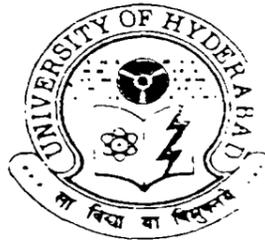


**CERTAIN ASPECTS OF AN ELECTRONIC DICTIONARY FOR A LANGUAGE
ACCESSOR [TELUGU – HINDI ANUSAARAKA SYSTEM].**

**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE AWARD
OF THE DEGREE OF M.Phil TRANSLATION STUDIES.**

**BY
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DECLARATION

I hereby declare that the work presented in this dissertation entitled **CERTAIN ASPECTS OF AN ELECTRONIC DICTIONARY FOR A LANGUAGE ACCESSOR (TELUGU – HINDI ANUSAARAKA SYSTEM)**, has been carried out by me under the guidance and supervision of Dr. G. UMA MAHESHWARA RAO, Reader, Centre for Applied Linguistics and Translation Studies [CALTS], School of Humanities, University of Hyderabad, and that this work has not been submitted for a degree or diploma of any other university.

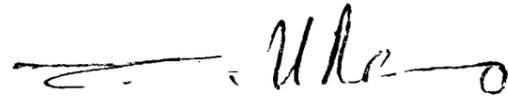

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CERTIFICATE

This is to certify that Ms KALYANI P. has worked under my supervision for her M.Phil dissertation entitled **CERTAIN ASPECTS OF AN ELECTRONIC DICTIONARY FOR A LANGUAGE ACCESSOR (TELUGU – HINDI ANUSAARAKA SYSTEM)**, at the Centre for Applied Linguistics and Translation Studies [CALTS], University of Hyderabad, during the academic year 1999-2000 and this is her bonafide work, and does not constitute part of any material submitted for a degree here or elsewhere.



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ACKNOWLEDGEMENTS

First and the foremost, I wish to thank my supervisor Dr G. UMA MAHESHWAR RAO for his guidance. His constant suggestions, perceptive monitoring and meticulous analysing with exemplary patience could lead me through this project.

I am especially indebted to Mr V. KRISHNA MOORTHY, who stood by me through thick and thin. His sincere support, suggestions and understanding, his constant encouragement and moral boosting only helped me in completing and making this project a success.

I can't resist myself to thank Mr V. ANANTHAN NARAYANAN, the epitome of true friendship and love.

I will always remember Mr DURGA SRINIVAS, SANJU, VARA PRASAD, RAJANI ,SATYA, ~~XXXXXXXXXX~~, MALLIK, SHASHI and many more for their help and co-operation.

I am also grateful to Mr P.V.S. Murthy, junior lab assistant, for his help with my computer technicalities and Mr Appa Rao, for his dueful assistance. I must also thank MALLESH apart from the entire department of CALTS, its staff, and professors.

I was benefited from the help and co_operation extended by the librarian and staff of INDIRA GANDHI MEMORIAL LIBRARY HCU, CIEFL library and the departmental library of CALTS.

Finally, I should sincerely thank MY PARENTS and MY BROTHER, RAVI[shanku] for helping me in more than one way.

ANTKIT
mit tiefer Liebe.

LIST OF ABBREVIATIONS

acc.	: Accusative
adj.	: Adjective
adv.	: Adverb
ba.	: bahuvachana (plural)
e.	: ekavachana (singular)
f.	: Feminin
Hi.	: Hindi
@Hi.	: Anusaaraka Hindi
ind.	: Indiclinable
m.	: Masculine
n.	: Neuter
N.	: Noun
na.	: napuMsaka (neuter)
Nom.	: Nominative
Num.	: Numeral or number
obj.	: Object
obl.	: Oblique
p.	: Person
pu.	: pulliMg (masculine)
pl.	: Plural
sg.	: Singular
sub.	: Subject
Te.	: Telugu
V.	: Verb

1. INTRODUCTION

1.1. INTRODUCTION

Liberated by technology, printed dictionaries of purely human use have developed into specialised Machine Readable Dictionaries. A machine readable dictionary is not simply a dictionary on computer but can be customised for a specific purpose. Machine readable dictionaries are also known as Electronic dictionaries. These Electronic dictionaries which are particularly meant for use in Machine Translation (or machine aided translation) will be different from other electronic and printed regular dictionaries.

Machine Readable dictionary is essentially a digitalized version of an ordinary printed dictionary, however, with added advantages such as fast search, and retrieval of the required item besides a possible on-line generation of a wordform. However, electronic dictionaries meant for Machine Translation purpose are quite different in their organization not only of entries but also of their meanings which always will be in the form of lexical equivalents and not in the form of definitions.

This work is a part of the major project work executed in order to build Telugu-Hindi machine aided anusaaraka system or language accessor. Anusaaraka machine translation system is a special kind of machine aided translation system unlike the traditional machine aided translation systems.

The basic principle underlying this work is to enable the accession of the information that is available in the given Telugu text by a Hindi

knowing reader. The system guarantees faithful rendering of the message available in Telugu text into Hindi by minimizing subjective interpretation and maximizing objective reading of the source text. Digitized versions of ordinary existing dictionaries are illequipped for this purpose. The thesis is a modest demonstration of how anusaaraka Machine Translation dictionaries can be built.

1.2. MACHINE READABLE/ELECTRONIC BILINGUAL DICTIONARIES FOR TELUGU-HINDI ANUSARAKA MACHINE TRANSLATION

The dictionary for anusaaraka machine translation consists of a list of words representing various lexicalized concepts each with the information for its morphological category and conjugational or declensional class. Since it is bilingual dictionary meant for machine translation, each lexical item is provided with one or more lexical equivalents in the target language Hindi.

The contents of a dictionary are determined partly by the linguistic theory (a morphological module) and partly by the needs of application. It is generally assumed that a dictionary is a repository of all such words which are associated with some sort of idiosyncrasy -- phonological, morphological and lexical. Any word or word-form derived by any regular derivational/inflectional rule may not become part of the dictionary, as long as its semantics are in accordance with the derivation/inflection, in other words derivationally regular but semantically irregular forms part of a dictionary. Besides these, elements/strings are larger than words seemingly consisting of more than one word such as idioms, proverbs etc., may be included if they become noncompositional in their semantics. Many compounds which often occur in the texts may be entered in the dictionary.

Machine readable dictionaries range from simple to the most structured, with different degrees of complexity, both in terms of the linguistic data recorded and their internal organization, and also in terms of the computational aspects of the software involved.

1.3. METHODOLOGY

The present study is a descriptive account of building an ausaaraka machine translation dictionary. The methodology that is followed involves locating the sources of the data, the Telugu corpus, procedure for the selection of words, principles of organization, theoretical basis for the categorical and paradigmatic information with regard to these words, finding their meanings, classifying and listing lexical equivalents against each entry. This methodology is described in detail under the following headings:

1.3.1. SOURCES OF THE DATA

The Telugu corpora developed by CIIL Mysore and CALTS, University of Hyderabad, consisting of a series of running texts of 5 million words in length are the basic source for obtaining words.

1.3.2. SELECTION OF WORDS

The entire corpus was run against a robust morphological analyser with 97% recognition rate analyses and sets up root/stem for each wordform found in the corpus i.e., it sets up uninflected roots/stems with the relevant part-of-speech tagging. The total number of wordforms distinct in the corpus is around six lakhs. These six lakhs distinct wordforms are reduced to approximately 60,000 distinct roots/stems. These 60,000 distinct roots/stems have become part of the dictionary. All such words recognised by the

morphological analyser with appropriate part-of-speech tags along with conjugational/declensional class are entered into the dictionary.

In addition to these there are many words which involve two or more words or at least one word plus a particle or a post position realizing some idiosyncratic meaning. Such words will not be available directly to be listed in the dictionary, they will have to be identified as one reads through the text. Therefore, the dictionary consists of simple words (roots/stems, uninflected words), complex words of idiosyncratic meanings and compounds (see, verbs). The dictionary also lists many inflected words which exhibit structural/semantic idiosyncrasy as in pronouns.

1.3.3. ORGANIZATION OF WORDS

Entries are arranged in the simple alphabetical order. Each entry is followed by tags indicating class/declension, their category labels as noun[n], verb[v], adjective[adj], adverbs[adv], numerals[num] or indeclinable[ind]. Finally, their meanings are filled with an equivalent Hindi word. Homonyms with distinct category labels are listed separately as additional entries. Words with related meanings/senses i.e., polysemous words will be treated as single entry.

Each entry in this dictionary is a lexical representation and is also the basis for many inflected and derived wordforms in accordance with the declensional/conjugational class and its category. Lexical entries which do not derive their corresponding inflectional/derivational forms are categorized as indeclinables. Lexical representations among verbs are almost and always the imperative forms of the verb. Whereas among nouns it is the nominative form, while among adjectives it is the adjectival base, and in adverbs it is the derivational base from which all other inflected forms are derived.

1.3.4. MEANINGS

Meaning of a word ranges over a cluster of various senses. Each such sense again ranges over a cluster of its usages in real context. In other words, a meaning of a word is a cluster of all its usages in real time. However, in conventional bilingual dictionaries, the meaning(s) of the source language word(s) are given in terms of the target language word(s) as isolated and discrete entities. This sort of discrete and isolated nature of the analysis not only misrepresents the meaning of the source language word but also it allows one to "over_read" or "under_read" the meaning of the source language word (Dr G. Uma Maheshwar Rao, 1999).

In this dissertation , the analysis and the identification of the meaning of the source language word and the representation of its meaning in the target language is done at two levels. In the first step, a proper analysis of the "senses" of the source language word shall be represented by a target language word ranging over the "core" of its overall meaning. Very often, since an appropriate target word is not available, a diacritic may be used to indicate "those extra" senses of the source language word. In the second step the user is requested to take a tour of the explanatory notes for learning the exact senses of the word. A series of real-time lexical equivalents and the corresponding usages will let the user to select the relevant word and get the appropriate "sense" of the source language word.

Words are characteristically endowed with the three properties viz., sound, meaning and category. One would not think of a dictionary (lexicon) where entries do not fulfil this requirement. A proper dictionary will equally care for the appropriate and comprehensive analysis involving all the three properties of the word

mentioned above. In the following chapters I will try to show how the conventional dictionaries often have entries which do not conform to one or some of the requirements resulting in defective analysis which will be treated as misanalysis, underanalysis and overanalysis.

1.3.4.1. MEANING OF WORDS

The meaning of an expression is said to be that to which the expression refers. There are different types of meanings i.e., speaker meaning, word meaning, lexical meaning, sentence meaning etc. All approaches to the semantic analysis of natural languages are based on the insight that the meanings of lexical items are not unanalysable or undefinable wholes. The meaning of lexical element is therefore specified, roughly speaking by the set of all the meaning postulates in which it occurs. In other words, the meaning of a word is a complex of semantic components connected by logical constants. The nature of the lexical meaning is to interpret in phonological terms and there are mental processes involved in the situation (cf. Zgusta, Manual of Lexicography, 1971).

The lexical meaning have three main components:

1. The designation
2. Connotation
3. Range of application.

DESIGNATION:

Designation is just a concept which stands between the reality and the word. It is a narrow use of the term concept and is the thought or mental construct by means of which the mind apprehends or comes to know things. The intuitive apprehension of an object causes a concept of that thing to arise naturally in the mind. This individual concept is a natural sign of the object and it can be

regarded as the meaning of the written or spoken word which, by convention, signifies it in particular languages.

In the field of designation, the relation of the words to the segments of extralinguistic world, has three main components: the (form of the) word as the expression capable of being communicated to the hearer (or reader etc.), the designatum (or the concept) as the respective mental, conceptual content expressed in it, and the denotatum as the respective segment of the extra-linguistic world (cf. Ogden and Richards, *The Meaning of Meaning*, 1936).

For example, the word /puli/ in Telugu has phonological expression and it denotes a particular carnivorous, feline beast, indicating that it is a thing itself, or more precisely, the class of things to which it has this type of relation, called as denotatum. In between these two, there is some extralinguistic qualities or world knowledge which indicates that it is a cruel wild animal, called as denotatum. The relation between the word and the denotatum is not a direct one and there is the designatum between the word (lexical unit) and the denotatum. In short, the lexeme /puli/ signifies the concept and the concept signifies the object/thing.

CONNOTATION:

All the other components of lexical meaning (with the exception of the range of application) that do not belong to the designation (and the other functions dealt with on its model), can be covered by the general term of connotation. In a more positive way, we can describe connotation as a construction of all components of the lexical meaning that add some contrastive value to the basic, usually designative function. It is that meaning which extends beyond their simple referential content. In other words the various aspects of linguistic units which are seen as lying outside their core meaning. It

extends in such causes or factors of the specific content of the usage, its associated meanings, and the user's nature, social situations and social relationships. Connotation is generally opposed to denotation and is thought of as an emotive or affective component additional to its central meaning.

According to J.S. Mill (1843), who introduced the terminological opposition itself, shows that the word 'white' denotes all white things, as snow, paper, the foam of the sea, and so forth, and implies, or as it was termed by the schoolmen, connotes, the attribute whiteness. Further, according to him, an expression denoted a class of individuals of which it was the name (so that denotation was subsumed under naming); but, if it was a concrete general term, like 'white' or 'man', in addition to denoting the class or one of its members, it also implied the property or properties by virtue of which individuals were recognized as members of the class in question. In more recent philosophical writing Mill's terms 'denotation' and 'connotation' are often used for the different distinction of reference and sense.

RANGE OF APPLICATION OF THE WORD:

The applicability of a word is limited by some of its properties, beginning with its stylistic value, through its semantic connections, to its grammatical category. The knowledge of the applicability of words is extremely important for the real mastery of a language. To rule out this type of applicability requires great circumspection on extremely rich or if possible exhaustive documentation and a thorough checking with many informations.

For example, the words 'stipend' and 'salary' have a designatum which can be regarded as practically identical. Broadly spoken, it is the financial remuneration people regularly receive for

doing some work. There is hardly any conceivable difference of connotation between them. It is basically only the range of application which makes them different: 'stipend' is mostly used in connection with a teacher, clergyman or priest, whereas 'salary' is used in connection with an official, etc.

The restrictions of the range of application are sometimes very severe. It may even happen that a word's range of application is limited to one possible combination. The usual situation is, however, that the range of the application of a word is broader. But the lexicographer is primarily interested in the more specific restrictions of the range of application which can be conceived as individual properties of the word in question. These restrictions are connected with factors which are so different that they cannot be enumerated.

In order to account for the observation that the meaning of lexical elements is specified only by their relatedness and their difference from other relevant elements, a different type of relation among the elements of the vocabulary is established by restrictions on their combinability. Selection restrictions on the part of words one expressed in the form of elements are selected in order to form semantically well formed combination of two or more syntactically combined lexical elements. They specify, so to speak, possible semantic affinities among lexical entries. In general, one might define a complex of semantic components connected by logical constants as a concept.

The dictionary of a language is then a system of concepts in which phonological form and certain syntactic and morphological characteristics are assigned to each concept. This system of concepts is structured by several types of relations. It is supplemented further more by redundancy or implicational rules, representing general properties of the whole system of concepts. They

are not learned, but rather are a part of human ability to acquire an arbitrary natural language.

"anusAraka" mainly depends on this type of conceptual dictionary. To build these conceptual dictionaries, anusaaraka follows evolutionary operation. In other words, it takes those equivalents which are available in the existed dictionaries and make some changes going through various senses which in overall define the concept and by suggesting a lexical item in the target language and if not available, using special notation. It needs because meaning of a word ranges over a cluster of various senses. This was necessitated by the difference in the cultural and world knowledge that the speakers of these languages have. Hence, it is not always possible to suggest an equivalent using the target language word. So, there is a need for using notation to represent equivalents of source language.

1.3.5. CATEGORIES

Most languages have at least the major lexical categories like nouns and verbs. Some languages have many more. Categories like adjectives, adverbs, pronouns, numerals may sometimes be identified as separate or distinct categories as nouns/verbs depending on the language. In Telugu, there is no controversy over the recognition of nouns and verbs. However, the status of category, in the case of adjectives and adverbs etc., is controversial. In this analysis, a distinct category status is recognized for adjectives and adverbs (see, Dr G. Uma Maheshwar Rao (1996), Ramesh (1997)). Every lexical entry exhibits characteristic inflection/marking or bound elements which trigger the corresponding semantics regularly requiring a distinct category label.

1.3.6. SCOPE OF THE WORK

The analysis presented in the dissertation has relevance in the making of dictionaries in general and machine translation dictionaries in particular i.e., a bilingual dictionary should provide word level lexical equivalents rather than definitions. The definitions are not part of a dictionary, they are but part of encyclopedias.

The present work is part of the larger work involving the analysis of Telugu exhaustively to enable building a morphological analyser as an essential module in developing Telugu-Hindi Anusaaraka Machine Translation System. It is an attempt to put the Telugu Grammar for machine use. Morphology and lexicon are two faces of the same coin.

2. VERBS

2.1. INTRODUCTION

Verbs form the most important lexical and syntactic category of a language. A verb's lexical entry must specify the syntactic and semantic information that is generally associated with it. The analysis of meaning (semantics) of verbal lexemes is a highly complex phenomenon determined by three factors:

- (1). The correlation with the real world, which in the present instance appears not as world of objects, but a world of their relations, actions and states.
- (2). The categorical semantics of the object meaning connecting with verb.
- (3). The type of sense relations between the action, its subject and object. (cf. Zgusta: Manual of Lexicography)

In the first place, the analysis of lexical meaning of a verb is complicated by an entire series of semantic features which express the moments in which an action proceeds, the circumstances of its execution, aspectual, and temporal characteristics of the verbal action, its mode and expressive shades of meaning. (cf. Zgusta: Manual of Lexicography)

Take for example, the verb 'Aripo' which has several senses and each can be mapped on to a number of words in Hindi such as TaMdA_hoh 'to grow cool', `xivAlA_nikala', `GAva_Bara', `sUKa', `buJa'. Many Telugu-English dictionaries list as many as dozen senses and some of them are antonym as in the following: (extracted from Gwynn: 1997)

1. to become dry, to become warm,
2. to be put out, to be extinguished,
3. to become cool, to grow cool,
4. to be calmed, soothed, appeased; allayed, alleviated, assuaged, be healed.

As can be seen from the above list, it is hopeless to go on listing such antonymous pairs of words. For a native speaker, the sense of the word is something like this: "to revert an existing activity, an event, or a state to a natural condition or state by removing or extracting anything be it a heat, cold, wetness, desire, pain, even wealth etc", which can be lexically represented as in Hindi `SoRiwa_ho` or `SoRaNa_ho`. Certain finer senses which are read into this word are due to various objects which occur in different expressions.

Secondly, the task of defining the semantics of a verb requires the identification of the feature which is peculiar to the verbal lexeme in the context of another lexeme. However, often it is the case in conventional dictionaries that the meaning is represented as generalised exclusively at the level of verbal lexemes, in fact at the expense of the precision. The meaning or senses which are triggered in the context of other lexemes shall not be considered as the semantics of the lexical verb. In this type the relationship of objects in the context of the said verb influences the meaning.

For example, the Telugu verb `kattu' has various senses which can be translated into Hindi as `bAzXa', `bana', `baMxa_kara', `cukA', `lagA', etc. The meanings depend on their noun heads which occur with the respective verb. When the concerned is one of a house or building then it is `banA'. If the noun concerned is money, fees, amount, currency etc., then it will be `jamA_kara'; if the nouns

concerned are other than those above , etc., then the following senses can be listed as shown against each N verb combination.

Te.	Hi.	
illu_kattu	Gara_banA	`to construct (a house)'
gUdu_kattu	GoMsalA_banA	`to build (a nest)'
gajjelu_kattu	pAyala_bAzXa	`to tie (anklets)'
koVttu_kattu	xukAna_baMxa_kara	`to close (a shop)'
pannu_kattu	kara_cukA	`to pay (tax)'
viluva_kattu	mUlya_lagA	`to estimate (the value)'
leVkka_kattu	ginawI_kara	`to count'
Plju_kattu	Plja jamA_kara	`to pay (fees)'
gudda_kattu	vaswra_pahana	`to wear clothes'
jaMta_kattu	jodI_banA	`to pair with'
mIgada_kattu	malAyI_jama	`to form cream'

From the above cases, it is not at all clear how one would propose the meaning of the verb `kattu', out of the context (i.e. excluding the semantic contribution made by the concerned noun). No abstraction is reachable as in the case of `Aripo' `SoRaNa_kara'! or in our conventional dictionaries would list.

2.2. VERBS AND THEIR VERITABLE SEMANTICS

Lexical semantics of verbs as discussed above is the result of these verbs in the context of other lexical and functional categories and certainly not to be seen as obtained in those verbs in isolation. Other lexical and functional categories in which context the veritable semantics of verbs obtained are, Nouns, a special set of verbs (auxillary and 2nd verbs in compounds), certain adjectives, adverbs, and case markers. The Telugu verbs which render themselves into

more than one sense due to the reasons usually add complexity to the bilingual dictionary.

2.2.1. PREDICTABLE SEMANTICS INVOLVING VERBS

Semantics of some verbs are more or less predictable on the basis of the word-class in which context they occur as illustrated below:

1. amarcu: sajA, prabaMXa_kara, meM_lagA, `to furnish', `arrange', `fix'.

The verb `amarcu' has several meanings such as `preparing', `arranging', `furnishing', `decorating', etc., which can be mapped on to Hindi by the corresponding equivalents of `sajAnA', `sajjiwa_karanA', `prabaMXa_karanA' and lagAnA. However, it seems that these various senses are dependent on various locative case markers and in the context of animacy of the noun as in the following:

1a. In the context of place/space denoting Adverbial noun or a post position, the verb `amarcu', always triggers the meaning of `sajA' in Hindi. The following are some of the examples:

(i) Te. civaragA salAdapE koVwwimlra reVbbalanu aMxaMgA
amarcaMdi.

@Hi.aMwa_meM salada_ke_Upara harl_XaniyAz_ko{ba.}
acCe_se sajAnA cAhie.

(ii) Te. I PiraMgulu yuxXa nOkalapE amarcabadivuMtAyi.

@Hi.yaha wopa{ba.} jaMgl jahAja para sajA jAwA
hE{3na.ba.}

1b. N[+live] - ku: when used in the context of 'amaru' will give the sense of 'ke lie prabaMXa kara' in Hindi.

- (i) Te. guruvuku gurAnni amarcadaMkosaM SiRyulu cAlA
SramapaddAnu.
@Hi. gurU_ko` Gode ko` kA]prabaMXa_karanA ko` SiSya
bahuwa mehanawa_kiyA. {3pu.ba.}
Hi.gurU_ke_lie Gode_kA prabaMXa_karane_kelie SiSya_ne
bahuwa mehanawa_kiye_hEM.

1c. N[-live] - ku/lo: when used in the context of 'amaru' always get translated into 'meM_lagA' in Hindi.

- (i) Te. vippara blednu miksllo amarci kodiguddu soVnanu
kalupukovAli.
@Hi. vippara bleda_ko miksl_meM lagA_kara aMde_ke
plwaka_ko mila_lenA cAhie.
- (ii) Te. godaku kitiki amarcabativuMxi.
@Hi. xivAra meM kidaki lagAyA gayA hE.

2. ceVyyi: kara: 'to do'

The verb 'ceVyyi' is often translated into Hindi by the words 'banA', 'le' and 'kara'. Of course, there are several other exceptional cases which need to be entered separately in the dictionary.

The verb 'ceVyyi' when used in the context of nouns indicating physical artifacts and other things, it is in the sense of 'banA', elsewhere it is used in the sense of 'kara'.

2a. N[-abstract]{obj} 'ceVyyi'. 'banA'

- (i) Te. kaMsAli baMgAraM wo ABaraNAlu ceSAdu.
 aHi. sunAra sonA se` ABURaNa banAya-[hE]WA[3pu.e.]
 Hi. SunAra ne sone se ABURaNa banAya hE.

2b. N[+abstract]{obj} `ceVyyi': `kara'

- (i) Te. BArawa rAjyAMgaM pOrulaMxariki pani ceseMxuku
 hakku kalpiswoMxi.
 @Hi. BArawa aXiniveSana nAgarika-saba_ko` kAma
 karane_kA haka xe_ralA_hE.

Te.	Hi.	Object Noun
boVmmalu_ceVyyi	puwall_banA	[-abstract]
kurci_ceVyyi	kursi_banA	[-abstract]
peVIYli_ceVyyi	SAXi_kara	[+abstract]
pani_ceVyyi	kAma_kara	[+abstract]
viluva_ceVyyi	klmawa_(raKa)	[+abstract]
vedi_ceVyyi	garaM_kara	[+abstract]

Such constraints on the selection of the senses indicate that dictionaries should list besides morpho-syntactic features, the semantic features [+/-] abstract for nouns in the context of which the verb's distinct semantics are triggered.

2c. However, there are exceptions to the above which can be ascribed to the idiosyncrasy of Hindi, i.e., when the nouns concerned are `SapaWa', `prawijfa', `appu', etc, the verb `ceVyyi' is translated as `le', and in the last case as `macA'.

- (i) Te. AcArya rajanIRa BArawaxeSaMloki adugubeVttamani
 SapaWaM ceSAru.
 aHi. AcArya rajanIRa BArawaxeSa-meM pAzva nahI

Xarane kA SapaWa liyA [hE|WA] {3pu.ba.}

(ii) Te. BArawaxeSaM IMP nuMdi aXika moVwwaMlo appu
cesiMxi.

@Hi. BArawaxeSa_ne IMP se` aXika_meM karja
liyA_[hE|WA] {3~pu.e.}

(iii) Te. pillalu allari cesWAru.

@Hi. bacce Sora macA_We_hEM.

Such exceptions need to be taken care of by listing in the dictionary, the compounds `SapaWaM_ceVyyi', `appu_ceVyyi' and `allari_ceVyyi' as independent entries.

3. ceru: pahuMca`: `to reach'

The verb `ceru' is often translated into various senses depending on the noun which is marked for dative i.e., directional or locative case functions as `pahuMca' in Hindi.

3a. N-ku `ceru': N-pahuMca:

(i) Te. pakRulu eVkkadiki poyinA sUryAswamayAniki
gUIYlaku cerukuMtAyi.

@Hi. pakRI{ba.} kahlz jAne_para BI SAma_ko`
GoMsAleM_ko` pahuMca_wA_[hE|WA]. {3~pu.ba.}

(ii) Te. rAmudu Aru gaMtalaku A Uru cerukunnAdu.

@Hi. rAma CeH baje vaha gAzva pahuMca{3pu.sg}.

3b. N-lo `ceru': N-meM SAmila ho:

Similarly, the verb 'ceru' in the context of a Noun marked for locative case marker is translated as 'SAmila ho'.

- (i) Te. svAwaMwryaMkosaM cinna vayasulone eVMwo maMxi
xeSaBakwulu appati kAMgresulo cerAru.
@Hi. svAwaMwrya_ke_lie CotA umra_meM_hl kal{loga}
xeSaBakwa usa_samaya_kA kAMgres_a_meM
SAmila_huA{3pu.ba.}[hE/WA]
- (ii) Te. vAdu cinna vayassulone sanyAsulalo ceripoyAdu.
@Hi. vaha{pu.} CotA umra_meM_hl sanyAsiyom_meM
SAmila_ho_gayA.{3pu.e}[hE/WA]
- (iii) Te. vIdu vAdini ceri ceVdagoVtteSAdu.
@Hi. yaha{pu.} usa_ko mila_kara
KarAba_kara_xiyA.{3pu.e}[hE/WA]

3c. The verb 'ceru' when used in the context of nouns marked for accusative in Telugu gets translated into Hindi by N-ke pAsa pahuMca as in the following:

N-nu 'ceru': N ke pAsa pahuMca:

- (i) Te. AkasaMloki visirina prawi vaswuvu wirigi BUmini
cerukuMtuMxi.
@Hi. AsmAna meM PeMkA huA kisl BI vaswU lOta kara
pqWvi ke pAsa pahuMcaWA hE.
- (ii) Te. eVnni jannaleVwwinA nime cerukuMtuAnu.
@Hi. kiwane janaM lene para BI were pAsa pahuMcaWA
hUM.

4. eVkku: caDa': 'to climb'

The verb 'eVkku', in the context of various nouns can be translated into Hindi 'caDa' and 'ho' depending on their nounheads. Consider the examples:

4a. N{-Abstract} eVkku: 'caDa':

In the general usage of climbing of concrete nouns, the verb 'eVkku' gets translated into 'caDa' in Hindi.

(i) Te. kowi ceVttu eVkkiMxi.
@Hi. baMxara peda_para caDa gayA.

(ii) Te. meVtIYlu eVkku.
@Hi. siDiyom_para caDa.

4b. N{+Abstract} eVkku: 'ho':

(i) Te. gAMXi mahAwmudiga prasixXikeVkkAdu.
@Hi. gAMXI mahAwmA_jaisA prasixXa_huA.

(ii) Te. savariMpulawo Ata vanneVkeVkkuwuMxi.
@Hi. savaraNoM se kela prasixXa huA.

(iii) Te. vAdiki jvaraMvalana valYlu vedeVkkiMxi.
@Hi. usa ko buKara se Saritra garam huA.

(iv) Te. Ame eAlA lAvu eVkkinaxi.
@Hi. vaha bahuwa motl ho gayl hE.

4c. However, there are some special cases which are idiosyncractic/ idiomatic for the verb 'eVkku' occurring due to the cultural differences in a language. Such usages need to be entered in

the dictionary with their corresponding noun. Consider some examples:

- (i) Te. Alludu katnaM ivvalexanI alakapAnupu eVkkAdu.
@Hi. XAMAxā xaheja nahI xene ke kAraNa rUTa-gayA.
- (ii) Te. AmeV guruwukuvaswe rakwaM udu keVkkuwuMxi.
@Hi. vaha yAxa Awe_hI KUna KOLA_uTawA_hE.
- (iii) Te. A mAtalanni repoVxxunna pawrikulakeVkkuwAyi.
@Hi. yaha saba bAwe kala subaha_waka pawrikAoM
_meM Capa jAyegA.
- (iv) Te. mAta mlkemEnA walakeVkkuwomxA?
@Hi. bAwa kuCa samaJa_meM A rahA_hE kyA?
- (v) Te. I mAta nI cevikeVkkiMcuko.
@Hi. yaha bAwa wuma gOra_se suna lo.
- (vi) Te. UrukunnakoVxxI vAdu neVwwikeVkki kUrcoVmmAdu.
@Hi. Cupa rahane_ke sAWa_sAWa vaha{pu;} lAdalA
banawA gayA.

5. eVwwu: uTA': 'to lift'

The verb 'eVwwu', is translated into Hindi as 'uTA', 'ho', 'le', etc. However, except in the sense 'uTA', all other senses seem to be idiosyncractic/idiomatic usages which need to be listed in the dictionary.

5a. N{-Abstract} eVkku: 'uTA':

- (i) Te. hanumaMwudu saMjlvini parvawaM eVwwAdu.

a)Hi. hanumAna saMjlvini parvawa uTAYA{3p pu.e.}

5b. N[+Abstract] eVvku: 'ho':

The verb 'eVvwi' in the context of the noun 'xuraxa', 'maMta', 'cirru', is translated as 'ho' in Hindi.

- (i) Te. vAdiki xuraxeVvwiMxi.
@Hi. usa{pu.}_ko` kujall_huA{~ pu.e.}

5c. 'le':

A special set of nouns behave idiosyncratically. the verb 'eVvwi' in the context of such nouns viz., 'janma, avawAraM, mAta', etc., is translated into 'le' in Hindi.

- (i) Te. vAdu eVvni janmalu eVvwiNA I pani sAXiMcaledu.
@Hi. vaha{pu.} kiwane janaM{ba.} lene_para_
BI yaha_kAma sAXiwa_nahl_kara_sakawa_hE.

(ii) Te. viRNumUrwi BUBArAnni waggiMcadAniki eVvno avawArAlu eVvWAdu.

@Hi. viRNumUrwi BUBAra kama_karane_ke_liye kal avawAra liyA{3pu. e.}

6. jarugu: saraka': 'to move'

The verb 'jarugu' is translated into Hindi as 'saraka, blwa and ho' depending on the context. However, each of these sense is triggered by a particular set of nouns which occur as subject of the verb. For example,

6a. N[-abstract]{sub}: 'saraka':

If the noun concerned belongs to the class of concrete nouns, then the verb 'jarugu' is translated into 'saraka'.

- (i) Te. rAkRasulu eVMwa prayawniMcinA aMgaxuni adugu
oVkka aMgulYaMkUdA jaragalexu.
@Hi. rAkRasa{ba.} kiwanA prayawna_karane_para_BI
aMgaxa_kA pAzva eka inca_BI nahl_sarakA
{3~pu.e}[hE/WA]

6b. N[+time-adv]{sub} 'jarugu' 'blwa'

N[+abstract]{sub} 'jarugu':

If the noun concerned belongs to one of the time adverbs or nouns like second, minute, hour, day, week, fortnight, month, year, eras, etc, then the verb is translated as 'blwa', elsewhere it is replaced by 'ho'

- (i) Te. SVAwaMwryAnaMwaraM eVnni saMvawsarAlu
jariginA pexala sWiwi mAralexu.
@Hi. SVAwaMwryAnaMwara kiwane sAla blwane_para BI
garlboM_kA sWiwi nahl_baxala [hE/WA] {3~pu.e.}
- (ii) Te. VAdiki 20 saMvawsarAlakriwaM peVIYli jarigiMxi.
@Hi. Usa_ko 20 sAla ke pahale Saxl huA.
{3~pu.e}[hE/WA]

7. jarupu: saraka': 'to move'

The verb 'jarupu' is translated into 'saraka, kara, and manA' in Hindi. Each sense of the particular verb is, however, triggered in the context of a particular set of nouns in which context it occurs. For example,

7a. N {-Abstract} jarupu `saraka':

If the noun concerned belongs to the class of concrete nouns, then the verb `jarupu' is translated as `saraka'.

- (i) Te. vAdu gaxiloni ikkadi vaswuvulni akkadiki jaripAdu
@Hi. vaha{pu.} kamare_meM_kA yahAz_kA vaswUoM_ko
vahAz_(ko)^ sarakAyA_[hE|WA]{3pu.e.}
- (ii) Te. kurcni pakkaku jarupu.
@Hi. kursl_ko bagala_ko sarakAo.

7b. `manA':

The verb `jarupu' when used in the context of `marriage, festivals, celebrations', etc., will always trigger the meaning of `manA' in Hindi.

- (i) Te. BArawaxeSaM 1997 lo svarNa jahaMwi uwsavaM
jarupukuMtoMxi.
@Hi. BArawa 1997_meM svarNa jayaMwl uwsava_*
manA_rahA hE{3~pu.e.}.

7c. N {+Abstract} jarupu `kara':

Similarly, the following case, where `jarupu' occurs in the context of `xaryApwu', we need to list it in the dictionary since it is an idiomatic usage.

- (i) Te. pollsulu oVka hawyaguriMci xaryApwu
jarupuwunnAru
@Hi. pullsa{ba.} eka hawyA [ke]bArc meM jAMca-
padawAla_kara_rahc hEM.

8. kalugu: ho': 'to happen'

The verb 'kalugu' is translated into 'ho', 'AnA', 'jagA', 'lagA', etc. However, each of these sense is triggered by a particular set of nouns which occur as complements to the verbs. For example,

8a. 'AnA':

In the context of nouns like 'kaStaM, saMwoRaM, AtaMkaM,' etc., the verb is translated in the sense of 'AnA' in Hindi.

- (i) Te. maXyalo eVnni AtaMkAlu kaliginA panini ApakUdaxu.
@Hi. blca_meM kiwane rukAvata Ane_para_bl kAma_ko`
rokanA_nahI_cAhie

8b. 'jagA':

In the context of nouns like 'sAnuBUwi, IrRya, Bakwi', etc., then the verb 'kalugu' gets translated into 'jagA' in Hindi.

- (i) Te. vAdipE aMxariki sAnuBUwi kaligiMxi
@Hi. usa_ke_Upara saba_ko` sahAnuBUwi jagA

8c. Apart from these there are several other exceptional cases where the verb in the context of a special set of nouns behave idiosyncratically, therefore the following exceptional cases need to be entered in the dictionary.

Te.	Hi.
(a)BAgyaM-kalugu	kismawa-Kula.
(b)naRtaM-kalugu	nuksAna-pahUMca.

8.d. 'ho':

Elsewhere the verb 'kalugu' always gets translated into the meaning of 'ho' in Hindi.

- (i) Te. peVIYli ayina paxi saMvawsarAlaku vAIYlaku ixxaru
pillalu kaligAru.
@H. SAxl hue xasa sAla_ko` una_ko` xo{loga} bacce hue{3
~na. ba.}
- (ii) Te. vAdiwo mAtlAdAlani nAKu korika kaligiMxi.
@Hi. usa_se bAWa karna_ko muJe iccA huA.

9. koVyyi: kAta': 'to cut'

The verb 'koVyyi' is translated into Hindi by more than one word as 'kAta' and 'woda'.

9a. 'kAta':

Here, it is not so easy to specify the context by the appearance of a particular set of Nouns or by their inflections. However, it seems that it is the manner of cutting that is relevant in selecting the appropriate word 'kAta/woda' in Hindi. If the concerned object is cut into pieces, slashed, etc., then the verb 'koVyyi' will get translated into 'kAta' in Hindi.

- (i) Te. vAdu mAmidikAyanu mukkaluga koSAdu.
@Hi. vaha{pu.} Ama kA Pala ko` xo tukade * kAta

9b. 'woda':

If the concerned object is plucked, then the verb 'koVyyi' always trigger the meaning of 'woda' in Hindi.

- (i) Te. vAdu ceVttunuMdi mAmidikAyalu koSAdu.
 @Hi. vaha{pu.} peda se` Ama ke Pala ko
 wodA [hW|WA]β pu.e.}

9c. Idiomatic expressions:

- (i) Te. mAtalu-koVyyi.
 @Hi. baDA-caDAkara bola.
- (ii) Te. kowalu_koVyyi.
 @Hi. DIMga_mAr.

The above mentioned cases are all dependent on the sense of the concrete noun. Hence, these cases require dictionary-entries.

10. Kuttu: kAta`: `to prick'

The verb `kuttu' can be translated as `kAta, sila Cexa, daMka_mAra' etc. However, each of these senses is triggered by a particular set of nouns which occurs as complements of the verb. For example:

10a. `kAta':

If the noun concerned belongs to the category of small insects, then the verb `kuttu' always gets translated as `kAta' in Hindi.

Te.	Hi.
purugulu_kuttu	kIde kAta
clma_kuttu	cltl kAta
weneVtlga kuttu	maXumakkl kAta
xomalu kuttu	macCara kAta

10b. `sila':

If the noun concerned belongs to the class of concrete nouns and particularly referring to fabric, leather, paper, etc., which are commonly of flat and thin surfaces, then the verb `kuttu' always triggers the meaning of `sila' in Hindi.

Te.	Hi.
battalu_kuttu	kapade_sila
ceVppulu_kuttu	cappal_sila
kagitalu_kuttu	kAgaj_sila

10c. `Cexa':

If the noun concerned belongs to the category of human body-parts, then the verb `kuttu' will always trigger the sense of `Cexa' in Hindi.

Te.	Hi.
ceVvulu_kuttu	kAna_Cexa
mukku_kuttu	nAka_Cexa

10d. Special cases:

In certain cases not listed above require the verb `kuttu' be translated differently from the above as `daMka_mAra, jalana/IrRyA_kara'. These senses need to be entered in the dictionary.

Te.	Hi.
kaIYIYu_kuttu	jalana/IrRyA_kara
welu_kuttu	biCUI daMka mAra

In all the above cases, a set of nouns are grouped together under a separate section depending on the noun viz., a concrete or an abstract.

11. pUyu: Kila': 'to bloom', powa : lagA : 'smear'

The verb 'pUyu' can be translated as 'Kila, laga, dAla' depending on a particular set of nouns which occur as complement to the verbs. For example,

11a. 'Kila':

If the noun concerned belongs to the case of accusative, then the verb 'pUyu' is translated as 'Kila' in Hindi.

Te.	Hi.
cirunavvu_pUyu	muskurAhata Kila
pUlu_pUyu	PUla_Kila

11b. 'lagA':

Elsewhere the verb 'pUyu' always has the sense of 'powa' 'lagA' in Hindi.

Te.	Hi.
pUwa_pUyu	powa lagA

11c. Special cases:

If the noun concerned belongs to the category of a mouth-disease, then the verb 'pUyu' gets translated into 'pada' in Hindi.

Te.	Hi.
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The verb `kAlcu' when used in the context of nouns marked for accusative triggers the meaning of `jalA' in Hindi and the nouns are non-edible things such as paper, clothes, leaves etc.

- (i) Te. A kAgiwAlanu kAlcu.
@Hi. una kAgaj_ko jalAvo.

13b. N{+edible things} kAlcu: `seMka':

The verb `kAlcu' when used in the context of nouns viz., `roVtte', `appadaM', etc., always triggers the meaning of `seMka' in Hindi.

- (i) Te. mA amMa roVttelu bAgA kAlcuswuMxi.
@Hi. merI mA rotI acCe_se seMka_WI_hE.

13c. `goll_calA':

The verb `kAlcu' when used in the context of nouns viz., `wupAkl', `PiraMgi', gannu', etc., will always get translated as `goll_calA' in Hindi.

- (i) Te. vAdu wupAkl_wo kAlcAdu.
@Hi. usane pistOl_se goll_calAyA.

13d. `pl':

The verb `kAlcu' when used in the context of nouns such as cigarettes, bidies, cigars etc., would trigger the sense of `to smoke' which gets translated as `pl' in Hindi.

- (i) Te. vAdu sigareVttu, bldllu kAlci ceVdipoyyAdu.
@Hi. vaha sigaret aura bldl pl_kara bigada_gayA.

In all the above cases, a special set of nouns behave idiosyncratically. Therefore, `kAgiwAlu kAlcu', `roVttelu kAlcu', `wupAkl kAlcu', `bldl kAlcu', etc need to be entered in the dictionary.

14. adugu: pUCa`, mAzga` : `ask'.

The verb `adugu' is ambiguous between `pUCa' and `mAzga'. The nuclear sense seems to be `pUCa' since it often includes `mAzga'.

14a. pUCa`: `to ask/enquire/to question'

The verb `adugu' when used in the context of nouns marked with accusative, dative, etc., will get translated into `pUCa' in Hindi.

- (i) Te. cinimAki vaswAvA ani nenu Ameni adugAnu.
@Hi. cinimA_ko Awe_ho kyA EsA mEne usa aOrawa_se pUCa.
- (iii) Te. KanipiMcina_vArini aMxarinl dabbulu aduguwU wirigAdu.
@Hi. XiKAYl xene_vAle saBl_logoM_se pEse pUCa_We_hue PirA.

14b. N{-Abstract} adugu: mAzga`:

The verb `adugu' when used in the context of asking or begging will trigger the sense of `mAzga' in Hindi.

- (i) Te. mlru katnaM aduguwunnArA?
@Hi. Apa xaheja mAzga rahe hEM?

2.2.2. COLLOCATIONS INVOLVING VERBS

It is often hard to predict the semantics of the given verbs on the basis of the word class, rather, it is dependent on individual word. Hence, the verb along with its collocational member i.e., the entire collocation need to be listed in the dictionary.

1. koVttu: mAra`: `to beat'

The Telugu verb `koVttu' when used in the context of the following nouns, it does not seem to have the same meaning always. Consider some such ambiguous Noun-verbs:

Te.	Hi.	
ceVttu_koVttu	peda_kAta	`to cut a tree'
kAyalu_koVttu	kacca_Pala_woda	`to pluck the fruits'
piMdi_koVttu	AtA_kUta	`to grind the floor'
cappatlu_koVttu	wAllyAz_baja	`to clap'
walupu_koVttu	xarvAjA_KadaKada	`to knock at the door'
mArkulu_koVttu	aMka_pA	`to manage marks'
pAliR_koVttu	pAliRa_lagA	`to apply polish'
jallu_koVttu	PuhAra_pada/bOCARA_pada	`to drizzle'
maMxu_koVttu	SarAba pl	`to booze/to consume alcohol'

In the above cases, it is not at all clear how one would propose the meaning of the verb `koVttu', out of the context (i.e. excluding the semantic contribution made by the concerned noun).

2. pAru: baha`: `to flow'

The verb 'pAru' has multiple senses which can be mapped on to Hindi in the following way:

Te.	Hi.	
wlga_pAru	lawA/bela_PEla	'to spread into branches'
pAyalu_pAru	XArAoM_meM_bata	'to divide into tributaries'
nllYlu_pAru	pAnI_baha	'to flow'

In the above cases, the verb 'pAru' when used in the context of abstract nouns, the idiosyncratic usages renders various verbs in Hindi depending on the various noun senses. Therefore, all these need to have entries in the dictionary.

3. padu: gira': 'to fall'

Besides the sense 'gira' which occurs in the context of [-abstract] nouns, there are a large number of cases where this verb 'padu' has more than one sense which can be mapped on to Hindi. Such cases probably require dictionary entries in the following way:

Te.	Hi.	
kaRta_padu	kaRta_Jela	'to suffer'
kiMxa_padu	nlce_gira	'to fall down'
naRta_padu	nuksAna ho	'to lose'
rAjl_padu	rAjl_ho	'to compromise'
saMwoRa_padu	KuSa_ho	'to be happy'
spaRTa_padu	spaRTa_ho	'to become clear'
Srama_padu	mehanawa_kara	'to labour'
sahAya_padu	sahAyawA_kara	'to be helpful'
veVMta_padu	pICA kara	'to follow'
bEta_padu	jAhira ho	'to be evident'
cikAku_padu	CidaCidAhata_ho	'to get irritated'
jabbu_padu	blmArA_pada	'to become sick'

Baya padu dara_jA 'to be afraid'

4. pattu: pakada': 'to catch'

As in the case of 'padu' the intransitive, a transitive verb 'pattu' occurring in the context of various nouns triggers more than one unrelated sense when mapped on to Hindi. Consider some examples:

Te.	Hi.	
axxaM_pattu	prawibiMbiwa_kara	'to reflect'
kunuku_pattu	nlzxa_laga	'to fall asleep'
maMcaM_pattu	blmARA_pada	'to become sick'
pAlu_pattu	xUXa_pilA	'to give milk'
opika_pattu	sahana_kara	'to have patience'
mara_pattu	AtA_plsa	'to grind the floar'
battI_pattu	rattA_mARA	'to byheart'
sAna_pattu	dARA_lagA	'to sharpen'

5. peVttu: rakA': 'to place'

This is the transitive counterpart of the intransitive verb 'padu'. Similar to 'padu', the verb 'peVttu' occurring in the context of large number of nouns, it is not possible to suggest single or any predictable meaning. Hence, all such cases need to be listed in the dictionary. Consider the following examples:

Te.	Hi.	
kaMpeVnl_peVttu	kaMpeVnl_Kola	'to open a company'
bEta_peVttu	rAja_Kola/paraxA_PAsa kara	'to reveal'
haxxulu_peVttu	haxa bana	'to restrict'
wikamaka_peVttu	pareSAna kara	'to confuse'
dabbu_peVttu	Xana_lagA	'to invest'

popu_peVttu	COMka dAla/lagA	`to season'
xlpaM_peVttu	xlpa jalA	`to light the lamp'
BojanaM_peVttu	KAnA xe/KAnA parOsa	`to give food'
kaRta_peVttu	xuKa_xe	`to make someone suffer'
naRta_peVttu	nuksAna_pahuMca	`to bankrupt'
cikAku_peVttu	CidA	`to irritate'

6. poyyi: dAla`/uMdela`: `to pour'

Besides the regular sense dAla/uMdela of the verb `poyyi' when used in the context of certain nouns have an idiosyncratic sense. Consider some examples:

Te.	Hi.	
ceVmatalu_poVyyi	pasInA laga/CUta	`to sweat'
mUwraM_poVyyi	peSAba_kara	`to urinate'
walaMti_poVyyi	aByaMgana_snAna_kara	`to take head-bath'
gutta_poVyyi	Dera_lagA	`to make heaps'
katnaM_poVyyi	xaheja_xe	`to endow'

7. sAgu: blwa`: `to continue'

The verb `sAgu' in the context of certain nouns has a variety of senses as represented in Hindi. Since these senses can not be predicted by any rule, all such N-V combinations need to be listed in the dictionary.

Te.	Hi.	
jlviwaM_sAgu	jlvana_blwa	`to spend the life-time'
prayANAM_sAgu	ravAnA ho	`to depart'
peVwwanaM_sAgu	rubAba cala	`to show supremacy'

8. veVyyi: dAla`: `to put'

Besides the regular meaning 'dAla', there are many nouns which when occur as complements the verb's senses are unpredictable and so the N-V combination require dictionary entries as follows:

Te.	Hi.	
boVmmalu_veVyyi	ciwra_banA	'to draw pictures'
cAtiMpu_veVyyi	GoRaNA_kara	'to declare'
pannu_veVyyi	kara_lagA	'to levy tax'
mArkulu_veVyyi	aMka_xe	'to give marks'
adugu_veVyyi	kaxama_baDA	'to step forward'
bANaM_veVyyi	wlra_mAra	'to shoot an arrow'
eVwwu_veVyyi	cAla_calA	'to cheat'
kAtu_veVyyi	kAta/Dasa	'to bite{especially by a snake}'
praSna_veVyyi	praSna_pUCa	'to question'
xaMdora_veVyyi	DIMdora_plta	'to proclaim'

9. visuru: PeMka: 'to throw'

Besides the main sense, 'PeMka' in Hindi, the verb 'visuru' has various other senses in the context of various nouns. These senses have to be mapped on to Hindi by various verb equivalents as below which need to be listed in the dictionary.

Te.	Hi.	
bANAlu visuru	wlra mAra	'to shoot an arrow'
mAtalu_visuru	bAweM banA	'to make statements'
visuru <i>visuru</i>	PeMka_PeMKA	'to throw with a force'
piMdi_visuru	AtA_plsa	'to grind the floar'
ceVNuku_visuru	cutakuleM sunA	'to crack jokes'
gAli visuru	havA calA	'to blow wind/to fan'

10. wlrcu: nibatA, nipatA, pUrA_kara, cuka : 'to fulfil'

It is difficult to propose a single or a dominant sense for this verb. A single equivalent verb or an acceptable equivalent verb in Hindi. The verb in the context of different nouns, different senses denoting verbal equivalents in Hindi have to be listed and therefore need to be listed in the dictionary accordingly.

Te.	Hi.	
korika_wlrcu	mAzga pUrA_kara	˘to satisfy the desire'
˘MxehaM_wlrcu	saMxeha nipata	˘to clear the doubt'
xAhaM_wlrcu	pyAsa_buJA	˘to quench the thirst'
ruNaM_wlrcu	aqNa_cukA	˘to remit'
paga_wlrcu	baxala_le	˘to take revenge'
anumAnaM_wlrcu	Sazka xUra_kara	˘to clear the doubt'
alupu_wlrcu	WakAvata xUra_kara	˘to refresh'
bArulu_wlrcu	kawAra_bana	˘to make queue'

11. wirugu: GUma˘, muda˘: ˘to go round', ˘wander', ˘be turned'

Besides these major senses, the verb ˘wirugu' also exhibits various other senses and need to be mapped on to equivalent words in Hindi depending on the context of the nouns used. Consider some examples that need separate entries in the dictionary.

Te.	Hi.	
eVxuru_wirugu	vixroha kara	˘to turn against someone'
malupu_wirugu	moda le	˘to take turn'
vaMkara_wirugu	teDZA ho	˘to twist'
kAlaM_wirugu	samaya_blwa	˘to pass the time'
veVnakkki wirugu	plCe_muda	˘to turn back'
wala_wirugu	sira cakara	˘to feel giddy'
gaswl_wirugu	pahara lagA	˘to patrol'
fAn_wirugu	PaMKA cala	˘to fan'

12. wiyyi: nikAlale': `to take', `to remove'

The sense `nikAla' seems to be the nuclear sense, however, it is not always possible to use it in the context of different nouns. In Hindi, the verb `wiyyi' when used in the context of various nouns requires to be represented by different contextually equivalent verbs in Hindi. The examples for this could be seen in the following:

Te.	Hi.	
bukku_wiyyi	kiwAba_Kola	`to open the book'
walupu_wiyyi	kavAda_Kola	`to open a door'
kottu_wiyyi	xukAna_Kola	`to open a shop'
ceyi_wiyyi	hAWa_hatA	`to move the hand'
wala_wiyyi	sara_kAta	`to behead'
prANaM_wiyyi	jAna_le	`to kill'
paruvu_wiyyi	ijjawa_nikAla	`to defame'
kUnirAgAlu_wiyyi	gungunAna	`to hum'
xiRti_wiyyi	najara_uwAra	`to remove the bad effects of an evil eye'

Since the verb `wiyyi' in the above mentioned cases of collocations in Telugu do not have the same sense as can be seen from Hindi equivalents, they need to be given separate entries in the dictionary.

2.2.3.GRAMMATICALIZATION

Certain verbs often exhibit a distinct phenomenon called grammaticalization, i.e., they besides having a lexical function, they

also function as grammatical categories which can be predicted in a given context as in complex verb predicates wherein such a verb occurs as an auxiliary/light verb/vector verb after a main lexical verb in its participial form, contributing more to the grammatical functions such as the aspectual, modal categories of verbs. In such cases, they besides being listed in the dictionary, as lexical categories also become part of grammar, for example: `badu', `veVyyi', `koVnu', `po', etc. Consider some of the following examples:

Te.	Hi.	
_badu	_yA_jA	`be -en-by'
caMpabadu	mAra_jA	`to be killed by someone'
wina_badu	KA_yA_jA	`to be eaten'
_i_veVyyi	_dAla	`Vb-away'
caMpeVyyi	mAra_dAla	`to be killed by someone'
wineVyyi	KA_dAla	`to eat away'
koVnu	_le	`for oneself'
caMpukoVnu	mAra_le	`to kill oneself {reflexive}'
vaMdukoVnu	pakA_le	`to be cooked'
caccipo	mara_jA	`to be dead'
_akamAru	e binA_nahl raha	We'll-not-stop-from- Vb-ing

(i) Te. AmeV annaM vaMdudoVMxi.
Hi. vaha KAnA pakAliyl.

(ii) Te. vAdu nAguriMci ceVppaka_mAnadu.
Hi. vaha mere_bAre meM kahe binA nahl
rahawA hE.

3.CONCLUSION:

Most Telugu dictionaries list a series of senses for each such verb of course, with exemplary usages. However, each of these senses is dependent on different contexts. Each of the different senses are actually triggered by the corresponding nouns. That there is or not an identifiable nuclear sense, the meaning or sense is modified or changed accordingly in the context of a noun. Each of these various senses is mapped on to Hindi by identifying an equivalent word. Wherever it is possible, an equivalent verb representing the nuclear sense is identified and that is modified in the context by an appropriate equivalent word in Hindi.

The above examples evidently tell us that there is no absolute lexical content or integral meaning for these verbs but meanings or senses are obtained only in the given contexts. The exact equivalent in Hindi may be triggered by finding the noun and its features whether concrete or abstract, animate or inanimate noun etc., as the case may be. The latter indicates that dictionaries should provide information for the features of nouns in which context various senses of verbs are identified.

3. NOUNS

Nouns in Telugu, in comparison with verbs present a lesser complexity while mapping on to equivalents in Hindi. Usually there are many to one and one to many correspondences in mapping in a considerable number of nouns. The meanings of the nouns do not seem to be dependent on other category words such as verbs and adverbs. Wherever such a modification occurs that is always in the context of another nouns in which case the sequence is treated as compound nominal. However, such cases are far few in number when compared to the size of nouns.

3.1. CATEGORIES:

The one to many correspondences between Telugu nouns and Hindi nouns could be studied under two heads:

- (a) polysemy and
- (b) homonymy.

Though one is not always clear or certain to distinguish the cases of polysemy and homonymy, in a considerable number of cases, we are sure of cases of polysemy.

3.1.1. POLYSEMOUS NOUNS

In Telugu, there are several polysemous words. These polysemous words have a number of etymologically related senses. Consider some of these polysemic words:

1. adugu[n]: 'pAzva, Puta, kaxaM, nicalA/nlce'.

The word 'adugu' exhibits far different but related senses as can be discerned from the following senses listed below:

1a. adugu: 'pAzva': 'foot'

The noun 'adugu' in the above sense generally occurs in such collocation as in 'adugu mopu', 'adugu peVttu' 'pAzva raKA', and in 'adugu_jAda' 'pAzva_ke_niSAna'. Such usages are far fewer in number than other usages as 'adugu kaxalcalekapoyAdu' 'he could not move his foot' 'vaha apanA pAzva nahI hatA sakA'. Consider some such similar examples:

- (1) Te.lopala adugupeVdiwe cAlu.
@Hi.aMxara pAzva raKewo basa hE.
- (2) Te. Wiyetar loki appudu AmeV adugupeVttiMxi.
@Hi. Wiyetar_meM waba vaha_Orawa pAzva raKI.
- (3) Te. maMciko ceVduko AmeV ml jlviwaMloki
adugupeVttiMxi.
@Hi. Bale_ke liye ho yA bure ke liye_ho vaha Apa ke
jlvana_meM pAzva raKI.
- (4) Te. goda xAti pakkiMti AvaraNaLo adugu peVdiwe cAlu...
@Hi. xlvAra pAra_kara ke bagala vAle ke Gara ke
AvaraNa meM pAzva rake Wo basa...

1b. adugu: 'Putā': 'a foot {a unit of measurement}'

The word 'adugu' in the sense of 'one foot' {a unit of measurement} occurs more frequently than in the sense of 'pAzva' 'foot' particularly in the context of a numeral classifier/quantifier viz. Number words, half, one fourth, three fourths, etc.

- (1) Te. xlni lowu 4 adugulu.
@Hi. isaki gaharAl 4 Puta hE.
- (2). Te. A xAraM poVdavu 886 adugulu.
@Hi. usa XAge_kI laMbAyl 886 Puta hE.
- 3) Te. xAni vegaM seVkaMduku 3 leka 4 vaMxala adugulu
kUdA uMdavaccu.
@Hi. usaki wejl sekaMda_meM 3 yA 4 sO Puta_BI ho
saka_WA hE.

1c. adugu: `kaxaM`: `leap`

The noun `adugu` when used in the following contexts of the verb `veVyyi`, triggers the sense of `kaxaM` in Hindi.

- (1) Te. vAdu adugu muMxuku vesAdu.
@Hi. usne {apanA} kaxaM Age baDAyA.
- (2) Te. meVllagA leci adugulo adugu vesukuMtU muMxuku
nadicAdu rAmu.
@Hi. Xlre se uTa_kara kaxaM_meM kaxaM dAla_we_hue
Age calA rAmu.
- (3) Te. aMxaru mUdu adugulu vesi yaWAsWAnaMlo
nilabaddAru.
@Hi. saBI wlina kaxaM cala kara yaWAsWAna meM
Kade_ho gaye.

1d. adugu: `nicalA`/`nlce`: `bottom`

The noun 'adugu' when used in combination with the suffixes viz., '-na, -ki' etc., marked for dative in Telugu always gets translated into 'nlcaA/nlce' in Hindi.

- (1) Te. pAxaM adugu BAgaAna xuraxeVwwiMxi.
 @Hi. pAzva_ke nlcale_BAga_meM kujall_huA.
- (2) Te. vAIYla amma nAkuoVka palacani xuppati aduguniMci
 wlsı icciMxi.
 @Hi. unaki mA muJe eka pawale_se kaMbala_ko nlce_se
 nikAla_kara xl.
- (3) Te. kuMdl adugu bAgAmlo koVxxiga isukapoyamdi.
 @Hi. kuMdl_ke nlce BAga_meM Wodl_sl mittl dAla xljiye.

Dictionary entries: Dictionary entries for 'adugu' may be organized in the following way. In spite of such composite entries, still there remain some some instances of ambiguity unresolved which needed pragmatic and domain context.

Te.	Hi.
adugu mopu:	pAzva raKa
adugu_peVttu:	pAzva raKa
adugu_veVyyi:	kaxaM baDzA
adugu_jAda:	pAzva ke niSAna

N[+number word/ +quantifier] – adugu: 'Putā', 'foot'

Te.	Hi.
adugu nuMci:	nlce se
adugu lo:	kaxama meM
adugu wo:	kaxama se/Puta se
adugu_ku:	kaxama kelie/Puta kelie

adugu nu batti:	kaxama ke AXAra se
adugu na:	nIce

2. maMta|u]: `Aga, jalana/IrRyA, jealous'.

2a. maMta: `Aga`': `flame, blaze'

The noun `maMta' when used in the context of the verbs `aMtu_koVnu', and `veVyyi', etc., always gets translated into `Aga' in Hindi.

(1) Te. iMti_ki maMta aMtukuMxi.

@Hi. Gara_meM Aga lagI hE.

[2] Te. avianniI cewiwo cesi maMtalalo kAlcinave.

@Hi. ve_saba hAWa se banA_kara Aga_se jAlAye hue hEM.

[3] Te. A walupu weVrici, kAsepu maMta xaggara kUrco.

@Hi. usa xaravAje ko Kola kara, WodI xera ke liye Aga ke pAsa bETa jAo.

2b. maMta: `jalana/IrRyA`': `envy, jealousy'

The noun `maMta' when used in the context of `kalugu', `puttu' triggers the senses of `jalana/IrRyA' in Hindi. However, the compound `kadupu_maMta' will always trigger the sense of `jalana/IrRyA' in Hindi.

(1) Te. vAlYla AnaMxaM awaniki maMta kaligiMciMxi.

@Hi. unakA AnaMxa usame IrRyA/jalana jagAyl.

2c. maMta: 'jalana': 'burning sensation'

The word 'maMta' in combination with the noun 'kadupu' will always trigger the sense of 'jalana' in Hindi.

- (1) Te. nAKu Iroju kadupu_lo maMtagA uMxi.
@Hi. Aja mere peta_meM jalana hE.
- (2) Te. A waravAwa manaku kadupulo maMta prAraMBaM
avuwuMxi.
@Hi. usa_ke bAxa hama_ko peTa_meM jalana
prAraMBa_howA hE.
- (3) Te. kAIYlu maMtaleVwwAyi.
@Hi. AzKa jala rahe_heM.

The following dictionary entries need to be made with reference to the word 'maMta'. The last entry is ambiguous and need to be resolved only in the larger context.

Te.	Hi.
maMta veVyyi:	Aga laga
maMta_aMtukoVnu:	Aga laga
maMta_puttu:	jalana ho
maMta kalugu:	jalana ho
maMta eVwwu:	jalana ho/jala
kadupu_maMta:	IraKA ho
maMtagA uMdu:	xaraxa laga
maMta:	Aga/jalana

3. eVwwu|n|: 'UzcAl, cAla, bade peMAnec meM'.

kadupu_maMta:	IraRA_ho
maMtagA_uMdu:	xaraxa_laga
maMta:	Aga/jalana

3. eVwwu[n]: `UzcAI, cAla, bade pEmAne_meM'.

3a. eVwwu: `UzcAI`: `height'

The noun `eVwwu' when used in the context of measuring something always triggers the meaning of `UzcAI' in Hindi.

- (1) Te. vAdi eVwwu Exu aMgulYAlu.
@Hi. usaki UzcAI pAzca iMca hE.
- (2) Te. AmeV A eVwwunuMdi AKarisArigA kiMxiki xUkiMxi.
@Hi. vaha usa UzcAI_se AKarI bAra nIce_ko kUxI.
- (3) Te. xInI eVwwu koVMceVM wakkuvagAne uMxi.
@Hi. isaki UzcAI kuCa kama hI hE.
- (4) Te. erial wIgala kaMte A BavanaM cAlA eVwwugA uMxi.
@Hi. erial wAroM_se_BI vaha Bavana bahuwa UzcA hE.

3b. eVwwu: `cAla`: `trick'

The noun `eVwwu' when used in the context of the verbs `veVyyi', `mArcu' always triggers the meaning of `cAla' in Hindi.

- (1) Te. vAdu vesina eVwwuku vIdu ciwwEpoyAdu.
@Hi. usakA calAyA_huA cAla_se yaha cakanAcUra huA.

- (2) Te. I logA pAmu eVwwu mArcesiMxi.
@Hi. iwane_meM sAzpa_ne cAla baxala_xiyA.
- (3) Te. AtagAlYlu oVkari waruvAwa oVkaru eVwwulu
veswAru.
@Hi. KilAdI eVka_ke bAxa eVka cAla calwe hEM.
- (4) Te. xInini oVka eVwwukiMxe leVkka veswAru.
@Hi. isa_ko eVka cAla_meM_hI ginawI karawe hEM.

3b.1. Special usages:

However, in absence of any of these conditions specified above such as in 3a and 3b it remains ambiguous and only in a larger context it can be disambiguated.

- [4] Te. "ixA mI eVwwu?"
@Hi. "yahI_[WA|hE] Apa_kA cAla/UzcAI?"

3c. eVwwu: `[peVxxa/BarI] eVwwu_na: `[bade] pEmAne_meM`: `on a large measure/scale`

The noun `eVwwu` when used in the context of the adjective `peVxxa` or `BarI`, always gets translated into `[bade] pEmAne_meM` in Hindi.

- (1) Te. nagaraMlo peVxxa eVwwuna paMdaga jarigiMxi.
@Hi. nagara_meM bade_pEmAne_meM uwsava manAyA.
- (2) Te. aMxuke Anakattalu BarI eVwwuna katti nltini

nilavaceswAru.

@Hi. isl_liye bAnXa_ko bade_pEmAne_meM banA_kara
pAnI_ko TeharAyA jAwA hEM.

(3) Te. vaswuvulanni yaMwrAla pEne peVxxa eVwwuna
wayAru kAsAgAyi.

@Hi. vaswU saBI yaMwroM_para_hI bade_pEmAne_meM
wEyyAra hone_laga_gaye_We.

(4) Te. I neVla peVxxa eVwwuna niXula xurviniyogamu
jarigiMxi.

@Hi. isa mahIne_meM bade_pEmAne_meM niXI_ka
xurviniyoga huA.

(5) Te. nuvvu unnAvani welisina waravAwane BArl eVwwuna
vyApAra raMgaMloki xigAnu.

@Hi. wuma ho EsA jAnane_ke_bAxa_hI
bade_pEmAne_meM vyApara_ke_kSewra_meM
uwarA hUM.

(6) Te. vAru saMGasevA kAryakramAlu peVxxa eVwwuna
ceyalekapoyAru.

@Hi. ve saMGasevA kAryakramoM_ko
bade_pEmAne_meM kara nahI sake hEM.

It would even be suggestive if these constructions are to be
listed as BArl_eVwwuna peVxxa_eVwwuna, in the dictionary.

3d. Special Usages: oVka eVwwu... oVka/maro eVwwu: eka ora...
eka/xUsarA ora

In Telugu, there are some special syntactic constructions involving `eVwwu'. Usually, the word `eVwwu' in collocation with `oVka' or `maro' gets translated as `ora' in Hindi. Consider some examples:

- (1) Te. cUdadaM oVka eVwwu ayiwe, cUsiMxi rAyataM maro
eVwwu.
@Hi. xeKanA eka ora wo, jo_xeKA_use liKanA xUsiri ora
hE.
- (2) Te. aMxari kaviwvaM oVka eVwwu Ayanaxi oVkaeVwwu.
@Hi. saba_kA kAvya eka ora, unakA eka ora.

4. cukka[n]: `wArA, biMxi, bUMxa'

The word `cukka' mostly used in three senses. The word is disambiguated in the context of the relevant verb, viz., `peVttu' `lagA' `padu' `rAlu' `gira' `poVduvu' `nikala' etc respectively.

4a. cukka: `wArA`/nakRawra``: `star':

The sense is triggered in the context of the verbs `poVduvu', `rAlu', `(woVMgi)cUdu', `meVruvu', `miNukumiNumkumanu' etc., and/or in the context of nouns `AkASaM, names of stars in the sky, darkness, night, etc. There are compounds with `cukka' as in `wokacukka', `pagaticukka', `reVcukka', `vegucukka', which need to be listed in the dictionary.

- (1) Te. AkASaMlo cukkalu poVduswunnAi.
@Hi. AsmAna_meM wAre nikala rahe hEM.
- (2) Te. AkASaMlo cukkalu woVMgi cUswunnAyi.
@Hi. AkASa_meM wAre xiKAyi xe rahe hEM.
- (3) Te. A cikkati cikatilo cukkala masaka masaka veVluwuru.
@Hi. usa gADe aMXere_meM wAroM_kI XuMXull_si
rOSanI.
- (4) Te. iMwasepu AkASaMlo cukkalanu cUswU aMxulone
IlnamayipoVyyAdu.
@Hi. iwanI xera AsamAna_meM wAroM_ko xeKa_we_hue
usI_meM wallIna ho gayA.

4b. cukka: `biMxI`: `Dot`:

The sense is triggered in the context of verbs `peVttu` and/or in the context of the nouns that have surface such as paper, cloth, planks of wood etc. in the context of colour, words, lines, signs, number etc.

- (1) Te. buggana cukka peVttu.
@Hi. gAla para biMxI lagAo.
- (2) Te. I glwa pakkana oVka cukka peVttu.
@Hi. isa lakIra_ke bagala_meM eka biMxI lagAo.
- (3) Te. kAgiwaMpEna cukkalu, glwalu accavuwAyi.
@Hi. kAgaja_para biMxI, lakIra Capawe hEM.

- (5) Te. vltini gurwiMceMxuku vllugA raMgula cukkalu
peVtwAru.
@Hi. ina_ko pahacAnane_ke_liye suviXA_se raMgoM_ke
biMxl lagAwe hEM.

4c. cukka: `bUzxa`: `Drop`:

The sense is triggered in the context of verbs, `padu`, `veVyyi`,
`wAgu` and/or in the context of the nouns indicating liquids, etc.

- (1) Te. cukkalu paduwunnAyi.
@Hi. bAhara bUzMxe gira rahe hEM.
- (2) Te. nAku muMxu reVMdupUtala alPAIPA 10 cukkalu 1/4
glAsu nIYlalo kalipi icce vAru.
@Hi. muJe pahale xonoM pahara alPAIPA_ke 10 bUzxeM
1/4 glAsa pAnI_meM mila_kara xewe We.
- (3) Te. "Iyana kalYIYallo silvar nEtretu cukkalu veVyyi"
annAdu.
@Hi. "ina_ke AzKoM_meM silvar nEtreta_ke bUzxoM_ko
dAlo" kaha WA.
- (4) Te. manaM pAlalo majjiga cukka vesi perugu
cesukuMtAM.
@Hi. haM xUXa_meM matTe_ke bUzxoM_ko dAla_kara
xahl banA_We hEM.

The distribution of the semantics of the word `cukka' tells us that dictionaries should require to indicate that nouns are [+/-liquids].

3.1.2. HOMOPHONOUS NOUNS

In Telugu, there are several homophonous or homonymous words that have etymologically unrelated senses. Consider some of the examples:

1. Te.	Hi.	
pattu[n]	1.reSam	`silk'
	2.pakada	`hold'

- (1) Te. pattu cIralu vixesIyulani kUdA AkattukuMtAyi.
 @Hi. reSaM_kI sAdiyAz vixeSIyoM_ko_BI mana bahalAne
 lagawe hEM.
- (2) Te. ippatiki vAdu mA pattu cikkAdu.
 @Hi. aba waka vaha hamAre pakada_meM AyA hEM.

The word `pattu' has two very different senses when mapped on to Hindi and these senses are not predictable. Hence, it requires a separate entry for both the senses in the dictionary. The word `pattu' when occurs in the context of words indicating clothing, dressing material, strings, twine etc., (cIreV, batta, vaswra, paMceV, coVkkA etc.) and in compounds such as /pattu pariSrama/`silk industry', /pattu purugu/ `silk worm', always denotes reSam `silk' in Hindi.

Whereas, the homophonous word /pattu/ has the sense of 'pakada' 'hold' in the context of verbs 'cikku' 'uMdu' or its negative form 'lexu' etc. Cases like 'pattubadu' 'pakada_meM_AnA', 'pattu battu' 'jixa pakada/xqDa_ho' need to be listed in the dictionary, since they are idiosyncratic NV compounds.

2. Te.	Hi.	
ceVvi[n]	1.kAna	'ear'
	2.cAbI/kuMjI	'key'

The word /ceVvi/ is one of such cases which are difficult to disambiguate simply by specifying a word in the context. Here, it is a matter of larger context and pragmatics which decide the interpretation.

- (1) Te. tIcaru pillavAni ceVvi patti piMdiMxi.
 @Hi. tIcara_ne bacce_kA kAna/kuMjI pakada_kara mall.
- (2) Te. rAmU ceVvini jebUlo vesukoni bayataku nadicAdu.
 @Hi. rAma_ne cAbI/kAna jeba_meM dAla_kara bAhara_kI
 ora calA.

3. Te.	Hi.	
pAlu[n]	1.xUXa	'milk'
	2.hissA/BAGa	'share'

The word /pAlu/ can be disambiguated to a greater extent in the following way: 'pAlu' when occurs in the context of '-avvu' 'to come', '_ceVyyi' 'to do', is always interpreted as 'hissA/BAGa bananA'. Other cases such as 'pAlu paMcukoVnu', BAGa/hissA lenA', 'pAlu povu' 'samaJa_meM AnA' which may be listed in the dictionary as a compound. The difficulty is disambiguate /pAlu/in non-verbal

constructions where it occurs in a genitive or possessive construction as in:

Te. nA pAlu eVkkada?
 @Hi. merA xUXa/hissA kahAz?

However, in other constructions where the verbs such as, `wAgu' `pInA', `piMdu' `xuhanA', `poVyyi' `dAla/uMdela', `wiyyi' `(xUXa)_xuhA' involve the possibility to identify the sense of `xUXa'. However, in the remaining cases only a larger context can only help us in disambiguating the word.

4. Te.	Hi.	
vaMwu[n]	1.BAga/hissA	`part/share'
	2.bArl	`turn'

The Telugu word `vaMwu' has two completely different senses when mapped onto Hindi and the senses can be predicted in the context of verbs. However, in the context of nonavailability of any verb the word remains ambiguous.

- (1) Te. nA vaMwu nAku icceVyyi.
 @Hi. merA BAga/hissA muJe xe_xo.
- (2) Te. ippudu nI vaMwu vacciMxi.
 @Hi. aba werl bArl Ayl hE.
- (3) Te. ippudu nA vaMwu.
 @Hi. aba merl/A bArl(hissA) hE.

5. Te.	Hi.	
viXi[n]	1.niyama	`duty'

2.BAgya

'fate'

- (1) Te. guMpu xAMpawyAlu AnAdu viXi.
@Hi. samUha xAMpawya usa jamAne_ke niyama We.
- (2) Te. nA viXi rAwa eVIA uMte alAge jaruguwuMxi.
@Hi. mere BAgya_meM jEsA_hE vEsA_hl hogA.

Similarly, the Telugu word 'viXi' is yet another example of homophonous nouns which renders two very different senses when mapped on to Hindi. Such disambiguation is tackled only by entering both the senses separately in the dictionary.

3.2. KINSHIP NOUNS

Kinship terms in Telugu offer great difficulty in translation. There is hardly any word which can be mapped in one to one correspondence. In Telugu, many kinship terms exhibit one to many correspondences when mapped on to Hindi. Consider the following:

Te.	Hi.	
1. awwa[N]	1.sAsa	'mother-in-law'
	2.buA	'father's sister'
	3.mAmI	'mother's brother's wife'
2. bAva[N]	1.bahanol	'sister's husband'
	2.jljA	'husband of one's elder sister'
	3.jeTa	'elder brother of one's husband'
	4.BAl{mamerA/PuPerA}	'cousin'

3. mAma[N]	1.sasura	`father-in-law'
	2.mAmA	`mother`s brother'
	3.PUPA	`husband of one`s father`s sister'

The ambiguity in kinship terms is caused due to the natural lacking of the cultural differences of languages. Such culturally peculiar terms could only be tackled at the time of post_editing done by the help of human intervention.

3.3. MANY TO ONE CORRESPONDENCES

In Telugu, there are several words that have one correspondence when mapped onto Hindi. Such many to one mapping could be seen in the following examples:

Te.	Hi.	
(1) ninna[N]	kala{blwA_huA_kala}	`yesterday'
repu[N]	kala{Ane_vAlA_kala}	`tomorrow'

Traditionally, dictionaries give `kala' as equivalent to both `ninna' and `repu'. In Hindi, the difference in their meanings could be understood only by their contextual use. For this, the necessary information should be stored in the equivalent corresponding words of the source language at the time of dictionary making.

(2) jadupu[N]	dara/Baya	`fear'
jaMku[N]	Baya(+saMkoca)	
BayaM[N]	Baya/dara	

Such many-to-one mappings create ambiguity in the translated texts which in the absence of any context may lead to wrong reading.

For example, the word `BayaM' has the usual sense of `Baya/dara'in Hindi. Then the word `jaMku' has an additional meaning of `saMkoca'. Similarly, the word `jadupu' triggers the meaning of `dara/Baya' in Hindi.

3.4. BORROWED WORDS

There are many borrowed words such as `lAMCanaM', `garvaM', `kalyANaM' etc which are borrowed from Sanskrit into both Telugu and Hindi but these terms have different senses, sometimes have almost same and sometimes altogether different senses. Consider some examples:

(1)Te.	Hi.
garvaM`: `proud'	garva`: `proud'

The Telugu word `garvaM' would render the sense of being proud but in a negative sense of `ahaMkAra', whereas in Hindi, the word `garva' would render the sense of `Pakra'. Consider the following example:

Te. nAku garvaM uMxi.
@Hi. muJe garva hE.

In the above example, the sentence `nAku garvaM uMxi' is a grammatically correct sentence but it is not a correct usage in Telugu whereas the sentence `muJe garva hE' has a positive usage in Hindi.

(2)Te.	Hi.
lAMCanaM`: `gift'	lAMCana`: `blame'

The Telugu word `lAMcanaM' has the sense of `gifts given at the

time of a marriage' whereas in Hindi the word 'lAMCana' has the sense of 'blame'.

(3)Te.	Hi.
kalyANaM˘: 'marriage'	kalyANa˘: 'welfare'

The Telugu word 'kalyANaM' has the sense of 'marriage' but in Hindi it has the sense of 'welfare'.

(4)Te.	Hi.
XarmaM˘: 'duty'	Xarmia˘: (1)'religion'
	(2)'duty'

Similarly, the word 'XarmaM' in Telugu has the sense of 'duty' whereas in Hindi, it gives the sense of 'religion' as well as 'duty'.

The ambiguity in the borrowed terms is caused due to the development of specific and peculiar nuances in that language. Such borrowed terms need to be tackled only by having separate entries in the dictionary.

3.5. CULTURE-BOUND TERMS

There are many words in Telugu which are culture specific. They usually have no equivalent terms in Hindi. However, there are some terms which have equivalents but do not have the exact sense. Such words require special notation to distinguish them as having additional information which would be given in detail in the footnotes. Consider some examples:

(1)Te.	Hi.
--------	-----

madi[N]	^SOca	`to be dressed in clean garments, as a Brahmin, while worshipping, eating food etc'.
---------	-------	--

The term `SOca' does not have the exact equivalent sense. Such inadequate senses required to be represented by a special notation of `^' which indicate that the additional information is quoted in the footnotes for further reference.

(2)Te. gaMgireVxxu[N]	Hi. ^nAxiyA	`A bull that is dressed with bells etc., and taught to dance especially on the festival day of `saMkrAnwI'.
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The noun `gaMgireVxxu' is purely a culture specific usage of Telugu which has no exact equivalent in Hindi. However, the term `nAxiyA' is used for the purpose. Since the term `nAxiyA' does not trigger the exact equivalent sense in Hindi, it is denoted in the lexicon with the special notation of `^' for further reference in the footnotes.

(3)Te. walaMbrAlu[N]	Hi. ^akSawa	`The rice poured over the head of the bride and the bridegroom for luck at the time of marriage'.
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4.MINOR CATEGORIES

4.1. INTRODUCTION:

In this chapter, we would be dealing with the other parts-of-speech consisting of:

1. Adjectives,
2. Adverbs,
3. Pronouns, and
4. Numerals.

In continuation of the description of the treatment of the two major categories of nouns and verbs, and in dealing with the sense related problems while building dictionary for machine translation, it is felt that it requires the recognition of minor categories for Telugu such as adjectives, adverbs of place and time, pronouns and numerals for effective rendering of their semantic peculiarities into the target language and also capturing the intuition behind these minor categories.

4.2. ADJECTIVES

Semantically, adjectives are indicators of qualities or attributes of nouns. In Sanskrit, since nouns and adjectives have basically the same inflectional endings, its grammatical description do not get any advantage by drawing a distinction between nouns and adjectives as primary categories. Hence Sanskrit has no distinct adjectival category other than that of the nouns. The categorical status of "adjectival" words in a

given language can be determined only on the basis of morpho-syntactic properties that are exclusively found with adjectives. If such a characteristic inflexion is found then there should not be any obstacle in setting up of a category.

4.2.1. *_xi/_vAdU*: PRONOMINAL ENDINGS ON ADJECTIVES:

In Telugu, adjectives are morphologically marked with pronominal suffixes when they occur as predicates in equative or copular sentences. Strictly speaking, this pronomilization is different from that of nouns which occur with similar inflections.

The pronominal (3rd person) suffixes that occur with adjectives primarily show agreement in gender, number and person. These pronominal endings, however, convey different meanings when they are attached with nouns. Consider the following examples:

(1).

(a). Te. *ixi maMci kukka.*

@Hi. *yaha acCA kuwWA hE.*

(b). Te. *I kukka maMcixi.*

@Hi. *yaha kuwWA
acCA_vAlA hE.*

Here, '*maMci*' occurs as an attribute to the noun '*kukka*', and '*maMcixi*' is a predicative adjective with the pronominal ending '*xi*'.

(ii).

(a). Te. *ixi kukka goVlusu.*

@Hi. *yaha kuwwe_kA sarakall hE.*

(b). Te. *I goVlusu kukkaxi.*

@Hi. *yaha sarakall
kuwwe_vAlI hE.*

Here, '*kukka*' functions as a nominal attribute and '*kukkaxi*' functions as a genitive nominal with the pronominal ending '*xi*' in

agreement with the nominal "goVlusu".

(iii).

- (a). Te. ivi maMci kukkalu. (b). Te. I kukkalu maMcivi.
@Hi. ye acCe kuwwe hEM. @Hi. ye kuwwe acCe_vAle hEM.

Here, `maMci' is in the attributive position and `maMcivi' is in the predicate position and the latter with `vi', a (non-human plural) pronominal suffix.

The differential semantics between the predicate adjectives and predicate nominals despite having the same morphology is an indication that adjectives form a distinct class and they should be treated as such.

4.2.2. NOMINAL DERIVATION

4.2.2.1. DERIVATIVE FORMS:

Certain nominal derivational suffixes like X_kawwe/X_gawwe'; `_kAdu/_gAdu', can be added to only nouns, in the sense of "a person who does or practises X".

For example, `mosaM', the base word meaning `cheating' derives `mosagAdu', `a person (masculine) who does or practises cheating', or `a cheat (masculine)'. Similarly, `mosagawweV', `a person (feminine) who does or practises cheating' or `a cheat (feminine)'. These derivational suffixes are not added to adjectives to derive adjectival nominal derivations. Consider the following examples:

- | | |
|---------------|-----------------|
| Te. | Hi. |
| (i). mosaM[N] | XokA[N]{neuter} |

mosagAdu[N]	XoKebAja[N](human masculine)
mosagawweV[N]	XoKebAja[N](human feminine)
(ii).	
biccaM[N]	BIka[N]{neuter}
biccagAdu[N]	BikArI[N](human masculine)
biccagawweV[N]	BikArin[N](human feminine)
(iii).	
aMdaM[N]	suMdar/suMdarawA[N]{feminine}
aMdagAdu[N]	suMdar[N](human masculine)
aMdagawweV[N]	suMdarI[N](human feminine)

Since, these derivational suffixes cannot be added to adjectives to derive nouns, this distinction is considered as evidence for the categorical difference between the adjectival and nominal words. None of the adjectives can accept these suffixes to derive the corresponding nominals. For example:

	Te.	Hi.
(i).	nalla[adj]	kAlA[adj]
	*nallagAdu	kAlA marx
	*nallagawweV	kAlI aUrawa
(ii)	maMci[adj]	acCA[adj]
	*maMciGadu	acCA AxmI
	*maMciGawweV	acCI aUrawa
(iii).	sanna[adj]	sUKA[adj]

*sannagAdu	sUKA Axmi
*sannagawweV	sUKI aUrawa

4.2.2.1. INFLECTED FORMS:

Adjectives may inflect for a number of morphological markings. Certain morphological and phonological distinctions between different adjectival bases in the course of derivation allows us to group them together but their lexical entries differ. For example:

1. `nalla'[adj]:

Te.	Hi.
nalla[adj]	kAlA
nalupu	kAlA {3p,n}
nallati/nallani	
nallapAti	kAlAsA
nallagA	kAlA
nallaxanaM	kAlApana
nallaxi	kAlA(feminine)
nallavAdu	kAlA(masculine)

In this case, `nalla' and `nalupu' are the only two words that needed to have separate entries in the dictionary. Whereas, the words `nallati', `nallaxi', `nallagA' etc are not listed separately, and so are assumed to have derived from the base `nalla', and their Hindi equivalents can be derived.

The recognition of adjectives as a separate category has a number of advantages in the dictionary making. First, it drastically reduces the number of word forms (related and derived from the main

entry) from being listed in the dictionary. A large number of words such as `svawaMwra', `SreRTa' derive many inflected forms such as:

Te.	Hi.	
svawaMwrudu	svawaMwra[m]:	`the independent one' [N., m.]
svawaMwrurAlu	svawaMwra[f]:	`the independent one'[N., f.]
svawaMwraM	svawaMwra[n]:	`the independent one'[N., n.]
svawaMwraw	svawaMwrawA[~m]:	`independence'

Similarly, the word `SreRTa' would derive forms such as:

Te.	Hi.	
SreRTa	SreRTa:	`excellent'
SreRTudu	SreRTa [m]:	`the excellent one' [m]
SreRTurAlu	SreRTa [f]:	`the excellent one' [f]
SreRTaM	SreRTa[n] :	`the excellent one' [n]
SreRTawa	SreRTawA[~m]:	`excellence'

The words ending in `-udu, -urAlu, -M, -wa,' etc., can be derived through derivational means. Hence, such words need not be listed, since their meanings are to a greater extent predictable.

4.3. ADVERBS

In Telugu, what are traditionally called as the adverbs of time and space need to be recognised as a separate category since they inflect regularly with characteristic morphological inflections for direction and location. Some or many of them have the corresponding nominal counterparts which behave differently when they enter into nominal inflections. Consider some of the following examples:

(i). `moVxalu'[n]:

Te.	Hi.
moVxalu[N.,sg.]	prAraMBa, SurUAwa, mUla: `the beginning, the start'
moVxata[adv.]	prAraMBa_meM, pahale, SurUAwa_meM: `in the beginning'
moVxatiki[adv._ku]	prAraMBa_ko: `to the beginning'
moVxalYlu[N.,pl.]	prAraMBa,mUla(ba.): `the roots, the beginnings'
moVxatinuNci [adv._nuMci]	prAraMBa_se: `from the beginning'
moVxativaraku [adv._varaku]	prAraMBa_waka: `till the beginning'
moVxatlo[adv._lo]	prAraMBa_meM: `at the beginning'

In all the above given words, `moVxalu' and `moVxata' will require dictionary entries as two distinct categories. Whereas the word like `moVxalu' inflects for number and case and the word `moVxata' inflects only for direction and location as `moVxalYlu', `moVxaluni', but, `moVxatiki', `moVxatinuMci' etc and these do not have any separate entries of their own.

Here, the bases noun and adverb will be entered in the dictionary. The list of adverb counterparts in the dictionary is necessiated by their special base which forms basis for further inflection and also of their special semantics.

4.4. PRONOUNS

Pronouns in Telugu like in many languages often exhibit a considerable amount of irregularities and idiosyncracies when inflected for case and number. This sort of behaviour on the part of pronouns is required for the setting up of separate paradigms for pronoun morphology. Since the base alternants of pronouns are unpredictable, they need to be listed in the dictionary with their fully inflected forms.

The inflectional variants of pronouns as in 1 p.sg. `nenu[nom.], nA[obl.], nannu[acc.]; 1 p.pl.(excl.) memu[nom.], mA[obl.], mammu/mammalni[acc.]; similarly, in second person require that these forms need to be listed in the dictionary with their equivalents in Hindi, the target language.

For example, the pronoun `nenu' has its plural counterpart as `memu'.

Te.	Hi.
nenu	mE
nA	merA
nannu	muJe
nAku	muJe
nAnuMdi	muJa_se

Consider the third person masculine singular `vAdu'. Traditionally `vAIYlu/vAru' are considered as the plural form of `vAdu' which is certainly wrong, since `vAdu' is the third person masculine

singular, and `vAIYlu/vAru' is the third person human (masculine/feminine) plural form.

Te.	Hi.	
vAdu	vaha[m]	
vAru/vAIYlu	ve[~na]	
vAdi/vAni	usakA[m]	
vAri/vAIYla	unakA[~na]	
vAdiki/vAniki	usako[m]	
vAdini/vAnini	usako[m]	~
vaYlanu/vArini	unako[~na]	

Similarly, `axi' is the third person neutral and masculine singular but its plural counterpart `avi' is not exactly the third person neutral and masculine plural but it is the third person and neutral plural.

Because pronouns have idiosyncracies in their semantics coupled with irregularities in morphology, the pronouns in their fully inflected forms need to be entered into the dictionary.

4.5. NUMERALS

Numerals, in addition to their membership in nominal category, they also have distinctly different inflections to realise various functions associated with numbers or quantifier terms such as, cardinal and ordinal distinction, ---- with numbers and gender, temporal direction, quantity etc., as shown below:

Te.	Hi.	
reVMdu[n]	xo:	`two'
reVMdu[num]	xo:	`two'
ixxaru/iruvuru	xono:	`two/both'
reVMditi	xonoM_ka:	`of both'
reVMdiMtiki	(1)xonoM_ko	`to both'(inflectional base for `two' indicating other than time.)
	(2)xo baje_k	`at two o'clock'
reVmdava/reVMdo	xUsarA	`the second'

`ava' is an ordinal numerical category which is used only with numerals and not with nouns. Similarly, `_Mtiki' also renders a special meaning of `O'clock' which is used only with numerals and not with nouns. So, numerals need to have a separate entry in the dictionary.

4.6. CONCLUSION:

This short chapter discussed the advantages of recognizing certain minor categories and provided the evidence for such. Particularly, in the case of adjectives it is shown that the recognition of adjectives and listing only the adjectives with their equivalents would drastically reduce the number of de adjectival nominals listed in the dictionary.

5.CONCLUSIONS

The analysis presented in the foregoing chapters is based on two assumptions:

1. The meanings given against an entry in terms of target language are ad hoc hence do not cover the complete semantic space with respect to that word;
2. The nature of equivalences in terms of words listed against an entry are not only randomly ordered, but also are over lapping and discontinuous in their nature.

Therefore, the analysis presented here discusses problems related to such presentation particularly in the context of compiling a bilingual dictionary used in machine aided translation or language accessor. It is an attempt at developing a machine readable/electronic bilingual dictionary. The scope of electronic dictionaries is much wider and information may be presented in a more dynamic form. The dissertation focusses not on the format but on the identification, selection and representation of semantic equivalents in the target language proposing sometimes even at the cost of naturalness.

It is shown while analyzing verbs for their semantics, that the category of verbs present a much wider range of semantics than

nouns and other categories. These verbs often display senses almost neutral/abstract to highly specific and discrete. The neutral or abstract sense receives specificity only in the context of certain other lexical categories. This amounts to say that lexical items can and need to be underspecified for their semantics and surface semantics are interpreted only in the relevant contexts. This is comparable to those accounts in phonology and morphology where lexicon come with underspecification for their phonological and morphological encoding before they get surface realization.

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