōrōku gōlā* 'went home' respectively.

The propositions can be represented through the simplest as well as the complex sentences.

³ John Lyons, 'Semantics, vol.1', Cambridge University Press: 1977; p.141-142.

⁴ David Crystal, 'A Dictionary of Linguistics and Phonetics, Basil Blackwell; 1985, p.293.

⁵ Ibid., p. 241.

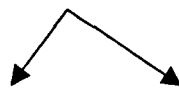
As, in the case of simplest sentences:

bāləkoti sue
 boy sleeps
 The boy sleeps

S

I

(P)



Subj Pred
bāləkoti sue
 'boy' 'slept'

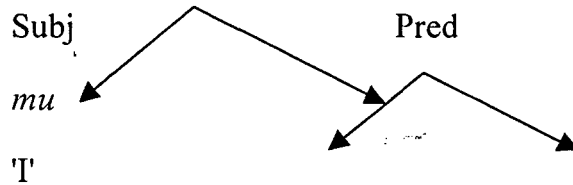
A complex sentence will have an embedded proposition:

mu b^hābuchije mu b^hul ɔte
 I think I wrong am
 I think that I am wrong.

S

I

(P)



'I'

V

b^hābuchije
 'think that'

(P)

Subj Pred
mu b^hul ɔte.
 'I' 'am wrong'

Propositional structure and actual sentence:

The propositional structures are converted to actual sentences through some grammatical operations: rearrangement, addition, deletion, and replacement, which are levelled as grammatical transformation. There are some instances in which the surface structure is very much like the core structure.

Like;

<i>bāl</i>	<i>ɔk</i>	<i>ɔti</i>	<i>sue</i>
boy			sleeps
The boy sleeps			

Addition transformations add new structural elements to the core proposition where as deletion propositions eliminate elements from the core proposition.

e.g.

(1)	<i>mu</i>	<i>b^hābuc^hije</i>	<i>mu b^hul</i>	<i>ɔte</i>
	I	think	I wrong	am.
	I think that I am wrong			
(2)	<i>pendutiku</i>	<i>mār</i>	<i>ɔ</i>	
	ball		kick	
	kick the ball.			

In example (1), the complement proposition gets attached to the core proposition by the addition or insertion of the complementizer as it is called, *je* 'that'. But in (2), the subject of the underlying proposition, 'you' is deleted.

In replacement transformations, an element is replaced by a new structural element.

As,

pila jieki p^hutbal k^hele
boy who football plays

The boy who plays football.

In the above transformation i.e. from core propositions to actual sentences, some rules are obligatory while others may or may not be. Some of these rules precede other rules or one rule is to be applied before another is applied to produce acceptable and grammatical sentences.

Semantics in propositional structure:

So far semantics is concerned, Prof. K. Kapoor has divided the aspects of meaning under three heads⁶:

- (a) Lexical semantics,
- (b) Sentential semantics and,
- (c) Utterance semantics

Lexical semantics deals with the meaning of the vocabulary of a language but pragmatics or speech act semantics is known as sentential semantics. On the otherhand, sentential semantics is the study of sentence meaning and meaning in relation to sentence structure. It may, more appropriately, be called propositional semantics. Such type of relation holds between nouns and verbs. In the propositional structure, this relation is reflected in the abstract level. But, when it is converted into sentential expression, the same proposition can be expressed in different sentences.

⁶ K.Kapoor, *op.cit* p.10.

e.g.

- | | | |
|--------------------------|---------------------------|-------------|
| (1) <i>pilati</i> | <i>g^hɔrɔku</i> | <i>gɔla</i> |
| boy | home | went |
| the boy went home | | |
| (2) <i>gaiti</i> | <i>nɔdiku</i> | <i>gɔla</i> |
| cow | river | went |
| The cow went to the pond | | |

Though, both the above sentences express different meanings they have the same propositional structure i.e., the given entity. A changes position/moves towards entity B. So propositions are defined as, 'abstract objects designed to represent semantic structure while ignoring syntactic and phonological form'.⁷ Moreover, propositions exist in the speaker's mind holding the relationships between objects and events and acts as language independent.

Propositional structure and generative semantics:

So far we have discussed the semantic structure of sentences in terms of nouns and verbs. This is true of generative semantics and is also true of Fillmore's case grammar in which propositions are analysed as structures involving nouns -verbs relations or what he calls case relations. The base structure of a sentence in this theory is modality proposition. Proposition here too, is a tenseless set of relationships involving nouns and verbs..

In Chafe's system (1970), the verb is first analysed into types-state, action, etc. and each verb type thus has a given number of nouns attached to it in given relations. Thus Chafe states,⁸

⁷ Neil Smith and Deidere Wilson 1979, p.149.

⁸ W.L. Chafe, 'Meaning structure of Language' Chicago: 1970; p.144.

'..... a picture of semantic structure is which the typical configuration is that of a central verb accompanied by one or more nouns, each of which stands in some particular semantic relation to the verb.....!'

These two (patient and Agent) do appear to play a more fundamental role in semantic structure than any other, a role which is tied to the basic specifications of a verb as state, process, action or action-process. They are, however, by no means the only relations which a noun can bear to the verb.

Propositional Structure and *Kāraka* Theory:

Apart from the Western generative semantics' concept, Panini has introduced such propositional relations among sentences in his grammatical treatise *Aṣṭādhyāyī*. *Kāraka* theory represented as the propositional structure holds the relationship between nouns and verbs in the semantico-syntactic domain. So propositional structure can be adequate enough to be analysed in Pāṇini's *Kāraka* theory.

e.g,

(1) *sah grham gachati*
he home goes

He goes to home

(2) *rāmah bidyālayam gachati*

ram school goes.

Ram goes to school

Here, both the sentences have different syntactic and phonological manifestation, but have the same proposition, i.e., somebody is moving to somewhere.

Pāṇini has explained such type of relations in Sanskrit. But, *Kāraka* theory, which is based on the noun-verb relation, is the foundation of all

semantically based models. This relation is the essence of logical analysis of sentences and of the conceptual analysis of the universe to which language gives expression.

Verb in Syntactic configuration

In the Indian Grammatical tradition, the terms *ākhyata* and *dhatū* are used to mean the verb. In course of time, the term '*dhatū*' got restricted to root while *Ākhyata* came to signify the verbal form. Yaska in *Nirukta*⁹ defines *ākhyata* or finite verb as '*bhāva pradhānam*' i.e. 'having becoming or action as its fundamental meaning'. For him, the verb denotes a change in state a state as in stative verbs, itself being a manifestation of such a change: *purvapari bhutam bhāvam ākhyatenacaste*,¹⁰ that is, a becoming or action arising from a former to a latter state is denoted by the verb. As contrast to verb, nouns are *Siddha* 'accomplished'. They have *Sattva* or the static element as their meaning. *nāma* and *ākhyata* are represented as *Viśeṣya* and *kriyā* respectively while the Sanskrit term *dhatu* retains its form in Oriya language.

Status of the verb in a sentence?

There are extensive discussion in the Indian tradition on the issue; which is primary in between the noun and the verb The Mimamsakas¹¹ state that *bhāvanā* or activity is the primary entity in a sentence, and, even the state of being is nothing but activity. It is the activity that makes a person 'agent' or 'patient' or 'object'. The Vaiyakarana contends that, "*Bhāva* which is but the meaning of the root is the primary entity, in the sentence ---" But the Nyāya school states that, 'in respect of his theory of verbal import maintaining that the noun in the nominative is the primary in

⁹ Nir. 1.1.

¹⁰ Nir. p.79.

¹¹ R.C. Pandey, "the Problem of Meaning in Indian Philosophy; Delhi-1963, p.167-68

a sentence, that only the nominative is free in a sentence, and thus all words in a sentence are subordinated to it'. Prof. K. Kapoor¹² has put the following reasons for which the verb is the primary element in the sentence:

- (1) It is always present in the sentence.
- (2) It uniquely determines the number of co-occurring nominals.
- (3) It indirectly determines the number and nature of subsidiary concepts (such as those denoted by adjectives) which may be present in a sentence.
- (4) It directly determines the nature of adverbial modifications, temporal and spatial.

So verb can be summed up as the primary element which directly or indirectly determines the nominals, adjectives, adverbs and other elements in a sentence.

What is the function of the verb in a sentence?

So far the noun-verb relationship is concerned, basically the verb decides the number of obligatory nominals in a syntactic configuration. The configuration may be single nominal, or two nominals or three nominals or four nominals.

Like the sentence,

(a) *pilati soila*
boy slept
The boy slept.

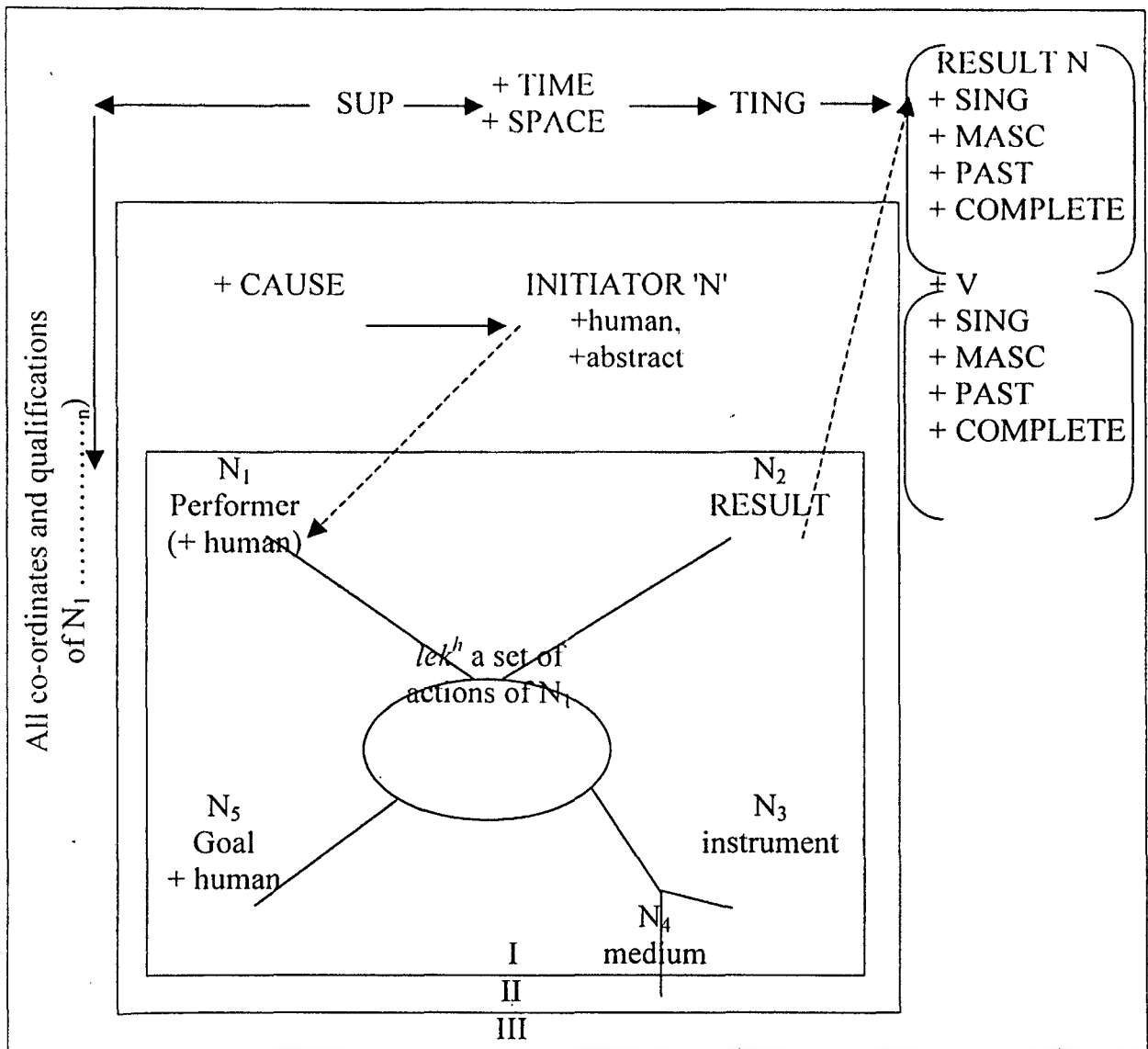
is a single nominal configuration, while the below sentence is a two nominal configuration.

(b) *pilati b^hatō k^haila.*
boy rice ate.
The boy ate rice

¹² K.Kapoor, *op.cit.* p.26.

The configurations also varies from sentence pattern to pattern. A simple sentence has one configuration, while a compound or a complex sentence has more than one.

Various factors involved to make the verb *lek^h* 'to write' *siddha* or accomplished are represented graphically in the below.¹³



The first rectangle shows the root meaning; the second rectangle, which includes the fist, shows the meaning of the stem the third rectangle,

¹³ Ibid., p. 41.

which includes the other two, gives the meaning of the verbal form. It may be noted that only when we reach the third triangle, do we have the manifest verbal activity, and only then the particularities of nouns (SUP) and the verb (TING) get specified. It shows from this figure that the event 'write' controls, determines everything in the total complex.

Verb can be concluded that as the heart of the sentence in which it controls and determines the other elements in a sentence. In other sense, it is the meaning of the verb that determines the relationship that nouns bear to it and the number of such nouns.

Propositional Structure and the verb:

Propositional structure determines the number of nominals and the nature of relationships they hold in a sentence. Such type of syntactic configuration is constructed in the semantic level i.e., by the semantic nature of the verb. The meaning of the verb has two parts:

- (1) Operation or efforts and
- (2) Effect

Operation and effect:

'Operation' stands for the activities and efforts leading to the fulfilment of the event and the nouns involved therein.¹⁴ The Indian grammarians use the term *vyāpāra* for 'operation' and *phal* for 'effect'. Bhattoji Dikshīt in his second *kārika* of *Sabda kaustubh*^h defines the principles of verb root meaning as:

- (a) the verb root expressive of both effect and operations;

¹⁴ Ibid., p.42.

(b) between the two, operation is primary because it is the operation which produces the effect;

(c) The noun that performs the operation is *kartā* and the noun that independently manifests effect is put in the *karma*.

All the verbs undergo the operation and effect process. The operation of the event *cori* 'to steal' brings the following activities:

- (i) thinking to get something.
- (ii) break the lock or door.
- (iii) enter to the room.
- (iv) search for things.
- (v) hold the things
- (vi) escape with the things etc.

But the effect of stealing is changing the ownership of the property from one person to another.

Now, the question arises between the verb roots having the sense of *parispandan* and a *parispandan*.¹⁵ The verb roots having the sense of some physical activities like *lek^h* 'to write', *rand^h* 'to cook' are called *parispandan* while verb roots denoting some non-physical movement like *dek^h* 'to see', *sun* 'to listen are *aparispandan*.

Both the verb roots have i.e., *parispandan* and *aparispandan* operation as well as effect.

Like,

- (1) *see gote cit^hi lek^hila*
he a letter wrote
He wrote a letter

¹⁵ Ibid., p.43

- (2) *ramɔ gitɔ sune*
 ram song listen
 Ram listens song.

In the above instances, the operation and effect are explicitly manifested in sentence (1) while sentence (2) implicitly produces the result. The act of writing a letter involves a series of actions and the outcome is noticeable or visible by the actor or others. On the contrary, listening something and how much the speaker is getting and what is its effect are known by the hearer only. Here, the agent acts as the actor/performer/experiencer of the effect.

The two types of meaning i.e., operation and effect of some verb roots are presented in the below:

- (1) *k^ha* 'to eat'
- | | |
|--------------------------------|-----------------|
| Operation | Effect |
| (2) feel like eating something | have something. |
| (3) decide to eat what | |
| (4) bring the eatable things. | |
| (5) prepare the food etc. | |
- (2) *jit* - 'to win'
- | | |
|----------------------------------|----------------------------|
| Operation | Effect |
| (i) decide to get something | achieve something in life. |
| (ii) go to the field | |
| (iii) practice in the field etc. | |
- (3) *daud* - 'to run'
- | | |
|---|----------------------------------|
| Operation | Effect |
| (i) lack of time for the place to reach the destination | moving from one place to another |
| (ii) don't get other means to go | |
| (iv) think of physical condition | |
- (4) *rɔk^h* 'to keep'
- | | |
|--|--------------------------------|
| Operation | Effect |
| (i) get something | Placing something in somewhere |
| (ii) decide to keep where | |
| (iii) ask the locus owner's permission | |

- | | | | |
|--|-----|------------|--------------|
| | (5) | <i>mar</i> | 'to kill' |
| (i) Operation | | | Effect |
| (i) holding down the throat. | | | loss of life |
| (ii) hitting with a sword. | | | |
| (iii) cutting the throat etc. | | | |
| (in the sense of killing with a sword) | | | |

Event and sub-event:

The verb which is a culmination of an ordered events puts questions as: what sort of relationship holds between these root sub-events and the root event? What those events are for the realization of the verb? We have already discussed in the preceding section about the operation and the effect of the verb. The operation is a series of events which ultimately leads the effect. These operational events are sub-events and the representation of the produced verbal form is the event.

The sub-events of the verb *rand^h* 'to cook' can be presented in the following manner:

- (i) arrange the utensil, rice etc.
- (ii) bring everything to the kitchen.
- (iii) keep the fire alive
- (iv) put utensil, rice etc. on the fire
- (v) check for softening of the food etc.

The event which holds these sub events is to get the cooked food.

Like,

ram b^hatɔ rand^hila
ram rice cooked
Ram cooked rice.

In the micro level of the event, each sub-event itself denotes a collection of sub-events. For instance, the sub-event of (i) arrange the utensil, rice etc. can be divided into:

- (i) go to the market and choose the utensil.
- (ii) produce rice.
- (iii) check the rice for not having small stones etc.

Moreover, it is to be noted that the order of the sub-events is fixed. Like, the cook can't check for softening of the rice, before putting the rice in the utensil.

On the basis of semantic relationship between the sub-events and the events, it has been stated that¹⁶ (i) the meanings of roots of sub-events and the events denoted by the verb root should be compatible, and (ii) the verb root should have inclusive reference, which means that the entailment relation should hold between the verb root and the sub-roots. So verbs can be divided semantically into events and sub-events in which event is the ultimate achievement of the agent.

Obligatory elements in sub-events

Event has two kinds of sub-events: some are obligatory and some are not. Each sub-event has at least one nominal in its substratum. When the sub-event is necessary, then its nominals are obligatory i.e. the nominals help for the realisation of the event.

se b^hatō rand^hila
he rice cooked
He cooked rice.

The operation of the above sentence has: (1) the status of sub-events, (2) the nominal substrate of the sub-events and the function of the nominals, (3) the status of nominals with reference to the event, and (4) their status with reference to occurrence (5) in the sentence. Such relationship is presented in the below table:

¹⁶ Ibid., p.47.

Table

1 Operation	2 Status with reference to the meaning of v-root	3 Nominals and their functions	4 Status with reference to the event rand ^h 'to cook'	5 Occurrence of the nominals in the statement oblig/opt.
<i>has.na kus.na</i> <i>jogada ka.na</i> 'arrange utensil etc.'	entailed/necessary	'He' who arranges i.e. agent	oblig	oblig
<i>rosei gh.a.kuan.a</i> 'bring to the kit ^h cen'	entailed/necessary	'He' who brings.	oblig	oblig
<i>nia ja.la.na</i> 'keep fire alive'	entailed/necessary	'He', lights the fire.	oblig	oblig
<i>nia up.a.re sa.bu</i> <i>ra.k^h.na</i> 'Keep utensil rice on the fire'	entailed/necessary	'He' who keeps everything on the fire'.	oblig	oblig
<i>b^h.a.na dek^h.na</i> 'check the rice'	entailed /necessary	'He' who checks the softening of the rice.	oblig	oblig

The above table doesn't show the obligatory nominals in a sentence. Rather it provides the conceptual framework of the verb root, That's why elements like fire, are not included in the above sentence.

Spatial and temporal relations in sub-events:

'se kot^h.ari.na ceyarre ekaga^h.anta d^h.ari basi gola

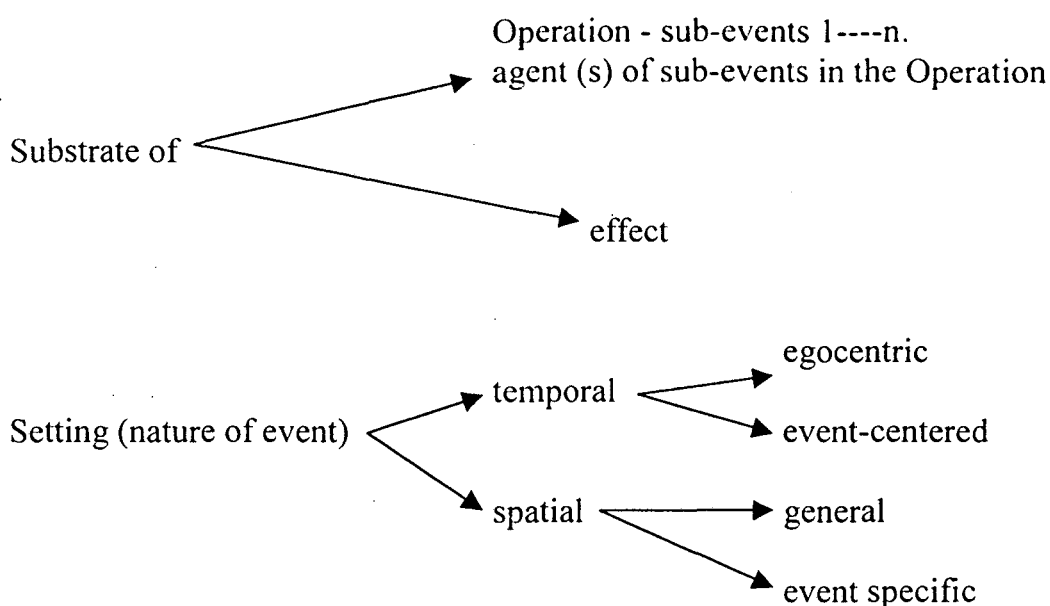
he in the room on the chair one hour sat

He kept sitting on the chair in the room for one hour.

Between the two locative phrases *kot^h.ari.na* 'in the room' or *ceyare* 'on the chair', the second one is the inner locative or the integral to the verb. Because, sitting on the chair is very much attached to the agent as contrast to the 'in the room'. So the inner locative is obligatory for the sub-event of the verb *bas* 'to sit'.

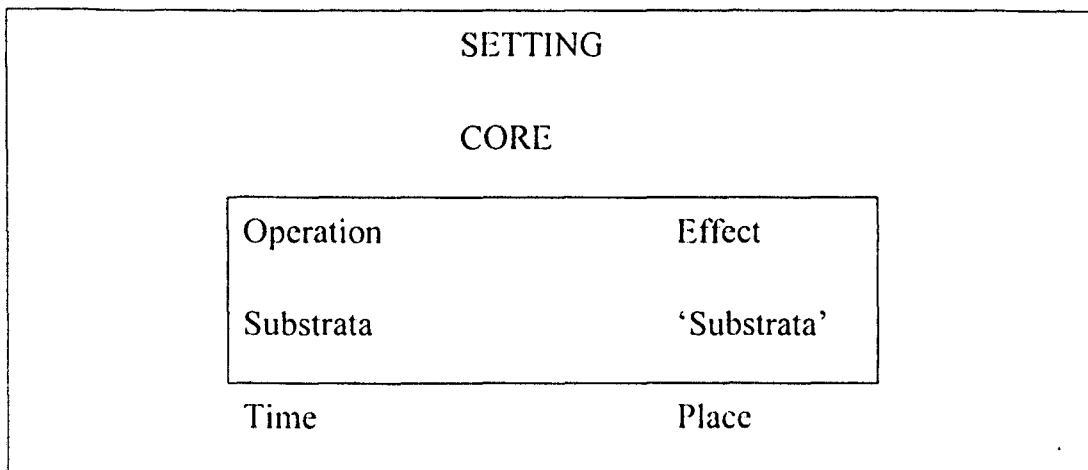
Sub-events hold the temporal relations in two ways: (i) egocentric and (ii) event centered. The first one is related to the verb type where the second expresses the momentary activities of the verb.

From the above discussion, i.e. the relations of operation and effect in the substrata and the temporal and the spatial aspects in the event can be presented in the below picture:¹⁷



As a whole, the verb falls into two parts: (I) the conceptual core, and (II) the setting – spatial and temporal. The conceptual core is analysable into two parts – (I) the operation of the event, and (II) the effect of the operation. The conceptual core is realised through ‘operation and effect’ and then the whole acquires a spatial and temporal setting. The setting of the above structure is represented in the below table.

¹⁷ Ibid., p.52.



Verb and its nominals:

A proposition is the composition of the number of nominal expressions and the relationship of the nominal expressions to the verb. The former one deals with the optimum expansion and the later one is the obligatory elements of the event. The following section will sort out the questions: what is the optimum expansion and how obligatory elements are derived from the optimum expansion in a propositional structure?

Optimum expansion:

Optimum expansion is the maximum number of elements that can appear with the verb.

Consider the verb root *rand^h* ‘to cook’ in the following possible sentence:

*he¹! ram² ta bapama³ pai ebɔu niɔ k^husi⁴ pai hɔri⁵ pai bɔhut
 atit^hyarɔ rsɔɔ sɔhitɔ sɔhitɔ rɔ⁸sɔɔ sahito gɔtɔka⁹li ta sang rosei g^hɔ¹⁰re
 bɔhut sig¹¹hr b^ha¹²tɔ rosei kɔla.*

Eh¹! Ram² cooked rice¹² for his parent's³ sake and for his own happiness⁴ for hari⁵ in a vessel⁷ with silvers⁸ with much hospitality⁶ yesterday⁹ vsery quickly in his frineds kitchen¹⁰ itself.

The above statement has one verb *rand'* 'to cook' along with eleven nouns and one adverb. The meaning function of these nouns and the adverb can be generally described as:

1 - *he* 'Eh'

Addressee

(to) whom the statement is addressed.

2 - *ramo* 'Ram'

who does the action

3 - *ta bapama* (pai)

'his parents'

(for) whom, in whose interest the action is done.

4. *nijɔ k^husi* (-pai)

'(for) his own happiness'

motive of the doer of the action.

5 *hɔri* (pai)

'(to) Hari'

'towards whom the production of the action is directed.

6 *bɔhut atit^hyarɔ* (*sɔhita*)

'(with) much hospitality'

7 *kɔdei* (*dyara*)

'(with) a vessel'

the instrument used in the action.

8 *rɔsɔrɔ* (*sɔhitɔ*)

'(in) silver'

'the medium related to the instrument of action'.

9 *gətə kali (yesterday)*

time when the action was performed.

10 *rosei ghətə (re)*

'in) the kitchen itself'

11 *bəhut sigr*

'very quickly'

manner of doing the action.

12 *b^hatə*

'rice'

'Production of the action'

The above descriptions are the answers of the below questions

1. Who is the addressee of the statement?
2. Who is the doer of the action?
3. What purpose does the doer have in mind?
4. What is the motive of the doer in undertaking the action?
5. Whom does the doer have in mind as the goal of his action?
6. What attitude does the doer bring to bear on the action?
7. With what instrument does the doer perform the action?
8. With what type of instrument does the doer operate?
9. At what time, did the action take place?
10. At what place did the action take place?
11. In what manner did the doer perform the action.
12. What is the production of the action?

The nominals express the

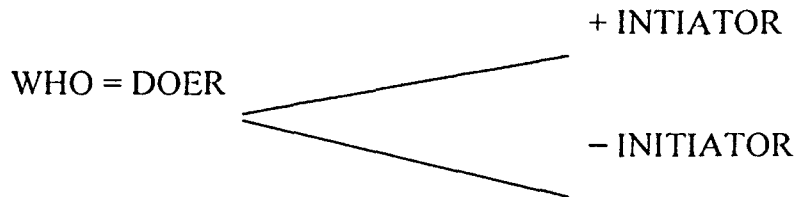
1. ADDRESSEE
2. DOER
3. PURPOSE
4. MOTIVE

5. GOAL
6. ATTITUDE
7. INSTRUMENT
8. MEDIUM
9. TIME
10. PLACE
11. MANNER
12. PRODUCT

- of the action denoted by the verb root *randʰ* 'to look'. The nominals represent not only the semantic structure of the verb but also the structure of thought. On the basis of the structure of thought, the following relations can be the MAXIMUM EXPANSION for verbs:

1. Who₁
2. Who₂
3. Why
4. What
5. about what
6. what with
7. what in
8. whom
9. with whom
10. for whom
11. to whom/what/where
12. from whom/what/where
13. how
14. where
15. when

Besides the above fifteen, there is derivational conceptual extension providing two kinds of WHO: the initiator who is also the doer and the doer who is not the initiator.



As a whole, the MAXIMUM EXPANSION of the verb can have seventeen functions.

Obligatory structure of the verb:

The above instance makes it clear that the maximum expansion of the verb is not possible to be expressed by the speaker. So the maximum expansion is reduced to the minimum obligatory structure of the verb. But, the question strikes into the analysts mind: how such reduction takes place in the verb structure? Western linguistics' the notion of verb-valence provide criteria for distinguishing obligatory and optional elements. In valence grammar, the notion 'valence' was defined syntactically, but was applied to a semantically based syntax, the categorial syntax.¹⁸

For example,

ramɔ b^hatɔ rand^huchi.

Ram rice cooking.

Ram is cooking rice

Two nominals i.e., *ram* 'Ram' and *b^hatɔ* 'rice' are syntactically represented with the verb *rand^h* 'to cook'. The verb can be categorized as 2N valued verb. Though cooking rice is impossible without the instrumental relation, but it is syntactically omissible. So, it is the verb-valence that determines the obligatory or optional elements of the verb.

¹⁸ H.Gunther, "Valence in categorial syntax", IN Werner Abraham (ed.), 1978, p.151.

Obligatoriness, optionality and specification:

Obligatoriness is of two kinds.¹⁹

- (1) Conceptual or logical: The element which is obligatory without which the event denoted by the verb cannot be realised. It may or may not be explicitly expressed. For instance, *de* 'to give' requires (i) one who gives, (ii) something given, (iii) to whom the thing is given.
- (2) Syntactic: The elimination of the element which leads to a different conceptual structure is called syntactic obligatory. In the case of the verb root *dek^h* 'to see', if the object is not mentioned, the verb becomes different.

Optionality is also of two kinds:²⁰

- (1) An element may or may not be explicitly mentioned although it is obligatory. This is non-occurrence. For instance, the instrumental phrase for *rand^h* 'to cook'.
- (2) The elements which are freely addable to all, may be conceptually obligatory but on account of its free addability do not serve to distinguish verbs. Consider the spatial dimension of the event *rand^h* 'to cook'

se rosig^h ɔre b^hatɔ rand^huc^hi.

he kitchen rice cooking

He is cooking rice in the Kitchen.

Elements that are obligatory for all verbs but need not be specified are categorized as specification of the elements.

¹⁹ K.Kapour, *op.cit.* p.59.

²⁰ *Ibid.*, p.60.

Tests for obligatory nominals:

The valence grammar has developed three major tests to identify and establish the obligatory elements: (1) the elimination test, (2) the addability test, and (3) the fixed position test.

(1) Elimination test: Such type of test is used to check two things: syntactic obligatoriness and occurrence potential. When the element can be eliminated, then it is optional. But the elimination is not allowed for the case of obligatory elements.

For instance,

(1) *se gote bag^hɔ dek^hila*
he a tiger saw
He saw a tiger.

(2) *se dek^hila*
he saw
He saw.

Though both the sentences have the same event *dek^h* 'to see' but sentence (2) provides different conceptual structure. Sentence (1) shows the directions of the event while the direction of seeing is not specified in sentence (2).

What is the relationship between 'conceptually obligatory' and 'syntactically obligatory' element? All syntactically obligatory elements are conceptually obligatory; but all conceptual obligatory elements need not be syntactically obligatory.

Occurrence potential test decides which element can be optionally omitted in the surface structure, regardless of their conceptual status. It can

also be used to test the hierarchy of relationship, the degree of closeness between the verb and its nominals. Considers the below instance:

Se bɔjarɔru g^hɔrɔku asuɔ^hi
he market home coming.

He is coming from market to home.

Here, out of the two spatial points i.e., bɔjarɔ ‘market’ and ghɔrɔ ‘home’, home is more liable to omission than the element market

(2) Addability test:

For such type of operation, the question is: ‘Is the element X addable to every verb?’ If the answer is yes (Y), the element under question is optional. But if the answer is No (N), the element under question is obligatory. Spatial and temporal dimensions are freely addable to all verbs.

(3) The fixed point test:

The fixed point test can be called the conceptual obligatory test, where the obligatory element may or may not be explicitly expressed. When the sub-event is necessary, its nominals are obligatory. And optional sub-events lead to optional nominal.

Test for obligatory nominals of the verb *rand^h* ‘to cook’

The following tests will be employed to get the obligatory nominals from the OPTIMUM EXPANSION of the verb root *rand^h* ‘to cook’:

- (1) Entailment Test for conceptual obligatoriness.
- (2) Elimination Test for omissibility.

(3) Addability Test for free/constrained addability.

Our decision procedure for the test is:

Test 1 Entailed	YES (Y)	=	+oblig.
	NO (N)	=	- oblig.
Test 2 Omissible	YES (Y)	=	- oblig.
	NO (N)	=	+ oblig.
Test 3 Addable	YES (Y)	=	- oblig.
	NO (N)	=	+ oblig.

The key to the system is:

For a specific verb:

Is the element x 'conceptual obligatory?'

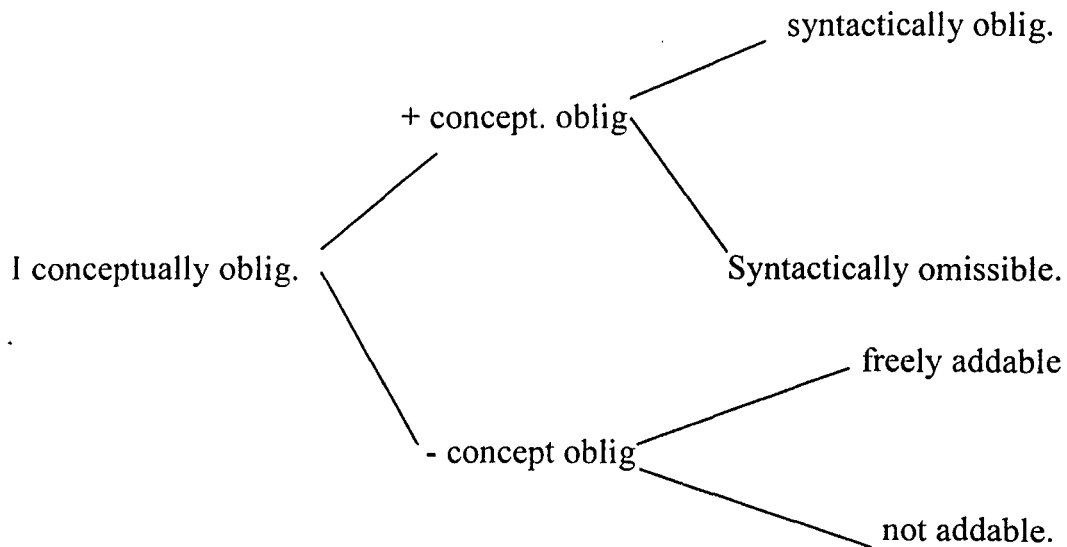
If 'Yes', 'is it syntactically obligatory?'

or is it syntactically omissible?'

If 'no', is it freely addable?'

or addable to specific sub-classes.

It can be presented as:



The key to 'conceptually obligatory' is.

Is the element X.

- (a) specific to the verb.
- (b) substratum of a sub event entailed by the verb,
- (c) such that its elimination leads to another event.

The nature of elements that co-occur with the *root rand*^h ‘to cook’ in its optimum expansion are:

1. *he* ‘Eh’
2. *ramɔ* ‘Ram’
3. *ta bapama (pai)* ‘for his parents’
4. *nijɔ k^husi (pai)* ‘(for) his own happiness’
5. *hɔri (pai)* ‘(to) Hari’
6. *bɔhut atit^hyarɔ (sɔhita)* ‘(with) much hostility’
7. *kɔdei (dyara)* ‘(with) a vessel’
8. *rɔsɔɔ (sɔhitɔ)* ‘(in) a vessel’.
9. *gɔɔkali* ‘yesterday’.
10. *rosei ghɔɔ (re)*. ‘(in) the kitchen itself’
11. *bɔhut sig^hr* ‘very quickly’
12. *b^hatɔ* ‘rice’.

In the following table, the elements are placed in rows according to their number, and each element is judged by the three criteria: obligatoriness, Omissibility and addability (columns). There are four obligatory expressions, non. 2,5,7 and 12. Only one of them (2) is non-omissible, and all the four among eight elements that are not freely addable:

Table
Nature of nominals with rand^h ‘to cook’.

	Test (1) conceptually oblig (Entailed)	Test (2) Omissible (Eliminable)	Test (3) Addable (Addabiity)
1.	N	Y	Y
2.	Y	N	N
3.	N	Y	N
4.	N	Y	N
5.	Y	Y	N
6.	N	Y	N
7.	Y	Y	N
8.	N	Y	N
9.	N	Y/N	Y
10.	N	Y	Y
11.	N	Y	Y
12.	Y	Y	N

Decision Procedure:

Test 1	N=NO =	-oblig.
	Y=YES =	+ oblig.
Test 2	Y=YES =	Omissible
	N=NO =	Not omissible.
Test 3	Y=YES =	Freely addable to all verbs.
	N=NO =	not freely addable to all verbs.

Notes on the Table:

Element 1. The element No.1, *he* ‘Eh’ is the vocative expression. It has no relation to the verb root and is freely addable. It can be omitted without affecting the conceptual structure and the meaning of the verb.

Element 2. *ramɔ* ‘Ram’ is obligatory in the sense that the event can’t be accomplished without the DOER. It is the only non-omissible element. The doer is not freely addable to all verbs.

Like, gac^hati pɔdigɔla.

tree fell down.

The tree fell down.

Element 3. The third element 'for his parents' is an expression of PURPOSE. It is not freely addable to all verbs.

Element 4. This element shows the expression like element 3.

Element 5. This element is closely associated with the resnet of the action, b^hato 'rice' by the doer. It is omissible and not freely addable.

Element 6. This sixth behaves like the third and the 4th element.

Element 7. The element *kədei dyara* 'with a vessel' expresses instrument. It is omissible. Though a high percentage of verbs take the instrument, but the instrument is not freely addable to verbs.

Element 8. The eighth element expresses the type of the instrument. It is neither obligatory nor omissible. It is not freely addable to all verbs.

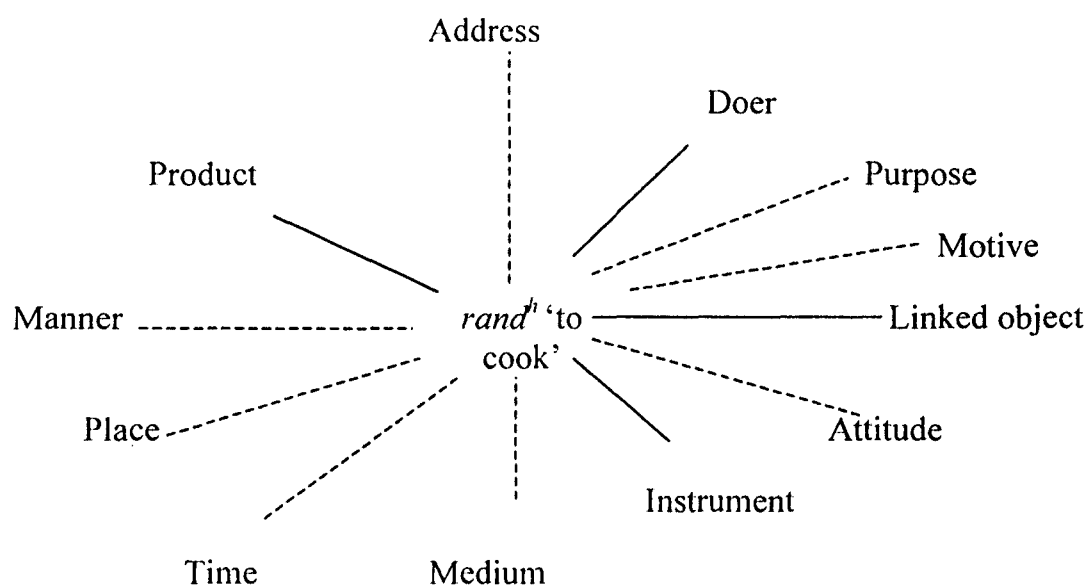
Element 9. This element expresses the Time of the event. Though Time is obligatory, but it is not specific to a verb or a class of verb. It is omissible. The TIME dimension is not freely addable; it is obligatorily addable to all verbs.

Element 10. The tenth element *rosei ghərɔ* (9re) 'in the kitchen it self' is an expression of SPACE or place. It is not obligatory but freely addable.

Element 11. This element 'very quickly' expresses MANNER. Like 9,10, it is a coordinate of events.

Element 12. The element *b'atɔ* 'rice' expresses the PRODUCT of the event as its effect. It is the substratum of the effect and is therefore, obligatory. It is omissible and not freely addable to verbs.

The below graphic structure provides the obligatory and optional elements of the verb *rand'* 'to cook'. Whose optional and obligatory elements are linked with broken and straight lines:



The below table presents the number of obligatory elements for the 120 verbs of our list.

Table

No. Of obligatory Nominals. (Verbs from our list are identified by their serial numbers in the list and (()) shows that verb has two meaning and therefore, two different analysis)

IN-Valued	2N-valued	3N-Valued	4N-Valued.
3,4,5,6, (17), 18	1,2,8,10,14,	9,11,12,13,	(17),19
26,31,33,46,57,	15,16,20,21,22,	19,28,30,(39).	49,54,
60,(86)	23,24,25,27,32,	42,48,51,52,	55,61,
	34,35,36,37,38,	53,58,59,63,	62,65-67,
	39,40,41,43,44,	68,(72),(73),	70,71,
	45,47,50,56,64,	74,77,80,81	75,83,
	69,(72),(73),76	82,84,85,	(92),95,
	78,79,(86),88,	87,89,90	98,99,
	91,97,120.	(92),93,94,	100-102,
		96,103-113,	114.
		115-119	
14	40	46	20

Chapter III
RELATIONS OF PROPOSITIONAL
STRUCTURE

Propositions are defined by both the number of nominal expressions that co-occur with the verb and the nature of the relationship they bear to the verb. We have noted in the preceding chapter that only obligatory nominals along with the verb define the propositions. On the basis of obligatory nominals, there are four classes of verbs, and accordingly four propositional types: IN valued, 2N valued, 3N valued and 4N valued. From our sample of 120 verbs, thirteen (13) are IN valued, forty one (41) are 2N valued, forty six are (46) 3N valued and twenty (20) are 4N valued. But, if all the verbs have fixed nominals, then what is the need to define the propositional structure?

Need to define the obligatory nominal:

Consider the following examples:

1. *ramo soila.*
 ram slept
 Ram slept
2. *gaditi rohila.*
 Vehicle stopped
 The vehicle stopped
3. *ramo pædigola.*
 ram felldown
 Ram felldown.

Though all the above sentences have IN valued verb, but in the first two sentences i.e. sentence (1) and (2), *ramo* ‘Ram’ and *gadi* ‘the vehicle’ are semantically related to their respective verbs in different ways. In (1), ‘Ram’ is the performer or doer of the event sleeping while ‘the vehicle’ is not the doer in sentence. (2). In other way, ‘Ram’ and ‘the vehicle’ are

manifested as animate and inanimate respectively. So the semantic features of both the sentences can be represented as:

ramo-‘animate; doer’

gadi-‘inanimate; involved:

The nominal ‘Ram’ appears in both sentence (1) and (3), but they have different functional relationships. Both the sentences can be interrogated as: what Ram does and what happens to Ram? ‘Ram’ in sentence (1) consciously decides the action of sleeping while falling down is an unconscious action of ‘Ram’ in sentence (3) On the other side, ‘Ram’ can be treated as the initiator and the patient in both (1) and (3) respectively. So the relationships ‘Ram’ bears with the verb are:

1.a *ramo*-‘animate; doer, initiator’

3.a. *ramo*-‘animate; doer, patient’.

The obligatory nominals are needed to be defined because the propositions having the same number of elements may differ from each other semantically.

***Kāraka* theory in relation to Propositional Structure of Oriya verb:**

The *Kāraka* theory which has been defined in length and depth in chapter (1) provides the relationships of the nominals with the verb. Even Berend Faddegon has noted¹: “By *Kārakas*, Pāṇini understands the logical or ideational relation between a noun and a verb, or more precisely between an object and an action....”. *Kāraka* theory specifies that the nouns enter into specific relationship with each other to accomplish or realise a

¹ Barend Faddegon, Studies on Panin’s grammar. Verhandelingen der koninklijke Akademie van Wetenschappen Amsterdam, Nieuwe Reeks (VKAWA), 1936; p.18.

given event. So Pāṇinian *Kāraṅka* theory can be apt for the analysis of the relations of the nominals with the verb in Oriya language.

What is the nature of relations?

Though the event plays the central role for deciding the nominals, but it doesn't have its own existence. It is realised by the nominals only. Like, the event *bṛṣ* 'to sit' doesn't reflect any entity unless it is attached with the nominals. *bṛṣ* 'to sit' can be realised in the representation like,

ramṇ bṛṣila

ram sat

Ram sat

So an event is a particular configuration of objects at a given moment in time.

The nature of the things is that they are co indexed with the event to be manifested in the external reality.

Consider the event *g^hod* 'to cover'.

ramṇ muhku kṛpṇdare g^hodaila

ram face cloth covered

Ram covered face with cloth.

g^hod 'to cover' is a 3N valued verb: Three nominals that co-occur with it are:

N1 ——— *ramṇ* 'Ram'

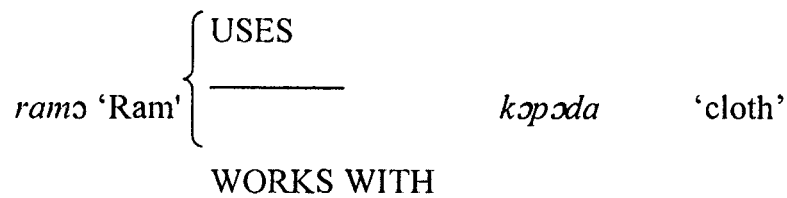
N2 ——— *kṛpṇda* 'cloth'

N3 ——— *muh* 'face'.

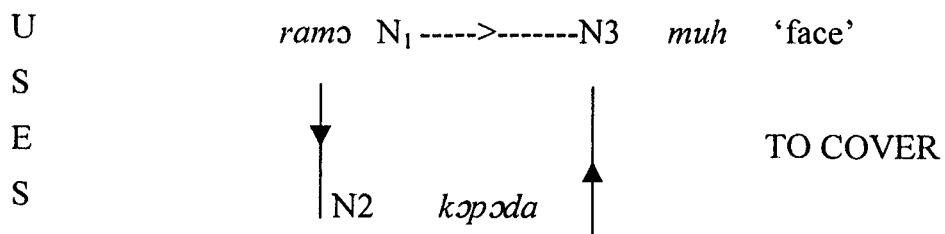
Without the above entities, the event covering doesn't have existence. So, to realise the event, it needs a particular interrelation of the three nominals.

$$\left\{ \begin{array}{l} ram\textcircled{3} \\ muh \\ k\textcircled{3}p\textcircled{3}da \end{array} \right\} = g^h od \text{ 'to cover' }.$$

Apart from a fixed number of nominals, to accomplish an event, the nominals must be linked or connected mutually in some specified way. That means, when 'Ram' wants to cover his face with the cloth, he first brings the cloth and keeps it on his face. The link between the three nominals can be presented like

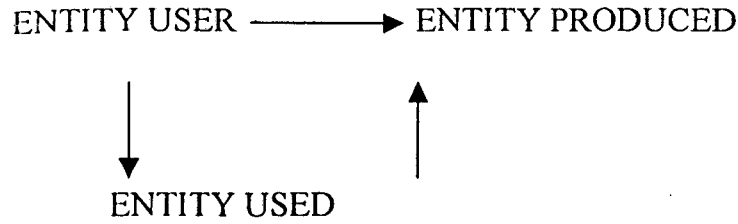


and the goal of his effort 'to cover the face', which comes into being as result of the effort.



This can be presented in the abstract level as:

N1



A nominal can be manifested in different ways for the realisation of the event. Even, one nominal can realise a multiplicity of relations and the same relation may be realised by a number of nominals.

Consider the examples below.

1. *b^hatɔ* *rɔnd^ha* *heuc^hi*.
 rice cook

Rice cooks.

2. *se* *b^hatɔ ku* *cak^hila*.
 he rice tested

He tasted the rice.

3. *se* *b^hatɔd yara* *bɔncuc^hi*.
 he rice by living

He is living by rice.

4. *se* *b^hatɔ tharu* *asuc^hi*.
 he rice from coming

He is coming from the rice

5. *se* *b^hatɔre* *pani d^halila*.
 he rice water rice

He poured water in rice.

The nominal *b^hatā* 'rice' can be agent, object, instrumental, ablative or locative.

The event 'kill somebody with something' can be represented by several nominals for the instrumental relations.

As,

<i>se</i>	<i>taku</i>	<i>marila</i>	{	<i>hatāre</i>
he	him	killed		<i>cakure</i>
				<i>ausad^hāre</i> etc.

He killed him with	{	a hand
		a knife
		medicine etc.

All the nominals have powers or *Sakti* to enter into specific relationship with each other to accomplish the event. The representation of a particular thing to a specific relationship with each other is decided by the speaker's intention. As Bhartṛhari says², "Speaking of something as a means is a matter of the speaker's intention". The term used is *vivakshā*, which is defined as "the intention or desire generally of the speaker with regard to the sense to be conveyed by his words"³. Prof. K. Kapoor states⁴; "the nominals have the 'potential' to figure in various relations, and the speaker has the freedom to 'invest' a nominal with a particular relation, the number and nature of such relations is determined uniquely by each event and is maximally determined by all event".

² VP. III.7.

³ V.K.Abhyankaer, A Dictionary of Sanskrit grammar Baroda, Oriental Institute, 1977, p.361.

⁴ K.Kapoor, *op.cit.* p.85.

The existence of relations raises the question; how many relations are there?

Types of relations:

As we have already discussed in the preceding chapter (chapter I), there are six types of powers or relations, which help for the realisation of the event. The relations are shown in the below:

1. *Se soila.*
 he slept *KARTĀ*
 He slept
2. *se b^hatō rand^hila.*
 he rice cooked *KARMA*
 He cooked rice
3. *se c^hurire ambō katila.*
 he knife mango cut *KARAṆA*
 He cut the mango with a knife.
4. *se g^haru asila.*
 he home came *APĀDĀNA*
 He came from home.
5. *se ramōku bōhi dela*
 he ram book gave *SAMPRADĀNA*
 He gave book to Ram.
6. *se gramōre rōhe.*
 he village live *ADHIKARAṆA*
 He lives in the village.

On the basis of the above relations; two points evolve: (1) different entities may represent the same relations' and (2) every entity can represent these six relations.

Consider the following examples:

(i) *se ambɔ c^hurire katila.*

he mango knife cut

He cut the mango with a knife.

(ii) *se luha niare tɔtaila.*

he iron fire melted

He melted the iron with the fire.

Here, though the instrumental devices differ, but the relations of the propositional structure remains the same.

The entity *ramɔ* 'Ram' has the potential to realise the six relations in the following instances:

(i) *ramɔ soila.*

ram slept

Ram slept

KARTĀ

(2) *mu ramɔku b^hɔɔpae.*

I ram like

I like Ram

KARMA

(3) *mu ramɔ dyara bɔhiti paili.*

I ram book got

I got the book through Ram

KARANA

(4) *mu ramɔku gote bɔhi deli.*

I ram one book gave

I gave a book to Ram.

(5) *mu ramɔtharu asuc^h.*

I ram coming

I am coming from Ram

APĀDĀNA

(6) *mu ramɔ^hare rɔhuc^h.*

I ram staying

I am staying with Ram.

ADHIKARANA

***Kartā* relation:**

Whatever the speaker chooses as the independent, principal and absolute source of action is *Kartā* or agent.⁵ Sanskrit grammarians describe *Kartā* as a semantico-syntactic category. There are three kinds of agents identified in the Indian Grammatical Tradition.

- a. Pure agent,
- b. Promptor agent,
- c. Object agent,

Consider the following examples.

(i) *se pharila*

he swam

He swam.

(ii) *ramo taku paraila.*

ram him swam.

Ram caused him to swim.

(iii) *b^hato rnd'a heuc^hi.*

rice cook

Rice is being cooked.

In sentence (i), the *kartā se* 'he' realises the event *parila* 'swam' independently. So, the *Kartā* is denoted as the pure agent. The prompter agent i.e., *ramo* 'Ram in sentence (ii), called as *hetu*, is the nominal that prompts another nominal to act as the agent. Such agency is represented in two ways:

- (a) constructions with verbs which have a corresponding intransitive and
- (b) causative constructions.

⁵ P.1.4.54.

Like,

(iv) *se taku cɔlaila*
he him walked
He made him walk.

(v) *se ta dyara tiari ekɔ kʰelɔna paila.*
he him by made one toy got.
He got a toy made by him'

The third kind of agent is represented in sentence (iii) where *bʰat* 'rice' is really the object of the verb *randʰ* 'to cook'. Here, the subject of the event cooking is not mentioned. So, the object becomes the grammatical subject. Such type of grammatical subject is called *Karma Kartā* 'object-agent'.

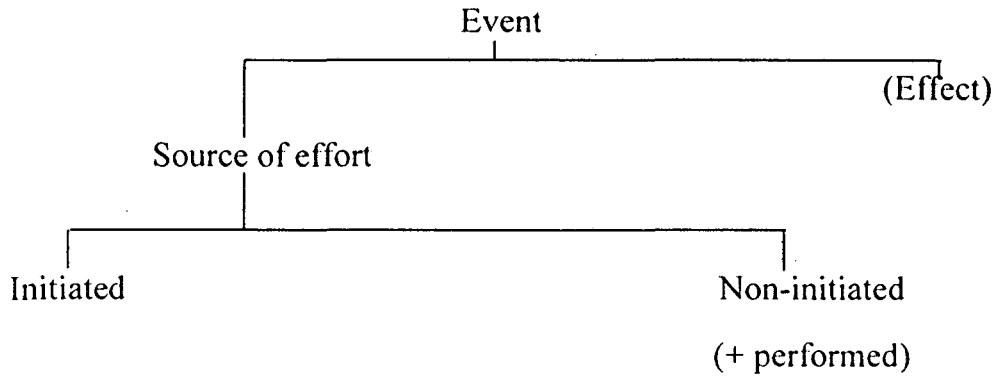
We have already discussed in the preceding chapter, the semantic analysis of the verb root meaning: operation and effect. In the operational stage, the source of the effort may be initiated or non-initiated

For instance,

(i) *ramɔ hɔsila*
ram laughed
Ram laughed.

(ii) *bɔhiti hɔji gɔla.*
book got lost
The book got lost.

Here, *ramɔ* 'Ram' and *bɔhi* 'book' act as the agent or performer of the event. But 'Ram' initiated the action of laughing and the book gets itself lost spontaneously, is termed as non-initiated. Such relations can be represented in the diagram below:



Besides the above classification there are five kinds of SOURCE for event i.e., five kinds of *Kartā* relations.⁶

For instance,

(i) *se calibaku arɔmbʰɔ kɔla.*

he walk started.

He started to walk.

(ii) *ramɔ kɔbatɔ kʰolila.*

ram door opened

Ram opened the door.

(iii) *se ramɔ dyara kɔhatɔ kʰolalia.*

he ram by door opened

He got Ram to open the door.

(iv) *se pɔdigɔla*

he fell down

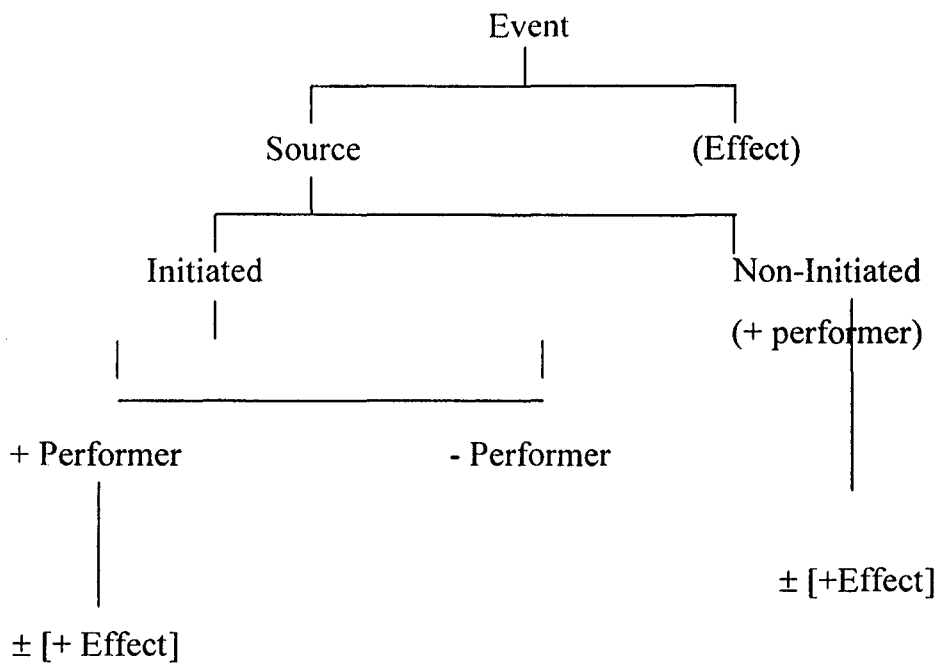
He fell down

Taking consideration of the above sentences, the sources of the *Kartā* can be defined in terms of Initiator, Performer, Affected as:

⁶ K.Kapoor. *op.cit.* P. 98

1. (i) *se* 'he' - $\left(\begin{array}{c} \text{Initiator} \\ \text{Performer} \end{array} \right)$
Affected
2. (ii) *ramo* 'Ram' - $\left(\begin{array}{c} \text{Initiator} \\ \text{Performer} \end{array} \right)$
3. (iii) *se* 'he' - $\left(\text{Initiator} \right)$
4. (iii) *ramo* 'Ram' - $\left(\text{Performer} \right)$
5. (iv) *se* 'he' - $\left(\begin{array}{c} \text{Performer} \\ \text{Affected} \end{array} \right)$

The five kinds of *Kartā* relations can be presented in the bellow diagram:



We now present a tabulation of our verbs according to the kind of source:

Table

INITIATED			NON-INITIATED	
Initiator Performer Affected	Initiator Performer	Performer Affected	Affected	Object
12,16,33,47,	28,29,30,	15,17,18,26,	13,14,20,21,	1,2,3,4,5,
54,655,	49,50,51,52,	3436,39	22,23,24,25,	6,7,8,9,
56,57,58,60,	53,53,67,68,		27,32,43,44,	1011, (102)
61,62,63,64,	70,71,72,73,		45,76,78,79,	
65,66,84,	74,75,77,80,		88,91,97,	
86,89	81,82,83,85,			
	87,90,92,93,			
	94,95,96,98,			
	99,100,101,102,			
	103,104,105,106,			
	108,109,110,111,112			
	113,114,115,116,117,119,			

***Karma* relation:**

What which it is intended should be must affected by the act of the agent is called the *karma* or the object.⁷ This entity may be affected in any one of the different ways. Like the *kartā* relation, the *karma* relation is also a semantico syntactic category. The Indian Grammatical Tradition recognises seven kinds of objects. But all the seven categories cannot be

⁷ p.1.4.49

described semantically. As Bhartṛhari says about the twelve verb roots that these entities "become objects because no other name has been taught for them".⁸ The other instance says that which was earlier some other *Kāra* relation is also treated as object when it appears in the presence of some preposition.⁹

Besides the above two, the other five kinds of objects can be defined semantically. And here, three classes of objects are identified. The first one i.e. that which is most desired to be attained is divided into three subject types given in below:

(a) Product:

- 1- *ramo cit^hite lek^hila.*
 Ram letter wrote
 Ram wrote a letter.

(b). Modification

2. *ramo cit^hiku unnoti kola*
 ram letter improved
 Ram improved the letter.

(c) Destination:

3. *ramo g^haraku gola.*
 ram home went
 Ram went to home

The second one states which is attained but not the desired object.¹⁰

4. *g^haraku jaut^hiba samayre se g^hasaku c^huila*
 home going time the grass touched.

⁸ VP. III. 7.72

⁹ VP.III.7.46

¹⁰ VP.III.7.46

While, going he happened to touch the grass

The third one says that what the agent dislikes also gets *karma kāraka*.¹¹

5. *se bisoku cak'ila.*

He poison tasted

He tasted the poison.

In the above sentences, *cih'* 'letter', *cih'* 'letter', *g^hɔɔ* 'home', *g^hasɔ* 'grass' and *bisɔ* 'poison' are semantically assigned the karma karaka in sent (1), (2), (3), (4) and (5) respectively.

Apart from the semantic classification, the notion of effect held in the event raises two questions: (1) kinds of effect, and (2) direction of effect.

1. Kinds of effect:

Consider the following examples

(1) *se gote g^hɔɔ bɔnaila.*

He a house made

He made a house

(2) *se g^hɔɔku dek'ila.*

He house saw

He saw the house

(3) *se g^hɔɔku b^hangila*

he house destroyed

He destroyed the house

¹¹ VP.III.7.46

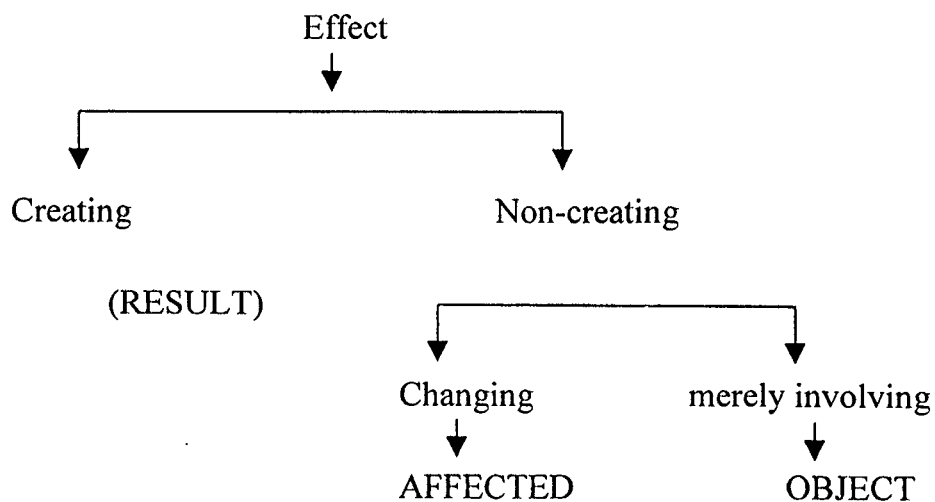
Here, *ghṛāḥ* 'house' is the *karma kāraṇa*. But, the manifestation of 'the house' varies from one sentence to other. Sentence. (1) represents an entity that comes into being as a result of the operation of the activity, while sentence (2) represents an already existing entity i.e., the hearer presupposes the existence of *g^hṛāḥ* 'the house'.

The effect of sentence (1), (2) and (3) shows very much different from each other where the house undergoes a change in sentence. (3)

Prof. K. Kapoor, on the basis of the effect of the *karma* notes:

"An already existing entity that undergoes the operation of the event, may as a result be changed or remain unchanged. We will call the entity that changes as AFFECTED, and shall reserve the familiar term OBJECT for the entity that remains unchanged. And the entity that comes into being as an effect of the event may be called RESULT".¹²

Such type of relations can be represented as:



Direction of the effect:

¹² K.Kapoor. *op.cit.* p.107

The effect is distributed over both the initiator /performer and the object.

For instance;

1 *se b^hatɔ rand^hila.*

he rice cooked

he cooked rice.

2. *b^hatɔ rɔnd^hahela.*

rice cooked

The Rice was cooked

Sentence (1) has initiator /performer while there is no initiator/performer but only affected in sentence (2). Semantically, *b^hatɔ* 'rice' is assigned as the *karma kāraka*.

Apart from the kinds and the directions of the effect, the effect has also some nature. The nature of the effect can be palpable, tangible or not. Such type of events are given in the table below.

List of verbs showing the three dimensions of effect

Table

Verb	<u>Kinds of effect</u> R.A.O	<u>Direction of</u> I/ P←V→A	<u>Nature of</u> P/non-P
1 <i>bɔd</i> (24) 'grow'	R	<V	P
2. <i>bɔh</i> (26) 'flow'	O	<V->	P
3 <i>jin</i> (30) 'win'	O	<V	P
4 <i>bɔnd</i> (33) 'stop'	A	<V	P
5 <i>buj^h</i> (51) 'understand'	O	<-V->	non-P
6 <i>dɔr</i> (34) 'be scared'	A	<V	P
7 <i>cal</i> (65) 'walk'	A	<-V	P
8 <i>de</i> (71) 'give'	O	V>	P

9 <i>dek^h</i> (73) 'see'	O	<-V ->	non-P
10 <i>k^ha</i> (74) 'eat'	A	<-V ->	P
11 <i>kəh</i> (75) 'say'	O	V->	P
12 <i>pəd</i> (84) 'read'	O	<-V ->	non-P
13 <i>kat</i> (88) 'cut'	A	<-V	P
14 <i>bəna</i> (93) 'make'	R	V->	P
15 <i>lek^h</i> (92) 'write'	R	V->	P
16 <i>rand^h</i> (94) 'cook'	(i) A/R	V->	P
17 <i>tərd</i> (97) 'melt'	(i) Λ	<-V	non-P
	(ii)	→	
18 <i>pəcar</i> (101) 'ask'	O	V->	P
19 <i>j^hək</i> () 'tire'	A	<-V	P
20 <i>p^hut</i> (18) 'erupt'	A	<-V	P
21 <i>əub^hh kər</i> (111) 'feel'	A	<-V (->)	non-P

***Karaṇa* relations:**

Pāṇini defines the *Karaṇa*¹³ as "that which is especially auxiliary in the accomplishment of the action". Bhartrhari says,¹⁴ when, after the activity of something the action is meant to be conveyed as accomplished, then that thing is said to be the instrument". From the above notion, the relation of *karaṇa* with the event can inquire into (i) *karaṇa* as obligatory or adjacent; (ii) *karaṇa* as general; (iii) *karaṇa* as specific; (iv) *karaṇa* as the closest accessory of the event; and (v) linkage of instrument and initiator/performer.

(i) *karaṇa* as obligatory or adjacent:

¹³ P.1.4.42

¹⁴ VP.III.7.96

All relations are accessories in the accomplishment of the event but the instrumental relation is especially so be it is temporarily closest to the event. Like

(i) *ramə gote cit^{hi} penre lek^hila.*

Ram one letter pen wrote

Ram wrote a letter by the pen.

(ii) *ramə b^hatə rand^hila.*

Ram rice cooked

Ram cooked rice.

Both, the above sentence, the event *lek^h* 'to write' and *rand^h* 'to cook' is accomplished by the instrument. But sentence. (1) explicitly shows 'the pen' while sentence (2) implicitly shows *nia* 'the fire' as instrument. In other sense, the instrumental relation is temporarily adjacent to the event *lek^h* 'to write'. Such type of relations of the entities with the event depend on the speaker's intention.

(ii) *Karaṇa* as general:

All the accessories of the event can be specified as the instrument

e.g.

ram *caluc^hi.*

ram walks.

Ram walks

Though the above sentence doesn't specify the instrument, but Ram himself realises as an instrument walking. All the accessories of the accomplished events are the instrument whether they are explicitly or implicitly mentioned in the sentence.

But some natural phenomena like *ut^h* (16) 'rise', *phut* (18) 'erupt' and *bɔh* (26) 'flow' don't allow the instrumental relations.

(iii) *Karaṇa* as specific:

The expression of the instrument depends on the speaker's intention. When the speaker wants to emphasize the instrument in the propositional structure, then it is manifested in the entity-event relations.

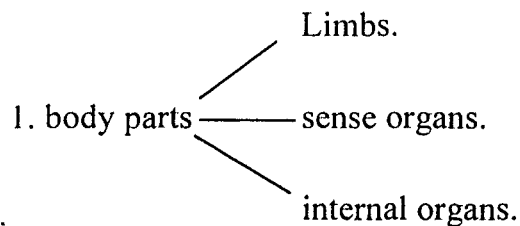
Like, the relation of *ita* 'brick' in

ramɔ itare g^hɔɔ tiarikɔla.

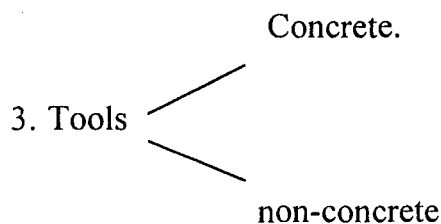
Ram brick house made.

Ram made the house with bricks.

Apart from the general and specific relations, broadly the nominals that realise this relation fall into four classes in instrumental types with the first and the third further divided into sub-groups.



2. natural entities.



4. materials

(iv) *Karaṇa* as the closest accessory of the event:

Among the accessories, *Karana* is especially auxiliary because the action is accomplished immediately after the activity of the instrument. The initiator decides the doing of the event but ultimately, the instrument realises the event. In this way, it separates the initiator from the event. There is an interval between the initiator's decision to do something and the actual accomplishment of that something and this interval is filled with, at least, the employment of the instrument. Despite the most effective means, the instrument doesn't become an accessory until it is employed by the initiator.

Consider the case of *c^huri* 'the knife' in the following instance.

ramɔ c^hrɪrɛ aṃbɔ katɪla

ram knife mango cut

Ram cut the mango by the knife.

(v) linkage of instrument and initiator/performer:

Instrumentality is a relation that holds uniquely between the initiator nominal and another nominal. Initiator can alone control the instrument. Instrument relation thus separates the initiator relation from all the other relations, including the object relation with which it otherwise shares the property of being superordinate. One aspect of the close linkage between the instrument and the initiator is that instruments can be perceived and expressed as initiators in their own right.

Consider the following example.

(1) *ram gɔrɔm bɔrɔp^h tɔrɔtɪla*

Ram heat ice melted

Ram melted ice by heat.

(2) *gɔɔm bɔɔpʰ tɔɔlala*

heat ice melted

Heat melted the ice

Though, in both of the above sentences, *gɔɔm* 'heat' acts as instrumental, but the instrumentality of heat can be expressed as initiator/performer in sentence (2).

Sometimes, out of two instruments, one acts as initiator and other as instrument.

Like,

nia nijɔ gɔɔmɔre luhakutɔɔlaila

N₁ N₂ N₃

fire with its heat iron melted.

The fire melted the iron with its heat.

N₁ and N₂ hold the instrumental relations, with the event melting. But, 'fire' is the performer and its 'heat' is the instrument.

Verbs from our list that allow the instrumental relation (i.e. verbs bearing the following serial numbers in our list allow the instrument relations):

5,7,13,14,15,19,20,21,23,24,25,28,29,30,32,37,39,42,43,44,45,49,50,
,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,
75,76,77,79,81,82,83,84,87,88,90,91,92,93,94,95,96,97,98,99,100,101,102,
103,104,105,106,107,108,109,110,111,112,113,114,115,119,

Sampradāna relations:

"That factor in the act of giving which sought to be reached by the thing given is called *sampradāna*"¹⁵ such type of relation can be manifested in the following instance.

ramo taku gote bohi dela

N₁ N₂ N₃

ram him a book gave

Ram gave him a book.

Here, the initiator nominal (N1) makes effort to reach N2 with N3. In this case, N2 may be described as the receiver or the recipient. When between the initiator and the object and another nominal, a link of 'direction towards' is established, then the nominal at the end of the direction is in *Sampradāna* relation.

Initiator/object -----→ x *sampradāna*

Sampradāna relation has been distinguished in the following 4 sub-types.

- (i) Transfer
 - (ii) Direction (source)
 - (iii) Direction (effect)
 - (iv) Limit
- (i) Transfer:**

¹⁵ VP.III.7.129

The direction from the initiator /object to the third entity can be actual and non-actual. Concrete entity is represented as actual while non-actual represents the abstract entity.

Like,

(1) *ramɔ taku gote bɔhi dela.*

ram him a book gave

Ram gave him a book.

(2) *ramɔ taku gitɔ sik^haila*

ram him song taught

Ram taught him singing.

The transfer of the objects *bɔhi* 'book' and *gitɔ* 'song' represent the concrete and abstract entity respectively.

(ii) Direction (source):

Consider the following example

(i) *sita ramɔku cinhila.*

sita ram recognised

Sita recognised Ram

(ii) *ramɔ sitaku ta gitɔpai k^husihela.*

ram sita his song become happy

Ram pleased Sita for her song.

The question 'towards/for, 'whom/what' is the 'effort of the initiator intended can be put in the above sentences. The answer will be the

initiator's indirect link with the entity other than the verb. So, 'Ram' and 'Sita' hold the *sampradāna* relations with the initiator/object and the event.

(iii) Direction (effect):

As contrast to the N1/N2 --→ N3 direction, the following sentence will have in reverse direction.

Like,

taku *g^harɔ miligɔla.*

N1 N2

him house found

(To him) he found the house

The N1 *taku* 'him' is not an initiator/performer but the recipient. So the direction of the event is

N1←----- N2

(iii) Limit:

There are certain events involving movement, the idea of movement needs to be expressed.

For instance,

se set^haru et^haku asila.

N1 N2 N3

He there here came

He came from there to here.

The event *as* 'to come' has two limits N2 and N3 expressed by *apādāna* and *sampradāna* respectively.

Verbs from our list that allow the sampradana relation (i.e. verbs bearing the following serial numbers in our list allow the *sampradāna* relations):

17,29,35,40,41,42,48,54,55,61,62,64,65,66,68, 70,71,75, 77, 82, 85, 92, 100, 103, 106, 114, 117

Total number of verbs that allow this relation are twenty seven.

***Apādāna* relations:**

Pāṇini defines,¹⁶ a noun whose relation to an action is that of a fixed point from which departure takes place is called *apādāna* or ablation

Consider the examples below.

(1) *se bōhiru pōd^hauc^hi.*

he book teaching

He is teaching from the book.

(2) *nōdi ti pahadōru asuōchi.*

river mountain coming down

The river is coming down from the mountain.

The fixed points, in the above sentences are *bōhi* 'a book' and *pahadō* 'the mountain.

The fixed point doesn't mean literally 'fixed' but fixed in the sense of being a reference point for the movement or separation. Like

se g^hodaru pōdigōla.

He horse fell down

¹⁶ P.1.4.24.

He fell down from the horse

The horse is not the fixed point rather the reference point from where he fell down. This fixed point is, therefore, a starting point; unless there is a starting point there cannot be departure or movement.

Types of starting point:

Starting point is divided into three types:

(a) That in relation to which actual movement is expressed.

Like,

se garu asuɕ^hi.

He villagecoming

He is coming from the village.

Here, the initiator /performer actually moves away/departs from the village.

(b) That in relation to which there is separation or distancing.

e.g.

se ta^haru galik^haila.

he him got scolding

He got scolding from him.

Unlike the former one, the starting point *ta* 'him', here, varies conceptually. The scolding may be defined as the momentary.

C. That relation to which there is, first, mental contact which is followed by separation.

Such type of relation can be distinguished into three sub-types which follows the discussions.

Consider the sentence below.

se b^hutəku dərila.

N1 N2 N3

he ghost scared

He got scared o the ghosts.

Here, the association of N1 *se* ‘he’ and N2 *b^hut* ‘ghost’ produces the state *dər* ‘fear’;. The notion ‘fear’ arises from N2 and permeates N1 and N1 as a consequence mentally withdraws from N2. So, the departure point of the abstract entity *b^hut* ‘ghost’ holds gets the *apādāna* relation and such type of separation is mental. Other verbs belonging to this group are: *bəystə* ‘worry’, *har* (19) ‘be defeated’, *pa* (49) ‘get’.

Though the second type of relation expresses a mental withdrawal, but this separation is actual. Like,

se ta^haru bəncigəla.

N1 N2

he him escaped

He escaped from him.

In the above instance, the source of the separating point is not in N2 *ta* ‘him’ but in N1 *se* ‘he’. N1 actually moves away form N2. As contrast to the former one, this relation has actual movement. Other verbs belonging to this group are: *bənd* (33) ‘stop’, *pəcar* (67) ‘ask’, *mag* (101) ‘seek’.

The third type separation is on axis other than that of spatial dimension. The two entities are brought together and are separated from each other in terms of qualities, attributes, properties etc.

e.g.

se tat^haru b^halo ste.

he him good is

He is better than him.

The two entities' i.e., *se* 'he' and *ta* 'him' properties are mentally brought together. Then, one of them is made the reference point. From the reference point, the other entity is separated through the qualities, attributes, properties etc.

Where the *sampradāna* represents the limit at one point, *apādāna* also has a limit at other point there is a set of verbs, like, *a* (54) 'come' and *ja* (55) 'go' involve the notion of limit.

e.g.

se setharu et^haku asuc^hi.

he there here coming

He is coming from there to here.

The verbs of our list that take the *apādāna* relation, i.e., 28 verbs are being listed here by citing their serial numbers:

17,19,25,27,29,30,31,33,34,36,49,54,55,58,61,62,64,65,66,67,70,83,
84,89,96,100,101,102.

***Adhikaraṇa* relation:**

The locus of the action is *adhikaraṇa*¹⁷. In the *adhikaraṇa* relation, a linkage is established between the locative nominal and the initiator or object. Such linkage can be divided as general and specific. All material object are supported by space and, to that extent, even in a mental event like *b^hab* (52) 'think', the initiator is supported by space. But a 'locative event' intrinsically requires a locative

like,

(i) *se koṭ^h ṛire eha cinta kṛla.*

he room this thought

He thought of this in the room.

(ii) *se ceyarre bāsila.*

he chair sat.

He sat down on the chair.

In activities like *ut^h* (16) 'rise/climb', an *rṛh* (47) 'stay', *bās* (56) 'sit', *bud* (38) 'drown' etc take either the

Initiator
Performer
Affected

entity that comes in contact with the locative nominal.

The contact between the nominals realising the initiator object relations on the one hand and the nominal realising the locative relation on the other can be of two kinds: (a) conjunction, and (b) inherence.

For instance,

(a) *se māsinare bāsic^hi*

he mat sit

¹⁷ P.1.4.45

He is sitting on the mat.

(b) *ak^hure bɔhut mit^ha ɔ^hi*

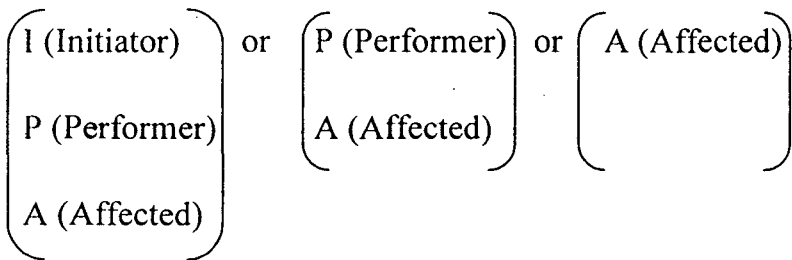
sugar much sugar is

(There is) much juice (is) in (the) sugar cane.

Where the relation is one of inherence, as in (b), the contact is at all prints; where there is conjunction, the contact is in parts as in (a) above.

We present below a representative list of verbs showing the two aspects of locative relation:¹⁸

(I) the entity whose contact is sought to be established:



(II) the nature of contact, INH (erence) or CONJ (unction):

Table

Locative Relation

		I			II	
		Entity located			Nature of Location	
		$\left(\begin{array}{l} \text{I} \\ \text{P} \\ \text{A} \end{array} \right)$	$\left(\begin{array}{l} \text{P} \\ \text{A} \end{array} \right)$	$\left(\text{A} \right)$	CONJ	INH
1	<i>ut^h</i> (16) 'rise/climb'	+	-	-	+	-
2	<i>rɔh</i> (47) 'stay'	+	-	-	+	-
3	<i>bɔs</i> (56) 'sit'	+	-	-	+	-
4	<i>bud</i> (38) 'down'	-	+	-	+	-

¹⁸ K.Kapoor. *op. cit.* P.116.

5	<i>thia</i> (12) 'stand'	+	-	-	+	-
6	<i>b^hɔr</i> (28) 'fill'	-	-	+	+	-
7	<i>pɔr</i> (63) 'swim'	+	-	-	+	-
8	<i>bistar</i> (89) 'spread'	-	-	+	+	-
9	<i>b^hɔr</i> (93) 'load'	-	-	+	+	-
10	<i>rɔk^h</i> (99) 'place'	-	-	+	+	-
11	<i>mis</i> 'mix'	-	-	+	-	+

Table

PROPOSITIONAL STRUCTURE

	VERBS	Source		Effect			Locative			Instrument				Sampradana				Apadana				THE EXAMPLE SENTENCE
		Initiator	Performer	Affected	Result	Object	Source Conjunction	Effect Conjunction	Source-Effect-Inherence	Limbs	Tools	Entities	Material	Transfer	Source-Direction	Effect-Direction	Terminal Limit	Movement- From	Separation From	Non-Actual	Initial Limit.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	ho	1																				ramo xe - 'Ram be'
2	ho																					bax'ui xe - 'carenter be'.
3	sɔjag no																					ramo sɔjag xe - 'Ram is alert'
4	dad'ɔ ho																					c'uriti dad'ɔ xe - 'knife is sharp'.
5	duk'i ho																					se duk'i xe - 'He is unhappy'.
6	kaharɔ ho																					g'haxi tarɔ xe - 'It is his house'.
7	nilo ho																					kaxmxi nilo xe - 'pen is blue'.
8	t'ɔnda ho																					g'haxi t'ɔnda xe - '(It is) cold in the house'.
9	keut'are ho																					kant'are kɔna xe - '(There is) a hole in the wall'
10	Kebe ho																					kali c'uti xe - 'Tomorrow is holiday'
11	pɔdo ho																					bɔhiti sethare pɔdi x'h - 'The book is tying there'

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
12	<i>l'ia</i>	—	—	—				—		—													<i>se l'ia hela-</i> 'He stood'.
13	<i>cir</i>			—								—											<i>kəpəlati kəntare cirila -</i> 'cloth got torn with thorn. <i>se taku marila -</i> 'He killed him.'
14	<i>mar</i>			—								—											<i>p^huləti ratire p^hutila -</i> 'Flower blossomed in the night.'
15	<i>p^hut</i>		—	—								—											<i>suryaə purvə digəre</i> <i>ut^hile. -</i> 'The sun rose in the east'.
16	<i>ut^h</i>	—	—	—			—																<i>se pədi gəla -</i> 'He fell down'.
17	<i>pəɖ</i>		—	—																			<i>jvalamukhi phuti giəla -</i> 'The vocano erupted'
18	<i>p^hut</i>		—	—																			<i>se k^heləre hari gəla -</i> 'He got defeated in the game.
19	<i>har</i>	—				—																	<i>se nəmrtarə səhito</i> <i>sudhir gəla -</i> 'He improved with politeness'
20	<i>sud^hə</i>		—							—													<i>pani pə^həətiku etharu</i> <i>həlai dela</i> 'The stone moved from here with water.
21	<i>həli</i>	—										—											<i>ramə katha juddhrə gəti</i> <i>bəɖəaidela. 'Ram's</i> speech turned the war'.
22	<i>bəɖə</i>			—								—											<i>panidyara pə^həəcti</i> <i>ghuri gəla -</i> 'The stone turned with wind'.
23	<i>Ghur</i>			—								—											<i>Pilati k^hirəre bəɖ^huchi -</i> The child grew with milk'.
24	<i>bəɖ^h</i>			—								—											

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
25	<i>bʰang</i>			—														—				<i>dulɔi gɔxʰɔru</i> <i>bʰangigla</i> - 'The stem, broke of the tree'.
26	<i>bɔʰ</i>		—	—																		<i>nɔdi bɔhu ɔchi</i> - 'The river is flowing.
27	<i>kʰɔs</i>			—														—				<i>bɔhiti elʰaru kʰɔsi gɔia</i> - 'The book slid from here'.
28	<i>bʰɔ</i>	—	—			—	—				—											<i>se tanki ku paipre</i> <i>bʰɔila</i> - 'He filled the tank with a pipe.
29	<i>pɔhɔnc</i>	—	—								—						—					<i>ramɔ ghɔru skul ku</i> <i>bɔsre pɔhɔre pɔhɔnci</i> <i>gɔla</i> - 'Ram reached from home to school by bus'.
30	<i>jin</i>	—	—			—																<i>se tasku cesre jini gɔla</i> - 'He won the chess off him'.
31	<i>hɔj</i>					—																<i>penti hɔji gɔla</i> - 'The pen got lost'.
32	<i>jit</i>			—								—										<i>kagɔxi ɔʰa dyara</i> <i>jodigɔla</i> - 'The paper got joined with gum.'
33	<i>bɔnd</i>	—	—	—																		<i>ramɔ bɔnd hela</i> - 'Ram stopped'
34	<i>dɔr</i>		—	—	—																	<i>ramɔaku dɔri gɔla</i> - 'Ram got scaired of him'.
35	<i>bʰul</i>		—	—		—																<i>se e cithitiku bʰuli gɔla</i> - 'He forgot this letter'.
36	<i>gʰɔb</i>		—	—																		<i>se ta dyara gʰɔbɔri gɔla</i> - 'He got worried (by) him'.
37	<i>sukʰ</i>		—	—																		<i>pani kʰɔrare sukʰi gɔla</i> - 'water got dried with sun'.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
38	<i>bud</i>	—					—															<i>se panre hudi gāla</i> - 'He downed in water'.
39	<i>bistar</i>		—	—				—														<i>gāndā sōhuade histari gāla</i> - 'The smell spreaded every where'.
40	<i>mil</i>					—																<i>taku pen mili gāla</i> - 'he (to win) found the pen'.
41	<i>b^had</i>					—											—					<i>kānta taku b^hedā kāla</i> - 'Thrn pricked him'.
42	<i>ahatitā</i>					—						—						—				<i>se kānta dyara aghaditā hela</i> - 'He got an injury through the nait.
43	<i>bānd no</i>				—								—									<i>pābānāre kābatāi bānd hoi gāla</i> - 'The door shut with wind'.
44	<i>sāp^ha ho</i>				—								—									<i>nia dyara jāngālatāi sāp^ha hoi gāla</i> - 'The jungle got cleaned with fire'.
45	<i>sukhi ho</i>	—	—	—																		<i>se cakiri k^hābānā pai suk^hi hoi gāla</i> - 'He became happy with getting the job result.
46	<i>arāmb^hāhu</i>						—															<i>bārsa arāmb^hā hela</i> - 'The rain started'
47	<i>rāh</i>	—	—	—				—														<i>se kātakre rāhuc^hi</i> - 'He lives in Cuttack'.
48	<i>byaghatā</i>						—															<i>se abyasa dyara b^hyaghatitā hela</i> . 'He ;got afflicted with the habit.
49	<i>pa</i>	—	—	—								—										<i>taku nijā b^hāā kānā pai Lokānkā^haru sōman milila</i> - 'He received respect from people on account his good deeds'.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
50	<i>raji</i>	—	—			—																<i>se ei kamaku raji hela</i> - 'He accepted this work'.
51	<i>buj^h</i>	—	—	—						—												<i>sadhu nijorutiyō</i> <i>ak^hire eghachaku</i> <i>buj^hile</i> - 'The Saint understod this matterss with his internal eye'.
52	<i>b^hab</i>	—	—				—			—												<i>se ehaku nijō mōnō</i> <i>dyara b^habile</i> - 'He thought of this with his mind'.
53	<i>jan</i>	—	—	—	—	—				—												<i>kōhi nijō kōkronare</i> <i>chaku janile</i> - 'The poet thought of this with his imagination'.
54	<i>a</i>	—	—	—							—											<i>se toenre sel^haku el^haku</i> <i>asile</i> - 'He came from there to here by train'.
55	<i>ja</i>	—	—	—							—											<i>se elrenre etharu sel^haku</i> <i>gōle</i> - 'He went from here to there by train'
56	<i>bɔ</i>	—	—	—	—	—					—											<i>se badi dyara bōsi gōle</i> - 'He sat down with a stick'.
57	<i>so</i>	—	—	—																		<i>se soi gōle</i> - 'He sat slept'.
58	<i>ut^h</i>	—	—	—						—												<i>se badi dyara ut^hi gōle</i> - 'He got up with a stick'.
59	<i>kōh</i>	—	—	—	—	—					—											<i>se nijō patrie chaku</i> <i>kōhile</i> - 'He said this thing with his own mouth'.
60	<i>hɔ</i>	—	—	—																		<i>se hōsile</i> - 'He leaghted'.
61	<i>daud</i>	—	—	—							—											<i>se etharu sel^haku niji</i> <i>godōre daudila</i> - 'He ran from here to there with his own legs'.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
62	<i>deg</i>	—	—	—							—						—					—	<i>se etharu sethaku gote badire degila</i> - 'He jumped from her to there with a stick'.
63	<i>pɔr</i>	—	—	—							—						—					—	<i>se gote tubre pok^hɔrire pɔrila</i> - 'He swam in the pond with a tube'.
64	<i>ud</i>	—	—	—				—			—						—					—	<i>cɔdeiti nijɔdenare udila</i> - 'The bird flew with its wing.'
65	<i>cal</i>	—	—	—							—												<i>se etharu set^haku niji godere calila</i> - 'He walked from here to there with his feet'.
66	<i>gurund</i>	—	—	—							—												<i>kitɔ etharu se t^haku niji godere gurundila</i> - 'The insect creepid from here to there with its legs'.
67	<i>pɔcar</i>	—	—				—				—												<i>se taku niji patire presnɔ pɔcarila</i> . 'He asked him this question with his own mouth'.
68	<i>dak</i>	—	—				—				—												<i>se teliphonre taku dakila</i> - 'He called him by telephone'.
69	<i>nac</i>	—									—												<i>se nije godɔre nicila</i> - 'He danced with his feet'
70	<i>sik^ha</i>	—	—				—				—												<i>se taku driving manual dyara sik^haila</i> - 'He taught him driving with the manual'.
71	<i>De</i>	—	—				—				—												<i>se taku niji hatcre bɔɔdela</i> - 'He gave him the book with his own hands'.
72	<i>Sun</i>	—	—	—			—				—												<i>se ehaku niji kenɔre sunila</i> ,- 'He heard this with his own ears'

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
73	<i>Dek^h</i>	—	—	—		—				—												<i>se eighaxu.na. nija akhire dekhilu</i> He saw this incident with his own eyes.
74	<i>k^ha</i>	—	—	—						—												<i>se tiniti roti nije hetore k^haila</i> - 'He ate three rotis with his own hand'
75	<i>koh</i>	—	—			—				—				—								<i>se taku eha nije jivore kohila</i> - 'He said this to him with his own tongue'
76	<i>p^hul</i>				—						—											<i>pani niare goram hela</i> - 'The water after all boiled with fire'
77	<i>Cihnn</i>	—		—								—										<i>se bino colar re tik^ho ku ol cinhila</i> - 'He recognised the peak with binocular'
78	<i>bod^h</i>				—						—											<i>kathare g^hatonati bodhi gola</i> - 'The matter increased with talk'
79	<i>k^hol</i>				—						—											<i>kobatoti hatore k^holila</i> 'The door opened with hand'
80	<i>Sung</i>	—	—	—		—					—											<i>se p^huloku nakore sunjila</i> 'He smelt flower with nose'
81	<i>Cak^h</i>	—	—	—		—					—											<i>se nije jivore torokari cak^hiya</i> 'He tasted the curry with his tongue'
82	<i>ug^hal</i>	—	—	—								—										<i>se taku gote bodudire paniru ug^halila</i> 'He took him out of water with a rope'
83	<i>Tan</i>	—	—									—			—							<i>se gote rasire gudiku tanila</i> 'He pulled the kite with the string'

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
84	<i>pɔdʰ</i>	—	—	—		—					—											<i>se cɔsɔmare bɔhiti</i> <i>pɔdʰila</i> 'He read the book with the spectacles'
85	<i>kʰoj</i>	—	—			—				—												<i>se nije hatɔre suci ko</i> <i>kʰojila</i> 'He searched the needle with his hands'
86	<i>bɔdɔl</i>	—	—	—								—										<i>se sɔmɔya sɔhila</i> <i>bɔdɔlaila</i> 'He changed with time'
87	<i>rɔng</i>	—	—	—									—									<i>se kagɔjɔtiku nilɔ rangre</i> <i>rɔngaila</i> 'He coloured the paper with blue colour'
88	<i>kat</i>				—							—										<i>pɔbɔnɔre gɔxʰɔi</i> <i>katihela</i> 'The tree got cut by high wind'
89	<i>gʰunc</i>	—	—	—														—				<i>se elʰaru gʰunca ila -</i> 'He shifted from here'
90	<i>gʰod</i>	—	—			—				—												<i>'se chabiku kɔpɔdare</i> <i>gʰodaila</i> 'He covered the picture with the cloth'
91	<i>jɔl</i>				—							—										<i>ghasaɔ kʰɔrare jɔligɔla</i> 'Grass got burnt with heat'
92	<i>lekʰ</i>	—	—		—					—												<i>se nije kɔlɔmɔre</i> <i>kɔbitaku lekʰila</i> 'He wrote the poem with his pen'
93	<i>bɔna</i>	—	—			—							—									<i>se itare gʰɔxʰi bɔnaila.</i> 'He built the house with the bricks'
94	<i>randʰ</i>	—	—			—					—											<i>se gyos re kʰadyɔ</i> <i>randʰila</i> 'He cooked food with gas'
95	<i>bun</i>	—	—			—						—										<i>se mecin re suiter ti</i> <i>bunile.</i> 'Sje knitted the

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
96	<i>l'el</i>	—	—			—				—												sweater with machine'. <i>se gediku hatære l'elila.</i> 'He pushed the vehicle by hand'. <i>bæp^h gæm re tædi</i> 'The snow melted with heat
97	<i>tæw</i>			—								—										<i>se kar ku trkre kren dyaræ b^hæila.</i> 'He loaded the car in a truck with a crane'. <i>se camæ dyara k^hæaku roti upære ræk^hila</i> 'He put pickles on the bread with a spoon'.
98	<i>b^hæ</i>	—	—			—		—			—											<i>se bæhiku nije hatære taku biki dele.</i> 'He sold them the book with his own hands'. <i>se ramæ ku nije patire eita pai magile.</i> 'He asked him for this with his own mouth'.
99	<i>ræk^h</i>	—	—			—		—			—											<i>se tapai eibæhiti nije hatære kinile.</i> 'He bought this book of him with his own hands'. <i>se paisa dyara taku sahayææole.</i> 'He helped him with money'.
100	<i>bik</i>	—	—			—				—					—							<i>se taku hrudæyæwæ sæhitæ grunakære.</i> 'He hates him with his heart'.
101	<i>mang</i>	—	—			—				—												<i>se taku hrudæyæwæ sæhitæ premæ kære.</i> 'He loves him with his heart'.
102	<i>kim</i>	—	—			—				—												
103	<i>sahajyæ kæ</i>	—	—								—				—							
104	<i>gruna kæ</i>	—	—								—				—							
105	<i>premæ kæ</i>	—	—								—				—							

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
106 <i>k^husi kər</i>	—	—								—				—							<i>se taku kə^hare k^husi kəla.</i> 'He pleases him with words'.
107 <i>gəb^hirə kər</i>	—	—								—											<i>se dril dyara gatə ku gəb^hir kəla.</i> 'He deepened the hole with drill'
108 <i>kər</i>	—	—			—				—												<i>se nije hrudəyarə səhitə pə^hibaku cesta kəla.</i> 'He tried with his heart to study'
																					<i>se taku hrudəyarə səhitə bisyasa kəla.</i> 'He believed in him with his heart'.
109 <i>bisyasa kər</i>	—	—							—						—						<i>se taku hrudəyarə səhitə səndehəkəla.</i> 'He doubted him with his heart'.
110 <i>səndehəkər</i>	—	—							—						—						<i>se ta duhk^hə hrudəyarə əub^həbə kəla.</i> 'He felt his sorrow with his heart'
111 <i>əub^həbə kər</i>	—	—				—				—											<i>se taku ta hrudəyarə səhitə pəsənd kəla.</i> 'He liked her with his heart'.
112 <i>pəsənd kər</i>	—	—								—					—						<i>se taku p^hon dyora əusənd^hanə kəla.</i> 'He found out about him with telephone'.
113 <i>əusənd^hanə kər</i>	—	—				—					—										<i>se hrudəyarə səhitə taku dek^ha kəribaku prətinga kəla.</i> 'He promised him visit with his heart'.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
114	<i>pr^htinga kər</i>	—	—		—				—				—								<i>se saməmənərə jibaku cima kəla. 'He decided to go with cool mind'.</i>
115	<i>nispəti kər</i>	—	—		—				—												<i>se awəx^hə dyara piba c^hadi dela 'He gave up drinking with a medicine'.</i>
116	<i>c^had</i>	—	—			—					—										<i>se iaku to hrudəyarə səhit.xəhe 'He wants her with his heart'</i>
117	<i>ca</i>	—	—							—				—							<i>binocular dyara red fort drusyə həla. 'with binoculars the red fort became visible'.</i>
118	<i>drusyəno</i>					—					—					—					<i>se g^hadiku gote hatərə calaila. 'He drove the car with one hand'</i>
119	<i>cəla</i>	—	—	—				—													<i>ramə səbu^hare xə. 'Ram is every where'</i>
120	<i>keot^hi no</i>	—				—			—												

CONCLUSION

The present study, basically analysed two issues:

- (i) The number of nominals in the propositional structure and classified the verbs according to these.
- (ii) The nature of these nominal elements and their relationships to the verb.

In addition to the above issues, it has been argued that propositions having the same number of obligatory elements may have widely different properties on account of the nature of relationship that holds between the nominal expressions and the predicate.

The first chapter defines *Kāraka* as the means of accomplishment of an action. From philosophical point of view, the *Kāraka* lies in the substance (*dravya*) holding different powers which act as the agent of the accomplishment of an action. Such type of power is called *Sādhana* or means. But, grammarians define it by the configuration of substance and case ending, which helps in the accomplishment of an action. Nyaya school states that *Kāraka* is the relationship of nouns and verbs in a sentence. The major grammatical concepts, dominant in the *Kāraka* theory are governors, *vibhakti*, *abhihita*, and *anabhita*. The conjugational affix *tin*, the primary affix *kṛt*, the secondary affix *taddhita* and compounds *samāsa* are the forces of a case affix. The six kinds of *pratyaya* passes through the morphophonological processes. It seems that *Kāraka* section is the only section of *Aṣṭādhyāyī*, which deals with the syntactic representation of the language. But, such representation is manifested by phonological, morphological and morphophonemic devices of language. The word meaning and the sentential meaning are manifested in the *Kāraka* theory.

The meaning of a sentence is the meaning of the individual words in it as systematically connected with one another. This sentential meaning cannot be located in the individual words in isolation. Besides the

philosophical and linguistics aspects, *Kāṛaka* theory also holds the socio-cultural aspect of India.

In the second chapter, we have argued that the underlying semantic structure, in semantic models, is a propositional structure. Such propositional structure, for an event, is a specific configuration of a given number of nominals. In Oriya, such configurations are IN-valued, 2N-valued, 3N-valued or 4N-valued. Each nominal in the propositional structure holds a particular relation to the verb.

The nominal element and the verbal element are the two primitives in the propositional structure. Between, the noun and the verb, the verb is primary. Because, it uniquely determines the number of nouns that can co-occur with it. The verb root is divided into two parts: (i) operation and (ii) effect, this approach is founded on the fact that each verb denotes a series of sub-events. Moreover, it may be noted that what determines the propositional structure is the verb root.

Verbs can have optimum expansion and obligatory nominals. In optimum expansion, the nominals represent not only the semantic structure of the verb but also the structure of thought. But, obligatoriness enables us to classify events according to the number of elements they take. A conceptually obligatory element may or may not be syntactically obligatory, while syntactically obligatory element is always conceptually obligatory.

In third chapter, we have discussed the nature of nominal elements in relationship with the verb. A proposition is defined by two things - (i) the number of nominal expressions, and (ii) the relationship of the nominal expressions to the verb. A careful distinction is made, and maintained by us, between the nature of relation and the semantic properties of nominal

realising the relation. Here, Bhartṛhari's dictum, such relations are only six is applied. We converted the *Kāraṅka's* theoretical model into an applicational model and then applying them consistently and rigorously to the facts of Oriya.

We also posited and established sub-types of the other relation, which are in the below:

- (i) Two kinds of Source: initiator and performer
- (ii) Three kinds of Effect: affected, result and object.
- (iii) Three kinds of Locative: source - conjunction, effect - conjunction, and source-effect inherence.
- (iv) Four kinds of Instrument: limbs, tools, entities and materials
- (v) Four kinds of *Sampradāna*: transfer, source-direction, effect - direction, and terminal.
- (vi) Four kinds of *Apādāna*: movement from, separation-from, non-actual movement/separation and initial limit.

A language model based on noun-verb relations is very careful for pedagogy, translation, contrastive lexicology, and cognitive psychology. Such models are being applied and evaluated in these and related areas in the west. But, if we develop such a model in India, it will be useful to describe/analyse the actual descriptions of language. As a whole, the theories and models of the Sanskrit grammarians can be evaluated and developed through critical and rigorous application to contemporary Indian languages. The powerful model developed by Indian grammarians, is reasonable to expect be applied/ analysed to all languages. It not only provides for the language specific features but also for language universal.

The model, applied in the present study, can be further applied in the following areas:

1. Feature specification of relations.
2. Logical relations that hold between proposition types.
3. Pragmatic analysis of propositions, and
4. Applicational studies of languages and/or literary texts and/or communication acts to evaluate and validate the model.

APPENDICES

Appendix - 1

This is the list of 120 representative verbs of Oriya that we have referred to in the study for the events they denote. In the preceding chapters, we have identified verbs by their serial numbers, and in the tables, we refer to the verbs only by the serial numbers they bear in this list.

1. *ramɔ* (proper name) + *ho* 'Be (someone)'
2. *kehi* (common noun) + *ho* 'be (somebody)'
3. *sɔjag* (quality adjective) + *ho* 'be sharp, alert'
4. *dad^h* (Property adjective) + *hō* 'be sharp'.
5. *duk^hi* (experimental adjective) + *ho* 'be sad'.
6. *kaharɔ* (possessive adjective) + *ho* 'be (somebody's)'
7. *nilɔ* (sensory adjective) + *ho* 'be blue'.
8. *thonda* (sensory adjective) + *ho* 'be cold'.
9. *keut^hare* (locative) + *ho* 'be (some where)'
10. *kebe* (temporal locative) + *ho* 'be (sometime)'
11. *pɔdɔ ho* 'be lying' 'placed'.
12. *t^hia* - 'stand'.
13. *cir* - 'tear'.
14. *mar* - 'kill'.
15. *P^hut* - 'blossom'
16. *ut^h* - 'rise, ascend'.
17. *pɔd* - 'fall, 'fall off'.
18. *phut* - 'erupt'.
19. *har* - 'lose, is defeated'.

20. *sud^hɔr* - 'reform improve'.
21. *hɔli* - 'move'.
22. *bɔdɔl* - 'bend, turn'.
23. *g^hur* - 'revolve'.
24. *bɔd^h* - 'sprout, grow'
25. *b^hang* - 'break'.
26. *bɔh* - 'flow'.
27. *k^hɔs* - 'slide'.
28. *b^hɔr* - 'fill'.
29. *pɔhɔnc* - 'reach'
30. *jin* - 'win'
31. *hɔj* - 'be lost, misplaced'
32. *jit* - 'join'.
33. *bɔnd* - 'halt, stop'.
34. *dɔr* - 'be scared, afraid'.
35. *b^hul* - 'forget'.
36. *g^hɔb* 'be rattled'.
37. *suk^h* - 'dry (up)'.
38. *bud* - 'drown, sink'.
39. *bistar* - 'spread'.
40. *mil* - 'be found'
41. *b^hɔd* 'prick'.
42. *ahatitɔ* 'be hurt'.
43. *bɔnd ho* - 'shut'.
44. *sɔp^ha ho* - 'be clean'.

45. *Suk^hi ho* - 'be happy'.
46. *arɔmb^hɔ ho* - 'start commence'.
47. *rɔh* - 'live, stay'.
48. *byaghatɔ* 'afflict'.
49. *pa* - 'get, receive'.
50. *raji* - 'accept, agree'.
51. *buj^h* - 'understand'.
52. *b^hab* - 'think'.
53. *jan* - 'know'.
54. *a* - 'come'.
55. *Ja* - 'go'.
56. *bɔs* - 'sit'.
57. *so* - 'sleep'.
58. *ut^h* - 'get up'.
59. *kɔh* - 'speak'.
60. *hɔs* - 'laugh'.
61. *daud* - 'ran'.
62. *deg* - 'jump'.
63. *pɔr* - 'swim'.
64. *ud* - 'fly'.
65. *cal* - 'walk'.
66. *gurund* - 'creep'.
67. *pɔcar* - 'ask'.
68. *dak* - 'call'.
69. *nac* - 'dance'.
70. *sikha* - 'teach'.

71. *de* - 'give'.
72. *sun* - 'hear'.
73. *dek^h* - 'see'.
74. *k^ha* - 'eat'.
75. *kəh* - 'say'.
76. *p^hut* - 'boil'.
77. *cihnn* - 'recognise'.
78. *bəd^h* - 'increase'.
79. *k^hol* - 'open'.
80. *sung* - 'smell'.
81. *cak^h* - 'taste'.
82. *tan* - 'pull, stretch'.
83. *ughal* - 'pull out, extract'.
84. *pəd^h* - 'read'.
85. *k^hoj* - 'search'.
86. *bədəl* - 'change'.
87. *rəng* - 'colour'.
88. *kat* - 'get cut'.
89. *g^hunc* - 'shift'.
90. *g^hod* - 'cover'.
91. *jəl* - 'burn'.
92. *lek^h* - 'write'.
93. *bəna* - 'build'.
94. *rand^h* - 'cook'.
95. *bun* - 'knit'.
96. *t^hel* - 'push'.

97. *tɔɔl* - 'melt'.
98. *b^hɔɔ* - 'load'.
99. *rɔk^h* - 'place, keep'.
100. *bik* - 'sell'.
101. *mang* - 'beg/ask for'.
102. *kin* - 'buy'.
103. *sahajɔ kɔɔ* - 'help'.
104. *gruna kɔɔ* - 'hate'.
105. *premɔ kɔɔ* - 'love'.
106. *khusi kɔɔ* - 'please'.
107. *gɔb^hirɔ kɔɔ* - 'deepen'.
108. *kɔɔ* - 'do'.
109. *bisyasa kɔɔ* - 'trust'.
110. *sɔndehɔ kɔɔ* - 'suspect'.
111. *ɔnubhɔbɔ kɔɔ* - 'feel'.
112. *pɔsɔnd kɔɔ* - 'like'.
113. *ɔnusɔndanɔ kɔɔ* - 'inquire'.
114. *prɔtinga kɔɔ* - 'promise'.
115. *nispɔti kɔɔ* - 'decide'.
116. *c^had* - 'give up'.
117. *ca* - 'want'.
118. *drusyɔ ho* - 'become visible'.
119. *cɔla* - 'drive'.
120. *keot^hi + ho* - 'be somewhere' (of immobile objects)

Appendix - 2

Transcription and the phonemic inventory of Sanskrit

We have used broad (phonemic) transcription for Sanskrit sentences and expressions, etc. We have adopted, for the purpose, the following phonemic inventory, set up by R.C. Kale, 1931:

A. Vowels

a	a	i	I	u	u	e	ai	o	au
अ	आ	इ	ई	उ	ऊ	ए	ऐ	ओ	औ
		m		h			r		
		अं		अः			ऋ		

B. Consonants

k	kh	g	gh	n
क्	ख्	ग्	घ्	ङ्
c	ch	j	jh	n
च्	छ्	ज्	झ्	ञ्
t	th	d	dh	n
ट्	ठ्	ड्	ढ्	ण्
t	th	d	dh	n
त्	थ्	द्	ध्	न्
p	ph	b	bh	m
प्	फ्	ब्	भ्	म्
	y	r	I	v
	य्	र्	ल्	व्
	s	s	s	h
	श्	ष्	स्	ह्
	ks	tr	jn	
	क्ष्	त्र्	ज्ञ्	

Appendix - 3

Transcription and the phonemic inventory of Oriya

We have used broad (phonemic) transcription for Oriya sentences and expressions, etc. We have adopted, for the purpose, the following phonemic inventory, set up by Kloss and Mc Connell 1989:358.

A. Vowels

	Unrounded	Rounded
High	i	u
Mid	e	o
Low	a	ɔ

B. Consonants

	Bilab.	Dent.	Alveo.	Retro.	Pal.	vel	vel
Stops	p	t		t	c	k	
	b	d		d	j	g	
	ph	th		th	ch	kh	
	bh	dh		dh	jh	gh	
Nasals	m	n		n			
Laterals tapped			l	l			
Fricatives		s	r				h
Semi-Vowels	w				y		

BIBLIOGRAPHY

Bibliography

- Abhyankar, Kashinath Vasudev, 1961. *A dictionary of Sanskrit grammar*, Baroda: Oriental Institute.
- Abraham, Werner (Ed.) 1978. *Valence, Semantic Case and grammatical relations*, Amsterdam: John Benjamin B.V.
- Agrawala, Vasudeva Sharan. 1945. *Panini, his life and works*, Journal of the Ganganatha Jha Research Institute, Allahabad, 2:81-114.
- Aklujkar, Ashok Narhar, 1970. *Ancient Indian Semantics*, Annals of Bhandarkar Oriental Research Institute, Pune (ABORI), 51: 11-29.
- Aklujkar, Ashok Narhar. 1970. "*Ancient Indian Semantics*", *Annale of Bhandarkar Oriental Research Institute*, Pune (ABORI), 51: 11-29.
- Al-George, Sergiu, 1972. "*Panini and modern thought*", *Summaries of Papers, First International Sanskrit Conference (SPISC)*, 2: 42-43.
- Ananthanarayana, M.S., 1970. *The karaka theory and case grammar*. *Indian Linguistics* 31: 14-27.
- Anderson, John M., 1971. *The grammar of case: towards a localistic theory*. Cambridge: Cambridge University Press.
- Astadhyayi. See under Srisa Chandra Vasu.
- Barlingay, S.S., 1964. *Theories of language in Indian logic*, *International Philosophical Quarterly*. 4:94-109.

- Bhattacharya, Bishnupada. 1962. *A Study in language and meaning (a critical examination of some aspects of Indian semantics)*. Calcutta: Progressive Publishers.
- Bhattacharya, Ram Shankar, 1966. *Paniniya Vyakarana ka anusilana (Studies in Paninian grammar)* Varanasi: Indological Book House.
In Hindi: Collection of papers.
- Bloomfield, Leonard, 1927, *On some rules of Panini, Journal of the American Oriental Society* 47:61-70.
- Brahmadatta Jijnasu-Prajna Devi (tr., commentators), 1964-68. *Astadhyayi-bhasya-prathamavrtti, 3 Vol.* Amritsar: Rama Lal Kapur Trust.
Panini's grammar with analysis of sutras into components, Sanskrit paraphrases, Hindi translation and explanations; Vol.1-2 by Brahmadata Jijnasu, Vol.3 by Prajna Devi; the whole prepared for publication by Yudhisthira Mimamsaka.
- Brough, John, 1951. *Theories of general linguistics in the Sanskrit grammarians*, Transactions of the Philological Society (TPS). London: 248-60.
- Cardona, 1964. *Panini's karakas: agency, animation and identity*, Journal of Indian Philosophy, Dordrecht. 2: 231-306.
- Cardona, 1970. *Some principles of Panin's grammar*, Journal of Indian Philosophy, Dordrecht.
- Cardona, 1976. *Panini A survey of research*, The Hague: Mouton.
- Cardona, George. 1967. *Panini's syntactic categories*. Journal of Oriental Institute, Baroda (JOIB) 16; 201-15.

Cardone, 1971. *Cause and causal agent; The Paninian view*, JOIB 21: 22-40.

Chafe, W.L., 1970. *Meaning and the structure of language*. Chicago: University of Chicago Press.

Chakravarti, Prabhat Chandra, 1930. *The philosophy of Sanskrit grammar*. Calcutta; Calcutta University.

Charudeva Shastri, 1930. *Bhartrhari: a critical study with special references to the Vakyapaidya and its commentaries*. Proceedings of the All India Oriental Conference 5, Lahor, 1928: 630-55.

Chatterji, Kshitish Chandra, 1964. *Technical Terms and technique of Sanskrit grammar*. Calcutta: Calcutta University.

Chomsky, 1963. *Formal properties of grammars*, In R.D. Luce, R.R. Bush and E. Galanter, (eds.) *Hand book Mathematical Psychology*. Vol.2. New York: Wiley.

Chomsky, 1965. *Aspects of the theory of syntax*, Cambridge Mass: MIT Press.

Chomsky, 1980. *Lectures on Government and Binding*.

Chomsky, N., 1957. *Syntactic structures*, The Hague: Mouton.

Chomsky, 1971. *Deep structure, surface structure and semantic interpretation*, in Steinberg and Jakobovits, 183-216.

Cole and Jerrold M. Sadock (eds.) 1977,. *Syntax and semantics*, Vol. 8, Grammatical relations. New York: Academic Press.

- Cole, P. and J.L. Morgan (eds.) 1975. *Syntax and semantics*, Vol.3 Speech acts. New York: Academic Press.
- Comrie, Bernard. 1976. *The syntax of causative constructions: Cross language similarities and divergences*,. In M. Shibatani (ed.) 261-312.
- Cook, 1978. *A case grammar matrix model (and its application to a Hemingway text)*. In Werner Abraham (ed). 295-311.
- Cook, Walter A. 1974. *Case Grammar and generative semantics*, Languages and Linguistics: working Papers 8, 1-28. Washington, D.C.: Georgetown University Press.
- Crystal, David, 1985, *A Dictionary of Linguistics and Phonetics*, Basil Blackwell; Oxford.
- Dalal Lokamin, 1991. *Parama Laghu manjusa* of Nagesa Bhatta, Varanasi.
- Das, K.S. 1994 *Semantico-Syntactic Relations*: Sanskrit Pustak Bhandar, Calcutta.
- Davidson and G. Harman (eds.) 1972. *Semantics of natural language*, Dordrecht: Reidel.
- Davidson, D. 1967. *The logical form of action sentences*, In N. Rescher (ed.)
- Edgren, A. Hjalmar, 1885. *On the verbal roots of the Sanskrit language and of the Sanskrit grammarians*, *Journal of the American Oriental Society* 11: 1-55.

- Faddegon, Berend 1936. *Studies on Panini's grammar*, Verhandelingen der Koninklijke Akademie van Wetenschappen Amsterdam, Nieuwe Reeks (VKAWA) 38.1.
- Fillmore, 1970. *The grammar of hitting and breaking*. In R.A. Jacobs and P.S. Rosenbaum (eds).
- Fillmore, 1971. *Some problems for case grammar*, in Richard J.O. 'Brien (ed.).
- Fillmore, 1971. *Types of lexical information*, In D.D. Steinberg and L.A. Jakobovits (eds).
- Fillmore, 1977. *The case for case reopened*, In Cole and Jerrold M. Sadock (eds).
- Fillmore, C.J., 1968. *The Case*, In E. Bach and R.T. Harms (eds).
- Fowler, Murray, 1965. *How ordered are Panini's rules?* Journal of American Oriental Society 85: 44:7.
- Gaurinath Shastri, 1956. *Philosophy of Bhartrhari*, Journal of the Asiatic Society-(of Calcutta), Letters, 22: 71-73.
- Ghatge, Amrit Madhav, 1968. *Panini 1.4.32*, Festschrift S.M. Katre (1971), 2, pp.150-54.
- Grice, H.P., 1968. *Utterer's meaning, sentence-meaning, and world-meaning*, Foundations of Language 4: 225-42.
- Gruber, Jeffrey S., 1967. *Look and See*, Language. 4.3:937-47
- Herman. A.L., 1962-63. *Sphota*, Journal of Ganganatha Jha Research Institute, Allahabad (JGJRI) 19:1-21.

- Huddelston, R.D. 1969. *predicate complement constructions in English*,
Lingua 23:241-273.
- Iyer, 1971. *The Vakyapadiya of Bhartrahari*, Chapter III, part 1; English
translation Poona: Deccan College.
- Iyer, K.A. Subramania, 1969. *Bhartrhair* Poona: Deccan College,
- Jespersen, Otto, 1924. *The Philosophy of Grammar*, London: Allen and
Unwin.
- Joos, M., 1964. *The English verb: form and meanings*. Madison:
University of Wisconsin Press.
- Joshi, Dayashankar Madhusudan. 1971. "On expressing karakas, a propos
of Panini 2.3.1." Indian Linguistics 32: 107-12.
- Joshi, S.D., 1969. "Sentence structure according to Panini". Festschrift
R.N. Dandekar, pp.14-26.
- Joshi, S.D., 1974. "Panini's treatment of karaka-relations". Festschrift
Charudeva Shastri, pp.258-70.
- Joshi, Shivaram Dattatray, 1962. "Verbs and nouns in Sanskrit", *Indian
Linguistics* 32: 60-63.
- Kale, R.C, 1931. *A Higher Sanskrit Grammar*, Gopal Naryan and Co,
Bombay.
- Kapoor, Kapil, 1985 *Semantic Structure and The Verb*, Intellectual
Publishing House, New Delhi.
- Kapoor, Kapil, 1989. "Forms in the ocean: The Indian Conception of
Language and Reality".

- Kapoor, Kapil, 1991. "*Bhartrhari on Lexical Meaning*". *Linguistics at Large*", Hyderabad.
- Kapoor, Kapil, 1991. "*Linguistic Meaning and Referential Reality*".
- Kapoor, Kapil, 1994. *Language, Linguistics and Literature: An Indian Perspective*, Academic Foundation, Delhi.
- Kapoor, Kapil, 1996. '*Vivarta and Parinama: Bhartrhari's Theories of Language*'.
- Kapoor, Kapil, 1997. "The Concept of *Padartha* in Philosophy and Language", *The 200 Years, William Jones Memorial Volume*, Deccan College, Pune.
- Katz, J.J, 1977. *Propositional Structure and Illocutionary Force*, The Harvester Press, England.
- Keenan, E.L., 1976. *Towards a universal definition of subject*, in Li (ed.) 247-301.
- Keithore, L.F., 1883. "*On the grammarian Bhartrhari*", *Indian Antiquary*, 12:226-227.
- Kiefer, F., (ed.), 1969. *Studies in syntax and semantics*, Dordrecht:Reidel.
- Kielhorn, Lorenz Franz, 1876. *Katyayana and patanjali: their relation to each other and to Panini*, Bombay: The Educational Society, Reprint: (Varanasi: Indological Book House 1963).
- Kiparsky, P. 2002. *The Architecture of Grammar*; CIEFL, Hyderabad.
- Kiparsky, P. and J.F. Staal. 1969. *Syntactic and Semantic relations in Panini*, *Foundations of Language* 5: 83-127.

- Kunjunni Raja K., 1969. *Indian theories of meaning*, Madras: The Adyar Library.
- Langendean, D.T., 1971, *Presupposition and assertion in the semantic analysis of nouns and verbs*, In Steinberg and Jakobovits (eds)., 241-45.
- Lyons, 1981. *Language and Linguistics. An introduction*, Cambridge: Cambridge University Press.
- Lyons, J., 1977. *Semantics, vols. 1 and 2*, Cambridge: Cambridge University Press.
- Mahapatra, N and Das. S., 1962. *Sarvasara Vyakarana (Oriya)*, New Students Store, Cuttuck.
- Mahul kar, D.D. (ed), 1998. *Essays on Pāṇini* IAS. Shimla.
- Matilal, B.K, 1971. *Logic, Language & Reality: An Introduction to Indian Philosophical Studies*, Motilal Banarsidass, Delhi,
- Matilal, B.K, 1992. *Word and the World*, Oxford University Press, New Delhi.
- Mishra, R. K., 1999. "*Buddhist Theory of Meaning and Literary Analysis*". D.K.Printworld (P) Ltd. New Delhi.
- Murti, M.S. 1996, *Vagyoga of the Grammarian*: Oriental Journal, vol. XXXIX. Sri Venkateswara University.
- Omamor, A. Phil, 1978. *Case grammar and viability*, In Werner Abraham (ed.). Ota, A., 1963. *Tense and aspects of present-day American English*, Tokyo: Kenkyusha.

- Pandeya, Ram Chandra, 1963. *The problem of meaning in Indian philosophy*, Delhi: Motilal Banarsidass.
- Pandit, M.D., 1963. *Some linguistic principles in Panini's grammar*, Indian Linguistics 24: 50-69.
- Prakasam V, (ed). 1991. *Linguistic At Large*, Book links corporations, Hyderabad.
- Raghvan Pillai, K. (ed. tr.) 1971. *Studies in the Vakyapadiya, volume I: The vakyapadiya, critical text of cantos I and II (with English translation, summary of ideas and notes)*. Delhi: Motilal Banarsidass.
- Renou, Louis, 1969. *Panini Current trends in linguistics. Vol 5: Linguistics in South Asia* (Ed.: T.A. Sebeok) The Hague-paris: Mouton. pp. 481-98.
- Shastri, 1999. *Source and Method of Panini*, Oriental Journal, vol. XLII. Sri Venkateswara University.
- Shastri, C.D. 1990. *Panini re-interpreted* Motilal Banarsidass. Delhi
- Shastri, J.L. 1984. *Dhatupathah*, Motial Banarsidass, Delhi.
- Singh, J.D. Panini: *His Description of Sanskrit. An Analytical Study of Astadhyayi*, Mushiram Manoharlal Publishers Pvt. Ltd. Delhi.
- Stabler, E.P. 1992. *The Logical Approach to Syntax*, MIT Press.
- Varma, Siddheshwar, 1972. *The concept of 'agent' - philosophical and grammatical - in Sanskrit*, Fests-schrift K.C. Chattopadhyaya, pp. 713-21.

- Vasu, S.C, (ed), 1982. *The Siddhanta Kaumudi of Bhattoji Diksita, vol. 1*, Motilal Banarsidass, Delhi.
- Vasu, Srisa Chandra (ed. tr.) 1891. *The Astadhyayi of Panini*, edited and translated into English, 2 vol. Allahabad: the Panini office [Reprint: Delhi: Motilal Banarsidass, 962].
- Vater, H., 1978. *Distinguishing between complements and adjuncts*, In Werner Abraham (ed.).
- Whorf, B.L. 1956. *Language, thought and Reality* (Selected writings of Benjamin Lee Whorf, ed. John B. Carroll). Cambridge, Mass: MIT Press and New York: Wiley.
- Zgusta, Ladislav, 1969. *Panini-descriptivist or transformationalist?* (in margine of two recent publications), *Archiv Orientalni, Praha*, 37: 404-15.