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Challenges Encountered in Processing Pronouns in English-Marathi Computational Translation

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Abstract

The present paper is an attempt to encompass the problems of processing pronouns to translate them from English to Marathi with the help of computers and initiate certain solutions to the problem. With this aim, the paper is prepared to present pronouns in English, and their counterparts in Marathi. It further endeavours to note the possible problems encountered during the process. These problems are related to the semantic divergence in two different languages. Some of these problems are related to the honorific words. With the help of this paper it is aimed at developing such a system with separate database for treating these pronouns separately and processing them according to the Marathi requirements. It can bring about the changes in the processing, and it will enhance the accuracy for the furtherance of English Marathi translation. It is attempted to identify and locate such problems with specific examples. It is helpful to the furtherance of translation process with increased accuracy.

Keywords: Computational Translation, pronouns, person, number, gender, case, Marathi

I Introduction

With the advancement in the field of Computational Sciences (CS), Artificial

Intelligence (AI), Machine Translation (MT) and Natural Language Processing (NLP), it has been observed that the field superficially looking to be very simple in natural language processing has number of challenges to pose, face and encounter. The challenges are not only at the technical level, but also at lexical, structural, grammatical, syntactic, pragmatic and cultural levels. Overtly, it looks to be the simple matchmaking, but at the bottom of these processes lies one very important aspect, it is meaning or the semantic aspect of language. The discursive practices are aimed at generating the meaning; however, the meaning which lies in the text actually lies in the smallest particles of the language. The smallest particles involving the very phonemes of the words further extendable into morphemes and syllables, which later on are converted into words, phrases, clauses, sentences and discourses. The journey of the meaning conversion starts with these elements; however, it produces the problems at the lexical level to the larger extent. These lexical elements are systematically divided into word classes. These word classes are split into open and closed classes. Father sub-categorized into noun, verb, adverb, adjective as the members of open class. On the other hand the world classes pronoun, operator verb, preposition, conjunction, interjection, enumerator, determiner belong to the closed class.

II Pronouns in English

The English pronouns are systematically classified into First Person, Second Person and Third Person. This classification is sub-divided into subjective, objective, possessive and reflective categories, and these categories consist of number viz. singular and plural. The classification in each category consists of masculine, feminine and neuter gender. This classification is clearly visible in the following chart.

English Plural Pronouns												
Case	Sub			Obj			Poss			Refl		
Gender	M	F	N	M	F	N	M	F	N	M	F	N
Sr Person												
1 First	we	we		us	us		our	our		ourselves	ourselves	
2 Second	you	you	you	you	you	you	your	your	your	yourselves	yourselves	yourselves
3 Third	they	they	they	them	them	them	their	their	their	themselves	themselves	themselves

Table 1

English Singular Pronouns												
Case	Sub			Obj			Poss			Refl		
Gender	M	F	N	M	F	N	M	F	N	M	F	N
Sr Person												
1 First	I	I		me	me		my	my		myself	myself	
2 Second	you	you	you	you	you	you	your	your	your	yourself	yourself	
3 Third	he	she	it	him	her	it	himself	herself	itself	himself	herself	itself

Table 2

Particularly, the classification is based on the semantic properties of individual pronouns, their structural makeup and position in the given sentence. Especially, the same pronoun may occur in the beginning of a sentence, it may have a different variant of spellings or altogether different one after the verb at the position of an object. Even the person of a pronoun determines different meanings, and these elements are present in the above chart.

III Marathi Pronouns

As this is related to the translation process, the Marathi pronouns moulded according to the English pronouns and the same categorisation is reproduced in the form of table. However, the basic difference in semantic layer is fully illustrated below with the help of tables. Even the table consists of every individual pronoun corresponding to different layers of meaning. To communicate with the pronouns, this is from the same classification of pronouns as first person, second person and third person. As well as the element of number as singular and plural: The gender like masculine, feminine and neuter; and the case elements like subjective, objective possessive and reflexive are given in the following table.



Marathi Paralels												
Case	Sub			Obj			Poss			Refl		
Gender	M	F	N	M	F	N	M	F	N	M	F	N
Sr Person												
1 First	ami	ami		ami	ami	ami	amc	amc	amc	amhi	amc	amche
	hi	hi		hi	hi	hi	he	he	he	swat	he	amchya
	aap	aap		aap	aap	aap	hya	hya	hya	aha	hya	amchi
	an	n		an	an	an	hi	hi	hi	hi	hi	amchi
2 Second	tu	tumhi		tum	tum	tum	ha	ha	ha	tumhi	tumhi	swataha
	mhi			hala	hala	hala	tumc	tumc	tumc	i	i	
							hi	hi	hi	swat	swat	
							he	he	he	aha	aha	
							hya	hya	hya			
3 Third	te	tya	te	tyan	tyan	tyan	ha	ha	ha			
				na	na	na	hi	hi	hi			
							hi	hi	hi			
							he	he	he			
							hya	hya	hya			

Table 3

Marathi Paralels												
Case	Sub			Obj			Poss			Refl		
Gender	M	F	N	M	F	N	M	F	N	M	F	N
Sr Person												
1 First	mi	mi	mi	ma	ma	ma	ma	ma	ma	mi	mi	mi
	ma	ma	ma	ma	ma	ma	ma	ma	ma	swat	swat	swat
2 Second	tu	tumhi	tumhi	tum	tum	tum	ha	ha	ha	tu	tu	tu
	tula	tula	tula	tula	tula	tula	ha	ha	ha	swat	swat	swat
3 Third	to	ti	ti	tya	tya	tya	tya	tya	tya	to	ti	ti
	tya	tya	tya	tya	tya	tya	tya	tya	tya	swat	swat	swat

Table 4

IV Semantic Equivalences in Marathi

The very crucial element in the processing of English into Marathi translation is related to the semantic equivalence. Every individual pronoun in English is not exactly simple replacement of Marathi symbols; it undergoes the changes at every level and in every position. To systematize them and process with nearer or exact meaning, they need to be systematically organised and related to corresponding exact meaning. It needs more focus on every individual element based on the number, gender person and case possibilities. The aim of this paper is to identify, analyse, relate and equate the lexical elements on semantic grounds. The following analogy is helpful to resolve complicated issue of pronoun processing by collaborating the position, syntax, and meaning shades.

The first table consists of the pronouns in English. The pronouns are classified on the

basis of their number; singular and plural. They are further sub-classified into subjective, objective, possessive and reflexive cases. The classification goes ahead with masculinity, femininity and neutrality of individual pronouns. Apart from the case-based and number-based elements, there is the classification of these pronouns in the form of their number as first person, second person and third person. The first person singular masculine pronoun is 'I'. The same is with feminine pronoun and in objective cases there is use of 'me'. There occurs myself as reflexive pronoun. This kind of classification is done with the intention to merge pronouns in Translation under the appropriate semantic shade in Marathi. This table is systematic in the sense that it tries to produce systematized whole for English pronouns. This is the source language database on the basis of which the target language is to be modelled. The table is in accordance with the table which is to be followed hereafter. The same kind of table is reproduced above in order to give the exact Marathi parallels.

V Semantic Divergence: Problems in Processing

With these two tables, it is vivid that the pronouns are very difficult to process, as it is an issue of English to Marathi translation. It is a simple issue, but it has long lasting effects on the entire translation process. It is necessary to consider every individual case on the basis of this table. The first case which is related to the first person singular pronoun I. While translating this particular pronoun from English to Marathi, there are two possibilities of its possible translation. There is /ml/ and /mala/ meaning shades of the same pronoun when the word changes from "I am" to "I have". This problem cannot be solved with simple matchmaking, because the choice of the appropriate meaning shade depends upon the verb following the pronoun. Such cases are complicated because the category of the individual verb that should

be specified, and then only it can be programmed to arrive at the exact results.

Secondly, the possessive pronoun my in the same category has also conflicting choices of the meaning shade. When it is used in singular masculine, it has different meaning shade to choose. For example in masculine gender, it is /maza/ in feminine cases /mazi/ and in neuter gender /maze/.

If the same pronoun has different and conflicting choices, automatically, the ambiguity is liable to come there. It needs syntactic and semantic aspects to be conglimerated. The representation of complication is presented below.

The example shows that there is the multiplicity of equivalences, and the choice is determined by other elements occurring thereafter. As discussed earlier, the number and gender issue control the conflict. This particular possessive pronoun does not contain or reflect the number or gender, however, the head of the NP to which it modifies controls this possessive pronoun's alternative in TL meaning-shade. Six different variants based on the number and gender are subordinate until they get in meaning to words particularization in the structural and semantic context of the NP. It shows that not only the dictionaries resolve the problem, but this separate lexico-semantic database is necessary which would specify and relate the semantic layers in the given context.

Pronoun in the given table has got its own issues. The analogy given above for 'my' is fundamental, and it varies from case-to-case. With the help of this paper the gravity of the problem is put forth as well as analysed the level of intricacies. The pronouns need to be redirected to the noun database as well as verb database. And coordination in relation to the semantic aspects and semantic parameters is helpful to resolve the ambiguity and bring about revolutionary changes in MT systems. Particularly, the domain specific formal

discourses in English can be translated largely with greater accuracy. The next aspect in structural hierarchy after lexeme is the phrase, and this is the more ignored but most important aspect that has controlled MT systems and their level of accuracy. On the basis of the discussion, it is possible to come to certain conclusions. They are presented in the form of certain findings.

VI Findings

The paper contains very important observations useful for high level accuracy in MT systems. They are useful for the constructive contribution. They are enlisted below.

- 1) Pronounce translation is both syntactically and semantically complex
- 2) Every individual pronoun in and parallel in terms of computational processing.
- 3) There is tremendous disparity in its semantic and correlation.
- 4) The meanings of pronouns are not embedded they are dependent.
- 5) The verbs and nouns control the meaning shades of pronouns.
- 6) The syntactic position determines its target language meaning variant.
- 7) The pronouns need separate programming.

The paper tackles a highly sensitive and practical issue with a theoretical base and interpretations from linguistic perspective for computational processing and translation output. It has touched upon a simply basic issue and put forth the serious concern that has created and has posed a grave challenge of MT System.

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05

USE OF LIBRARY COLLECTION AND SERVICES: A CASE STUDY OF DR.BAPUJI SALUNKHE LAW COLLEGE, OSMANABAD

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ABSTRACT:

This study investigates user satisfaction of law students of Law College, Osmanabad (Maharashtra).The study focuses on information required by the students and satisfaction level, what resources they require, methods for locating information, library collection, services and facilities available in the library. A descriptive survey method was used & the data was gathered through the questionnaire completed by 180 students, the users' opinions and suggestions have been collected in this study for data collection process.

Keywords:Users study, Collection Development, Library Services, Best Practices, College Library, LAW, INFLIBNET and N-LIST.

1. INTRODUCTION

India has a large educational system comprising thousands of colleges & hundreds of universities along with several institutes of higher learning & centers of excellence. The college & university libraries being the nerve centers of the higher education & learning play a vital role in support of all the activities such