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# SAMANVAYA

## An Interlingua for Unity of Indian Languages


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**(Established by an Act of Parliament)**
**New Delhi – 110 058**

अनादिनिधनं ब्रह्म शब्दतत्त्वं यदक्षरम्।
विवर्ततेऽर्थभावेन प्रक्रिया जगतो यतः॥

(वाक्यपदीयम् १.१)

# Preface

Language is a profound tapestry woven from the threads of meaning, structure, and cultural nuance. In the Indian grammatical tradition, scholars have delved deeply into the intricacies of language, exploring all aspects of it, starting from the meanings of individual words to the complexities of discourse analysis. This rich heritage has laid a foundation for modern linguistic theories, particularly in the realm of dependency grammar.

Dependency grammar offers a suitable framework for understanding sentence structure by visualising relationships among words through a parse tree. At its core, this model posits that the main verb acts as an independent unit, while other words are interconnected with each other based on various relationships. This approach is especially relevant for Indian languages, which bear a harmonious interrelation despite surface-level differences.

In our exploration of Indian languages, we have observed that parallel sentences can appear dissimilar due to typographical conventions that treat whitespace-separated tokens as distinct words. To address this challenge, we advocate for a method that utilises 'word groups' to bridge these apparent discrepancies.

To provide a structured approach to understanding the unity among the diverse tongues, in this book, we introduce Samanvaya, our proposed interlingua for Indian languages. Central to Samanvaya are dependency relations that draw upon the principles of Sanskrit grammar while also incorporating features from various native Indian languages. This dual foundation

enriches our understanding and application of language processing.

To enhance our dependency parsing structure, each word and word group is annotated with lemma and morphological tags that encompass not only standard grammatical features, such as case, gender, number, person, tense, aspect, mood and transitivity, but also additional nuances like negation, emphasis, conjunction, interrogation, comparison, politeness/respect and inclusivity/exclusivity.

We believe that Samanvaya will not only refine the accuracy of computational tools in language processing but will also cultivate a deeper appreciation for the interconnectedness of Indian languages. In an era marked by globalisation and technological advancement, understanding these relationships is crucial for celebrating linguistic diversity and fostering cross-cultural communication.

As one embarks on this exploration of Samanvaya and its implications for Indian languages, we hope that one will be inspired to reflect on the beauty and complexity of language, which is a living testament to human thought and expression.

| | | |
|---|---|---|
| चैताली डांगरीकर | डाङ्गरीकर-चैताली | Chaitali Dangarikar |
| অর্ণব ভট্টাচার্য | भट्टाचार्य-अर्णवः | Arnab Bhattacharya |
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| అణ్ణారావ కులకర్ణి | कुलकर्णि-अण्णारावः | Annarao Kulkarni |
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tating the creation of corpora, and supporting linguistic research as well as education.

## 1.6 Samanvaya Dependency Relationships

The Samanvaya dependency relationship tagset consists of 69 tags arranged in a hierarchy across 11 broad categories.

Each dependency relationship tag in the Samanvaya framework is described in this book and example sentences with dependency relation analysis and graphs are presented for major Indian languages, starting with Sanskrit. Five other major Indian languages are covered in this book. We plan to extend this in future. The current set of six languages in the alphabetical order of the Indian alphabet are:

| | | | |
|---|---|---|---|
| संस्कृतम् | Saṁskṛtam | Sanskrit | (san) |
| ಕನ್ನಡ | Kannaḍa | Kannada | (kan) |
| বাঙ্গলা/বাংলা | Bāṅgalā | Bengali/Bangla | (ben) |
| मराठी | Marāṭhī | Marathi | (mar) |
| മലയാളം | Malayāḷaṁ | Malayalam | (mal) |
| हिन्दी | Hindī | Hindi | (hin) |

### 1.6.1 Features of Samanvaya Dependency Relations

The proposed dependency relations exhibit the following features:

- *Binary and Directed Relations:* The relations are binary and directed, connecting a word to its headword.
- *Conceptual Basis:* All relations established between words denote specific concepts.
- *Traditional Terms:* Most relation names are derived from the Pāṇinian tradition, maintaining a connection to classical Sanskrit grammar.
- *New Relation Terms:* A few new relations, not originally found in Pāṇinian grammar, have been introduced. These correspond to certain nuances of modern Indian languages, such as the distinctions for

location indicated by “in” and “on”, as well as the experiencer as a subject. The term names are taken from native language grammars.

- *Suitability for Automatic Parsing:* These dependency relations are designed to be suitable for automatic parsing.
- *Comprehensibility:* The labels are crafted to be comprehensible to non-Sanskrit experts, making the system accessible to diverse language groups across India.
- *Application to Indian Languages:* With necessary modifications, Pāṇinian grammar can be effectively applied to Indian languages, enabling the creation of nearly canonical dependency structures. This approach leverages Sanskrit grammar as an interlingua to standardise grammatical representations across diverse linguistic landscapes, thereby enhancing communication and information exchange within India’s multilingual context.
- *Handling Nuances of Modern Usages in Indian Languages:* Specific adaptations have been made to account for linguistic nuances in modern Indian languages, including the adaptation of tags for spatial relations, the introduction of new semantic role tags, and the handling of compound words, named entities, and morphological variations. For example, some southern Indian languages do not use conjoining conjunctions like yadi-tarhi (Sanskrit) or agara-tō (Hindi) separately.
- *Figurative Language:* The system addresses the fundamental challenges of figurative language, ensuring that different linguistic structures are accurately represented and understood. This is achieved through tags such as sādr̥śya (similarity), tulanā (comparison), nirdhāraṇa (determination), and kriyōpamā (action-comparison).

### 1.6.2 Example

To illustrate the dependency relations using the Samanvaya tagset, we provide example sentences for each tag and each applicable language. For each example sentence we also present their transliteration (ISO-15919), gloss, translation, and the dependency relations as a dependency graph. The relation corresponding to the tag under discussion is also highlighted.

*Sentence*: देवदत्तः ओदनं पचति
*Transliteration*: devadattaḥ ōdanaṁ pacati
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice

*Dependency Relations:* The dependency relations for the sentence are described using the positions of the words in the sentence:

1 देवदत्तः (Devadatta) has a relation of कर्ता (kartā, subject) with the word positioned at place 3 in the sentence

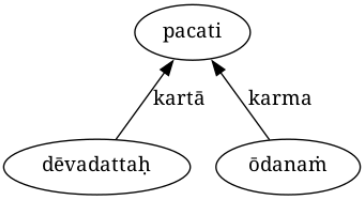
2 ओदनं (rice) has a relation of कर्म (karma, object) with the word positioned at place 3 in the sentence

3 पचति (cooks) is the main क्रिया (kriyā, verb) or root of the sentence

*Dependency Structure:* The structure, thus, can be represented as

1 देवदत्तः कर्ता 3
2 ओदनं कर्म 3
3 पचति 3

*Dependency Graph:* The dependency structure can be visually rendered as a graph using Graphviz (Gansner and North, 2000) or drawn through an online tool such as Anvayachitranam (Lakkundi and Shivani, 2021) to demonstrate the relationships among the words in the sentence. The graph highlights how "devadattaḥ" (कर्ता) and "ōdanaṁ" (कर्म) are connected to "pacati" (क्रिया). The graph structure is illustrated as follows:




### 1.6.3 Dependency Relations

We list the entire set of 69 dependency relations by dividing it into 11 tables.

Table 1.1: कारक-सम्बन्ध

| 1 | कारक-सम्बन्ध | Case Relations |
|---|---|---|
| 1.1 | कर्ता-कारक | Subject or Agent |
| 1.1.1 | कर्ता | Direct subject |
| 1.1.2 | अनुभवकर्ता | Experiencer |
| 1.1.3 | कर्ता-कारकषष्ठी | Subject of the verbal derivative |
| 1.1.4 | प्रयोजक-कर्ता | Causative agent |
| 1.1.5 | प्रयोज्य-कर्ता | Caused agent or instigated agent |
| 1.1.6 | मध्यस्थ-कर्ता | Intermediary or middle agent |
| 1.2 | कर्म-कारक | Object |
| 1.2.1 | कर्म | Direct object |
| 1.2.2 | कर्म-कारकषष्ठी | Object of the verbal derivative |
| 1.2.3 | गौण-कर्म | Secondary or indirect object |
| 1.2.4 | अनुभव-कर्म | Emotional target or stimulus |
| 1.3 | करण-कारक | Instrument |
| 1.3.1 | करण | Direct instrument |
| 1.4 | सम्प्रदान-कारक | Beneficiary |
| 1.4.1 | सम्प्रदान | Direct beneficiary |
| 1.5 | अपादान-कारक | Source of separation |
| 1.5.1 | अपादान | Direct source of separation |
| 1.5.2 | विपरिणाम | Source for state transformation |
| 1.5.3 | प्रकृति-अपादान | Source for material transformation |
| 1.6 | अधिकरण-कारक | Location or Time |
| 1.6.1 | देशाधिकरण | Spatial location |
| 1.6.2 | अभ्यन्तर | Inside location (in) |
| 1.6.3 | औपश्लेषिक | Touching location (on) |
| 1.6.4 | अभिव्यापक | Surrounding or encompassing location |
| 1.6.5 | सामीप्य | Proximity location (near) |
| 1.6.6 | कालाधिकरण | Time |
| 1.6.7 | विषयाधिकरण | Subject matter |

Table 1.2: कारकेतर-सम्बन्ध

| | | |
|---|---|---|
| 2 | कारकेतर-सम्बन्ध | Noun Relations |
| 2.1 | सम्बन्ध-षष्ठी | Relation |
| 2.2 | उपपद-सम्बन्ध | Secondary word relation |
| 2.2.2 | उपपदमूलक-सम्बन्ध | Secondary word relation |
| 2.2.3 | उपपद | Secondary word |
| 2.3 | विस्मयादि-बोधक | Interjection |
| 2.4 | सम्बोधन-सम्बन्ध | Vocative relation |
| 2.4.1 | सम्बोधन | Vocation |
| 2.4.2 | सम्बोधन-द्योतक | Vocation indicator |
| 2.5 | विधेय | Predicate noun or adjective |
| 2.6 | अभ्यस्त-सम्बन्ध | Repetitive use through duplication |
| 2.6.1 | वीप्सा-पूर्णाभ्यस्त | Complete reduplication |
| 2.6.2 | अंशाभ्यस्त | Partial reduplication |

Table 1.3: विशेषण-सम्बन्ध

| | | |
|---|---|---|
| 3 | विशेषण-सम्बन्ध | Modifier Relations |
| 3.1 | विशेषण | Adjective |
| 3.2 | क्रियाविशेषण | Adverb |
| 3.3 | तीव्रतादर्शी | Intensifier and Qualifier |
| 3.4 | नादानुकारी | Onomatopoeia |

Table 1.4: प्रश्नवाचक-सम्बन्ध

| | | |
|---|---|---|
| 4 | प्रश्नवाचक-सम्बन्ध | Interrogative Relations |
| 4.1 | प्रश्नवाचक | Interrogative |
| 4.2 | विकल्प-प्रश्नवाचक | Interrogative with alternatives/choices |

Table 1.5: समुच्चय

| | | |
|---|---|---|
| 5 | समुच्चय | Coordination Relations |
| 5.1 | समुच्चित | Coordinated |
| 5.2 | समुच्चय-द्योतक | Coordination indicator |

Table 1.6: नकारात्मक-सम्बन्ध

| | | |
|---|---|---|
| 6 | नकारात्मक-सम्बन्ध | Negation Relations |
| 6.1 | नकारात्मक | Negation |
| 6.2 | विशेष-नकारात्मक | Special negation |

Table 1.7: प्रयोजनादि-सम्बन्ध

| | | |
|---|---|---|
| 7 | प्रयोजनादि-सम्बन्ध | Relations for Purpose, etc. |
| 7.1 | प्रयोजन | Purpose |
| 7.2 | हेतु-सम्बन्ध | Intention relationship |
| 7.2.1 | हेतु | Intention |
| 7.2.2 | भयहेतु | Fear-driven intention |
| 7.3 | अङ्गविकार | Bodily deformities |

Table 1.8: तुलनादि-सम्बन्ध

| 8 | तुलनादि-सम्बन्ध | Relations for Similarity, etc. |
|---|---|---|
| 8.1 | सादृश्य-सम्बन्ध | Similarity relation |
| 8.1.1 | सादृश्य | Similarity |
| 8.1.2 | सादृश्य-द्योतक | Similarity indicator |
| 8.2 | तुलना-सम्बन्ध | Comparison relation |
| 8.2.1 | तुलना | Comparison |
| 8.2.2 | तुलना-द्योतक | Comparison indicator |
| 8.3 | निर्धारण | Reference |

Table 1.9: वाक्य-सम्बन्ध

| 9 | वाक्य-सम्बन्ध | Sentence and Subordinate Relations |
|---|---|---|
| 9.1 | वाक्य-संयोजक | Sentence joiner |
| 9.2 | वाक्यकर्म-सम्बन्ध | Sentence as Object |
| 9.2.1 | वाक्यकर्म | Sentence-object |
| 9.2.2 | वाक्यकर्म-द्योतक | Sentence-object indicator |
| 9.2.3 | उक्ति | Utterance or Quoted speech |
| 9.2.4 | अनुसार | Attribution |
| 9.3 | वाक्यांश-योजक | Sentence-part joiner |
| 9.4 | स्वरूप-सम्बन्ध | Form or Nature relationship |
| 9.4.1 | स्वरूप | Form or Nature |
| 9.4.2 | स्वरूप-द्योतक | Form or Nature indicator |

Table 1.10: क्रिया-सम्बन्ध

| | | |
|---|---|---|
| 10 | क्रिया-सम्बन्ध | Verb Relations |
| 10.1 | समुच्चित-क्रिया | Coordinate verb |
| 10.2 | सापेक्ष-क्रिया | Dependent verb |
| 10.3 | क्रियोपमा | Verb comparison |
| 10.4 | क्रियाकाल-सम्बन्ध | Tense relations |
| 10.4.1 | पूर्वकाल | Anterior action |
| 10.4.2 | अनन्तरकाल | Posterior action |
| 10.4.3 | समानकाल | Simultaneous action |
| 10.4.4 | अभ्यासगतकाल | Habitual action |
| 10.5 | कृदन्त-विशेषण | Verbal modifier |
| 10.6 | भाव-लक्षण | Simultaneous action (locative) |
| 10.7 | अनादर | Simultaneous action (genitive) |

Table 1.11: विरामादि-चिह्न

| | | |
|---|---|---|
| 11 | विरामादि-चिह्न | Punctuation |
| 11.1 | विरामादि-चिह्न | Punctuation Marks |

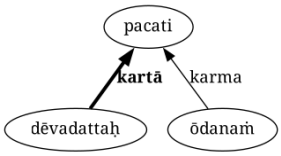
In the first sentence, "रामः" (Rama) is the agent performing the action. In the second sentence, "कुञ्चिका" (key) is the subject performing the action. In the third sentence, "तालः" (lock) is the theme undergoing the action.

There are several types of kartā depending upon the various types of roles it can play.

### 2.1.1 Kartā

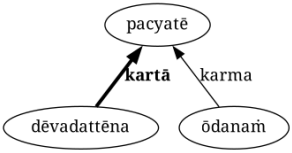
**English Name:** Direct subject
**Description:** The concept of kartā in Sanskrit and Indian language grammars encompasses a wide range of entities, including subjects, themes, agents, and even inanimate objects that are the main independent source or cause of an action.[1] According to (Kulkarni et al., 2019), kartā can be roughly translated as "doer" which need not be animate.

**Example 2.1:** Kartā **(san)**
*Sentence*: देवदत्तः ओदनं पचति
*Transliteration*: dēvadattaḥ ōdanaṁ pacati
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice

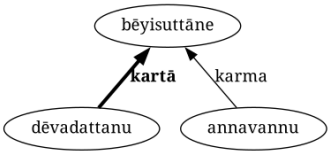



[1] स्वतन्त्रः कर्ता P.1.4.54. The agent (kartā) is the independent, primary source of action chosen by the speaker. It is absolute and unrestricted, as exemplified by "Devadatta cooks" (देवदत्तः पचति) and "the pot cooks" (स्थाली पचति) (Vasu, 1897). The agent is the subject of an action, a kāraka that produces the action's result without relying on other instruments. This aligns with Pāṇini's definition (I.4.54) of the agent as "an unmodified element intended to convey independence in the performance of an action". The agent is typically in the nominative case (active voice), instrumental case (passive voice), or genitive case (with noun of action) (Abhyankar, 1961).

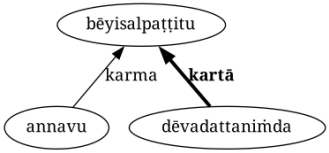
**Example 2.2:** Kartā **(san)**
*Sentence*: देवदत्तेन ओदनं पच्यते
*Transliteration*: dēvadattēna ōdanaṁ pacyatē
*Gloss*: Devadatta_by rice cooked
*Translation*: Rice is being cooked by Devadatta



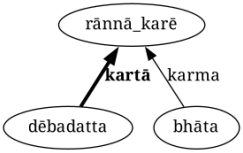

**Example 2.3:** Kartā **(kan)**
*Sentence*: ದೇವದತ್ತನು ಅನ್ನವನ್ನು ಬೇಯಿಸುತ್ತಾನೆ
*Transliteration*: dēvadattanu annavannu bēyisuttāne
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice



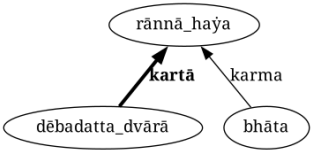

**Example 2.4:** Kartā **(kan)**
*Sentence*: ಅನ್ನವು ದೇವದತ್ತನಿಂದ ಬೇಯಿಸಲ್ಪಟ್ಟಿತು
*Transliteration*: annavu dēvadattaniṁda bēyisalpaṭṭitu
*Gloss*: Devadatta_by rice cooked
*Translation*: The rice was cooked by Devadatta



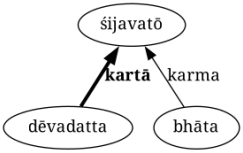
**Example 2.5:** Kartā **(ben)**
*Sentence*: দেবদত্ত ভাত রান্না_করে
*Transliteration*: dēbadatta bhāta rānnā_karē
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice



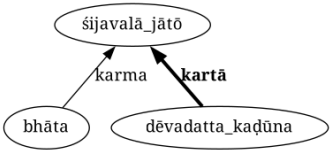

**Example 2.6:** Kartā **(ben)**
*Sentence*: দেবদত্ত_দ্বারা ভাত রান্না_হয়
*Transliteration*: dēbadatta_dvārā bhāta rānnā_haẏa
*Gloss*: Devadatta_by rice cooked
*Translation*: Rice is cooked by Devadatta



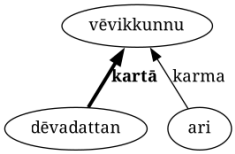

**Example 2.7:** Kartā **(mar)**
*Sentence*: देवदत्त भात शिजवतो
*Transliteration*: dēvadatta bhāta śijavatō
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice



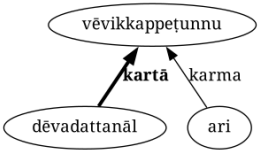
**Example 2.8:** Kartā **(mar)**
*Sentence*: भात देवदत्त_कडून शिजवला_जातो
*Transliteration*: bhāta dēvadatta_kaḍūna śijavalā_jātō
*Gloss*: rice Devadatta_by cooked
*Translation*: The rice was cooked by Devadatta



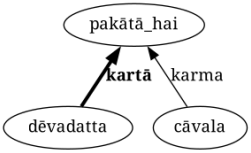

**Example 2.9:** Kartā **(mal)**
*Sentence*: ദേവദത്തൻ അരി വേവിക്കുന്നു
*Transliteration*: dēvadattan ari vēvikkunnu
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice



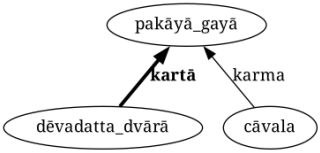

**Example 2.10:** Kartā **(mal)**
*Sentence*: ദേവദത്തനാൽ അരി വേവിക്കപ്പെടുന്നു
*Transliteration*: dēvadattanāl ari vēvikkappeṭunnu
*Gloss*: Devadatta_by rice cooked
*Translation*: The rice was cooked by Devadatta



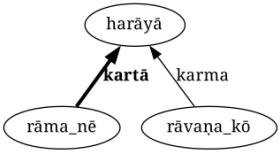
**Example 2.11:** Kartā **(hin)**
*Sentence*: देवदत्त चावल पकाता_है
*Transliteration*: dēvadatta cāvala pakātā_hai
*Gloss*: Devadatta rice cooks
*Translation*: Devadatta cooks rice




**Example 2.12:** Kartā **(hin)**
*Sentence*: देवदत्त_द्वारा चावल पकाया_गया
*Transliteration*: dēvadatta_dvārā cāvala pakāyā_gayā
*Gloss*: Devadatta_by rice cooked
*Translation*: The rice was cooked by Devadatta

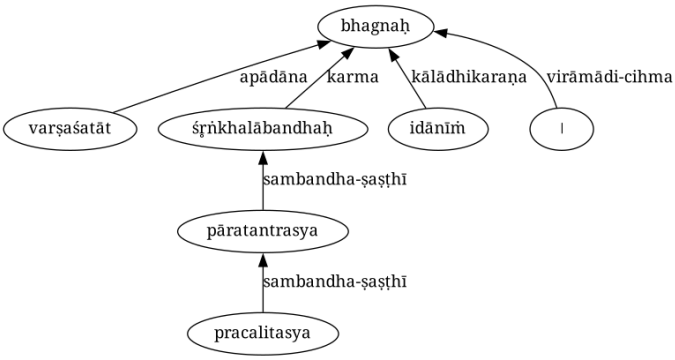



**Example 2.13:** Kartā **(hin)**
*Sentence*: राम_ने रावण_को हराया
*Transliteration*: rāma_nē rāvaṇa_kō harāyā
*Gloss*: Rama_by Ravana defeated
*Translation*: Rama defeated Ravana

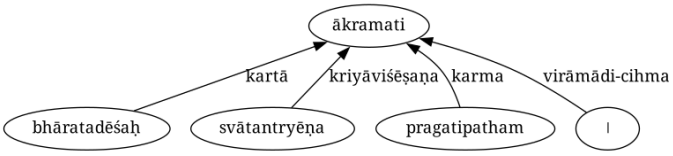


## 13.1 Saṁskr̥tam (**Sanskrit**)

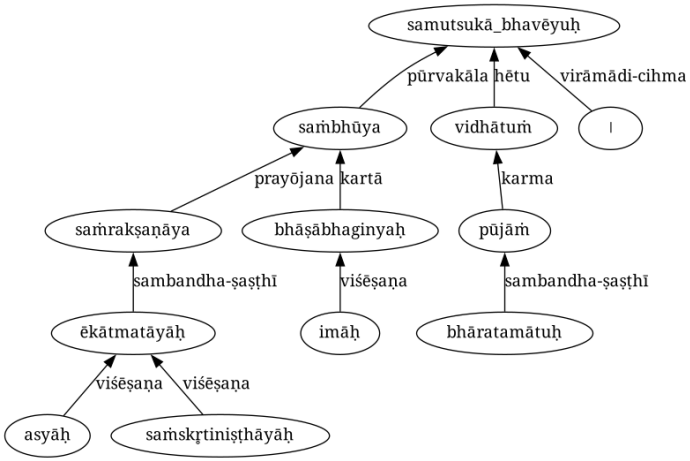
**Example 13.1:** Full Dependency Parse (**san**)
*Sentence*: वर्षशतात्प्रचलितस्य पारतन्त्रस्य शृङ्खलाबन्ध इदानीं भग्नः।
*Transliteration*: varṣaśatātpracalitasya pāratantrasya śr̥ṅkhalābandha idānīṁ bhagnaḥ।
*Gloss*: century_from ongoing_of slavery_of chain now broken.
*Translation*: The chains of centuries of slavery have been broken.




**Example 13.2:** Full Dependency Parse (**san**)
*Sentence*: भारतदेशः स्वातन्त्र्येण प्रगतिपथम् आक्रमति।
*Transliteration*: bhāratadēśaḥ svātantryēṇa pragatipatham ākramati।
*Gloss*: Bharat independently progress_road_to moving.
*Translation*: Independent Bharat is moving on the path of progress with all speed.



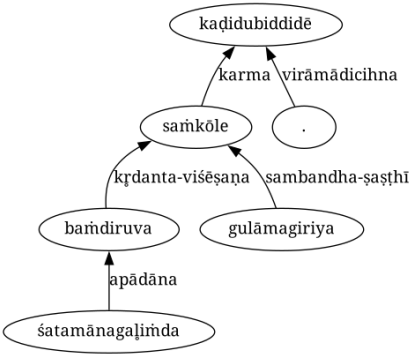
**Example 13.6:** Full Dependency Parse **(san)**
*Sentence*: अस्याः संस्कृतिनिष्ठाया एकात्मतायाः संरक्षणाय इमाः भाषाभगिन्यः संभूय भारतमातुः पूजां विधातुं समुत्सुका_भवेयुः।
*Transliteration*: asyāḥ saṁskr̥tiniṣṭhāyā ēkātmatāyāḥ saṁrakṣaṇāya imāḥ bhāṣābhaginyaḥ saṁbhūya bhāratamātuḥ pūjāṁ vidhātuṁ samutsukā_bhavēyuḥ।
*Gloss*: this_of culture_dedication_of unity_of protection_for these language_sisters becoming "BHARATI"_mother_of worship_to maintain_for motivated_should.
*Translation*: In order to maintain this cultural unity, the languages should come forward like sisters to worship mother "BHARATI".



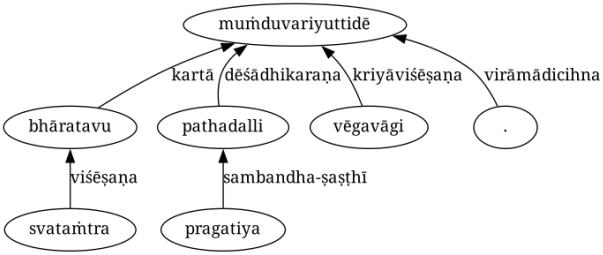

## 13.2 Kannaḍa (**Kannada**)

**Example 13.7:** Full Dependency Parse **(kan)**
*Sentence*: ಶತಮಾನಗಳಿಂದ ಬಂದಿರುವ ಗುಲಾಮಗಿರಿಯ ಸಂಕೋಲೆ ಕಡಿದುಬಿದ್ದಿದೆ.
*Transliteration*: śatamānagaḷiṁda baṁdiruva gulāmagiriya saṁkōle kaḍidubiddide.
*Gloss*: centuries_from coming slavery_of chain cut_fallen.

*Translation*: The chains of centuries of slavery have been broken.



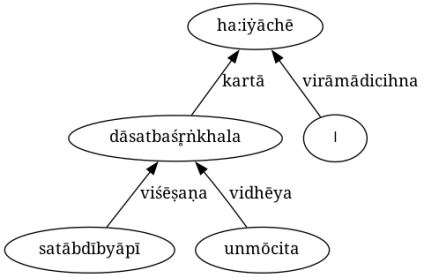

**Example 13.8:** Full Dependency Parse **(kan)**
*Sentence*: ಸ್ವತಂತ್ರ ಭಾರತವು ಪ್ರಗತಿಯ ಪಥದಲ್ಲಿ ವೇಗವಾಗಿ ಮುಂದುವರಿಯುತ್ತಿದೆ.
*Transliteration*: svataṁtra bhāratavu pragatiya pathadalli vēgavāgi muṁduvariyuttide.
*Gloss*: independent Bharat progress_of path_in speed_with forward_moving.
*Translation*: Independent Bharat is moving on the path of progress with all speed.



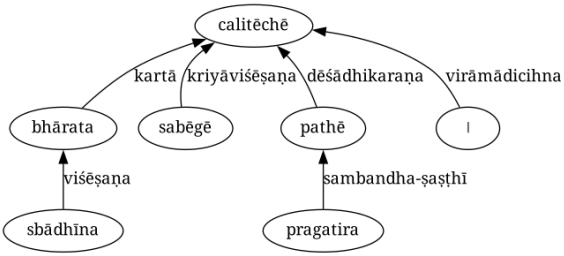

**Example 13.9:** Full Dependency Parse **(kan)**
*Sentence*: ಆಧ್ಯಾತ್ಮಿಕ ದೃಷ್ಟಿಯಿಂದ ಮೋದಲೇ ಶ್ರೇಷ್ಠವಾದ ಈ ನಾಡು ಈಗ ಭೌತಿಕ ಪ್ರಗತಿಯ ಪಥದಲ್ಲಿ ತೀವ್ರವಾಗಿ ಅಭ್ಯುದಯಹೋಂದುತ್ತಿದೆ.

## 13.3 Bāṅgalā **(Bengali/Bangla)**

**Example 13.13:** Full Dependency Parse **(ben)**
*Sentence*: শতাব্দিব্যাপী দাস্যত্বশৃঙ্খল উন্মোচিত হইয়াছে।
*Transliteration*: śatābdibyāpī dāsyatvaśr̥ṅkhala unmōcita haiẏāchē।
*Gloss*: century_spread slavery_chain opened is.
*Translation*: The chains of centuries of slavery have been broken.

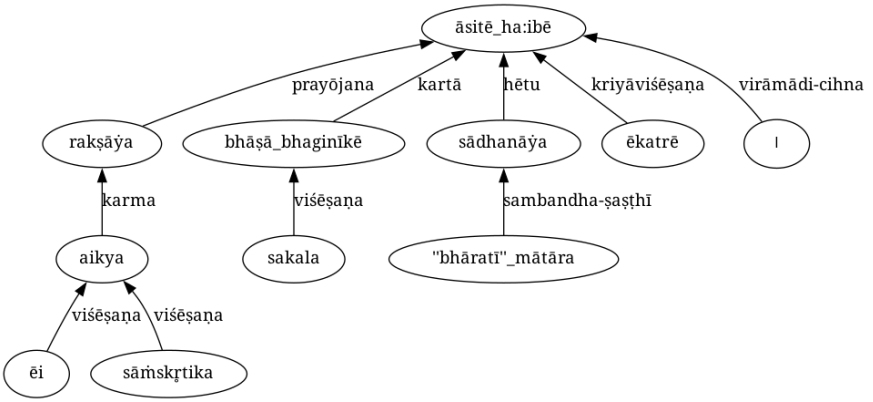



**Example 13.14:** Full Dependency Parse **(ben)**
*Sentence*: স্বাধীন ভারত সবেগে প্রগতির পথে চলিতেছে।
*Transliteration*: svādhīna bhārata sabēgē pragatira pathē calitēchē।
*Gloss*: independent Bharat speed_with progress_of road moving.
*Translation*: Independent Bharat is moving on the path of progress with all speed.



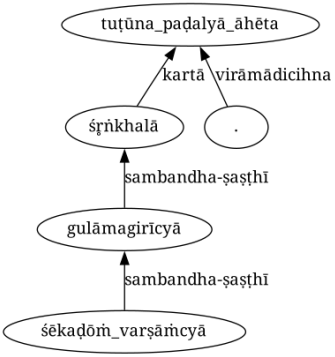

**Example 13.15:** Full Dependency Parse **(ben)**
*Sentence*: ইতিপূর্ব্বে আধ্যাত্মিকতায় মহান এই দেশ এক্ষণে ভৌতিক উন্নতির পথেও

**Example 13.18:** Full Dependency Parse **(ben)**
*Sentence*: এই সাংস্কৃতিক ঐক্য রক্ষায় সকল ভাষা_ভগিনীকে "ভারতী" মাতার সাধনায় একত্রে আসিতে_হইবে।
*Transliteration*: ēi sāṁskr̥tika aikya rakṣāẏa sakala bhāṣā_bhaginīkē "bhāratī" mātāra sādhanāẏa ēkatrē āsitē_haibē।
*Gloss*: this cultural integrity maintenance_in all language_sisters_to “BHARATI” mother_of worship_in together should_come.
*Translation*: In order to maintain this cultural unity, the languages should come forward like sisters to worship mother “BHARATI”.

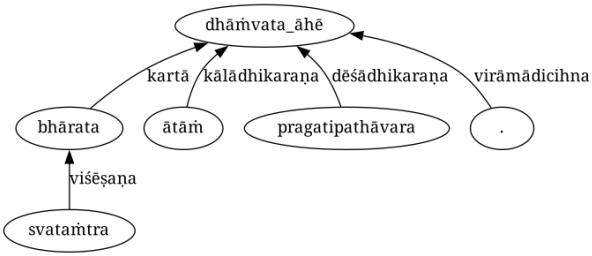



## 13.4 Marāṭhī (**Marathi**)

**Example 13.19:** Full Dependency Parse **(mar)**
*Sentence*: शेकडों_वर्षांच्या गुलामगिरीच्या शृङ्खला तुटून_पडल्या_आहेत.
*Transliteration*: śēkaḍōṁ_varṣāṁcyā gulāmagirīcyā śr̥ṅkhalā tuṭūna_paḍalyā_āhēta.
*Gloss*: centuries_of slavery_of chains broken_are.
*Translation*: The chains of centuries of slavery have been broken.



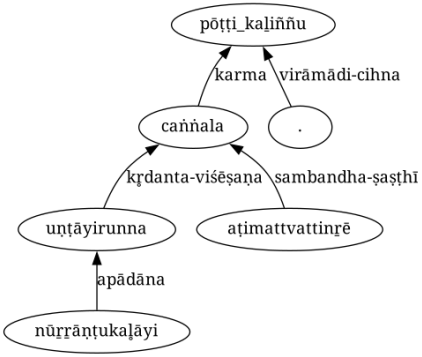

**Example 13.20:** Full Dependency Parse **(mar)**
*Sentence*: स्वतंत्र भारत आतां प्रगतिपथावर धांवत_आहे.
*Transliteration*: svataṁtra bhārata ātāṁ pragatipathāvara dhāṁvata_āhē.
*Gloss*: independent Bharat now progress_of road_on running.
*Translation*: Independent Bharat is now moving on the path of progress with all speed.




**Example 13.21:** Full Dependency Parse **(mar)**
*Sentence*: आध्यात्मिक दृष्टया आधींच श्रेष्ठ असलेला हा महान् देश आतां भौतिक_उन्नतीचीहि वाट वेगानें चालत_आहे.
*Transliteration*: ādhyātmika dr̥ṣṭayā ādhīṁca śrēṣṭha asalēlā hā mahān dēśa ātāṁ bhautika_unnatīcīhi vāṭa vēgānēṁ cālata_āhē.

## 13.5 Malayāḷaṁ (**Malayalam**)

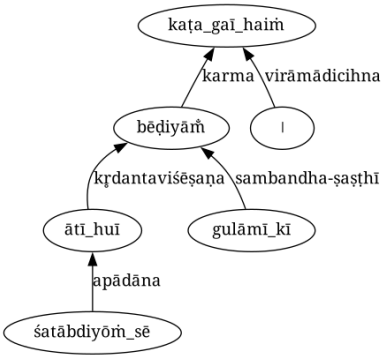
**Example 13.25:** Full Dependency Parse **(mal)**
*Sentence*: നൂറ്റാണ്ടുകളായി##ഉണ്ടായിരുന്ന അടിമത്ത്വത്തിന്റെ ചങ്ങല പൊട്ടി_കഴിഞ്ഞു.
*Transliteration*: nūṟṟāṇṭukaḷāyi##uṇṭāyirunna aṭimattvattiṉṟe caṅṅala poṭṭi_kaḻiññu.
*Gloss*: centuries_since there_been slavery's chain break_over.
*Translation*: The chains of centuries of slavery have been broken.




**Example 13.26:** Full Dependency Parse **(mal)**
*Sentence*: സ്വതന്ത്ര ഭാരതം ദ്രുതഗതിയിൽ പുരോഗതിയുടെ മാർഗത്തിൽ സഞ്ചരിക്കുകയാണ്.
*Transliteration*: svatantra bhāratаṁ drutagatiyil purōgatiyuṭe mārgattil sañcarikkukayāṇ.
*Gloss*: independent Bharat speed_with progress_of way_in travelling_is.
*Translation*: Independent Bharat is moving on the path of progress with all speed.

## 13.6 Hindī (Hindi)

**Example 13.31:** Full Dependency Parse (hin)
*Sentence*: शताब्दियों_से आती_हुई गुलामी_की बेडियाँ कट_गई_ हैं।
*Transliteration*: śatābdiyōṁ_sē ātī_huī gulāmī_kī bēḍiyāṁ kaṭa_gaī_ haiṁ।
*Gloss*: centuries_from coming slavery_of chains broken_are.
*Translation*: The chains of centuries of slavery have been broken.




**Example 13.32:** Full Dependency Parse (hin)
*Sentence*: स्वतंत्र भारत प्रगति_के पथपर बड़ी तेजी_से बढ_रहा_है।
*Transliteration*: svataṁtra bhārata pragati_kē pathapara baṛī tējī_sē baḍha_rahā_hai।
*Gloss*: independent Bharat progress_of road_on speed_with moving.
*Translation*: Independent Bharat is moving on the path of progress with all speed.

## About the Book

This book is the result of collaborative efforts from scholars passionate about linguistics and cultural unity. We extend our heartfelt gratitude to colleagues at IIT Kharagpur, IIT Kanpur, IIT Bombay, CDAC Bangalore and Karnataka Samskrit University, as well as the Ministry of Electronics & Information Technology (MEITY) for supporting our project under the National Language Translation Mission (NLTM) Bhasini scheme.

## Reflections on Unity

**Samanvaya** embodies the belief that unity arises from diversity. Let us all embrace the beauty of language as a dynamic expression of our shared heritage.

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The accompanying website for the book is at:
**https://sanskrit.iitk.ac.in/samanvaya**

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