

Plural Formation in Telugu an English Comparison

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Abstract: Telugu is one among the 22 officially recognised languages of India and it is belonged to south central branch of Dravidian Languages. Telugu is the second largest language in India and one among 15 major languages of the world. Machine Translation has been developing with Language Technology to translate information from English to Indian languages and many libraries and Institutions developing digital texts to their students (clientele). To translate with meaningful retrieval of information into Indian languages such Machines will have to understand the intricacies and nuances of the language.

Though there are some set of Rules for plural formation in Telugu but there is also a number of exceptions. General rule for plural formation in Telugu, the most commonly and frequently occurring plural suffix is **-lu**, where as in English **-s** & **-es**. The stem/root of a word in Telugu is known as **Dhaatu** which undergoes many modifications in cases of singular/plural forms, Unlike English the change in agreement markers are obligatory in Telugu sentences. Verb forms in Telugu sentences change according to human/non-human and Gender cases in plural formations but not in English.

Ex: She is Coming - Ame Vacchu Chunnadi
 He is coming - Atadu Vacchu Chunnadu
 They are Coming - Vaaru Vacchu Chunnaru
 The dog is coming - Kukka Vacchu Chunnadi
 The dogs are coming - Kukkalu Vacchu Chunnavi

In the above sentences the verb form (coming) is common for all the cases in English but it changes in Telugu.

Singular/ Plural Form	Human/ Non-human	Pronoun in English	English Verb Form	Pronoun in Telugu	Telugu Verb Form
SINGULAR	Human	I	Coming	Neinu	Vacchu Chunnanu
		You	Coming	Neevu	Vacchu Chunnavu
		He	Coming	Atadu	Vacchu Chunnadu
		She	Coming	Aame	Vacchu Chunnadi
	Non-human	It	Coming	Adi	Vacchu Chunnadi
PLURAL	Human	We	Coming	Meimu/ Manamu	Vacchu Chunnamu
		You	Coming	Meeru	Vacchu Chunnaru
		They	Coming	Vaaru	Vacchu Chunnaru
	Non-human	They	Coming	Avi	Vacchu Chunnavi

This paper mainly highlights the Problems in Machine Translation in plural formation in Telugu comparing to English.

Keywords: Plural Formation, Plural suffix, Machine Translation, Dhaatu, Language Technology.

Date of Submission: 30-04-2021

Date of Acceptance: 14-05-2021

I. INTRODUCTION

There is no perfect machine translator for Indian languages that are originated from Sanskrit and Dravidian family, mainly because of the reason that they are rich in sandhis. The performance of the system of translation highly depends on the POS tags attached to the given source sentence. Better the tagger, the more efficient translation can be obtained. Some extraordinary case likes Interrogatory and exclamatory sentences will have to be handled in future. Plural formation is also one among the problems in translation.

Languages are challenging, because natural languages are highly complex, many words have various meanings and different possible translations, sentences might have various readings, and the relationships between linguistic entities are often vague. The major issues in MT involve ambiguity, structural differences between languages, and multiword units such as collocations and idioms. If sentences and words only had one interpretable meaning, however, languages can present ambiguity on several levels. If a word can have more

than one meaning, it is classified as lexically ambiguous. An approach to solving this problem is statistical analysis [1].

The word *plural* means more than one in number. In most cases, a noun will form its plural by adding suffixes; a plural noun is a word for two or more people, places, or things to the singular form. Telugu is one among the Dravidian Languages and is belonged to south central branch of the Dravidian Languages (The other languages are chenchu, savara and waddara). In Telugu Language the *stem/root* of a word is known as *Dhaathu*. The *Dhaathu* undergoes many modifications in cases of singular/plural forms, tense, gender, dative/accusative cases, animate and inanimate objects.

Plural Formation in Telugu

A stemming algorithm is a process of linguistic normalization, in which the variant forms of word are reduced to a common form, called the *root stem*. This work deals with the problem of plural resolution in Telugu language. A set of rules has been adapted to develop algorithms for plural resolution in Telugu language.

Telugu is a Central Dravidian language primarily spoken in south India where it is an official language. According to the 2001 Census of India, Telugu is the language with the third largest number of native speakers in India (74 million), 13th in the Ethnologies list of most-spoken Language world-wide, And most spoken Dravidian Language. As the English Language has ASI II encoding system for Identifying the specification of a charter, similarly Indian Languages have encoding system named Unicode such as UTF – 8, UTF – 16, UTF -32, ISCII[2].

Nouns and pronouns will have singular and plural forms in Telugu Language. The general algorithm for plural formation in Telugu is to add suffix – *lu* to each word. But, this does not work in all the cases, some other suffixes like *tlu*, *ntlu*, *ndlu*, *llu* also add in plural formation. Generally singular words in Telugu ends with the suffixes like *du*, *mu*, and *vu*. While formation of plural words in Telugu suffix –*du* is replaced by plural suffix – *lu*.

Ex: - *Bheemudu* - *Bheemulu*

In some cases singular suffixes –*mu* and –*vu* takes multiple changes in plural formation. Sometimes –*mu* remains unchanged and in some cases it replaced by –*lu* changing with its before letter. –*Vu* also takes many changes in plural formation, it remains unchanged in some words and it replaced in some other words.

Ex:- *Vrukshamu*(tree) - *Vrukshamulu*(trees) - *Vrukshaalu*(trees)

Ex:-*Guruvu*(priest) - *Guruvulu*(Priests) - *Gurulu*(priests)

Some singular words ending in –*i* changes into –*u* and add –*lu* suffix to make plural.

Ex:-*Kavi*(poet) - *Kavulu*(poets)

Katthi(Knife) - *Katthulu*(knives)

Suffix –*ru* is also used as plural mark in Telugu in the nominative words. Generally first person singular words in Telugu occur ending in –*du* which is replaced by –*lu* in plural formation.

Ex:-*Bala*(root word) - *Baludu*(Boy) - *Baluru*(Boys)

Pagatudu(enemy) - *Pagaturu*(enemies)

In special cases some words ending in –*nu* will become plural by adding –*ku* or –*nku* along with plural suffix – *lu*

Ex:- *Kolanu*(lake) - *Kolakulu*(lakes)

Kolanu(lake) - *Kolankulu*(lakes)

Words like *chaenu*, *paenu* while changing into plural the last letter –*nu* drops and replaced by plural suffix –*lu*.

Ex: - *Chaenu*(field) - *Chaelu*(fields)

Paenu(bed bug) - *Paelu* (bed bugs)

Plural marks like –*ndlu*, –*tlu*, –*dlu* are also used as suffixes in Telugu for plural formation in some words.

Ex:- *Kannu* (eye) - *Kannulu*(eyes) - *Kandlu*(eyes)

Chettu(tree) - *Chetlu*(trees), *Aeddu*(ox) - *Aeddlu*(oxen)

Bh. Krishnamurti (1985) and P.S.Subramaniam (1974) gave the following morph-phonemic changes in Telugu
 i) pilli+lu=pullulu. The final *i* is changed into u due to the influence of the final u of the plural marker –*lu*
 ii) guDi+lu=GuLLu. Final syllable is dropped as well as the lateral *lis* changed into the retroflex *LL*
 iii) paNDu+lu= paLLu. The final *NDu* is dropped and the lateral *L* is changed into the retroflex *LL*
 iv) BaNDi+lu=BaLLu The final *NDi* is dropped and the lateral *L* is changed into the retroflex *LL*
 v) raayi+lu=raaLLu. The final *yi* is dropped and the lateral is changed into *LL*.
 vi) kuuturu+lu=kuutuLLu The final *ru* is dropped and the lateral *L* is changed into *LL*.
 vii) manavaDu+lu=manavaLLu. The final *Du* is dropped and the lateral *L* is changed into *LL*.
 viii)Manavaraalu+lu=manavaraaLLu. The final syllable *lu* is dropped and the lateral *L* is changed into *LL*.

Some adjectives - *Telupu*(white), *Nalupu* (Black), *Erupu* (Red) a word *Biyyamu* (rice) always remains as singular. Some other words in Telugu will also always remain as singular words.

Ex: - some crops - *Vary*(paddy), *Jonna*(maize)

Some food items - *chintapandu*(tamarind). *Uppu*(salt)

Some metals - *Vendi*(silver), *Raagi*(copper), *Bangaram*(gold)

Some words in Telugu will always remain as plural words.

Ex: - Some games in Telugu - *Omanaguntalu*, *Gacchakayalu*

Some words like *pesallu*(green Gram), *Kandulu*(red gram), *Paalu*(milk), *Neellu*(water), etc. are always remain as plural in Telugu.

Plural Formation in English

To make most of the nouns into plural in English, add *-s* or *-es* to the end of the word. These are called regular plurals (or regular nouns).

Ex: - *Bag- Bags*, *Class-Classes*

Nouns ending in *-s*, *-sh*, *-ch* (soft) or *-x* are form the plural by adding *-es* to the singular.

Ex: - *Mass – Masses*, *Brush – Brushes*, *Match – Matches*, *Box – Boxes*

Nouns that form their plural in some other ways are called irregular plural (or irregular nouns).

Ex: - *child - children*; *foot - feet*

Most of the Nouns in English ending in *-o* also form the plural by adding *-es* to the singular , but a few Nouns ending in *-o* form the plural by adding *-s* to the words.

Ex: - *Potato – Potatoes*, *Tomato – Tomatoes*

Ex: - *Kilo – Kilos*, *Commando – Commandos*

Nouns ending in *-y*, preceded by a consonant, to form their plural by changing *-y* into *-i* and adding *-es* to the words at an end.

Ex: - *Lady – Ladies*, *Story – Stories*, *Beauty – Beauties*

In some other cases Nouns ending in *-f*, *-fe* form their plural by changing the letters *-f*, *-fe* into *-v* and add the suffix *-es*. But some other words ending in *-f* or *-fe* change into plural by adding *-s*.

Ex: - *Leaf - Leaves*, *Thief - Thieves*, *Wife - Wives*, *Knife – Knives*,

Proof – Proofs, *Roof - Roofs*, *Safe - Safes*

A few Nouns in English that form their plural by adding *-en* to the singulars.

Ex: - *Child – Children*, *Ox – Oxen*

Some nouns have peculiar characters they form their plurals by changing the inside vowels of the singular words.

Ex: - *Foot – Feet*, *Woman – Women*, *Mouse – Mice*, *Tooth – Teeth*, *Goose – Geese*

Subject - Verb - Plural Agreement

The basic rule states that a singular subject takes a singular verb, while a plural subject takes a plural verb, in general a verb must agree with its subject.

English to Telugu Machine translation system is tested with 450 simple sentences. The output is categorized into three types namely good, understandable and Bad. Bad translation occurs mainly due to following reasons, 1.Non-availability of Lexicon in the bilingual dictionary. 2. Reordering Output is incorrect. (Cases like Exclamation sentences, Question types and Negative sentences) 3. Due to limited Morphological inflection [3].

Two singular subjects connected by or/nor require a singular verb in English, but plural verb comes in Telugu in the same context.

EX: - *My father or mother is coming today.*-English

Ma amma laeda nanna eeroju Vasthunnaru – Telugu

Two singular subjects neither connected with either or/neither nor require a single verb in English but they require plural verbs in Telugu. When I am one of the two subjects, put it second and follow it with the singular verb am.

Ex: - *Either Mother or Teacher is helping for success* –English

Talli Leda upadhya yudu gelupulo saharistunnaru –Telugu

Neither he nor I am playing –English

Atadu gani nenu gani aadutalemu—Telugu

Collective nouns lik team, staff may be used either singular or plural depending on their usage in the sentence in English as well as in Telugu.

English words such as pants, glasses, Scissors are regarded as plural and require plural verbs unless they are precedes by the phrase pair of in which case the word pair becomes the subject.

Ex: - *The glasses were on the table* (plural)

A pair of glasses is cost very high (singular)

In the same way Telugu Language also have some words which always used either as singular or plural. But the words are different in English and Telugu. They are not the same words, as they become the problem in machine Translation.

The complexity increases when it comes to translating it to another language. Whenever the source language does not code some information explicitly, but the target language requires it to be coded explicitly, then one is forced to 'guess' the missing information [4].

Borrowed words like *coffee, tea* etc. Will take plural mark in Telugu but not in English.

EX:- *coffeelu Tealu Unnaaya* ? –Telugu

Is there coffee or Tea? –English

Unlike in English the Honorific noun like Vic-chancellor, Minister, Head, etc take either the plural marker **-lu** or the honorific form – **vaaru-gaaru** in Telugu.

Ex: - *Aacharyula Varu matladutunnaru*- Telugu

The principal is addressing –English

Adyakshulu Vastunnaru - Telugu

The Hon'ble Head is coming – English

When the proper names like *Ramaa, Sitaa, Roja, Pooja* occur in combination as subject, the last name in the phrase takes plural mark in Telugu, but not in English.

Rama, Sitaa, Roja, Poojalu Pariksha rastunnaru – Telugu

Rama, sitaa, Roja and pooja are writing the Examination – English

In the formation of samasa by adding two or more nouns in Telugu will also take the plural form, which not occur in English.

Ex: - *Ramalaxmanulu* – *Rama and Laxmana*

SitaaRamulu – *Sitaa and Ramaa*

Especially in Telugu the Human plural nouns have the agreement marker **-ru** and non Human plural nouns have the agreement markers **-yi**.

Rama laxmanulu Vaccharu - *Rama and Laxmana came*

Hamsalu, chilukalu Vacchayi - *swans and parrots came.*

When one human noun and one non – human noun are combined together as phrase as subject in Telugu the human agreement plural is used instead of non- human agreement plural.

Oo muni pulito vastunnadu (s) - Telugu

Oo muni mariyu Oo puli vastunnaru (p) - Telugu

One saint and one tiger are coming - English

In Telugu the agreement marker changes in human and non - human while using numerals like two, three, four etc. The classifiers **-guru** is used, above nine the classifier **- mandi** is used.

Ataniki naluguru pillalu – *He has four children*

Naaku padimandi sishyulu- *I have ten students*

Maemu tommanduguramu Vacchamu- *We nine came*

The meaning of the words compared to Telugu and English Changes according to Context of the sentence.

Pannu(tooth or tax) – singular

Pannulu(taxes)- plural

Pandlu (teeth or fruits) – plural

Pandlu (n) – fruits

Pandu (n) – fruit

Pandu (v) – sleep

In Telugu poetry pronoun *naenu* sometimes changed into *enua* and *meemu* changed into *aemu, neevu* into *eevu*.

In this way so many example can be explained to show the differences in plural formation in Telugu and English.

In a large multilingual society like India, there is a great demand for translation of documents from one language to another language. Approach: Most of the state government works in there provincial languages, whereas the central government's official documents and reports are in English and Hindi. Results: In order to have an appropriate communication there is a need to translate these documents and reports in the respective provincial languages. Natural Language Processing (NLP) and Machine Translation (MT) tools are upcoming areas of study the field of computational linguistics [5].

II. CONCLUSION

Telugu is a Dravidian Language and English is an Indo European Language. So many differences are there in semantic, morphological and syntactic structures compared to Telugu and English. Morphological analyzer and generator have been developed with the limited resource of linguistic knowledge. In the future people who have good knowledge in Telugu can use the system and provide an enhanced output. Telugu is second most spoken language in India, it is important to have a translation system for Telugu language.

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Authors' Biography



DR. K. MALLAREDDY received M.A (TELUGU) from Osmania University and honoured with Gold Medal for securing highest marks in the University Examinations. Received M.Phil & Ph.D from Osmania University. Received Teacher Training Certificate and Appointed as Teacher in 1996. Appointed as Lecture in Telugu through Andhra Pradesh Public Service Commission (APPSC) in 2002. Now working as Lecturer in the Asst. Professor Cadre.

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Dr.Kotthireddy Mallareddy. “Plural Formation in Telugu an English Comparison.”*IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 26(05), 2021, pp. 01-05.