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Modified Numerals and Plurality in *Bangla*

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ABSTRACT

The issue of how quantification is encoded in various languages has been widely debated in formal semantics as well as in syntax. This paper presents an overview of the various modified numeral phrases in Bangla in relation to the theories of Plurality and Distributivity. Moreover, this paper examines the structural distribution of the modified numeral phrases in Bangla along with a brief semantic analysis of the different kinds of plurality (i.e. collective, distributive, cumulative) that are encoded by these. Additionally, this paper argues that distributivity can also be signalled by the modified numeral phrases in Bangla.

সারাংশ

গণনার ধারণা ঠিক কি ভাবে বিভিন্ন ভাষায় উপস্থাপিত হয়েছে সে বিষয়ে ফর্মাল সেমান্টিক্স এবং সিনট্যাক্স-এ বিস্তর বিতর্ক রয়েছে। এই প্রবন্ধটিতে মূলতঃ বিশেষ এক ধরনের বিশেষ্য পদগুচ্ছ আলোচিত হয়েছে। লক্ষ্যনীয়, এই পদগুচ্ছ গুলি সংখ্যাবাচী পদের দ্বারা বিশেষিত। এই বিশেষ ধরনের পদগুচ্ছের আলোচনায়, বহুত্বের প্রসঙ্গ যেমন উত্থাপিত হয়েছে, ঠিক তেমন ভাবেই এসেছে বিন্যাসের প্রসঙ্গও।

1. Introduction

Modified numerals in natural languages are defined as a composite phrase denoting cardinal numbers that are modified by a quantifier or degree modifiers (+ adposition) and yield plurality. Modified numerals denote plurality with or without specifying the exact cardinality of the numerals. The examples of a few of these modified numerals are given below:

(1) There are *at most 10* students in the class.
(2) I have *fewer than* 10 pens.

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The structure of modified numerals can also be observed on postpositional languages, where the quantifiers or degree modifiers follows the numeral. (e.g. Bangla, Hindi etc.) In several languages, there is a comparative adposition that occurs in between the numeral and degree modifiers, such as, than, /se/ (in Hindi), /que/ or /de/ (in French) etc. However, in Bangla, a null comparative postposition is present that implicitly denote the comparative quantity which is signalled by the numeral and adjectival degree modifiers in a modified numeral phrase. The following sections will present an overview of the various modified numerals in Bangla. In addition to that, the syntactic structure of these modified numerals will be provided along with an in-depth semantic analysis to show the different kinds of plurality that is expressed by the modified numerals in Bangla.

2. Research Objectives

In this paper, the question of how plurality is encoded by various modified numeral phrases in Bangla is examined. In addition to that, this paper addresses the issue of distributivity that is explicitly or implicitly signalled by the modified numeral phrases. This paper is a semantic inquiry into adjectival quantification (specifically, comparative and proportional adjectival quantity words in a NumP) in Bangla and analyses whether modified numerals map into universal grammar, and if so, how these notions can be located at the semantics-syntax interface.

3. Theoretical Background

The formal study of quantification and its logical dimensions has been a debated issue in formal semantics for decades. Barwise and Cooper(1981), Keenan and Stavi (1986) have established the significance of quantification in the theory of LF, and later semanticists have proposed multiple applications of Generalized quantifier Theory in relation to many of the quantificational categories in natural languages.

In contemporary semantics, Ionin and Matushansky (2006) claim that numbers are nouns. Whereas Kayne (2005) offers a detailed analysis proposing that few and many are adjectives and that instead of modifying the Head Nouns directly, they in turn modify an "unpronounced noun" containing the number (Num). Geurts and Nouwen (2007) argue that inferences can be drawn from comparative numbers, such as *more than two*, *less than two,* however, *more than n-1* is not equivalent to *at least 1*. However, Heim (2001) interprets the modified numerals as 'degree-determiners' that functions as a relation between two sets of degrees.

Interestingly, the modified numeral phrases, such as, *most three boys*, *more than three boys* and *fewer than three boys*, do not denote the exact cardinality of the plural predicates. In view of such examples, the issue whether the modifier modifies the whole nNP phrase or combine with the numeral to compositionally build the meaning, is debatable. (Krifka 1999, Winter 2001).

Furthermore, Nouwen (2010) puts forward the claim that there are two classes of modified numerals (Class A and Class B) and also provides the semantic analysis of modified numerals in English. Moreover, he argues, Class A modified numerals readily express relations to definite amounts (e.g. A hexagon has *fewer than* 11 sides.). Class B modified numerals, on the other hand, are incapable of expressing relations to definite amounts (e.g. A hexagon has *at most/maximally/up to* 10 sides.).

4. Research Methodology

The Bangla data-set to illustrate the modified numerals in Bangla in this paper, is produced by my linguistic judgements as a native speaker of Bangla (Spoken in Kolkata). The research methodology is largely deductive with some induction based on the data, which has been collected and examined based on my acceptability judgements as a native speaker with ample additional examples which have

been compiled in consultation with other native Bangla speakers. The data is verified against the introspective judgments of the Bangla speakers located in both Delhi and Kolkata, including both monolingual and multilingual speakers.

5. Modified Numerals in Bangla

The issue of modified numerals in natural language has been a topic of inquiry in the contemporary semantics. According to Szabolcsi (2010), modified numerals include counting words (e.g. *exactly n NP*), comparative quantifiers (e.g. *more than n NP*) and non-comparative/superlative quantifiers (e.g. *at most n NP*). [p.175].

Several studies have shown the quantificational distribution of the modified numerals in natural languages. Hackl (2001), Krifka (1999) and Takahashi (2006) have analysed comparative quantifiers, Nouwen (2008) has examined negative comparative quantifiers, Solt (2007, 2009) posits an semantic acoount of differential quantifiers, Geurts & Nouwen (2007), Umbach (2006) and Krifka (2007) have inquired into degree quantifiers, Corver & Zwarts (2006) put forward an analysis of locative quantifiers, and Nouwen (2008) has theorized about directional quantifiers.

The cardinal numbers in natural language can be modified by adjectives and degree quantifiers. Numeral modifiers modify the exact cardinality of the natural numbers and encode a set of scalar range for the number. The modified numerals differ from the proportional quantifiers. Although, the proportional quantifiers denote a set of numeral variables, however, they encode the relation between two cardinal numbers or one cardinal number and a measurement value, for example, *more than half of 10, 8 out of 10 and one thirds etc.*

In Bangla, the numerals can be modified by adjective quantity words, comparative quantifiers and degree quantifiers. Additionally, these modified numerals can also be modified further by adjective quantity words, quantifiers, partitives and negation. Some of the examples of modified numeral phrases in Bangla include:

(3) /dɔšer kɔm/(*less than 10*)
(4) /dɔš er ɔnek kɔm/ (*fewer than 10*)
(5) /dɔš er beši/ (*more than 10*)
(6) /dɔš er ɔnek beši/ (*a lot more than 10*)
(7) /dɔš er beši nɔe/ (*not more than 10*)
(8) /ɔn̪to̪to dɔš/ (*at least 10*)
(9) /t^{h}ik dɔšta/ (*exactly 10*),
(10) /dɔš er beši nɔe/ (*not more than 10*)
(11) /dɔš er kɔm nɔe/ (*not less than 10*)
(12) /šud^{h}u dɔšta/ (*only 10*)

The modified numeral construction in Bangla include cardinal numbers that are modified by degree modifiers (/kɔm/,/ beši/), quantifiers (/kichu/, /ektu/, /ɔlpo/), adjective quantity words (/ɔnek/) etc.

These modified numerals occur in different sentence structures and encode comparative quantificational sets of entities/objects. The cardinality of the numeral is denoted by comparative quantification and definite NPs. However, the plural readings of these modified numerals needs to be defined in relation to the complex cardinality that is implicitly encoded by these composite phrases.

6. Modified Numerals and Plurality

Plurality in natural language semantics is typically encoded by plural noun phrases that quantifies over atomic individuals or collections of individuals and entities (Winter & Scha 2014). Scha (2003) has described a unified treatment of plurality in natural language that accounts for the variety of plural

readings. According to Scha, "A quantification which ranges over the extensions of a noun is called distributive." [ibid] Balusu (2005) has put forward semantic account of the distributive readings of the reduplicated numerals in Telugu.

Winter and Scha (2015) examine the problem concerns in the interpretations of plurality in natural languages by mainly concentrating on English plurals. According to them, referential plural NPs are uniformly analysed as denoting plural individuals that act as predicate arguments. Similarly, they also occur in sentences that have distributive interpretation, and moreover, quantificational distributivity is identified with only referential plurals.[ibid] To further extend, they put forward two central approaches of semantic analysis of plurals, i.e. as modifiers of predicates and as plural determiners. They argue that in many instances the plural NP quantifies over single entities or collections of entities. They claim that the sentence John shuffled the decks encode both the collective and distributive readings. Along similar lines, the modified numerals also encode various range of plurality in Bangla, such as:

(13) ei boi -te dɔš -ta -r kɔm paṭa ac^{h}e [Collective]
this book -LOC. ten -CLS. –GEN. less page be.PRES.
"This book has less than 10 pages."

(14) ami bajar ṭ^{h}eke t^{h}ik kuri -ta lebu kinec^{h}i [Collective]
I market -ABL exactly twenty -CLS. lemon buy.PERF.1st
"I bought exactly 20 lemons from market."

(15) Ram kauke dɔš -er opor -e nɔmbor ḍayə ni [Distributive]
Ram anyone ten -GEN over -LOC. marks give.PERF. NEG.3rd
"Ram has not given anyone more than 10."

(16) dɔš -ta c^{h}ele mile hadʒar -er beši čaḍa ṭulec^{h}e [Cumulative]
ten -CLS. boy together thousand -GEN. more donation collect.PAST.perf.
"Ten boys have collected more than thousand rupees donation."

The above examples express the various plural readings that are encoded by the various modified numerals in Bangla. The following section (6.1) provides a detailed semantic analysis of the distributivity feature that is encoded by these modified numerals in Bangla (in some sentences). Moreover, an account of the syntactic structure of the modified numeral in Bangla is also provided in the section (7).

6.1 Distributivity and Modified Numerals

The modified numerals in Bangla yield the distributivity feature in some of the sentences where the extension set(s) quantified by the modified numerals distributes over a range of sets of variables in all possible world (w). These sets of variables include adjectival quantity words, quantifiers and indefinites. In some of the examples, the modified numerals encode both collective and distributive readings, for example:

(17) ek -ta boi -te dɔš -ta -r kɔm paṭa t^{h}ake [Distributive]
one -CLS. book -LOC. ten -CLS. –GEN. less page be.PRES.hab.
"One book has less than 10 pages (usually)."

(18) ek -ta boi -te dɔš -ta -r kɔm paṭa t^{h}ake [Collective]

one -CLS. book -LOC. ten -CLS. –gen. less page be.PRES.hab.
"One book has less than 10 pages (specifically)."

However, there are sentences that yield only distributive readings are such as:

(19) ɔnek baɽi - ʈe onʈoʈo ɖu -to boi tʰake
many house -LOC. at least two -CLS. book be.PRES.hab.3rd
"At many houses, there are at least two books."

(20) kicʰu lok -er ɖu -to –r beši gaɽi acʰe
some people –GEN. two -CLS. –GEN. more car be.PRES.hab.
"Some people have more than two cars.

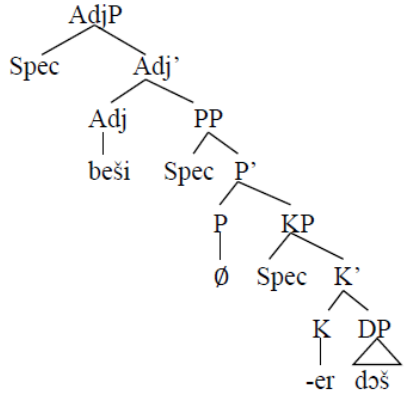
Therefore, the modified numerals in Bangla encode the feature of distributivity that is observed in many quantificational constituents in Bangla. This paper demonstrates the comparative quantification in Bangla in relation to plurality and distributivity.

7. An Account of Structure and Semantics of Modified Numerals

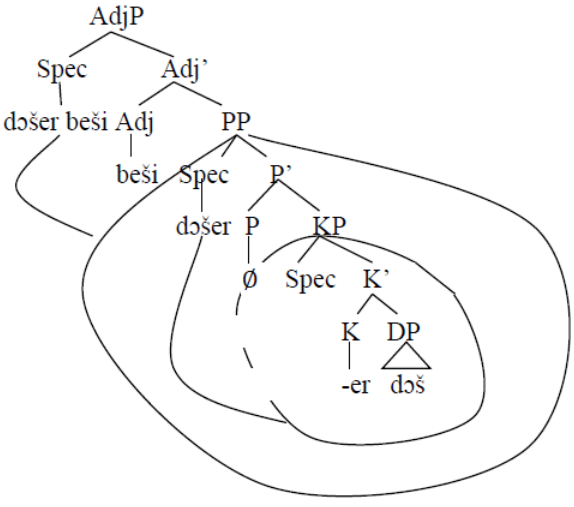
The syntactic structure of these modified numerals in Bangla includes a composite phrase that has a null comparative postposition. The structure of the modified numerals in Bangla can be analysed as follows (Kayne, 2005 & Bittner and Hale, 1996):

(21) /dɔš er beši/ (more than 10)

(22) a. The repeated (21.) phrase structure after Merge:



(22) b. The syntactic derivation after Move:



The semantic analysis of the distributivity feature of some of the Bangla modified numerals can be formalized as follows (example 20. is repeated as example 23.):

(23) kiċʰu lok -er ɖ u -to –r beši gaɽi aĉhe
some people –GEN. two -CLS. –GEN. more car be.PRES.hab.
'Some people have more than two cars.'

This interpretation of distributive reading is modelled by letting the predicate [Have(aky)] 'distribute over' the denotations of the DP (<<e,t>,t>).

(24) Let P= {a1, a2, a3... } be the total set of people in the given context.

=Let x {a1, a2,a3...., an} be the subset of people picked out by /kiĉhu lok/ 'some people'.
= ∃x (x⊆P)⋀∀ak {∃y ((Car (y) ⋀ (|y|=i))⋀ (ak x) → Have(aky)] where i>2, such as i= 3, 4..., and k ∈ {1,2,3....,n}
=k can denote a∈ny type or token of car.

Therefore, the modified numerals in Bangla encode the semantic feature of distributivity that is observed in various modified numeral phrases in Bangla. This paper highlights the comparative quantification in Bangla in relation to plurality and distributivity.

8. Conclusions

This paper present brief analysis of the semantics modified numerals and plurality in Bangla. These modified numerals in Bangla are capable of encoding different kinds of plurality, most importantly distributive plurality. Syntactically these modified numerals include a nullP denoting a comparative adposition. Therefore, this paper highlights the issue of modified quantification in Bangla in relation to the theories of plurality and Distributivity in natural language semantics.

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Gaddi case

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ABSTRACT

Case is vitally a morphological as well as syntactic category. It is a manifestation of the syntactic or semantic function of a noun phrase in a sentence. This paper attempts to document the various types of morphological cases in Gaddi, a language spoken in the lower western Himalayas. The paper focuses on documenting the various case markers, and the environments (of aspect and mood) in which they occur. Gaddi has the following cases: the nominative, the accusative, the genitive, the dative, the ergative, the "subject-oblique", the locative, the ablative and the instrumental. The nominative is a covert case in Gaddi. The genitive is overtly marked. So is the accusative-dative. The "subject-oblique" case (see section 5.5 for more on this), which appears when an event/state is unrealized in time, does not have any independent morpheme to represent it on simple noun phrases. Instead, it is encoded in the noun phrase in the form of a suppletive stem. The paper also discusses the idea that the subject-oblique case in Gaddi may just be a covert dative. The overtly marked cases and the "subject-oblique" block the verb from agreeing with the noun they are associated with. The ablative and locative cases are postpositional cases in Gaddi. The locative, the ablative and the instrumental are interesting in Gaddi because each of them is marked by at least three morphemes.

সারাংশ

গাদ্দি ভাষার কারকের একটা রূপতাত্ত্বিক আলোচনা করা হয়েছে এই লেখায়। রূপতাত্ত্বিক দৃষ্টিভঙ্গী থেকে কারকের আলোচনা করতে দিয়ে উঠে এসেছে তাদের ভাষাতাত্ত্বিক বিন্যাসের কথা। এই ভাষায় নিম্নে বর্ণিত নয়টি কারক পাওয়া যায়: কর্তৃ কারক, কর্ম কারক, করণ কারক, সম্প্রদান কারক, অপাদান কারক, সম্বন্ধ পদ, অধিকরণ কারক, সাবজেক্ট-অবলিক এবং এর্গেটিভ। গাদ্দি ভাষা পশ্চিম হিমালয়ের সানুদেশে ব্যবহৃত হয়।

1. Introduction

The Gaddis (pronounced /gəɖɖi/) are a people living in the lower reaches of the western Himalayas, primarily concentrated in the districts of Chamba, Mandi and Kangra in Himachal Pradesh. The Gaddis are also spread out in districts of Punjab, Uttarakhand and Kashmir. They are a shepherding community who were nomadic to begin with, but in recent years have acquired land and build

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permanent settlements, where they cultivate crops apart from grazing their sheep. Besides their native tongue, Gaddi, the Gaddis identify themselves with their age old unique culture and traditions. Most speak at least one other language; like Kumaoni or Pahari: languages spoken in neighbouring areas. Many also speak Hindi. Recent generations have had access to formal education in government schools, where the medium of instruction is Hindi.

2. Research Objectives

The primary objective of the paper is to document the various morphological and structural cases on Gaddi noun phrases; these include the nominative, the accusative, the genitive, the dative, the ergative, the "subject oblique", the locative, the ablative and the instrumental. The paper further aims to show how Gaddi uses the accusative case for differential object marking purposes. It also attempts to solve the puzzle behind what the case that appears on subjects of clauses in the irrealis mood is.

3. Theoretical background

There has been little detailed work on the description of structural and morphological case of many Himalayan languages, Gaddi being one of them. From its stock vocabulary and syntax, it is quite evident that Gaddi belongs to the Indo-Aryan sub family of languages. And therefore, what is expected is an overt structural case on subjects of unaccusative and unergative verbs. Verbs that denote agentivity could be expected to be marked by a distinct case marker (the ergative case marker). Such a case marker could attach to all subjects (an ergative-absolutive situation) or only to subjects of verbs in certain aspects or subjects which are in certain persons (1st, 2nd or 3rd or a combination of these). Indo-Aryan is also known to mark direct and indirect objects using the same morpheme. Direct object marking is often associated with differential object marking. The Genitive Indo-Aryan languages show agreement if the language has noun classes based on gender. Therefore, we could expect to note this in Gaddi as well, as Gaddi nouns are classified for grammatical gender; male and female. The various theories that are appealed to in the description of the Gaddi cases are noted in section 5 beside the discussion of each case.

4. Research Methodology

Gaddi language data was collected in two periods. From August 2015 to November 2015 data was collected from a native speaker of Gaddi living and working in New Delhi since 1993. The speaker was male, aged forty-six and a native of Bharmour (Chamba district of Himachal Pradesh), where he had received higher secondary education in Hindi. Data was also collected from various participants, both male and female, literate and illiterate in the villages of Saperu, Banuri and Sungal in Kangra district (Palampur tehsil) of Himanchal Pradesh between 16 Decmber 2015 and 22 December 2015. All participants were asked for their consent of participation during the collection of language data.

Participants were provided sentences (of various paradigms) in Hindi, which they (mostly) translated into Gaddi. Data collected was simultaneously recorded and transcribed in the International Phonetic Alphabet (IPA).

5. Discussions

5.1 The Nominative Case

Except for subjects of transitive verbs in the perfective and perfect aspects that are marked by the ergative, subjects of verbs expressing an event/state unrealized in time (marked by sub.-obl/dative),

and subject noun phrases that receive the dative or post positional cases, all other subjects receive the nominative case [as shown in (1) - (4)[i]]. This includes subjects of unergative verbs.

(1) **dəbbu** skul gənde hin (imperfective aspect)
3.NOM.PL school.ACC.SGM go.IPFV.PL IND.PL (from Data base 1)
Children go to school.

(2) **bəndəɾ** ɾoti kʰəu (progressive aspect)
monkey.NOM.SGM roti.(SGF) eat (Roy:24)
kəɾənda ha
PROG.SG.M IND.SG
A/the monkey is eating a/the roti.

(3) **so** suturɛ hin (perfect aspect,
3.NOM.PL sleep.PRF.PL IND.PL intransitive verb)
they have slept. (Toppo:19)

(4) **bəɣɑ** **hɑtʰi** na məru (perfective aspect,
big.SGM elephant.NOM (SGM) NEG die.PFV.M intransitive verb)
The big elephant did not die. (Roy, Pg 26)

Subjects of unaccusative verbs and adjectival predicates also get nominative case. This is illustrated in (5) and (6) respectively.

(5) **sisa** bədʒi gu
Glass NOM.(SGM) break
go.PFV.SGM
The glass broke.

(6) uɖɖəɭɳə hukke hin (Data Base 2)
Cloth.(PL) dry.PL IND.PL
The clothes are dry.

5.2 The Ergative Case

Like many Indo-Aryan languages, Gaddi has the ergative case. The ergative case in Gaddi is split along aspectual lines. The ergative case on subjects is seen only with transitive verbs in the perfect and in the perfective aspect. On a simple noun phrase (say, a name), the ergative is marked in the form of a suppletive stem of the noun followed by the ergative marker -*ɛ*. For example 'sjɑm' with the ergative case is 'səmm-ɛ' [see (9)].

All persons, the first, second and third can be marked by the ergative case. The following shows examples of sentences with ergative subjects in Gaddi.

(7) mɛ paɭa dikʰ-u ha (Toppo: 16)
1.ERG.(SG) mountain.(SGM) see.PFV.SGM IND.SG

I saw the mountains.

(8) tɛi paɽɑ dikʰu hɑ (Toppo: 16)
2.ERG.(SG) mountain.(SGM) see-PFV.SGM IND.SG
you saw the mountains.

(9) **səmm-ɛ** rəmmɑ-dʒo kətɑːb dituri ha
shyam.ERG.(SGM) ram.OBL-ACC.(SGM) book.(SGF) give.PRF.SGF IND.SG
Shyam has given a/the book to Ram.

A Complex subject (say, a conjoined noun phrase), is marked by the ergative case marker -ɛ. This is illustrated in (10):

(10) **svetɑ etɛ Pinki ɛ** mənpɾit-dʒo heɾu ha
Sweta and Pinki.PL ERG Manpreet-ACC(SGF) see.PFV.SGM IND.SG
Sweta and Pinki saw Manpreet.

5.3 The Genitive Case

The genitive case in Gaddi is marked by the markers ɾa/ɾi/ɾɛ, which agree in number and gender with the noun phrase being modified. Sentences (11) to (13) illustrate this.

(11) [indɛ deʃa] **-ɾɑ** **nɑ** bʰɑrət hɑ (Sharma et al: 4)
3.GEN.PL country.OBL -GEN.(SGM) name.(SGM) bharat.(SGM) IND.SGM
Our county is called Bharat.

(12) Ramma-**ɾi** **kətɑb** muʈʈi bʰu.nd̪i ha (from Data Base 1)
Ram.SGM-GEN.SGF book.(SGF) big.(SGF) be.SGF IND.SG
Ram's book is large.

(13) hɑttʰi-**ɾɛ** **kən** muʈʈ.e bʰunde hin (from Data Base 1)
elephant.(SGM)-GEN ear.(PL) big.PL be.IPFV.PL IND.PL
The elephant's ears are large.

5.4 The Dative and the Accusative

Masica (1991:244) in its description of dative case markers in Indo Aryan, notes that –dʒo is the dative case marker in West Pahari (Mandeali, Chameali, Bharmauri, Bhadarwahi-Bhalesi). In Gaddi too, the dative case marker is -dʒo. All indirect objects (which are beneficiaries or goals) are obligatorily marked by the dative. [see (14)]. So are experiencer subjects [see (15) and (16)].

(14) səmme **rəmma-dʒo** kiʈaːb diʈuri ha
Shyam.ERG.(SGM) Ram.OBL.(SGM)-DAT book.(SGF) give.PRF.SGF IND
Shyam has given a book to Ram.

(15) **pəŋkədʒa-dʒo** bʰukə ləguɾi ha (Data Base 2)
Pankaj.OBL-DAT.(SGM) hunger.(SGF) feel.PRF.SGF IND.SG
Pankaj has been feeling hungry. (Lit: Hunger is coming to Pankaj)

(16) mindʒo ɛ gəlla jad ɾɛɳi ha
1.DAT.SG this matter.(SGF) remember stay.INF.SGF IND.SG
I will remember this matter. (Lit: This matter will stay in my memory)

Masica (1991, pg 239) notes that north Indo-Aryan languages[ii] (except Sinhala) do not have an accusative case. This refers to the fact that in Indo-Aryan languages, direct objects can be marked by the same case marker marking indirect objects i.e. the dative case marker, and there is no independent accusative case marker (unlike, for example, in Dravidian languages). What happens in Gaddi, while largely within the Indo-Aryan Paradigm, is not exactly the same. While direct objects are marked by -dʒo, they may instead also be marked by another marker, -o [see (17)].

(17) ɾəvi-ɛ boʈʈəl-o ʈebl-a puʈʈʰi ɾəkkʰi ha
Ravi.(ERG.SGM) bottle-ACC.(SGF) table-OBL on.LOC keep.PFV IND.SG
Ravi kept the bottle on the table.

Interestingly, indirect objects can never be marked by –o [see (18)]

(18) * səmme **rəmma-o** kiʈaːb diʈuri ha
Shyam.ERG.(SGM) Ram.OBL-DAT.(SGM) book.ACC.(SGF) give.PRF IND.SG
Shyam has given a book to Ram.

5.4.1 Differential Object Marking

Gaddi exhibits Differential Object Marking (Bossong, 1985). Differential Object Marking (DOM), as defined by Aissen (2002) following Bossong (1993) refers to the phenomenon in some languages wherein some objects (and not others) are overtly marked by a case marker. As Aissen (2002:3) says, "The higher in prominence a direct object, the more likely it is to be overtly casemarked". Prominence is assessed along the dimensions of animacy or/and definiteness. The animacy and definiteness scales are reproduced here from Aissen (2002:3):

Animacy scale: Human > Animate > Inanimate
Definiteness scale: Personal pronoun > Proper name > Definite NP > Indefinite specific NP > Non-specific NP

This means that if in a language a direct object of a particular rank can be case-marked, direct objects that rank higher than it can be case-marked but not necessarily those ranked lower than it.

Indo-Aryan languages typically show an interaction between both these scales. Aissen (2002) calls this two-dimensional DOM. For example, in Hindi, it says, both animate objects and inanimate objects can be case marked. But while only those inanimates that are definite can be case marked, amongst animates, both definite and indefinite humans (and some non human animates) can be case marked. Also, for humans (and some non-human animates) case marking is obligatory while it is usually optional for inanimates. [iii]

In Gaddi, both the animate and inanimate objects can be case marked. When the object is human it seems it is obligatory to case mark it irrespective of it being definite or indefinite. This is illustrated in (19) and (20). In (19), *dəbbu* is indefinite while in (20) *dəbbu* is definite.

(19) mei ek **dəbbu-o** dikkʰu. (Data Base 2)
1.ERG.(SGM/F) one boy.ACC.(SGM) see.PFV.SGM
I saw a boy.

(20) mei **dəbbu-o** dikkʰu. (Chakraborty: 22)
1.ERG.(SGM/F) boy.ACC.(SGM) see.PFV.SGM
(SGM/F) SGM SGM
I saw the boy.

However, definite human objects of verbs like 'see' in the perfective and perfect aspects are obligatorily unmarked, as shown in (21) and (22).

(21) mindʒo **Sita** dikkʰi
1.DAT.(SGM.F) Sita.(SGF) see.PFV.SGF
I saw Sita.

(22) *mindʒo **Sita-o** dikkʰi
1.DAT.(SGM/F) Sita-ACC.(SGF) see.PFV.SGF
I saw Sita

When the object is non-human accusative case marking is optional. If the object not marked with the accusative case, its interpretation is ambiguous between an indefinite reading and a definite reading. This is illustrated in (23) below:

(23) mɛ̃i tɑsidʒo **tʃɛntɛ** diturɛ hin (Kumari: 23)
1.ERG.SGM/F 3.DAT.SGM/F cloth.(PL) give.PRV.PL IND.PL
I have given him/her clothes
or
I have given him/her the clothes

However, when a non-human object is marked by the accusative case, the only interpretation available is that of the definite [see (24)].

(24) mei **əlmaɾi-o** dikkʰu (Chakraborty: 21)
I.ERG.SGM/F almirah.ACC.SGF see.PFV.SGM
I saw the almirah.

The data collected for dative-accusative case was not done with special focus on DOM. DOM in Gaddi needs to be explored further and these initial claims verified with more data that is sensitive to DOM.

5.5 The "Subject-Oblique" Case or just the Dative?

5.5.1 The Oblique form of noun phrases

Noun phrases that end in consonants appear in a suppletive oblique form (which ends in a vowel) when followed by a case marking suffix or postposition. (25), (26) and (27) instantiate proper nouns ending in consonants that appear in the oblique when followed by a case marker or postposition:

(25) sʊetɑ etɛ Pinki ɛ **dʰirja**-dʒo heɾu ha
Sweta and Pinki.PL ERG Dheeraj.(SGF)-ACC see.PFV.SGM IND.SG
Sweta and Pinki saw Dheeraj.

(26) sa:mma **ra:mma**-dʒo kitab (Roy: 31)
Shyam.SUB OBL.(SGM) Ram.OBL.(SGM)-DAT book.(SGF)
deɳi ha
give.PFV.SGF IND.SG
Shyam will give a book to Ram.

(27) Bɑgʰɛ **bisɑllɑ** puɾ həmlɑ kəɾu
tiger.ERG.(SGM) Vishal.OBL(SGM) on attack do.PFV.SGM
A/The tiger attacked Vishal.

The following [(28) to (30)] are examples of common nouns in the suppletive form when followed by a case marker or post position:

(28) kumaɾɛ **kutta** tʰau ɡend lei
Kumar.ERG.(SGM) dog.OBL.(SGM) ABL ball.(SGM) take.PFV.SGF
Kumar took a/the ball from a/the dog.

(29) ləkʃmi **sebbɑ**-ɾɛ tukɾɛ kʰɑɳɛ
hin
Lakshmi.SUB OBL.(SGF) apple.OBL-GEN.(SGM)-PL piece.PL eat.INF.PL IND.PL
Lakshmi will eat the slices of a/the apple.

(30) **pʰulla** sɔgi muɾti səʤaji ɡeji.
flower.OBL.(PL) with.INS idol.ACC.(SGF) decorate.SGF go.PASS.SGF
A/the idol was decorated with flowers.

5.5.2 The Subject Oblique

Gaddi seems to have a special way of marking the subject of events unrealised in time. When an event is unrealized in time, like an event in future time, or an event/state expressing a modality of necessity, obligation etc, the subject noun phrase is a suppletive stem. Interestingly, this suppletive stem has the same form as the oblique form of the noun stem that is required when a case marker or postposition follows it. Considering that the presence of the suppletive stem blocks subject-verb agreement [as seen in (31) and (32)], it is evident that the stem is covertly case marked. Henceforth, the oblique form of the noun phrase in subject position will be referred to as the noun phrase with the subject oblique (Sub-Obl in short) case.

(31) **rəmma** duttɛ ɑm kʰɑɳɑ hɑ (Roy, p. 12)
Ram.SUB OBL.(SGM) tomorrow mango.(SGM) eat.INF.SGM IND.SG
Ram will eat mangoes tomorrow.

(32) **sɑmmɑ** rɑmmɑ-dʒo kitɑb (Roy, p. 14)
Shyam.SUB OBL.(SGM) Ram.OBL.(SGM)-DAT book.(SGF)
deɳi hɑ
give.SGF IND.SG
Shyam will give a book to Ram.

Some subject noun phrase (only ones ending in a vowel) have the same shape as their roots. These too are marked with Sub-Obl, as is evident the fact that subject-verb agreement is blocked. This is shown in (27) below.

(33) **pudʒɑ** duttɛ tæ ʈʃəlnɑ hɑ (Roy, p. 14)
Puja.SUB OBL.(SGF) tomorrow till walk.INF.SGM IND.SG
Puja will leave by tomorrow.

There is a possibility that the Sub-Obl is just the dative, but a covert dative, thus leaving just the oblique in subject position. Such covert marking of a otherwise cross-linguistically overtly marked case in subject position is seen, for instance, in languages like Kutchi (Keine et al:41), Marwari and Kutchi Gujarati (Patel:51)[iv], where the ergative case can be covert and agreement patterns point to the existence of the covert ergative [see (34)].

(34) jon mɛri nɛ dhudr-av-i (Patel 2007:51)[v]
Jon.(SGM) Mary.(SGF) ACC shake-caus.PRF.SGF
John shook Mary.

In fact, in one variety of Kutchi, Abhdasa Kutchi , the ergative is covert and the presence of the oblique form of the subject NP is what indicates the presence of the ergative (Keine et al:40) [see (35)].

(35) *Abhdasa Kutch:* an ghaɳe tʂokriyũ nɛr-e (Keine et al: 40)[vi]
3OBL.SG many girls.PL see-PFV.SG

He saw many girls.

The argument that the subject oblique case is actually just the covert dative is furthered by the fact that using a dative subject along with the verb in the infinitive is a fairly common way of expressing an event unrealised in time [see (36), (37), (38)] in other Indo-Aryan languages as well.

(36) *Hindi:* mudʒe kəl gʰər dʒana hɛ
1.DAT tomorrow home go.INF be.SG
I want to/need to go home tomorrow.

(37) *Gujarati:* məne kale gʰər dʒavu tʃʰe
1.DAT tomorrow home go.INF be.SG
I want to/need to go home tomorrow.

(38) *Punjabi:* munɖe nu: kata:b paɽni: pavegi:.
boy.OBL. DAT book read.INF compel.FUT
(SGM) (SGF) SGF SGF
The boy will have to read the book.

(Bhatia 1993: 37)[vii]

* munɖa: kata:b paɽni: pavegi:
boy.NOM book read.INF compel.FUT
(SGM) (SGF) SGF SGF
The boy will have to read the book.

Expressing an event that is unrealised in time, using the infinitive of a verb, is a strategy seen in other languages of the world as well, like for example in the Romance languages [see (39)]

(39) *French:* ʒə ve naʒe
1.NOM go.AUX.1SG swim.INF
I am going to swim.

There is, however, evidence that seem to contradict the "Sub-Obl equals Dative" argument. This is the evidence from pronouns. If the Sub-Obl case is indeed just a covert dative, the pronouns marked with the dative should ideally be the same as the pronouns marked by the Sub-Obl[viii]. As shown in Table 1 (compare the Dative and Sub-Obl columns). For instance, the second person singular pronoun in the dative case is *tindʒo* while that in the Sub-Obl is *tud*. Having said that, there is also some evidence form pronouns that supports the argument that Sub-Obl is indeed the dative. The first person singular pronoun with the dative, mu, is identical to the first person singular pronoun with the Sub-Obl (the other first person singular pronoun with the dative, mindʒo, however, is not permitted as the Sub-Obl. This suggests that while there is crucial evidence pointing towards the Sub-Obl being just the dative and not a case distinct from it, there is also evidence against it.

Person	**Number**		**Nominative**	**Accusative**	**Genitive**	**Ergative**	**Dative**	**Sub Obl**
First	**Singular**		ɑũ	mindʒo	merɑ/i/e	mɛ	mindʒo/mu (only as dat sub)	mu~`
	Plural		əsɛ/əhɛ	əsudʒo	indɑ/i/ɛ	əsɛ/əhɛ	əsudʒo	əsu~`

Second	**Singular**		Tu	tindʒo	tera/i/e	tɛ	tindʒo	tud
	Plural (/Formal)		tusɛ/tuhɛ	tusudʒo	tunda/i/ɛ	tɛ	tusudʒo	tud
Third	**Singular**	**proximal**	e	təsio/təsidʒo	sera/i/ɛ	iɳɛ	təsio/təsidʒo	təs
		distal	o/so	usio	sera/i/ɛ	tijɛ/uɳiɛ	usidʒo	os
	Plural (/Formal)	**proximal**	e	iɳi	usera/i/ɛ	tiɳijɛ	-[ix]	tinna
		distal	o (səb)	-	uʊɛrɑ/i/ɛ	usie	unnadʒo	-

Table 1: summary of the pronouns in Gaddi with the various cases (except the prepositional cases) as discussed in Sharma et al (2016)

5.6 The Locative Case

The locative case is used to mark the noun phrase that is the location of the event/state of being. In Gaddi, like the ablative and the instrumental, locative case markers are post positions; like *pur* [illustrated in (40)] and *məndʒ* [illustrated in (41)]

(40) paːɖa **pur** jũ ha (Data Base 1)
mountain.OBL.(SGM) LOC ice.(SGM) IND.SG
There is snow on the mountain.

(41) Səɽkɑ **məndʒ** kutr kʰəruɾɑ (Data Base 1)
road.OBL.SGM LOC dog.(SGM) stand.PRF.SGM
ha
IND.SG
A/the dog is standing beside the road.

5.7 The Ablative Case

The ablative case, which is used in languages to indicate movement away from something (a location, person or inanimate object), is present in Gaddi. It is also used to compare two noun phrases. There are four ablative case marking post positions in Gaddi*, tʰaũ*, *hɔ*, *haũ* and *tʰũ*, all of which are found to be used interchangeably[x].

In Gaddi, the ablative is used to indicate movement (not necessarily literally) from one spatial location to another [see (42), (43) and (44)].

(42) bədʒɑr eɽi **tʰɑũ** duːr hɑ (Chakraborty: 27)
baazar.(SGM) here from. ABL far IND.SG

The market is far from here.

(43) so skullɑ **tʰɑũ** iɳɑ ləgurɑ (Chakraborty: 27)
3.NOM.(SGM) school ABL come.INF.SGM do.PRF.SGM
He has come from school.

(44) ɖɑlɑ **tʰaũ** seb peji (Chakraborty: 28)
branch.OBL.(SGM) ABL apple.(SGF) fall.PFV.SGF
An/the apple fell from the tree.

The ablative is also used to express movement (literal and discourse) from one temporal location to another. This is exemplified by (45).

(46) e tʃɛnellɛ(PL) sombɑrɑ **tʰɑũ** tuɑrɑ tək (Chakraborty: 28)
these channels Monday ABL Sunday till
dəsi gənde hin
show.PASS go.IPFV.PL IND.PL
These channels air from Monday to Sunday.

5.8 Instrumental Case

The instrumental case is used in languages to mark noun phrases used in the execution of an event. Gaddi has three instrumental case marking postpositions, each of which can be used in place of the others: -te, -hoggi and -sɔgi. (34), (35) and (36) illustrate the use of this case marker.

(47) təsidʒɛ pʰəl tʃʰuɾi **sɔgi** (Chakraborty: 28)
3. ERG.SGM/F fruit.(SGM) knife with.INS
bəɖɖu
cut.PFV.SGM
She/ He cut the fruit with the knife.

(48) pʰulla **sɔgi** muɾti sədʒaji (Chakraborty: 28)
flower.OBL.(PL) with.INS idol.ACC.(SGF) decorate.SGF
gɐji
go.PASS.SGF
A/the idol was decorated with flowers.

(49) dʒendɾa tʃabi **sɔgi** kʰulda ha (Data Base 2)
lock.(SGM) key.(SGF) INS open.SGM IND.SG
Locks open with keys.

6. Conclusion

Gaddi has eight cases (it could have more that are yet to be documented), of which the "sub-obl" is particularly interesting because it has the same form as the oblique form of noun phrases and might be

covertly marked with the dative. More data must be collected to verify this fact, including data from pronouns with "sub-obl". Another area that needs clarity is the case of varying postpositional cases for the same case; this will need studying the various varieties of Gaddi.

Notes

[i] Each example sentence in this paper is accompanied by a two-layer gloss for ease of understanding. The first layer gives the meaning of the word/morpheme, information regarding case, tense, aspect and mood. The second layer gives PNG information (and therefore Agreement information). All glosses follow the Leipzig Glossing Rules.

[ii] From its stock vocabulary and syntax, it is quite evident that Gaddi belongs to the Indo-Aryan sub family of languages

[iii] DOM in Hindi:

(a) inanimate definite NP, optionally case-marked
bəʈʃʈʃe-ne kita:b-(ko) medʒ pəɾ rəkʰ-a
child(M).OBL-ERG book (F)-ACC floor LOC keep-PFV.DEF
'the child kept the book LOC the table'

(b) inanimate indefinite NP, cannot be case marked
bəʈʃʈʃe-ne kita:be kʰəɾidɪ̃
child.OBL-ERG book.PL(F) buy.PFV.PLF
'the child bought books'

(c) animate human NP, obligatorily case-marked
ma-ne bəʈʃʈʃe-ko zami:n pər biʈʰa-(j)a
mother.ERG child-ACC foor LOC sit.CAUS-PFV.DEF
'the mother made the child sit on the floor'

[iv] The fact that Kutchi and Kutchi Gujarati has covert ergative case was brought to the first author's notice by Rajesh Bhatt at the GIAN Syntax in Indo-Aryan Languages (SIAL) workshop at Mumbai University (21st-25th December 2016)

[v] glosse are mine

[vi] glosses are mine

[vii] transcription and glosses are mine

[viii] Assuming that pronouns are monomorphemic i.e. the case on them cannot be a bound morpheme.

[ix] the blank boxes indicate data that seems to be anomalous and has therefore not been put up here.

[x] Speakers of Gaddi told us that while these morphemes can be used interchangeably, they are actually indicators of varieties of Gaddi. They said that while one may be used by speakers from the higher reaches of the mountain, a different one would be used to people from lower areas. This needs to be verified by looking into the various varieties of Gaddi being spoken in the mountains.

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A Study on Some Selective Complex Predicates in Bangla

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ABSTRACT

Bangla, like other South-Asian languages, possesses a number of complex predicates. Complex predicates are lexically autonomous units, listed in the dictionaries and are composed of Noun + Verb, Adjective + Verb or Verb + Verb. In this paper we are dealing with a few selective N +V Bangla complex predicates where simple or degenerated nouns combine with operator verbs, such as /dewa/ 'to give', /newa/ 'to take', /mara/ 'to beat', /tola/ 'to raise', /dʰɔra/ 'to hold'. At times they are found to work as set expressions and sometimes they behave like idiomatic expressions. We are also trying to analyze the semantic relations among the metaphorical extensions of these complex predicates.

সারাংশ

সাউথ-এশিয়ার অন্যান্য ভাষাগুলির মত, বাংলাতেও একাধিক কমপ্লেক্স প্রেডিকেট আছে। কমপ্লেক্স প্রেডিকেটগুলি অভিধানভুক্ত সার্বভৌম একক এবং বিশেষ্য + ক্রিয়া, বিশেষণ + ক্রিয়া অথবা ক্রিয়া + ক্রিয়া দ্বারা গঠিত। এই পেপারে আমরা কিছু বাছাই করা কমপ্লেক্স প্রেডিকেট নিয়ে আলোচনা করব যেগুলিতে মূল ক্রিয়া, যেমন /দেওয়া/ 'to give', /নেওয়া/ 'to take', /মারা/ 'to beat', /তোলা/ 'to raise', ধরা 'to hold',-এর সাথে কিছু সরল অথবা ক্রিয়া বিশেষ্য যুক্ত হয়। কখনও তারা সেট এক্সপ্রেশন হিসাবে কাজ করে, কখনও বাগধারার মত আচরণ করে। আমরা এইসব কমপ্লেক্স প্রেডিকেটের আলংকারিক প্রয়োগগুলির মধ্যে অর্থসংক্রান্ত সম্পর্ক বিশ্লেষণ করার চেষ্টা করব।

1. INTRODUCTION

According to Butt (2005) a complex predicate is "A complex (polyclausal) argument structure that correspond to a mono-clausal functional structure (single subject; a single primary event predication)". Bangla has mainly three kinds of complex predicates which are extensively used in the language, viz., adjective-verb conjunct predicates, noun-verb conjunct predicates and verb-verb predicates known as the compound verbs in the literature (Ghosh 2015). In N+V complex predicates, the light verb or an operator verb takes all the number, gender and tense markers while agreeing with the subject and or object in different types of constructions (Koul 2012). By forming a complex predicate, the meaning of the operator verb sometimes loses its fundamental meaning and acquires different shades of meanings (Mitra 2012).

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This paper deals with Bangla N + V complex predicates which are formed by using nouns/ degenerated nouns and operator verbs /dewa/ ‘to give’, /newa/ ‘to take’, /mara/ ‘to beat’, /tola/ ‘to raise’, /dʰɔra/ ‘to hold’. Firstly, we aim at explaining two different categories of such expressions namely Non-fundamental meanings and Idiomatic Expressions in section 2. Non-fundamental meanings are those which usually carry the meaning of the component nouns and Idiomatic expressions exhibit a completely different meaning from the meaning of their components. Secondly, in section 3 we are going to analyze the semantic relations among the metaphorical extensions of these complex predicates.

2. USAGES OF DIFFERENT COMPLEX PREDICATES

In this section we are going to give some examples of complex predicates formed with the help of above mentioned verbs. According to our hypothesis, these complex predicates are categorized into two different groups depending on their usage: (i) Non-fundamental meanings and (ii) Idiomatic expressions.

a. /dewa/ ‘to give’

i. Examples of Non-fundamental meanings:

1. ʃɔbar kɔtʰa-j kan dio na
   all.GEN speech-LOC ear give.2PRS.IMP no
   ‘Don’t pay heed to everyone.’

2. ei rɔkom kɔtʰa dewa-r kono mane nei
   this type speech give-GEN any meaning not
   ‘There is no sense in such a promise.’

3. ar kɔto gul debe
   more how much lies give.2FUT
   ‘For how long would you be lying?’

4. ebar tor ɖʰɔp dewa bɔndʰo kɔr
   this time 2SG.GEN lies give.NF close do.2PRS
   ‘Could you please stop lying?’

5. take tar prappo ʃɔmman dao
   3SG.ACC 3SG.GEN deserving respect give.2PRS.IMP
   ‘Do pay her/him the respect, s/he deserves.’

6. ar oʤuhat dio na
   more excuse give.2PRS.IMP no
   ‘Stop giving excuses.’

ii. Examples of Idiomatic expressions:

7. keno or paka dʰan-e moi diʧʧʰis
why 3SG.GEN ripe paddy-LOC ladder give.2PRS
'Why are you intervening?'

8. or kaʈa gʰa-e nun-er ʧʰiʈe dio na
3SG.GEN cut wound-LOC salt-GEN sprinkle give.2PRS.IMP no
'Do not hurt him when he is already hurt.'

9. tar baba take uttom moddʰom dieʧʰen
3SG.GEN father he.ACC best better give.3PRS
'His father abused him left and right.'

b. /newa/ 'to take'

i. Examples of Non-fundamental meanings:

10. tumi beʃ bʰalo-i mɔʤa niʧʧʰo
2SG enoungh good-EMP pleasure take.2PST.PROG
a) 'You are enjoying every bit.
b) 'You must be drawing pleasure seeing someone suffer.'

11. ʃit-er ʃɔkal-e ʧa-er ameʤ nite nite roddur pohaʧʧʰe
winter-GEN morning-LOC tea-GEN pleasure take.NF take-NF sunlight bask.3PRS.PROG
'On a winter morning, S/he is enjoying tea while basking under the sun.'

12. protiʃodʰ nie kono labʰ nei
Revenge take.NF any benefit not
'You will gain nothing out of revenge.'

13. protihiŋʃabɔʃoto ʃe tar pran nite-o piʧʰpa hɔjni
Out of revenge 3SG 3SG.GEN life take.NF-EMP backward movement did not
'He did not even hesitate to kill her out of revenge.'

14. bʰalo kore ʃɔb kʰɔbor nieʧʰis
Good do.NF all news take.2PRS.PRF
'Have you gathered the information properly?'

15. ebar bidaj newar pala
this time leave take.NF.GEN chance
'It's time to bid good bye.'

16. o ʈaka-ʈa ʃorie nilo
3SG money-CL displace.NF take.3PST
a) 'S/he stole the money.'
b) 'S/he took the money away.'

17. fon kore ʤan newa-r humki diʧʧʰe
phone do.NF life take.NF-GEN threat give.3PRS.PROG
'S/he is giving threats to kill me, over the phone.'

ii. Examples of Idiomatic expressions:

18. tumi ki amar matʰa kine nieʧʰo
2SG what 1SG.Gen head buy.NF take.2PRS.PRF
'Am I your slave?'

19. ʃe adʒ ʃuʤog peje æk hat nieʧʰe
3SG today chance get.NF one hand take.3PRS.PRF
'Sensing the opportunity, s/he took revenge.'

c. /mara/ 'to beat'

i. Examples of Non-fundamental meanings:

20. ʃɔb kɔtʰa-j iarki mero na
all speech-LOC joke beat.2PRS.IMP no
'Don't joke about everything.'

21. ket mere mere-i or din gælo
style beat.NF beat.NF-EMP 3SG.Gen day go.3PST
'His days pass by, showing off attitude.'

22. ʧʰele-ʈa ʤʰari marʧʰe
boy-CL flirt beat.3PRS.PROG
'The boy is flirting.'

23. meje-ʈa ʧʰele-ʈa-ke ʧokʰ marlo
girl-CL boy-Cl-ACC eye beat.3PST
'The girl winked at the boy.'

24. ebar pʰãki marle pʰel korbe
this time evasion beat.NF fail do.3FUT
'If you don't study, you will fail.'

25. keu æk-ʤon okʰan tʰeke ũki marʧʰe
any one-CL there from peep beat.3PRS.PROG
'Someone is peeping.'

ii. Examples of Idiomatic expressions:

26. andaɖʒ-e ar ɖʰil mero na
assumption-LOC more pebble beat.2PRS.IMP no
'Don't work on assumption.'

27. purna niɖʒe-i niɖʒe-r pa-e kuɽul marlo
Purna own-EMP own-GEN leg-LOC axe beat.3PST
'Purna dug her own grave.'

28. ɖʒuto mere goru dan kore kono labʰ nei
shoe beat.NF cow donate do.NF any benefit not
'No need to be so sweet after such humiliation.'

29. o-ke ɔntoto bʰat-e mero na
3SG-ACC at least rice-LOC beat.2PRS.IMP no
'At least don't snatch away his/her source of income.'

d. /tola/ 'to raise'

i. Examples of Non-fundamental meanings:

30. tini ɔnnæj-er ʃodʰ tuleʧʰen
3SG misdeed-GEN revenge raise.3PRS.PRF.HON
'S/he avenged the injustice.'

31. or kaɖʒ-er bæpar-e aŋul tulo na
3SG-GEN work-GEN matter-LOC finger raise.2PRS.IMP no
'Don't criticize his/her work.'

32. Sumon-er kɔtʰa-i ʃɔbʰa-j ʤʰɔɽ tullo
Suman-GEN speech-EMP meeting-LOC storm raise.PST
'It was Suman's speech that created controversy in the meeting.'

33. kɔtʰa-ɽa tar kan-e tola dɔrkar
speech-CL 3SG.Gen ear-LOC raise.NF need
'S/he should be informed about the fact.'

ii. Examples of Idiomatic expressions:

34. Rambabu pɔɽol tuleʧʰen
Mr. Ram Indian gourd raise.3PRS.PRF.HON
'Rambabu died.'

35. matʰa-j tule-i or baɽo-ɽa baɖʒieʧʰo
head-LOC raise.NF-EMP 3SG.GEN 12 o'clock-CL play.2PST
'S/he spoiled by his/her endearment.'

e. /dʰɔra/ ‘to hold’

i. Examples of Non-fundamental meanings:

36. amar kʰub matʰa dʰoreʧʰe
1SG.GEN very head hold.PRS.PRF
‘My head is aching.’

37. ʃɔbai take ʧʰẽke dʰorlo
everybody 3SG.ACC sift.NF hold.3PST
‘S/he was mobbed.’

38. ɔboʃeʃ-e tini kɔlom dʰorlen
final-LOC 3SG pen hold.3PRS.HON
‘Eventually he started writing.’

39. ʃe tar ʤibɔn-er baʤi dʰorlo
3SG 3SG.GEN life-GEN bet hold.3PST
‘S/he bet on her/his life’

40. ʈaim dʰore kaʤ kɔro
time hold.NF work do.2PRS.IMP
‘Work, according to the time’

ii. Examples of Idiomatic expressions:

41. kʰɔmota na tʰakle ʧãd dʰɔra-r ʧeʃʈa-o koro na
power no remain.NF moon hold.NF-GEN try-EMP do-2FUT.IMP no
‘Don’t try to attain the unattainable if don’t have power.’

42. ætokkhon-e akaʃ dʰoreʧʰe ʧɔlo berie poɽi
final-LOC sky hold.PRS.PRF move.2PRS.IMP go out.NF fall.1PRS
‘Finally the rain has stopped, let’s get going.’

3. FINDINGS AND ANALYSIS:

In this paper while examining the metaphorical extensions of these complex predicates we observed that they share some semantic relation such as synonymy, co-hyponymy, higher level co-hyponymy, ambiguity, reduplication, discontinuous usage and living process. Some examples of such relations are explained below.

3.1. Synonymy:

The examples that illustrate the relationship of synonymy between the complex predicates are: relationship between (3) and (4). In these sentences /gul dewa/ and /ɖʰɔp dewa/ are synonymous to each other because they share similar sense of 'telling lies'. These two nouns /gul/ and /ɖʰɔp/ also combine with other verbs to form complex predicates such as /gul mara/ 'to lie' and /ɖʰɔp mara/ 'to lie' etc. They do not occur independently in Bangla.

3.2. Co-hyponymy:

In case of complex predicates (13) and (19) both /pran newa/ 'to kill' and /æk hat newa/ 'to insult/ to take revenge' are hyponyms of the hypernym /protiʃodʰ newa/ 'to take revenge' in (12) because at times the hypernym could also include the sense of 'take revenge by killing or insulting'. Since the hyponyms express the similar sense therefore they are co-hyponym of each other.

3.3. Higher level co- hyponymy:

Here in the examples (12) and (13), (4) and (6), the non-fundamental meanings /protiʃodʰ newa/ 'to take revenge' and /pran newa/ 'to kill', /ɖʰɔp dewa/ 'to lie' and /oʤuhat dewa/ 'to give excuses' respectively function as higher level co-hyponyms because both these non-fundamental meanings carry almost a similar sense but it is difficult to find out the hypernym of these metaphorical extensions.

3.4. Ambiguity:

Sometimes it is noticed that some complex predicates exhibit ambiguous meaning, as we find in the case of non-fundamental meanings (10) and (16) /mɔʤa newa/ 'to enjoy or to take sadistic pleasure' and /ʃorie newa/ 'to displace or to steal' respectively.

3.5. Reduplication:

In some instances, it is observed that there is a recursive use of the operative verbs in some complex predicates as we find in the non-fundamental meanings (11) and (21). In (11) the operative verb /newa/ is reduplicated in the complex predicate /ameʤ nite nite/. Similarly, in (21) the operative verb /mara/ is reduplicated as /ket mere merei/.

3.6. Discontinuous usage:

Even if some complex predicates are made discontinuous they do not fail to portray their idiomatic sense as seen in (26). /andaʤe ɖʰil mara/ is an idiomatic expression in Bangla whichi is discontinued in the example (26) by the use of /ar/ 'more'.

3.7. Living process:

Words (nouns or degenerated nouns) borrowed from other languages are also used in forming complex predicates in Bangla as in (17) /fon kɔra/ 'to call', (20) /iarki mara/ 'to joke' and (40) /ʈaim dʰore/ 'to maintain time'.

4. CONCLUSION

From this study we would like to conclude that in Bangla complex predicate are of very common use and these expressions are able to exhibit different semantic relationships. The operator verbs we dealt with also form complex predicates with verbs, i.e. verb + verb expressions which can be studied further.

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Abbreviations[i]

1	1st person
2	2nd person
3	3rd person
ACC	Accusative marker
CL	Classifier
EMP	Emphatic marker
FUT	Future tense
GEN	Genitive marker
HON	Honorific
IMP	Imperative marker
LOC	Locative mark
N	Noun
NF	Non-finite verb
PRF	Perfective marker
PROG	Progressive marker
PRS	Present tense
PST	Past tense
V	Verb

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[i] We have followed Leipzig glossing rules throughout the paper. However, abbreviations for Honorific and Emphatic were absent in the list for which, we are using HON and EMP respectively.

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Persian-Dutch-French loans in Bangla: An optimality theoretic account

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ABSTRACT

This paper looks at the phonological processes that loanwords undergo and the patterns that emerge when they are adopted from three different languages into Bangla. A constraint-based analysis under the framework of Optimality Theory is used in this work. The source languages examined in this work are: Persian, Dutch and French. In this paper, I observe the phonological processes that take place during Bangla loanword adaptation and find the phonological changes after the processing of the loanwords at the segmental and syllable level. A detailed optimality theoretic analysis is done to account for the syllable level changes; segmental level changes have been accounted briefly. Then, we arrive at a constraint ranking which accounts uniformly for onset as well as coda clusters in the loanwords incorporated into Bangla from Persian, Dutch and French.

সারাংশ

পার্সি, ডাচ, এবং ফরাসী ভাষা থেকে বাংলায় ঋণীকৃত শব্দের অধ্যয়ন করে, অপটিমালিটি তত্ত্বের সহায়তায় ধ্বনিতাত্ত্বিক নির্মিতির গঠন ও বিবর্তনের একটা আলোচনা করা হয়েছে এই লেখায়। অক্ষর এবং ধ্বনি এই দুটির দৃষ্টিকোণ থেকে করা এই আলোচনায় আমরা বুঝতে চেয়েছি ধ্বনিতাত্ত্বিক রূপান্তরের ক্ষেত্রে ক্রিয়াশীল শর্তগুলির ক্রম ঠিক কিরূপ?

1. Introduction

Bangla is a very rich language, because of centuries of borrowing, which has led to the adoption of a wide range of words of Indian and foreign origin. It has borrowed mainly from Sanskrit, Hindi, Chinese, Persian, English, Portuguese, Dutch and French. Therefore, in a language like Bangla, the phenomenon of loanword incorporation is an intriguing object of study.

2. Research Objectives

The paper aims at giving a descriptive and theoretical analysis of the phonological processes that take place during Bangla loanword adaptation and observe the different phonological changes which take place after the processing of the loanwords at the segmental and syllable level. The main objective is to arrive at a constraint ranking which accounts uniformly for onset as well as coda clusters in the

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loanwords incorporated into Bangla from Persian, Dutch and French. This will show that the loanwords are adopted according to the native phonology and not the different languages from which it has been borrowed to the native language.

3. Theoretical background

Loanword adaptation is a common process across languages. And the words which are borrowed into a language, in most of the cases, are not borrowed perfectly, they undergo phonological alterations. During its adaptation, the loanword has to sustain the information of the source language, at the same time it has to suit to the native language phonology (Kenstowicz, 2007). The final result of loanword processes is generally a native form which exhibits nominal changes from its foreign origin, as shown by the findings from various languages (Miao, 2005). According to Silverman (1991), loanword phonology uncovers the processes by which speakers possessing one phonological system perceive, apply native representational constraints on, and ultimately produce forms which have been generated by a different phonological system. The adaptation affects the phonological structure of the borrowing language, and reflects the segmental, phonotactic, suprasegmental and morphophonological restrictions of the borrowing language. In rule-based phonology, loanword adaptations present one oddity: given that foreign words often contain illegal structures that are absent from underlying forms in the native phonology, novel rules should be added to the grammar to deal with their adaptations. This undesirable feature is absent from constraint-based phonology, in which the transformations in loanwords are driven by constraints that are already part of the grammar.

The rise of constraint-based theories has thus given a particularly strong impetus to the study of loanword adaptations, and a steady flow of articles has appeared that analyze loanword adaptations within such output-oriented frameworks (Yip, 1993; Paradis and LaCharité, 2001). Recently, there has been an increasing interest in the study of loanword phonology. One reason for this is that the study of loanwords can provide much insight on phonological systems in general. Loanword phonology involves at least two phonological systems: one in the recipient language and the other in the source language.

One benefit from the study of loanword phonology is that hidden language internal constraints in the borrowing language can be uncovered by a unique pattern of loanwords; thus, loanwords can be used as a window for looking at a phonological system of the recipient language (Davis, 1993). Although a number of studies have been carried out on Bangla phonology, very less work has been done in Bangla loanword phonology. The present study is an exclusive and extensive study of loanwords using the Optimality Theory framework.

4. Research Methodology

The data used is mainly from Chatterjee (1926). The phonetic transcriptions is based on the phonological systems of the different languages used for this research.

4.1 Data

Table 1 (Data)

Loanword	**Bangla**	**'Gloss'**
Persian		
sæhr	ʃɔhor	*'town'*
rɛsɪt	rɔʃi̪d̪	*'receipt'*
xərɣos	kʰɔrgoʃ	*'rabbit'*
zəmɪn	ɟomin	*'land'*
nɛzar	nɔɟor	*'sight'*

ənɖaz	anɖaɟ	*'approximation'*
xəbr	kʰɔbor	*'news'*
nırx	nirikʰ	*'scales, weighing'*
ɣərıb	gorib	*'poor'*
baɣowan	bagan	*'garden'*
muryɣ	morog	*'cock'*
qaıɖ	kɔeɖ	*'imprisonment'*
baqı	baki	*'remaining'*
ʃowq	ʃɔkʰ	*'desire'*
mehʃu:l	maʃu:l	*'tax'*
ʔahıstəh	aʃte	*'slowly'*
tazah	taɟa	*'fresh'*
daroɣah	ɖaroga	*'police officer'*
ʔalahiɖa	alaɖa	*'separate,different'*
ʔəql	akkel	*'a type of fragrance'*
duʔa	ɖoa	*'prayer'*
Dutch		
trof	turup	*'trump'*
rətən	rɔton	*'precious stones'*
ʃrof	ıʃkrup	*'screw'*
French		
ʁestuʁɑ̃	restora	*'restaurant'*
petı	paṭi	*'small'*

5. Discussions

5.1. Phonological Changes

Lexical borrowing is a common process across languages. And the words which are borrowed into a language, in most of the cases, are not borrowed perfectly, they undergo phonological alterations. A close look at the borrowed words in Bangla shows both the neutralization processes: namely, adaptation and deletion put forth by Paradis and LaCharite (2001). While some sounds are deleted, others are replaced by sounds that are frequently used in Bangla. The process of epenthesis is very dominant at the syllable level. In order to account for the different phonological changes during loanword adaptation, we will divide the changes into two levels: **Segmental Level** and **Syllable Level**.

5.1.1. Segmental Level

At the segmental level we will see the phonological changes that the loaned consonants undergo in the onset and coda positions. There are two types of processes involved in these changes, they are

5.1.1.1 Substitution

1. +Continuant /f, v, x, ɣ/ become –continuant /p, p^h, k^h, g/ sounds.

2. –Distributed /s, z, t, d/ become +distributed /ʂ, ʐ, ʈ, ɖ/ sounds.

3. +Anterior /s,z/ become -anterior /ʃ, ʒ/ sounds.

4. . In dorsal sounds, -high /q/ becomes +high /k/ sound.

5. . –Round /ʁ/ becomes +round /r/ sound.

5.1.1.2. Deletion

1. /h/ gets deleted in the coda.

5.1.2. Syllable level

5.1.2.1. Epenthesis

Vowels are inserted inside, before and after consonant clusters both in onset and coda positions.

5.1.2.2. Deletion

Deletion of /h/ in the coda and /ʔ/ in the onset position.

5.1.2.3. Gemination

Gemination takes place mainly in the coda of the first syllable, which is usually the stressed syllable.

5.2. Optimality - Theoretic Analysis

5.2.1. Optimality Theory

The analysis of loanword adaptation has received substantial attention in the literature of phonology by opening copious avenues in the sphere of linguistic research. Among different approaches applied in this attempt, optimality theory, which was originally proposed by the linguists Prince and Smolensky (1993), and later expanded by Prince and John J. McCarthy, is one of the most important and powerful methodologies in recent years.

5.2.1. Analysis

5.2.1.1. Syllable Level OT Analysis

Nagarajan (2012), has given a detailed OT analysis of the loanwords from Sanskrit, English, Portuguese into Bangla at the syllable level. We will be taking the same constraints along with some other, for our analysis of Persian, Dutch and French loans.

5.2.1.1.1. Onset Consonant Clusters

According to Yavas (2003), Bangla does not allow consonant clusters at the onset position. Let us take the Dutch word, /trof/ which becomes /ʈu.rup/ in Bangla. The vowel /u/ gets inserted between the consonant cluster /tr/. The monosyllabic word changes to disyllabic. In order to provide an explanation, we require the same constraints.

Explanation through OT Tableau (1)

/trof/	**COMPLEXONS**	**SYL CONTACT LAW**	**Disyllabic Trochee**	**CONTIGUITY**	**MAX-IO**	**DEP-IO**
☞a. /ʈu.rup/				*		*
b. /trof/	*!					
c. /ɪʈ.rup/		*!				*

Here we see, because of *COMPLEXONS, candidate (b) is restricted. Candidate (c) violates SYLCONTACT LAW, hence is not allowed in the language. Candidate (a), on violating the lower ranked constraint CONTIGUITY becomes the optimal candidate.

5.2.1.1.2. Coda Consonant Clusters

Kar (2010), says that native Bangla lexicon does not contain any word having a consonant cluster. Masica (1991) claims that even borrowed words in Bangla do not allow consonant clusters at the word final position. But Kar argues that "…..a few of that sort are indeed present in the B-lexicon. The only cases of such clusters are found in OB cases

5.2.1.1.2.1. Vowel Epenthesis (Inside the cluster)

When there is rise in sonority, insertion takes place inside the consonant cluster.

Now take the Persian word /xəbr/ which becomes /kʰɔ.bor/ in Bangla. There is vowel insertion between /br/. The vowel /ə/ is added between the consonant clusters, breaking the monosyllabic word into disyllabic word. In order to give an explanation for this we will be using the same constraints which we used earlier.

Explanation through OT Tableau (2)

/xəbr/	*COMPLEXCODA	SYLCONTACT LAW	Disyllabic Trochee	MAX-IO	DEP-IO
☞a. / kʰɔ.bor/					*
b. /xəbr/	*!		*		
c. / kʰɔb.ro/		*!			*

Here, the constraint *COMPLEXCOD bans candidate (b) from becoming the optimal candidate. Candidate (c) is not allowed as it violates a high ranked constraint SYLCONTACT LAW (/r/ is more sonorous than /b/). Therefore, candidate (a), wins and becomes the optimal candidate.

So, far we have seen that when there is a rise in sonority, insertion takes place between the consonants. But there is an exception, /murɣ/ -> /morog/. The Persian word /murɣ/ becomes /morog/ in Bangla. There is vowel insertion between /rɣ/. The vowel /o/ is added between the consonant clusters, breaking the monosyllabic word into a disyllabic word. We know that /r/ is more sonorous than /ɣ/, still insertion takes place inside the CC. There is no violation of SYLCONTACT LAW as /r/ in the coda is more sonorous than /g/ in the onset of the following syllable. So, what forces epenthesis in between /r and /g/? In order to give an explanation for this we will establish the constraint ALIGN-R, apart from the earlier constraints.

Explanation through OT Tableau (3)

/murɣ/	*COMPLEXCODA	SYL CONTACT LAW	ALIGN-R	Disyllabic Trochee	MAX-IO	DEP-IO
a. /murɣ/	*!			*		
☞b. /mo.rog/						*
c. /mor.go/			*!			*

Here, the constraint *COMPLEXCOD restricts candidate (a) from becoming the optimal candidate. We see that both candidate (a) and (c), do not violate the constraint SYLCONTACT LAW. In order to avoid (c), from becoming the optimal candidate, ALIGN-R is introduced, and is ranked before Disyllabic Trochee. Candidate (c) violates ALIGN-R, which leads to the emergence of candidate (b) as

the optimal one (it violates lower ranked constraint DEP-IO only).

To sum up, we note that the following constraint ranking which we have proposed, will account uniformly for onset as well as coda clusters in the loanwords incorporated into Bangla.

***COMPLEXCODA>>*COMPLEXONS>>SYLCONTACT LAW >> ALIGN-R>>DisyllabicTrochee>> CONTIGUITY>>MAX-IO>>DEP-IO**

5.2.1.1.3. Other phonological changes

5.2.1.1.3.1. Gemination

Consider the Persian word, /ʔə.ql/ which changes to /akkel/. We can see that the sound in the coda /q/ becomes /k/ and is geminated with the addition of another /k/. A vowel /e/ is also inserted between the second /k/ and /l/. To account for this, we need the *COMPLEXCODA constraints, as it comes under coda consonant cluster. Sonority is a key factor for the process of gemination, therefore we have SYLCONTACT LAW, along with Disyllabic Trochee, MAX-IO and DEP-IO.

Explanation through OT Tableau (4)

/ʔəql/	***COMPLEXCODA**	**SYL CONTACT LAW**	**Disyllabic Trochee**	**MAX-IO**	**DEP-IO**
a. /ʔəql/	*!		*		
☞b. /ak.kel/				*	*
c. /a.ke.le/			*!	*	**
d. /a.kel/				*	*
e. /ak.le/		*!		**	*

We see that *COMPLEXCOD restricts candidate (a), Disyllabic Trochee bans candidate (c) and SYLCONTACT LAW prohibits candidate (e). MAX-IO is violated by candidates (b) and (d) once, so both emerge as optimal candidates. But, (d) is not allowed in the native language. So, candidate (b) becomes the optimal one.

5.2.1.1.3.2. Absence of /h/ in the coda

If we observe the data carefully, we can see that the native language doesn't allow /h/ in the coda position. /h/ is very much present in the onset position but not in the coda. When any word having /h/, is borrowed from foreign source into native Bangla, either it is simply dropped or insertion takes place, which forces /h/ to shift from the coda position to the onset position of the following syllable.

Now take the Persian word /meh.ʃu:l/ which becomes /ma.ʃu:l/ when borrowed into Bangla. We see that /h/ gets deleted in the coda. In order to account for this, we will take the following constraints:

Explanation through OT Tableau (5)

/meh. ʃu:l/	***h]σ**	**SYLCONTACT LAW**	**Disyllabic Trochee**	**MAX-IO**	**DEP-IO**
a. /meh. ʃu:l/	*!				
☞b. / ma. ʃu:l/				*	
c. /ma.hi. ʃul/			*!		*

It is observed that the very high ranked constraint *h]σ bans candidate (a) from becoming the optimal candidate. Candidate (c) violates the constraint Disyllabic Trochee, hence is not allowed. Candidate (b), on violating a lower ranked constraint MAX-IO, becomes the optimal candidate.

5.2.1.2. Segmental Level OT Analysis

It appears to be like the emergence of the unmarked as more marked sounds change to less marked ones. Such changes have been noted in language acquisition as well.

Take the Persian word /nirx/ which changes to /nirikʰ/. We see that /x/ (+cont) → /kʰ/ (-cont).

In native Bangla, the only +continuant sounds are /ʃ/, /r/, /l/ and /h/. It doesn't have the above mentioned [+continuant] sounds, so it substitutes them with closest sound. Here, we can see that the place of articulation remains the same (velar), the manner of articulation changes. In this example, the becomes stop. So, we require the constraints *+cont, IDENT- PLACE and IDENT-MANNER.

Explanation through OT Tableau (6)

/nirx/	***+cont**	**IDENT-PLACE**	**IDENT-MANNER**
a. /nirikʰ/			*
b. /nirx/	*!		

We can see that candidate (b) violates a very high ranked constraint, *+cont. Therefore, it is not allowed in the native language. Candidate (a), on violating lower ranked constraint IDENT-MANNER, becomes the optimal one.

Take the Dutch word /trof/ which becomes /t̪urup/. We observe that /t/ (-distr) → /t̪/ (+distr).

In native Bangla, there are few [–distributed] sounds, but the above mentioned sounds are not present. Therefore, it substitutes them with the closest sound. Here, we can see that the place of articulation remains the same (alveolar), the manner of articulation changes. In this example, the alvelar becomes dental. So, we require the constraints *-distr, IDENT- PLACE and IDENT-MANNER.

Explanation through OT Tableau (7)

/trof/	*-distr	IDENT-PLACE	IDENT-MANNER
a. /t̪urup/			*
b. /trof/	*!		

We can see that candidate (b) violates a very high ranked constraint, *-distr. Therefore, it is not allowed in the native language. Candidate (a), on violating lower ranked constraint IDENT-MANNER, becomes the optimal one.

Take the Persian word /sæhr / which changes to /ʃɔhor/. We see that /s/ (+ant) → /ʃ/ (-ant).

In native Bangla, the only [+anterior] sounds are /p/, /b/, /m/, /n/ and /l/. It doesn't have the above mentioned +anterior sounds, so it substitutes them with closest sound. Here, we can see that the manner of articulation remains the same (fricative), the place of articulation changes from alveolar to post-alveolar. So, we require the constraints *+ant, IDENT-MANNER and IDENT-PLACE.

Explanation through OT Tableau (8)

/sæhr/	***+ant**	**IDENT-MANNER**	**IDENT-PLACE**
a. /ʃɔhor/			*
b. /sæhr/	*!		

We can see that candidate (b) violates a very high ranked constraint, *+ant. Therefore, it is restricted in the native language. Candidate (a), on violating lower ranked constraint IDENT-PLACE, becomes the optimal one.

Take the Persian word /baqɪ/ which becomes /baki/. We observe that /q/ (+dorsal -high) → /k/(+dorsal+high).

In native Bangla, /q/ is not present. Therefore, it substitutes the /q/ sound with the closest sound /k/. Here, we can see that the place of articulation changes (uvular → velar), the manner of articulation remains the same (stop). So, we require the constraints *+dorsal-high, IDENT- PLACE and IDENT-MANNER.

Explanation through OT Tableau (9)

/baqɪ/	***+dorsal-high**	**IDENT-PLACE**	**IDENT-MANNER**
a. /baki//			*
b. /baqɪ/	*!		

We can see that candidate (b) violates a very high ranked constraint, *+dorsal-high. Therefore, it is not allowed in the native language. Candidate (a), on violating lower ranked constraint IDENT-MANNER, becomes the optimal one.

Apart from the above mentioned segmental changes, we also see that –Round /ʁ/ becomes +round /r/ sound in French loans, as this sound is not there in the native Bangla sound inventory. Here also Markedness principles operate. Native Bangla substitute this sound with closest replacement /r/.

6. Conclusion

A study of loanwords from languages like Persian, Dutch and French into native Bangla shows the influence of native phonology at the segmental and syllable level. The phonological changes are summarized as follows:

1. Epenthesis is the favoured option to avoid onset clusters. The site of epenthesis is however, determined by the interplay of the constraints SYLCONTACT LAW and CONTIGUITY.

2.Coda clusters, which are disallowed in the Native Bangla, are again repaired by a rule of epenthesis.
3. Apart from epenthesis, the other repair strategies used in Bangla are a) deletion, b) deletion leading to gemination.

4. Intolerance of /h/ in the coda position of the syllable and repair strategies to avoid this.

5. At the segmental level, sounds which are not found in native phonology are avoided. For example, +continuant /f, v, x, ɣ/ become –continuant /p, p^h, k^h, g/ sounds, –distributed /s, z, z̪, t, d/ become +distributed /ɟ, ʃ, c, t̪, d̪/ sounds, +anterior /s,z/ become -anterior /ʃ, ɟ / sounds, and -round /ʁ/ becomes +round /r/ sound. Instead of an isolated set of rules, this paper has attempted to bring all these phonological changes (syllable and segmental level) under the broad canvas of Optimality Theory using universal constraints, which are ranked according to Bangla native phonology.

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The Realisation of the Phonological Variation of /ɻ/ in Malabar Mappila dialect of Malayalam

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ABSTRACT

This paper analyses the way social factors affect linguistic variation and how they influence the process of dialect levelling by taking instances from Mappila dialect of Malayalam in Malabar. Malayalam is a language which has lot of variations according to different social factors starting from the geographical region to different religions and castes. Being in Dravidian family Malayalam shows its richness in having many retroflex sounds. Some linguistic features present in the dialect of Mappila community in Malabar were different from other dialects of Malayalam and the variations were attached with their socio-cultural identity. The dialect of central Malabar, especially Muslim dialect shows a variation in this schema of retroflex sounds of Malayalam. The central Malabar Muslim dialect is marked for replacing voiced retroflex approximant sound /ɻ/ with voiced palatal approximant /j/ in all their occurrences. Even though /ɻ/ and /j/ are two different phonemes in other dialects of Malayalam, this group of population does not used to make any distinction between the two. However, the paper observed a significant variation in the existing pattern of variation among the speakers of Malabar Mappila dialect. This paper analyses the variation happened in the free variation of /ɻ/ and /j/ and the gradual process of dialect levelling happening at the level of phonology and the social factors and identity attached to it by taking instances from a sociodialect of Malayalam. The study shows agreement with previous efforts about the motivation for linguistic change and identity correlation which results in linguistic change in a community.

সারাংশ

ভাষাতাত্ত্বিক বৈচিত্রের আলোচনায় সামাজিক প্রভাবের প্রসঙ্গ অবশ্যম্ভাবী। মালাবার অঞ্চলে প্রচলিত মালায়ালম ভাষার মাপ্পিলা ধরনটি এখানে আলোচিত হয়েছে। এই ভাষাটির একটি গুরুত্বপূর্ণ বৈশিষ্ট হল: **/ɻ/**-কে **/j/** দ্বারা প্রতিস্থাপন। উল্লেখ্য, দ্রাবিড়ীয় গোষ্ঠী ভুক্ত হওয়ায় মালায়ালামে সাধারণভাবে **/ɻ/**-এর প্রাধান্য। প্রতিস্থাপনের এই ভাষাতাত্ত্বিক সংঘটনার মূলে যে সামাজিক পরিপ্রেক্ষিত তারই আলোচনা এই প্রবন্ধের মূল আলোচ্য বিষয়।

1. Introduction

Variation is a universal and natural phenomenon existing in almost every human languages and it is a necessity for the existence of the language and the speech community. Language variation begins

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when an individual starts using a language and it may extend to the characteristics of the whole language itself. It is a phenomenon observed in languages of the world and continuously discussed in the field of linguistics for several years; and it can be a variation at the phonetic level or in the choice of a word or at the structure of linguistic expressions and so on, that is, a variation is possible at any level of linguistic expression. Similarly, at a different aspect, language variation can be caused by other socio-cultural-regional factors also. Language is a vehicle that carries socio-cultural features that make each language different from others in terms of their structure, culture, implications and so on and thereby play a role in creating an identity for the individual speakers as well as the speech community. At the same time, the identity of the speech community or the individual also could make an impact on a language by creating a variation in the structure. Thus, language variation, a common phenomenon in everyday life could have a lot of intertwined implications and aspects which are analysed and interpreted in a scientific platform to extend a greater understanding of the phenomenon called *Language*.

Sociolinguistic studies of language variation developed in 1950s analyses how various social factors cause a variation in languages and the speech community and vice versa. Language plays complex roles in society. The previous studies (Fisher 1958, Labov 1963, 1986, 2001, Chambers 1993, Trudgill 2002, among others) on language and society explain their interconnected, complementary interactions and, those studies were primarily focused on the variations in the language. The research questions of sociolinguistics are pre-eminently social questions (Woolard 1985) and studies in this area identify different social factors like age, sex, class, caste, and ethnicity and so on that creates variation which correlated with dependent linguistic variables (Chambers 1993). Theories on language variation, both diachronic and synchronic variations have come up with many case studies and the question of why language vary pointed towards the social identity and the changing needs of a speech community.

In certain cases, language variation becomes a necessity to sustain the language itself. The variation could help in vitalizing a language from an endangered or declining state or it could enrich a language according to the changing needs of linguistic expressions developing time to time. Many of the historical variations happened to the English, beginning from phonology to morphology were helped in keeping the language alive and vitalized (Crystal 2004). The change in needs of a speech community that reflects in the language through variation might not be the linguistic necessity to fill the gaps in communication or to make the process easy alone. Rather, it could be motivated to express one's identity as we seen in the Martha's Vineyard case study of Labov through which a struggle to keep their identity, culture and language alive. The social changes can cause these factors also change and the later studies in the same area show that the change is varying according to the latest social needs (Blake & Josey 2003). Nonetheless, it is the fact that language varies not only according to the linguistic factors but also according socio-cultural factors.

The paper is based on the study of the variation pattern of the phonemes voiced retroflex approximant /ɻ/ and voiced palatal approximant /j/ in the Mappila dialect of Malayalam and tries to bring out the social factors and background that motivated for the variation. The paper is organized into different subsections and gives an idea about the empirical data taken and the analysis taken place for the study. The section titled background of the study gives you an idea about the dialect Mappila Malayalam and the speech community. Apart from that it also introduces the two variables /ɻ/ and /j/ which has been taken for the empirical analysis. The section titled research methodology explains how the study is carried out, how data are collected and organized for the analysis and what are the output of the study. The section titled discussions intended to show you the pattern of variation of the variables and its implications. The analysis of the data collected from the speakers shows a

clear, systematic variation of these phonemes and how it is manifested in the Malabar Mappila dialect of Malayalam in a definite pattern over a period of time.

2. Research Objectives

This paper is analysing a phonological variation in Malabar Mappila dialect of Malayalam and how this variation influencing their identity and social interactions and also looks at the motivation and factors affecting this variation. The main focus of the study lies on two phonemes in Malayalam, voiced retroflex approximant /ɻ/ and voiced palatal approximant /j/ and its realization in the speech of the Mappila Malayalam speakers.

3. Background of the Study

Being a member of the Dravidian language family, Malayalam has a rich schema of retroflex sounds. /ɻ/ is a voiced retroflex approximant is one of the retroflex sounds in Malayalam (Steever 2017). It occurs at the word-medial position (e.g. /ɑ̄ɻɑm/ 'depth') but not at the word initial position. /ɻ/ is not used in a geminated structure also (*ɻ ɻ). At the same time, /j/ occurs at the word initial (e.g. /jɑːt̪rɑ/ 'journey') as well as medial (/ɑːjɑm/ 'force') positions. It can also occur in a geminated construction as in the words, / pɑjje/ 'slowly'. These two are considered as two different phonemes in Malayalam (Asher& Kumari 1997). For example, consider the following minimal pairs;

1. a. /ʋɑ̄ɻɑ/ 'plantain' /ʋājɑ/ 'mouth'
   b. /ɑ̄ɻɑm/ 'depth' /ājɑm/ 'force'

From the above example 1, we could see that /ɻ/ and /j/ are distinct phonemes in Malayalam. In orthography also these two phonemes have two different symbols to represent each of them. These phonemes are the two variables of the present study.

3.1 Malabar Mappila Dialect, Malabar Region and the Speakers

The Mappila dialect is spoken by the Mappila community called Mappilas in the Malabar region. Malabar District, a part of the ancient Malabar, was a part of the British East India Company controlled state. The area is predominantly Hindu, but the majority of Kerala's Muslim population called Mappilas also live in this area. This paper is based on the data collected from different regions of Malabar presently spread in districts called Malappuram and Kozhikode. With a large minority of Mappilas in Kerala Malayalam used by them has absorbed a considerable amount of Arabic, Persian and Urdu loanwords and hence can be easily distinguished from the other sociolects (based on religion and caste) of Malayalam (Asher& Kumari 1997, Namboothirippadu 1994, Roy 1985; Raja 1985). These kinds of linguistic variation were highly motivated because of the socio-political factors and, intertwined with the historical facts about the origin and spread of Islamism in the region; people from the Mappila community highly motivated to project their identity as a Mappila because of the social insecurities they had to face before accepting that religion. Most of the Mappila population were converted people from the Hindu community, especially from the 'lower castes' of the Hindu community in the traditional hierarchy (Correa 1869). There was a clear socioeconomic motivation behind these conversions in the Malabar region. Thus there was a need to show their identity as a Mappila and the deliberate inclusion of Arabic, Persian and Urdu words in their speech helped in achieving that. Apart from the variation at the lexical level, Malabar Mappila dialect shows variation from other dialects or sociolects of Malayalam at the level of phonology also which helps in constructing their identity as a member of Mappila community. This paper focuses on a phonological variation happening in the Malabar Mappila dialect and discusses its implication.

Malabar Mappila dialect is marked for replacing voiced retroflex approximant /ɻ/ with voiced palatal approximant /j/ in all their occurrences. Even though /ɻ/ and /j/ are two different phonemes in Malayalam, the Malabar Mappila population did not use to make any distinction between the two. People never used to pronounce the two sounds differently; /ɻ/ used to be replaced by /j/ in every occurrence. Consider the examples in 2;

2.		**Mappila Dialect**	**Other Dialects**	
	a)	/maja/	/maɻa/	'rain'
	b)	/puja/	/puɻa/	'river'
	c)	/pajam/	/paɻam/	'banana'
	d)	/maju/	/maɻu/	'axe'

There are instances where _ɻV is followed by jV_ in words like /kɑɻijūkɑ/ 'to get over', /ɑɻijukɑ/ 'to loosen' etc. In those instances, the vowel following /ɻ/ gets deleted and /ɻ/ is replaced by /j/ in Malabar Mappila dialect. In effect there will be a geminated /j/ structure and the words in the above mentioned examples will be spoken as /kɑjjūkɑ/ and /ɑɻijukɑ/. In effect, Mappila dialect did not have the phoneme /ɻ/ in their speech. They could understand the meaning from the context in instances like example 1. But recently there is a visible change in this feature and that is occurring with a visible pattern. The paper explores the pattern of variation which is happening in the Malabar Mappila dialect in which speakers start using /ɻ/ in more frequency in their speech so as to match with the other dialects of Malayalam and to reduce the gap between their speeches. The analysis would lead to find out the pattern of variation and its social relevance in the background of current situations of the Mappila dialect speakers.

4. Research Methodology

The primary data collection was carried out from the southern Malabar region and across different economic background. There were many subjects who are from the present-day Kozhikode district and its suburbs available now. The data is crosschecked with the speakers from Malappuram district. The informants were categorised into three groups according to their age. They were 11-30, 31-50 and 51-70. In each category, there are 60 subjects, where, 30 of them were female and the other 30 were male.

In this study, this variation is analysed in two-phase; initially, data taken from the casual speech of the subjects and later from reading a small paragraph from a text. In the first phase, the output would be spontaneous, without conscious efforts and also without the monitoring process. Whereas in the second phase the reading output would be more conscious and monitored kind of output. It is to be noted that the ability to read is completely based on literacy which directly related to the attainment of formal education in usual cases. Thus in the reading sample, the respondents who could participate in the activity is influenced by this factor. Thus in the younger generation of age 11-30, most of the people were formally educated and could read the sample text whereas the age increases the number of people who could read the text is decreasing. So in the age group 31-50, just 53 out of 60 could give the response in the reading output. A similar trend is following as the age increases.

In the age group 51-70, only 9 people out of 60 could give the reading output. Data from the casual speech were collected from the subjects without their explicit awareness so that to get responses without conscious effort and thereby avoided monitored responses from the subjects. Appropriate data with the sound /ɻ/ could be collected by purposefully creating contexts in which the

responses would include the sound /ɻ/ in the conversation and thereby the variation happening in their sociolect could be analysed.

4.1 The Occurrence of ɻ/ in Casual Speech

The Malabar Mappila dialect has a lot of phonemes that are not in the inventory of Malayalam, rather they are borrowed from Arabic, Persian and Urdu as there are more borrowings from these words to their dialect than in other dialects of Malayalam. Interestingly they do show some difference in the pronunciation of existing Malayalam words as well. But these variations getting reduced as the speakers tend to change their features to equate their speech with the other dialects of Malayalam. The absence of /ɻ/ in the Malabar Mappila dialect was once a marked feature of their variety and now undergoes a gradual change. Speakers of this dialect started using /ɻ/ and drop the existed feature. Table 1 shows how this variation is carried out by different age groups and gender.

Age Group→	**11-30**			**31-50**			**51-70**		
speech↓	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
with **ɻ**	23	25	48	17	11	28	3	1	4
without **ɻ** (**ɻ** replaced by **j**)	7	5	12	13	19	32	27	29	56

Table 1

The data shows that most of the people from age group 11-30 were having speech with /ɻ/ as compared to the other age groups. Out of 60 subjects, 48 people had a speech with the presence of /ɻ/ i.e. 80% of the subjects were producing /ɻ/ sound without any conscious effort and this shows a clear variation in the speech pattern of this age group. In the group of people of age 31-50, out of 60 subjects, 28 people were used /ɻ/ whereas 32 of them had speech without /ɻ/. In short, in this age group more than 50% of the individuals used /j/ instead of /ɻ/ in their casual speech. This shows a pattern in the distinction of the phonemes /ɻ/ and /j/ which is occurring over generations over a period of time. This pattern becomes clearer when analysing the data of the subjects from age group 51-70. In this group, only 4 individuals out of 60 made a distinction between /ɻ/ and /j/ where the rest of the people used /j/ in both the places. I.e. in the older generation they hardly had the phoneme /ɻ/ in their casual speech. The distinction between the phonemes /j/ and /ɻ/ is a recent variation within this speech community which was absent in earlier days. As many other observed sociolinguistic variations, this variation also has a clear pattern and a progressive nature which can be correlated with extralinguistic factors. It is also noted that a very few number of people from each age group have used /j/ and /ɻ/ in free variation. In fact, they have confusion among the use of these two phonemes and they tend to hypercorrect /j/ into /ɻ/ in some wrong places also. But still, it was not consistent also, for example, consider the word /pūɻi/ ‘sand’. The same speaker uttered this word as /pūɻi/ in some instances and /pūji/ in some other instances.

4.2 The Occurrence of ɻ/ in Reading

Mappilas are the significant population in Malabar region of Kerala. They lagged behind when it came to formal modern education. While there were some attempts made, a hundred years ago, it was not until a generation ago that major effort was made to link the community to modern or formal education

without losing the religious and cultural identity. In the initial stage of change in the attitude of the community towards modern education, they did not encourage women's education. It took many years to change this attitude and it is still in process (Miller 1992; Mohammed. U, 2007). This limitation in education and literacy continued to reflect in their language also. Studies show that most of the people above the age of 50 are not given modern education and hence cannot even read or write even in their first language. Eventually, this has been changed and the present young generation is almost able to get proper education and related developments. Considering this background and social factors like education, literacy etc. is essential for further analysis in the current study. One cannot make any major advance towards understanding the mechanism of linguistic change without serious study of social factors which motivate linguistic evolution (Labov 1970, 2001). To further analyse the factor of consciousness created by literacy and education of the speakers, the data collected from the reading samples of the Mappila dialect speakers.

Collecting data from reading output enables to analyse the interplay of cross connected factors like education, literacy and the language variation influenced by these factors. This output will also provide a data of more conscious and monitored responses of the subjects. It should be noted that, out of 60, some subjects from each age group are not able to read because of the lack of education and literacy even in a state like Kerala which shows a high literacy rate. Thus the reading output is available only with people who has got an education to some extend and or gained literacy. Thus the older generation who lacks literacy couldn't be able to read and give corresponding output.

Age Group→	**11-30**			**31-50**			**51-70**		
Reading↓	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
with ɻ	26	28	54	20	21	41	2	1	3
without ɻ (ɻ replaced by **j**)	4	2	6	7	5	12	3	3	6

Table 2

The data from reading output show the same variation pattern as seen in the casual speech data, which is happening over generations. Reading output being more conscious and monitored by the speakers there is a slight upward rise towards the pronunciation of /ɻ/ when compared with the casual speech data which can be visibly seen among the age groups 11-30 and 31-50. Notably, in the age group 11-30, all of the subjects were gained basic education and literacy so that they all could successfully give reading outputs. Being the age group which shows a strong affinity towards /ɻ/ pronunciation, this variation in their speech can be directly associated with literacy and awareness of the orthography of Malayalam.

Out of 60 subjects in the age group 11-30, 54 of them (i.e. 90%) gave an output with /ɻ/ while reading whereas only 6 people read without making a distinction between /ɻ/ and /j/ even though the two phonemes are represented by two different symbols in orthography. In the age group 31-50, as seen in the casual speech output, the individuals who pronounce /ɻ/ decreased when compared with the age group 11-30. 41 individuals read by pronouncing /ɻ/ where 12 individuals read without making a distinction between /ɻ/ and /j/. Out of 60 subjects, 7 of them were not able to read because of illiteracy. The age group 51-70 has special importance at this point. Among this age group majority of the people (41 out of 60) were illiterates without basic education and this was the group of people showed the speech which has a high degree of absence of the sound /ɻ/ in both casual speech and reading. This again correlates with the social factor of literacy and education with their speech patterns. Only 9 out of 60 could read the text and among them, 6 people didn't distinguish between /ɻ/ and /j/ whereas only

3 people read by pronouncing /ɻ/.

In short, speech samples from both casual speech and reading showed similar variation in the phonological pattern which is progressing over generations. The older generation with less education and literacy showed speech without distinguishing between the phonemes /ɻ/ and /j/ which is the marked feature of Malabar Mappila dialect. But after the education movements and literacy initiatives in the community caused a situation where they could reflect upon their own language patterns and distinctive features in their speech pattern. This made them to have a hypercorrection in the phonological pattern which didn't use to distinguish between the sounds /ɻ/ and /j/ over a period of time which is visible in younger generations of the community to establish the phoneme /ɻ/ in their speech and thereby attaining a linguistic equality by dialect levelling (here Malabar Mappila dialect which is a sociolect) with other dialects/sociolects of Malayalam.

5. Discussions

The presence of **/j/** instead of /ɻ/ in speech was the common feature present in the Mappila dialect of Malabar. Mappila dialect of Malabar varied from the other varieties of Malayalam because of the lack of the phoneme /ɻ/ in their speech. But this variation is observed to be hypercorrected by the speakers of this variety over a period of time to level with the other dominant varieties of Malayalam which are considered to be more prestigious or higher. The correction is happening over generations as shown in Table 3, the younger generation (Age 11-30) move towards a speech with /ɻ/ whereas most of the members of the older generation (Age 51-70) are not using /ɻ/ in their speech. There is an upward movement towards the speech with /ɻ/ as the age decreases.

Reading	**Age Group**		
	51- 70	**31- 50**	**11- 30**
Speech with ɻ	6.67%	46.67%	80.00%
Speech without ɻ	93.33%	53.33%	20.00%

Table 3

93.33% of the informants in the age group 51-70 gave an output without /ɻ/ whereas in the age group 11-30 it was only 20%. The younger generation is slowly moving towards the speech with /ɻ/ over a period of time. From figure 1 we could see that the rise towards the /ɻ/ pronunciation as the age decrease. This variation is gradual, steady and systematic and, happening over generations. From the data, we could hypothesise that the Mappila dialect will completely move towards the /ɻ/ pronunciation within a few years.

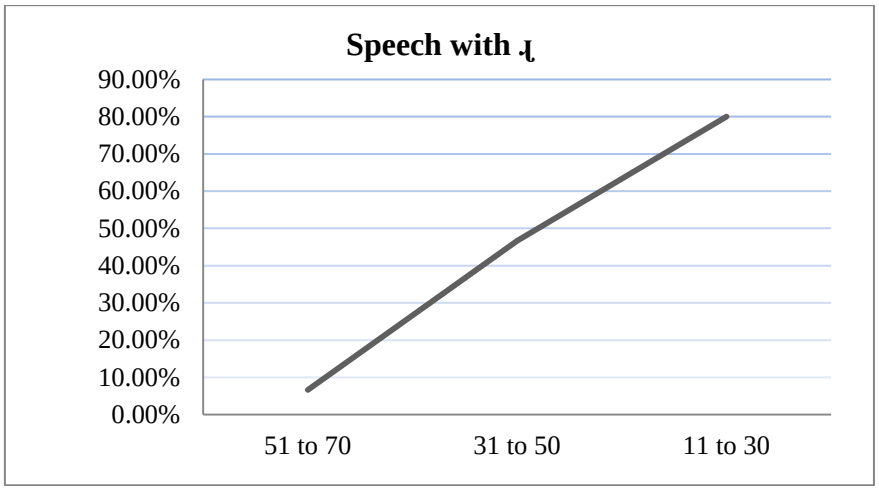

Figure 1

Thus the presence of the sound /ɻ/ in their speech can be considered as a sociolinguistic variable, as Labov (1970) points; 'one which is correlated with some non-linguistic variable of social context: of the speaker, the addressee, the audience, the setting, etc'. The motivation for the current variation discussed in the study is the social consciousness of reducing the difference between Mappilas and others in terms of language and keeping the speech community similar to others in the speech. The socio-political need once existed at an earlier point in time for distinguishing and showing their identity as a Mappila, no more exists at present situation. Rather, the formal education created a consciousness about their speech and the difference between others' speech that eventually created a sense that they will be marginalised if they speak differently from others. The education background of the speakers who use /ɻ/ in their speech is found to have a correlation.

The medium of texts and education were in a 'standardized' format of Malayalam which includes /ɻ/ and makes a distinction between /ɻ/ and /j/. Speakers of other dialects noticed the variation in the Mappila dialect and this variation is considered as ignorance or inability of the Mappila dialect speakers by the others (speakers of other dialects). The Mappila dialect speakers who got formal education consciously put an effort to change their speech by incorporating /ɻ/ in their speech and thereby achieving a prestige to their speech. In a way, this conscious variation made by the speakers of Mappila dialect is a strategy to keep their language alive and vital by matching it with the other common varieties. At the same time, they are keeping their phonological features that are borrowed from Arabic, Persian or Urdu for the speech within their community and not outside their community most of the time. However, the inclusion of /ɻ/ in the speech created a variation in the phonology of existing variety of Malabar Mappila dialect and it is consciously accomplished over the generations.

6. Conclusion

The fundamental fact about of language is that it is always varying. The variation can be in all areas of structure (phonology, grammar, discourse style, semantics, and vocabulary) and it changes in different ways at diverse places and times. The motivation for a linguistic variation would also be under changes according to the changing social conditions. Even the Labovian findings were restructured in a later period of time (Pope, Meyerhoff& Ladd 2007). The phonological variation that discussed in this study shows agreement with previous efforts about social factors being the cause of linguistic change and its correlation with identity and prestige of language verities. The social factor acted in the

phonological variation of Malabar Mappila dialect is modern education and literacy. The absence of the voiced retroflex approximant sound /ɻ/ and the use of the voiced palatal approximant sound /j/ at the place of /ɻ/ is associated with Malabar Mappila identity and also considered less-prestigious by others. The implementation of modern education and thereby literacy by overcoming the socio-religious barriers existed in the community accelerated the efforts to check the variations within their speech and thereby mutability of their linguistic patterns. The overall effect of these kind of variation is the process of dialect levelling happening across different dialects of Malayalam. It is a conscious effort made by the members of the speech community against the marginalisation of their speech variety and bringing up their language to the live stream of the society as we could see in any linguistic communities of the world.

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Negation Markers in *Gaddi*

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ABSTRACT

This article discusses the negation markers of Gaddi Language. In logical sense, the linguistic operation of negation (NEG) consists in denying the truth value of the negated sentence, or of a part of the sentence. The significance of this study lies with the typological analysis of Gaddi on the basis of the behaviours of Gaddi negation markers.

সারাংশ

এই প্রবন্ধে গাদ্দি ভাষার না-বাচক রূপিম গুলি আলোচিত হয়েছে। নেতিকরণের ক্ষেত্রে এই রূপিমগুলি যেমন বাক্যে প্রকাশিত বক্তব্যের সত্যমুল্যের রূপান্তরে গুরুত্বপূর্ণ ভূমিকা পালন করে, ঠিক একই ভাবে ভাষার টাইপোলজিকাল চরিত্রায়নেও বিশেষ ভূমিকা পালন করে থাকে।

1. Meaning of Negation

What does negation mean in linguistics? In logical sense, the linguistic operation of negation (NEG) consists in denying the truth value of the negated sentence, or of a part of the sentence. So sentences (1) a and (1) b given below can be negated by applying the negation operator (πNEG) to them and getting (1) a' and (1) b' respectively

(1) a. Ram eats an orange.
(1) b. Sita drinks juice in the morning.
Become,
(1) a'. Ram **does not** eat an orange
[It is not the case that Ram eats an orange]
(1) b'. Sita **does not** drink juice in the morning.
[Sita drinks juice, but not in the morning]

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Here as we can see, '**does not'** is adding to the structure to give the negated meaning. But only 'not' is the negation marking morpheme in the structure, rest is change in the syntactic structure of the sentence to denote that negation is present (in this case, aspect has been separated from the verb inflection). The above two sentences are different in what is called the **scope of negation**. Hence, 1(a') is an example of **sentential negation**, and 1(b') is an example **of constituent negation.**

P Ramat has typologically classified strategies for the expression of negation in the world's languages to be of the following main types:

1. Morphological – a NEG mark that can be integrated in the verb.
2. Morphosyntactic – NEG is expressed by a particular verbal cluster, with a negative auxiliary expressing tense aspect mood and person; however, the verb categories may be distributed between the negative auxiliary and the main verb, as is the case for some Uralic languages. Purely syntactic strategies, such as specific word-order rules as in Kuwaa, are rather exceptional.
3. Lexical –special lexemes, different from the corresponding affirmative existential verb, can occur for the negative copula 'there is not, there does not exist' as in Turkish yok vs. var.

Hedde Zeijlstra states that every instance of sentential negation must be expressed by some negatively marked, overt element, with variation lying only in the type, position and number of such markers. We call such structures as **negation markers.**
In English we have negation markers, which have to be coupled with special auxiliary verbs like *do* and *is,* leaving the main verb uninflected making it a language which expresses negation morphosyntactically. In Hindi, we have something like

2. Ram aːm nəhi kʰaʈa hɛ
   Ram mango Neg eat.Inf be.pres
   'Ram does not eat a mango'

Hence Hindi has a morphological structure, / nəhi/ which can be integrated into the verb. Hence it expresses negation morphologically.According to Rajesh Kumar(2006), Negation in Hindi is expressed through three negation markers: *nahiiN, na,*and *mat.* Now lets see what negation markers are there in Gaddi.

2. Negation Markers in Gaddi

Gaddi has four different negation markers: /na/, /ni/, /nəʈʰi/, and /mət/:

3. ram paləmpur-o **na** iŋa
   Ram.nom palampur-acc Neg come.fut
   "Ram will not come to palampur"
4. ram kʰəra gubruː **ni** ha
   Ram good boy Neg ind
   "Ram is not a good boy"
5. ram kʰəra gubruː **nəʈʰi**
   Ram good boy Neg.ind
   "Ram is not a good boy"
6. aːnɖər-ɔu **məʈ** gəccʰ
   in-loc Neg.phb go
" don't go inside!"

Clearly 6 is an example of a prohibitive sentence, here the *məʈ* is similar to the hindi negation marker ***məʈ.*** *nəʈʰi* has been encountered by me through at least two informants, in the same context of usage, i.e. indicative mood as in 5. It may be a kind of inflected form of negation, inflection showing the indicative mood, as present in marathi:

7. ram sənɖʰjakaɭi kəɖʰi: ʃaɭet **nəsʈo**
ram evening ever school.loc Neg.exs
"Ram is never in the school in the evening"
Here *nəsʈo* is inflected negation marker with existential mood.

But the problem lies with the most commonly used *na* and *ni*. Data elicited from different informants showed that they can be used either interchangebly or in specific complementary contexts in terms of either tense, aspect or mood. So which one is it? And what are the licensing contexts for *na* and *ni* ? we will find out in next section.

3. The *Na/Ni* Perplexity

With the first data encountered by me, *na* and *ni* were scattered alternatively all over the language. But only later did I realise that many of the informants mostly commonly used *na* for marking negation, and many others used *ni*, so following is the data, along with the details of the informants, where I encountered *ni* which appeared to be a marked usage. What i am proposing ahead is the existence of caste dialects in Gaddi. Ramanujan(1991) had discussed variation in the Brahmin and non-Brahmin caste dialects in Tamil. Although he focussed only on what was variation in lexicon and phonological differences, he also talked about different in the negation markers used by the B and NB dialects.

So, based on the data collected from field, I propose the existence of two caste-dialects in Gaddi, which use two diffrent negation markers. I give below examples from speakers of the two dialects to demonstrate the use of negation in perfect in imperfective aspects:

Informant 1 (Caste: Gaddi)
- Preferred usage was *na*, e.g.

8) ram kʰaɳa **na** kʰənɖa
Ram.nom food Neg eat.hab
"Ram does not eat food"
9) Ram kʰaɳa **na** kʰəu
Ram.nom food Neg eat.perf
"Ram has not eaten the food"

Informant 2 (Caste: thakur)
- Preferred usage was [ni], like:

10) ram kʰaɳa **ni** kʰənɖa
Ram.nom food Neg eat.hab
"Ram does not eat food"
11) Ram kʰaɳa **ni** kʰəu
Ram.nom food Neg eat.perf
"Ram has not eaten the food"

So, there exist two caste dialects in Gaddi:

- *Non-Thakur dialect (NT*): where the use of *na* is unmarked, used by majority of the people,

- *Thakur dialect (T)*: use of *ni* is marked for usage, by only Thakurs.

But caste dialects is not the only explanation, as both ***na and ni*** are also used by the speaker of the other variety in certain contexts:

Informant 1 (NT dialect, user of na):

28) peɖ-a ənɟə əkkə bʰi pʰəl ni/***na** ha
tree-obl loc one even/also fruit Neg ind
" there is'nt a single fruit on the tree"

Informant 2 (T dialect, user of ni):

29) siʈa əccʰi na/***ni** ʈʰi
Sita good Neg be.past.ind
"Sita was not good"

For many speaker of Gaddi, the usage was interchangeable, supporting data given below:

8. bandər-ɛ roʈi na/ni kʰə-uri ʈʰi
monkey.erg roti.abs Neg eat-perf be.past
"The monkey did not eat roti"

9. ram əccʰa dəbbu na/ni ha
ram good boy Neg ind
" Ram is not a good boy"

10. ram kʰaɳa na/ni kʰənɖa
ram food Neg eat.hab
"Ram does not eat food"

Clearly, existence of caste dialects with varied usage of negation markers is not the only way to explain the licensing of *na* and *ni.* On top of the layer of dialectal variation, a substratum of phonological constraint is at work which caused the usage of na/ni by speakers to be in a pattern so that adjacent syllable vowels of negation marker aand the verb were in contrast.

In other words,the contexts of usage of *na* and *ni* also depends on a phonological aspect, the OCP-V(Obligatory Contour Principle for vowels), where two adjacent syllables avoid having the same vowel. OCP-V has been shown to exist in Wendell kimper's work on "**reduplication in Klamath**", where ,OCP-V: identical vowels in adjacent syllables are prohibited.

11. /sn{v}+qlin/ →* sniqlin, sniqlən

Both these inferences can be clubbed together can help to understand the contexts where *na* and *ni* are used. For first inference, we need to understand the social structure of the Gaddi society. As cited from

Veena Bhasin's work before, Gaddi is an umbrella name for a tribe consisting of Rajputs, Thakurs, Brahmins, Sippis etc. In this the Rajputs consider themselves to be the original gaddis, the ones still pursuing the transhumane way of life. It brings a sense of superiority in the class heirarchy. Brahmins are also repected, but as I came to know from my informants, Thakurs, although high in the class heirarchy, are looked down upon. Most of the Thakur families here are prosper and have the sedentry lifestyle, and allegedly are identified by this dialectal variation in their Gaddi, where they use *ni* instead of *na* for marking negation.

So keeping in mind given proofs, it can be inferenced that because of interaction between the two dialectal variants,there is a situation of **language contact** where users try to satisfy OCP-V for ease of perception by their listener. But we can surely conclude that ***ni* and *na* are not proven to be in complementary contexts with respect to tense,aspect and mood.**

4. Conclusion

Hence we can conclude finally that *ni* and *na* are not in complementary contexts with respect to tense,aspect and mood. Firstly,There are two caste dialects of Gaddi, the T-variety prefers using *ni*, NT-variety prefers using *na* as the negation marker.Secondly,Speakers use the negation marker of the other variety to satisfy OCP-V in the utterance.

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Formal codification of Temporality through Events in Discourse

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ABSTRACT

This paper mainly concentrates on discourse analysis in order to draw insight on the configuration of discourse in terms of events and how these events are entwined in context to construct or codify differently ordered temporal arrangements. By the formal account of event configuration and their interactions in a context, the temporal ordering and its re-ordered arrangement in language becomes apparent. The attempt of this paper is to look into event-interactions in a discourse which as a whole adheres to cognitive coherence and leads to path planning, a significant aspect of comprehension, coherence and continuity of discourse, leading to temporal rearrangements. It also intends to view event-interactions along with pragmatic relations between event-narrations leading to the extraction of temporal re-orderings.

সারাংশ

সন্দর্ভের গঠনতন্ত্রে ঘটনা ও কালের ভূমিকা খুঁজে দেখা হয়েছে এই প্রবন্ধটিতে। ঘটনার ভাষাতাত্ত্বিক বিন্যাসের থেকে কিভাবে কালের ধারনাটি নির্মিত হয় তারই অনুসন্ধান এই প্রবন্ধটিতে করা হবে। মানব মননে, সন্দর্ভে বর্ণিত ঘটনা সমূহের অর্থগত উপস্থাপনা যে জটিল মিথস্ক্রিয়ার জন্ম দেয় তার বিশ্লেষণের মধ্যে দিয়েই খুঁজে পেতে চাওয়া অন্তর্লীন বহু প্রক্রিয়ার সুলুক সন্ধান।

1. Introduction

Temporality constitutes an important feature of linguistic discourse. Though, temporality is manifested in language, it is not exclusive to it. It is rather one of the cognitive phenomena that form the character of human discourse patterns. The most significant aspect of temporality in language is that language exhibits a re-ordering of temporal events that do not maintain the temporal orderings of the events in the state of affairs. This indicates that human cognition plays a vital role in rearranging the temporal events in discourse. Consider the example sentences.

1. a. Mary fell down.
   b. John pushed Mary.

It is obvious to the readers and speakers of these two sentences that (1a) is a consequent of (1b), yet in language, it is often attested otherwise. The inherent basis of this phenomenon is in cognition which understands temporal events in relation to other events. The alternatively ordered events in language does not always show linearity of temporal ordering however, it can be derived if the cognitive

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makeup that allows the understanding of temporal events are given a functional attribute. The extraction of temporality from a discourse ensues the understanding of relations of events to other events in time.

2. Research Objectives

This paper mainly concentrates on the exposition of how pragmatic understanding of event relations, a cognitive phenomenon, allows constructions like (1) as given in the previous section. It also deals with how the pragmatic understanding of events allows the understanding of temporal relation between connected events, which ensures the comprehension, participation and carrying forward a temporally reordered discourse.

3. Theoretical background

Formal exposition of event in terms of their internal structures offers explanation to the cognitive understanding of events by humans. It not only executes the formalism of the event structures but also unfolds the causal property of events that binds the occurrence of other events in discourse. The pragmatic nature of the causal property of events renders to the understanding of the cognitive phenomenon of planning. Thus, arises, a need to explain how these events are connected and entwined within the configuration of a discourse. The two main frameworks pertinent to this paper are *Events Calculus* by Lambalgen and Hamm (2005), originally developed for the purpose of *path planning* in robotics and Artificial Intelligence; and "*Segmented Discourse Representation Theory*" (abbr. SDRT) by Lascarides and Asher (2008), which was originally an extension of Discourse Representation Theory by Kamp (1995).

3.1 Event Calculus and Path Planning

Event Calculus provides an account of the relationship between events and sub-events delineating the causal property of events. It provides axioms required for the understanding of the path planning that forms the core of event cognition. But before we get into the details of the axiom system, elaboration of the notion of path planning is crucial.

Planning refers to the process involving set of sequenced actions and events required to attain a desired goal. For instance, if an agent wants a light L to glow from time t_0 to t_1, the plan would include a sequence of events such as turning on a switch S that serves the light L at t_0, and let the switch remain in that state until t_1 and then switching off S at time t_1. Plan, thus is the causal description of a situation. Cognition involving the planning process yields the grasp of the concept of the causality of events. The understanding of the whole cumulated larger event of the light glowing from time t_0 to t_1 involves certain smaller ones, which, along with the concept of causality, constitute the cognitive process of path planning.

Event Calculus provides insight to the path planning of the larger event thereby formalizing construal of sub-events and event types. Event Calculus provides axiomatization of the idea that all occurring changes are due to certain cause. It makes the formal structure of the causality of events available that in turn helps to explore the temporality and temporal ordering of the events in the state of affairs.

Event calculus deals with the two notions of causality:

First, being the notion of cause involving instantaneous change

Second, being the notion of cause, inducing incremental change resulting into a new state of affair.

3.1.1 Causality involving instantaneous change

Causality involving instantaneous change can be supported with examples such as event type *falling off*. This corresponds to the semantic type of the verb *falling off* which is *achievement*, belonging to the ontology of the event calculus.

The time dependent properties are required for the formalism of the notion of causality, such as:

2. 'Book is on the table'.

In the case of 'falling off', the fluent* 'book is on the table' is true until time *t*, when it falls off the table, after which 'book is on the table' is false. The condition, 'book is on the table' is formalized as:

3. *ON(book,table)*

The above given condition requires another time-argument for predicate *ON* to specify time, which is as follows:

4. *ON(book,table,t)* which means 'the box is on the table at time *t*'.

(4) is the representation of the fluent of (3) specific in time. The fluent may be represented by dropping the argument *t*, thereby reifying the predicate *ON* to a function *on*.

5. *on(book,table)*

Now, since the fluents are functions, they need predicates which would provide them with truth value. Hence, if

6. *f* is considered a variable over fluents

7. *e* is a variable over events

8. *t* is a variable over time points

Then, the predicates, which state that fluents are initiated and terminated by events and that a fluent was true at the beginning of time, can be written as:

9. *Initially(f)* meaning the fluent *f* exists initially since the beginning of time

10. *Happens(e,t)* can be interpreted as 'event *e* happens at time *t*'

11. *Initiates(e,f,t)* means 'event *e* initiates the fluent *f* at time *t*'

12. *Terminates(e,f,t)* is interpreted as 'event *e* terminates the fluent *f* at time *t*'

---

* The categories in event calculus that change over time are called fluents.

13. *HoldsAt(f,t)* which is the truth predicate as per Lambalgen and Hamm meaning 'the fluent *f* holds at tine *t.*'

In order to explain the causality involving instantaneous change, predicates are interpreted, considering that the events happen instantaneously, as

14. If *Happens(e,t)* ^ *Initiates(e,f,t)*, then *f* will begin to hold after *t* (not at *t*); i.e., *HoldsAt(f, t)* is false; *HoldsAt(f,t')* is true and,

15. If *Happens(e,t)* ^ *Terminates(e,f,t)*, then *f* will still hold at *t*, but not after *t*;

i.e., *HoldsAt(f,t)* is true, but *HoldsAt(f,t')* is false, where $t < t'$.

The case of *falling off* is modelled in the following manner:

16. book is on the table at time *t*: *Initially(on(book, table),t)*

17. book falls off the table at *t'*: *Happens(fallsoff(book),t')*

18. *Terminates((fallsoff(book)),(on(book, table)),t')*

19. *Happens(fallsoff,t')* ^ *Terminates((fallsoff(book)),(on(book, table)),t')*

This can be represented as 'the falling of the book terminates the book's being on the table'. Hence the the fluent 'the book is on the table' can be represented with the predicates as follows:

20. *HoldsAt(f,t)* is true; *HoldsAt(f,t')* is true; *HoldsAt(f,t'')* is false. That is, the book is on the table at time *t* as well as at time *t'* but, conceivably, not at *t''* which is a time after *t'*.

21. $t < t' < t''$ is a temporal ordering that emerges from the derivation.

Note: *f* represents the fluent 'the book is on the table' and the formal notation is given in (5).

3.1.2 Causality involving incremental change

Causality inducing incremental change results into a new state of affair or fluent, which is qualitatively different from the fluents involving instantaneous change. These occur due to the continuous influence of a force. Consider the following:

22. *Drawing a straight line*.

In such cases of accomplishments, the causal element is not instantaneous, rather continuous in nature which is required to be interpreted as following for providing the semantics of causality. The predicates, involved for the formal construction of accomplishments, are:

23. *Trajectory*(f_1,*t*,f_2,*d*)

Where, f_1 is a force which exerts its influence continuously causing change, and f_2 is a variable quantity which changes under the force f_1; *t* is a time point (the initial point at which the force starts to exert its change) and *d* is a duration along which the force operates and the change takes place. Thus

the predicate in (23) expresses that if f_1 holds from time t until time $t + d$ then at time $t + d$, f_2 holds[†].

Another significant insight provided for different non continuous properties with the help of the two predicates is given below:

24. *Clipped*(t_1,f,t_2)

This predicate means that the fluent f is terminated or paused in between t_1 and t_2.

25. *Declipped*(t_3,f,t_4)

This predicate means that the fluent f is restarted or re-initiated[‡] in between t_3 and t_4.

These predicates help to deal with the notion of *f-relevent* events[§].

The axiomatic system of event calculus thus stands as follows:

(a) $(Initially(f)) \rightarrow (HoldsAt(f,0))$

(b) $((HoldsAt(f,r)) \wedge (r < t) \wedge (\neg\exists s < r)(HoldsAt(f,s)) \wedge \neg (Clipped(r,f,t))) \rightarrow (HoldsAt(f,t))$

(c) $((Happens(e,t)) \wedge (Initiates(e,f,t)) \wedge (t < u) \wedge \neg (Clipped(t,f,u))) \rightarrow (HoldsAt(f,u))$

(d) $((Happens(e,t)) \wedge (Initiates(e,f_1,t)) \wedge (t < u) \wedge (u=t+d) \wedge (Trajectory(f_1,t,f_2,d)) \wedge \neg (Clipped(t,f_1,u))) \rightarrow (HoldsAt(f_2,u))$

(e) $((Happens(e, s)) \wedge (t < s < u) \wedge (Terminates(e,f,s)) \vee (Releases(e,f,s))) \rightarrow (Clipped(t,f,u))$

Note: 1) r, s, t, u are arbitrary time points, however, a precedence relation as mentioned in (21) holds between r and t in (b) and t and t′ in (c) and (d).

[†] In application, f_2 will generally have a real number as argument for the length drawn in time duration is an output of the function g on d from the starting point, measured in real numbers. Therefore, in the case of *drawing a straight line*, the predicates will operate in the way given below:

Trajectory(drawing,t,length(0+g(d)),d)

g is a function operating on time duration d, which gives the length drawn within this duration. The function g must be definable in the language of Reals and should satisfy $g(0) = 0$, which means in a duration of expanse 0 unit, the length of the straight line drawn is 0 unit.

[‡] In language, these predicates along with the previous ones correspond to the semelfactive verbs.

[§] f-relevant events occurring between time *t1* and *t2* are those which change the truth value of fluents at *t1* to the truth value at *t2* and the absence of these f-relevent events between *t1* and *t2* leave the truth value of *f* at *t2* same as *t1*.

2) This axiom system acknowledges instantaneous change (achievements), durative change (accomplishments) and also iterative change (semelfactives).

These axioms provide a compact structure of event calculus which would be banked upon to find out solutions to how temporality in the state of affairs evolves.

Though the events structure and the way they intermingle within the causal domain have been well formalized, we need to refer to certain aspects of coherent path planning in the context of a discourse which adds to the analysis, comprehension and continuity of the same. This is attained by the understanding of a discourse structure from the point of view of the Segmented Discourse Representation Theory.

3.2 Account of Events in Segmented Discourse Representation Theory

SDRT as previously mentioned is an extension of DRT (Kamp H. , 1995; Kamp, Genabith, & Reyle, 2011). It is a formal approach towards discourse interpretation which has been modified with the kneading of rhetorical relations into the original dynamic approach of DRT which tries to bridge up the semantics – pragmatics interface. SDRT is able to capture the context which builds up with the help of previous contexts and furnishes the evolution of later ones. It would be prudent enough to present how SDRT captures the concept of dynamicity. Though the following example was pointed out to solve the problem of anaphora, yet part of the example delineated below serves the purpose of this paper.

Consider the following labelled discourse as given by Lascarides and Asher (Lascarides & Asher, 2008) in their original work:-

π_1 John had a great evening last night.
π_2 He had a great meal.
π_3 He ate salmon.
π_4 He devoured lots of cheese.
π_5 He won a dancing competition.

The rhetorical relations, which is an undeniable part of SDRT gives us a simplistic way to formalize the aforementioned discourse, which would be otherwise difficult to formalize, if not impossible. The rhetorical structure for the given discourse is:

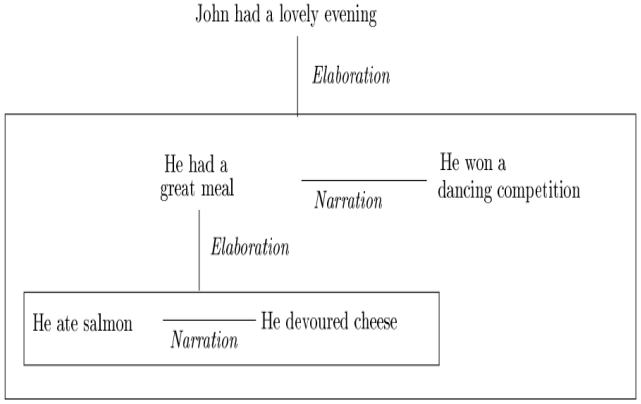

Figure 1: SDRS for π_1- π_5

Elaboration and Narration are the *rhetorical relations*** used to permit the analysis of discourse with varied level of detailing. Elaboration suggests that the event in π1 is described in more details in π2 to π5 and π2 is described in details in π3, π4, indicating a difference in granularity, i.e. a subordination relation between the sentences. Narration on the other hand is another rhetorical relation between the events of same category or granularity; and hence flourishes coordination.

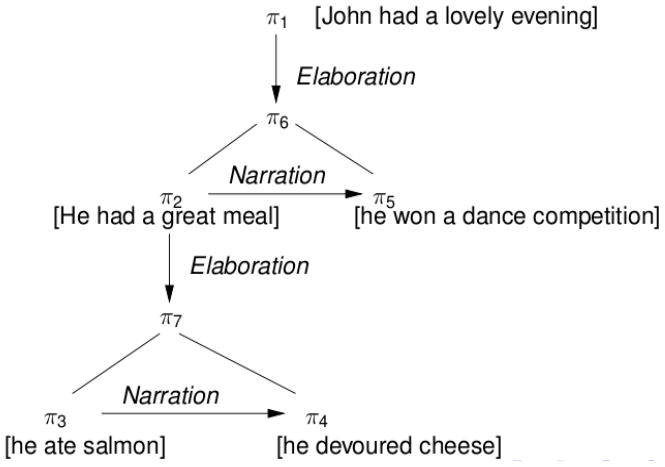

Figure 2: Mappings of the functions with the SDRS of π_1- π_5

Note: The nodes labelled as π6 and π7 are functions that map the rhetorical relation of elaboration to its branches.

5. Discussions

Discourse, as known, is driven by contexts. The unit elements being sentences comprises of events, situations, etc., which intermingle together to form the context to carry the discourse forward. While this happens, arbitrary events and contextual happenings work in their own way to construct the discourse. These events are most often non-atomic events and are thus constituted of various other sub-events which satisfy the causal property delineated in section iii. Instantiation of one such non-atomic event is *the book falling off the table*, induced by some event as a result of which the book falls off the table, as discussed in section iii.i.

** The two rhetorical relation cited above are not the only ones. The other rhetorical relations, along with the abovementioned ones belong to the following types:

(i) Veridical or the truth supporting rhetoric: Explanation, Elaboration, Background, Contrast, Parallel, Narration, Result, Evidence, etc.

(ii) Non-Veridical or non-truth supporting rhetoric: Alternation, Consequence, Cause, etc.

iii) Divergent: Correction, Counterevidence, etc.

But, it is much likely that some events do not occur as a direct result of some constituting event; rather they are independent of eventual causality, yet holding an important position within a discourse. And, the presence of such events does not baffle the receiver or neither is it difficult to put into language by the speaker.

26. a) Robin fell down b) Lily informed me.

In the sentences (26a) and (26b) there does not exist any causality and the (26b) does not occur as a result of (26a), and no causal relation is to be found within the event structure of these sentences, yet it does adhere to the path planning which renders such constructions comprehendible as well as constructible. Such path planning is also behind the understanding that (26b), despite of having no causal relation, is still a distant or immediate consequent of (26a) in the state of affairs. Now, acceptable justifications to such facets of a discourse demand the incorporation of the event semantics with the SDRS structure. The discourse used for analysis is presented as follows:

'Baby killed after bus overturns

A one-month-old baby was killed and ten people were injured when a private bus overturned near Park Circus area in Kolkata today, police said.
The baby was killed on the spot.

The injured were taken to hospital after the accident this morning'

(NDTV, 2015)

The entire newspaper extract is a linguistic discourse which describes an accident and is inherently a narrative one. The SDRS of the given linguistic discourse can be fabricated as follows:

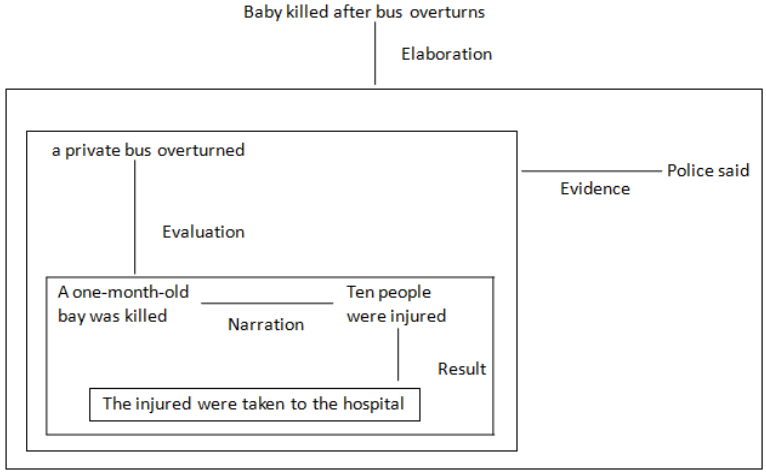

Figure 3: SDRS of the above given discourse

It is well evident from Segmented Discourse Representation Structure (henceforth SDRS) of the narrative that the rhetorical functions efficiently establish not only the evolution of a discourse but also context for the later utterances. The entire formation delineates the construction of a discourse, and allows the readers to understand how these functions are based on human intuition and knowledge.

The tree structure of this SDRS along with the narrative components is shown in the figure iv.

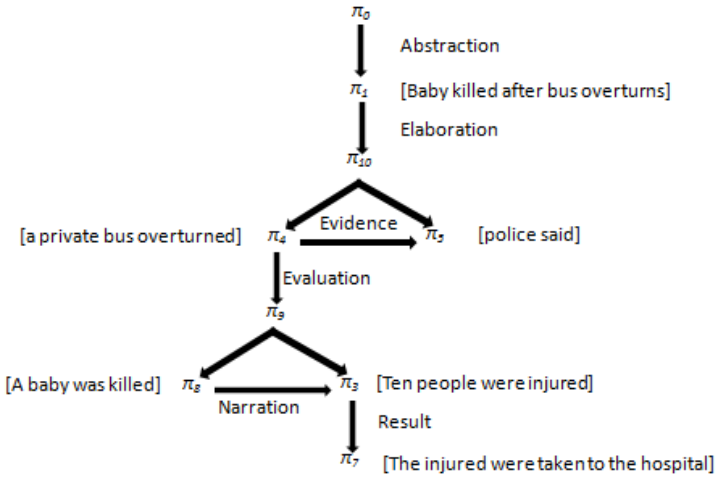

Figure 4: Function mappings of SDRS in Figure 3

The tree structure of the SDRS of the narrative imparts knowledge about the process involved in construction of a discourse which has its origin in human cognition and shows that every node consists of either events or functions mapping the rhetorical relations to subordinate events. These events can be reduced down to the structure outlined in section iii.i and is delineated below.

The utterances along with their functions can be labelled as shown in the diagram. Beginning with the headline of the discourse, it imparts insight of the temporal structure of the events:

π_1 Baby killed after bus overturns

This demonstrates that the event of overturning of the bus is temporality prior to the death of the baby.

27. OVERTURN(bus) < DIE(baby)

The next sentence, '*A one-month-old baby was killed and ten people were injured when a private bus overturned near Park Circus area in Kolkata today, police said'*, is the elaboration of the headline of the discourse. This can be represented in terms of Jackendoff's *Conceptual Structure* (1992), which also provides a way of exhibiting causality in formal terms, as given below:

$$[\text{EVENT}] \rightarrow \left[\underset{\text{Event}}{\quad} \text{CAUSE} \left(\left[\begin{Bmatrix} \text{THING} \\ \text{EVENT} \end{Bmatrix} \right], [\text{EVENT}] \right) \right]$$

Figure 5: Conceptual Structure (Jackendoff, 1992)

Therefore, 27 is translated into:

28. $[EVENT] \rightarrow [CAUSE([OVERTURN(bus)],[(DIE(baby)) \wedge (INJURE(Tenpeople))])]$

This in turn provides the path to reach the formalism of the event structure of the entire event of the overturning of bus, the death of the baby and ten people being injured, for which the following are essential:

The baby is alive and the ten people mentioned are healthy before the accident; and these facts are known to the reader or listener. Let us consider these as the fluents of the occurring event.

29. f_1 = *(living(baby))*

30. f_2 = *(healthy(people))*

31. f_3 = *(die(baby))*

32. f_4 = *(injure(people))*

34. *e = overturn(bus)*

Therefore, the events interacting and initiating fluents and terminating other fluents intermingle together and provide a compact event structure which can be drawn out as follows:

35. $(Happens(e,t)) \wedge ((Terminates(e,f_1,t) \wedge (Terminates(e,f_2,t))$

The interpretation of (35) is that the event *e*, i.e. overturning of the bus, occurring at time point *t* terminates the fluents f_1 and f_2 which are interpreted as (29) and (30).

36. $(Happens(e,t)) \wedge ((Initiates(e,f_3,t) \wedge (Initiates(e,f_4,t))$

(36) expresses that the same event *e* occurring at time point *t* initiates the fluents f_3 and f_4.

The amalgamation of (35) and (36) gives us (37).

37. $((Happens(e,t)) \wedge ((Terminates(e,f_1,t)) \wedge (Terminates(e,f_2,t)) \wedge ((Initiates(e,f_3,t) \wedge (Initiates(e,f_4,t)))$

The addition of the predicate *clipped* imparts new insight to the construction of the discourse structure and builds the context for the *evaluation* and *result*.

38. $(((Happens(e,t)) \wedge (Terminates(e,f_1,t)) \wedge (Terminates(e,f_2,t)) \wedge (Initiates(e,f_3,t)) \wedge (Initiates(e,f_4,t))) \wedge (t < s) \wedge (\neg(Clipped(t,f_3,s)) \wedge \neg(Clipped(t,f_4,s))))$

The interpretation of this would be that the happening of the event *e* at time *t* terminates the fluents f_1 and f_2; initiates f_3 and f_4; both at time *t*. The fluents f_3 and f_4 are not interrupted or paused between time *t* and *s*. Thus from the above formal account of the larger event structure at hand, the *evaluation* and the *result* can be drawn out in the following way:

39. $(((Happens(e,t)) \wedge (Terminates(e,f_1,t)) \wedge (Terminates(e,f_2,t)) \wedge (Initiates(e,f_3,t)) \wedge (Initiates(e,f_4,t))) \wedge (t < s) \wedge (\neg(Clipped(t,f_3,s)) \wedge \neg(Clipped(t,f_4,s)))) \rightarrow ((HoldsAt(f_3,s)) \wedge (HoldsAt(f_4,s)))$

Therefore, the *evaluation*, which is π_6 *ten people were injured* and π_8 *the baby was killed* should be explained in terms of the fluents f_3 and f_4.

40. *the baby was killed - (HoldsAt(f_3,s))*

(HoldsAt(f_3,s)) by virtue of itself can act as an event. Let us consider *(HoldsAt(f_3,s))* as the event *a*

41. *ten people were injured* can be formally written as *(HoldsAt(f_4,s))*

The *result* is inherently an addition to π_8, but it can also be conceived as a course of action after the injury caused to the ten people, exhibited as below.

If *(HoldsAt(f_4,s))* is considered as an event *b*, taking the injured people to the hospital with being injured as the cause can also be written as:

42. $((Happens(b,s)) \wedge (Initiates(b,f_5,s)) \wedge (s < v) \wedge \neg(Clipped(s,f_5,v))) \rightarrow (HoldsAt(f_5,v))$, where f_5 is *(hospitalize(people,s))*.

(42) explains how event *b*, that is, people getting injured becomes the cause of their hospitalization. This type of causal relation is not similar to the one which operates between bus-overturning and people dying and getting injured yet it is a kind which indirectly connects the two events. This can be called as the *indirect cause* that operates between two events.

Further *(HoldsAt(f_5,v))* is itself the event embedded in the result of the discourse which can be considered as an event *c* happening at time *v*.

Similar to (42), it is plausible to say that events *e*, *a*, *b* and *c* together play as *indirect cause* for π_5 . (π_5 = *police said*). Let us consider, *e*, *a*, *b* and *c* as a single event *h* and the culmination of the time of all these events as *u*. The *indirect cause* for π_5, can be constructed as follows:

43. $((Happens(h,u)) \wedge (Initiates(h,f_6,u)) \wedge (u < r) \wedge \neg(Clipped(u,f_6,r))) \rightarrow (HoldsAt(f_6,r))$, Where f_6 denotes *said(police)*.

The SDRT tree structure with the amalgamation of event semantics of this particular discourse can be constructed as follows:

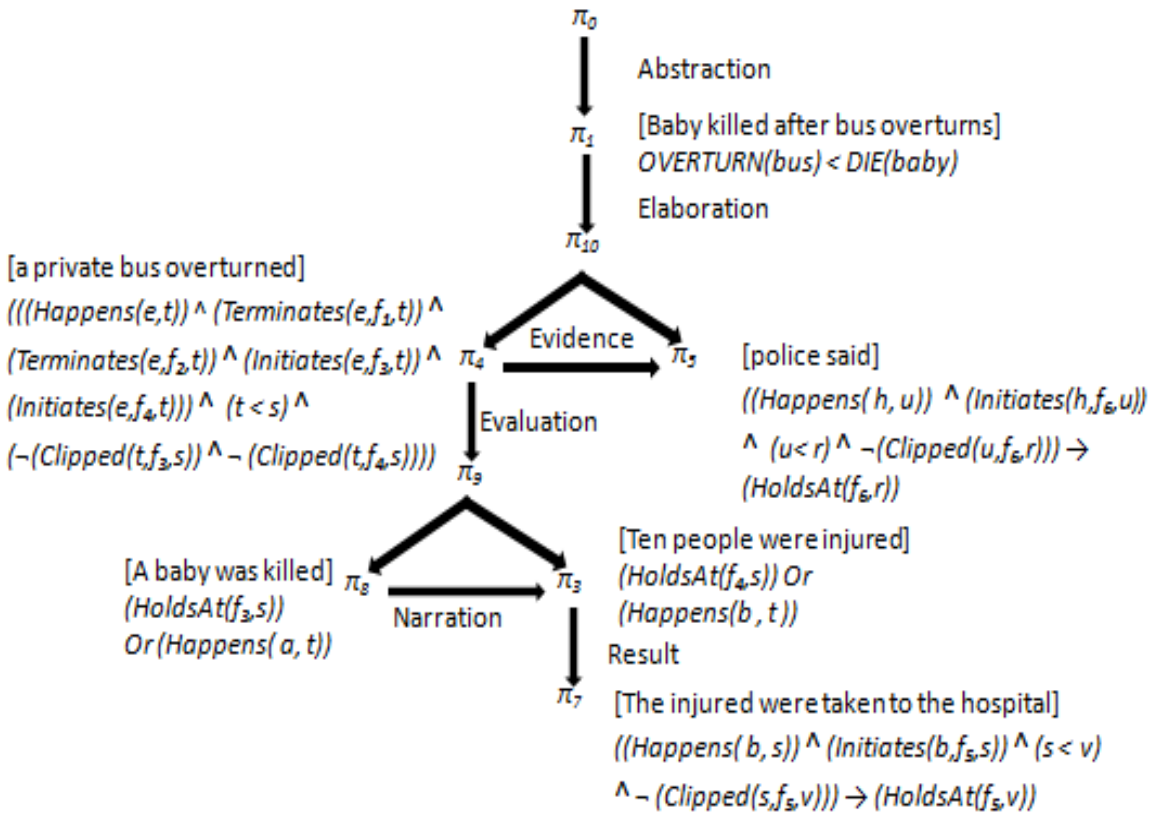

Figure 6: SDRT function mapping with event structure

The entire establishment of the discourse structure along with the event structure answers the question of how events, structured in lexical items of language operate within a discourse; and the knowledge of it explains the significance of path planning required for the construction and comprehension of the discourse. The path planning is inherent to cognition which is evident from the viewing of this discourse in terms of its internal structure leading to a proper insight to temporality in which events are embedded. The temporal ordering of the events can also be drawn out from the composite structure of the SDRS with event semantics, i.e. to say that this model, used to analyse the events in discourse, yields answers to whether the events precedes, follows or overlaps with other events. Thus, the structure of event ordering, signifying temporality, can be represented as in Figure vii.

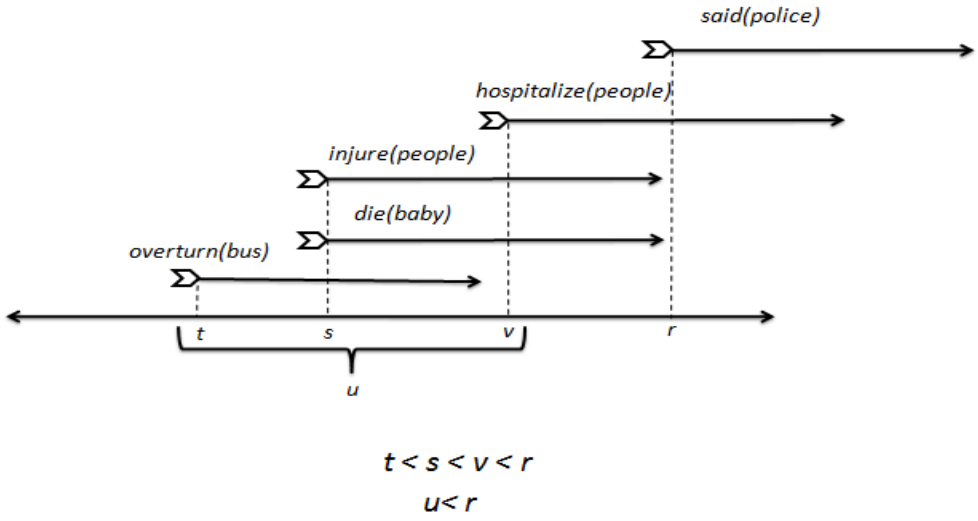

Figure 7: Temporal Ordering of Events

From both the Figure vi and Figure vii, it is evident that the temporality is comprehended and construed as a result of the cognitive understanding of the events which are embedded in time. From the figure vii the relation between time-points *t, s,* and *v and r* is clear being *t* precedes *s* and *s* precedes *v,* thereby a clear indication towards the ordering of events within the discourse and the tense of the entire discourse which is narrated after the completion of the entire event.

This cognition of procedural information involving path planning and rhetorical relations (part of world knowledge) allows the understanding of temporality in the state of affairs. This temporal understanding leads to the rearrangement of the inherent temporal ordering of the events in the state of affairs to a differently non-linear ordering in linguistic discourse. This analysis of the discourse structure in terms of event semantics and SDRS shows the presence of the cognitive faculty which allows speaker-hearers to rearrange the ordering of events of the state of affairs, when encoded in language. Though speaker-hearer is well aware of the fact that the entire events of bus's overturning, and the baby's dying, and people being injured and hospitalized precede the event of the police talking about it, the cognitive ability of framing such causal relations form the basis of construction and comprehension of temporal alterations of ordered events in language.

6. Conclusion

The analysis of discourse to grasp the process of intermingling of events leads to certain insights that can stand useful in the understanding of the cognitive ability of humans to comprehend, construct and carry a discourse forward. It identifies components of path planning in discourse.

The main components of path planning give structure to a discourse in state of affairs according to which the events of the physical world is put and rearranged in language. Also, path planning along with the knowledge of rhetorical relations allow speaker-hearers to cognize, comprehend and participate in the alterations of the temporal re-ordering of the actual sequence of the state of affairs.

The other significant element of path planning is the function, which glues the non-causal events together and binds them in a discourse and exhibit their interaction. These functions are finitely many which also project the ability of humans to use finite means for infinitely many productions. The

functions are nothing but the feeding in of the context that allows the continuity of a discourse, thereby providing some pragmatic insight drawn from language.

Another integral part of language which emerges from the analysis of discourse in terms of events is the cognitive absorption of the concept of time and temporality through the understanding of causal and rhetorical relations.

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Present Progressive Verb Form in Kolhapuri Marathi: A Case of Grammaticalization

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ABSTRACT

Grammaticalization is a process in which a word loses its primary lexical meaning and acquires a grammatical meaning or performs a grammatical function. The present paper tries to account for the genesis and morphology of the present progressive verb form in Kolhapuri variety of Marathi and argues that it has undergone grammaticalization.

সারাংশ

গ্রামাটিক্যালাইজেসন প্রক্রিয়ার মধ্যে দিয়ে একটি শব্দ তার লেক্সিক্যাল তাৎপর্য-এর পরিবর্তে একটি গ্রামটিক্যাল তাৎপর্য অর্জন করে। এই প্রবন্ধটিতে ঘটমান বর্তমানে কোঙ্কনী ক্রিয়ারূপের কিরূপ গ্রামাটিক্যালাইজেসন হয়েছে তার আলোচনা করা হয়েছে। কোঙ্কনী মারাঠী ভাষার একটি উপভাষা।

1. Introduction

Kolhapuri Marathi is a regional variety of Marathi, an Indo-Aryan language of the southern sub-branch. It is spoken in south-western parts of the state Maharashtra, India. Though not radically different from the standard variety, it does show some characteristic features of its own. The verb sequence which is of interest to this study falls into this category. The following sections discuss the present progressive verb forms from standard and Kolhapuri variety of Marathi and by examining the latter, argue that they are the resultant of the process of grammaticalization.

2. Research Objectives

The paper will examine the morpho-phonology of the present progressive construction in Kolhapuri Marathi and will try to show how the verb '*lagɳe* (to get hit)' seems to have undergone grammaticalization.

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3. Discussion

3.1 Present progressive verb forms

Present progressive construction in standard Marathi would be

1a) *ʈo* *kam* *kər-ʈ-oj*[*/†]

3.SG.M work do-PRS-3.SG.M

He is working.

The same construction in Kolhapuri Marathi would be

1b) *ʈo* *kam* *kər-aj-l-aj*

3.SG.M work do-INF-PROG-3.SG.M

Or

1c) *ʈo* *kam* *kər-aj* *lag-l-aj*

3.SG.M work do-INF get hit-PROG-3.SG.M

He is working.

These two verb forms, 'kərajlaj' and 'kəraj-laglaj' are used interchangeably in Kolhapuri Marathi and have the same meaning.
Some other examples of these types of constructions would be as follows:
('example a' is from standard Marathi whereas 'example b & c' would be its equivalents in Kolhapuri Marathi)

2a) *ʈja-tsə* *poʈ* *ɖukʰ-ʈ-əj*

3.SG.M-POSS stomach.N ache-PRS-3.SG.N

2b) *ʈja-tʃja* *poʈ-aʈ* *ɖukʰ-aj-l-aj*

3.SG.M-POSS stomach-LOC ache-INF-PROG-3.SG.N

2c) *ʈja-tʃja* *poʈ-aʈ* *ɖukʰ-aj* *lag-l-əj*

3.SG.M-POSS stomach-LOC ache-INF get hit-PROG-3.SG.N

His stomach is aching.

3a) *ʈi* *krikeʈ* *kʰeɭə-ʈ-ije*

---

[*] All present progressive verb forms with their genesis and glossing would be explained in section 3.2

[†] The data has been collected from native speakers

3.SG.F cricket play-PRS-3.SG.F

3b) *ʈi kriketʈ kʰeɭ-aj-l-iaj*

3.SG.F cricket play-INF-PROG-3.SG.F

3c) *ʈi kriketʈ kʰeɭ-əj lag-l-iaj*

3.SG.F cricket play-INF get hit-PROG-3.SG.F

She is playing cricket.

4a) *mi dʒev-ʈ-oj*

1.SG.M eat-PRS-1.SG.M

4b) *mi dʒev-aj-l-oj*

1.SG.M eat-INF-PROG-1.SG.M

4c) *mi dʒev-aj lag-l-oj*

1.SG.M eat-INF get hit-PROG-1.SG.M

I am eating.

Here, as we can see, this type of construction is not limited to a small number of verbs and is seen wherever a present progressive construction appears.

3.2 Morpho-Phonology of the present progressive verb forms

In standard Marathi, the form 'kərʈoj' is used for present progressive which is a phonologically reduced form of 'kərʈo ahe' (which is used while writing).

5a) *mi kam kər-ʈ-o ahe*

1.SG.M work.N do-PRS-3SG.M be.PRS.3.SG

He is working.

5b) *mi kam kər-ʈ-oj*

1.SG.M work.N do-PRS-3.SG.M

He is working.

Here, as 'kər-ʈ-oj' is the phonologically reduced form of 'kər-ʈ-o ahe' it maps all the syntactic information encoded on the latter (and thus, these forms have been glossed accordingly).
In Kolhapuri Marathi, the form used for present progressive is 'kərajlaj' or 'kəraj laglaj.' These variant forms do not have a corresponding phonologically unreduced, split verb sequence.
Here, the form 'kəraj laglaj' is phonologically very similar a verbal sequence 'kərajla lagla ahe.' We consider this to be hypothetical unreduced version of it (which is also in accordance with native speakers' intuitions). The Kolhapuri Marathi variants of the present progressive can be the resultant of phonological reduction of 'karaj laglaj. With the help of certain phonological processes, we can explain the systematic reduction of 'kərajla lagla ahe'; first to 'kəraj laglaj' and subsequently 'kərajlaj.'

This phonological reduction can be illustrated with the help of following processes:

i) First, auxiliary verb gets reduced. This is similar kind of process that happens in standard Marathi (as illustrated in examples 5a and 5b: *kərʈo ahe* → *kərʈoj*).

kərajla lagla ahe → *kərajla laglaj*

This is quite a common process (deletion of verb root) that happens in the case of auxiliary verbs.

ii) The '*la*' morpheme gets deleted under haplology.

kərajla laglaj → *kəraj laglaj*

iii) Further, the verb root '*lag*' gets deleted from the V2

kəraj laglaj → *kərajlaj*

Due to this, the agreement pattern that is shown by 'karajla lagla ahe' will be mapped onto the non-standard, reduced verb forms.
The verb forms and their glossing would be as follows:

6a) *kər-ajla* *lag-l-a* *ahe*
do-INF get hit-PST-3.SG.M be.PRS.3.SG

6b) *kar-aj* *lag-l-aj*
do-INF get hit-PROG-3.SG.M

6c) *kar-aj-l-aj*
do-INF-PROG-3.SG.M
*is doing

Hence, it can be said that reduction of the verbal sequence 'karajla laglo ahe' to 'karaj laglaj' and 'karajlaj' is a plausible process.

The paradigm of the Kolhapuri present progressive is as follows:

Person	Gender	Singular	Plural
1st person	M	*kar-aj-l-oj*	*kar-aj-l-oj*
	F	*kar-aj-l-ej*	*kar-aj-l-oj*
2nd person	M	*kar-aj-l-ajs*	*kar-aj-l-aj*
	F	*kar-aj-l-iajs*	*kar-aj-l-aj*
3rd person	M	*kar-aj-l-aj*	*kar-aj-l-eʈ*
	F	*kar-aj-l-iaj*	*kar-aj-l-jaʈ*

So, it is evident that speakers of Kolhapuri Marathi use a reduced form of V1+V2 +Vaux sequence for marking present progressive as opposed to that of standard variety's V1+Vaux sequence. Here, in the V1+V2 +Vaux sequence, the V2 (lagɳe- to get hit) does not seem to appear in its primary lexical meaning. On the contrary, it seems to convey some grammatical information, i.e. the progressive aspect. So, the verb 'lagɳe' seems to have undergone the process of grammaticalization.

3.3. Tests for Grammaticalization

In this sub-section, we will try to illustrate how the concerned verb forms seem to have undergone various processes that are characteristic of grammaticalization.

3.3.1 Phonological Reduction

Phonological reduction is a process often seen in case of grammaticalized items. In this case also, a strong phonological reduction is observed.

**kərajla lagla ahe* → **kərajla laglaj* → *kəraj laglaj* → *kərajlaj*

(*Hypothesized forms) (Forms in actual usage)

As illustrated in section 3.2, a hypothetical form is considered first in which auxiliary verb gets reduced. Then, by haplology, deletion of '-la' morpheme takes place. The verb root of V2 gets deleted in the last stage. The last form is phonologically reduced to the extent that the presence of the form of verb 'lagɳe' is not easily noticeable.
So, in this way, the verb sequence seems to have undergone strong phonological reduction.

3.3.2 Loss of Syntactic Freedom

Marathi has a relatively free word order. It is seen that verbs from CV and SV constructions sometimes occur separately. In the following examples, their occurrence with the reversal of V1-V2 sequence seems permissible.
Serial verb constructions:

7a)	*ɖon*	*miɳʈə*	*je-un*	*dza*
	two	minute.PL	come-CP	go-2.SG.M

7b)	*ɖon*	*miɳʈ-ə*	*dza*	*je-un*
	two	minute-PL	go-2.SG.M	come-CP

7c)	*dza*	*ɖon*	*miɳʈ-ə*	*je-un*
	go-2.SG.M	two	minute-PL	come-CP

Come for 2 minutes and go.

Here, CP is conjunctive participle.
Compound verb constructions:

8a)	*gʰe-un*	*ʈak*	*navin gaɖi*

take-CP throw-2.SG.M new car

8b) *ʈak* *gʰe-un* *navin gaɖi*

throw-2.SG.M take-CP new car

(Don't think much and) buy a new car.

In the concerned verb form 'kərajlaj', there exists no scope for such reversal of V1 and V2 as the verb sequence is reduced to a single form.
In case of 'kəraj laglaj', this kind of reversal or separate occurrence of both the verb forms would render the usage unacceptable for a native speaker.

9a) *amhi* *mætʃ* *bagʰ-aj* *lag-l-oj*

1.PL match watch-INF get hit-PROG-1.PL

9b)**amhi* *lag-l-oj* *bagʰ-aj* *mætʃ*

1.PL get hit-PROG-1.PL watch-INF match

We are watching the match.
Here, example 9a is acceptable but example 9b is not.
Therefore, this construction does not allow any of its elements to occur separately unlike in CVs and SVs where V1 and V2 are syntactically freer. Therefore, this sequencing seems to have resulted in the loss of syntactic freedom of the present progressive verb forms.

3.3.3 Reanalysis

Reanalysis involves a change in constituency, hierarchical structure, category labels, grammatical relations and cohesion (type of boundary) (Harris and Campbell, 1995: 61).
The process of grammaticalization minimally consists of one process of reanalysis. The example of 'will' from English would be an example of category labels being reanalysed where its meaning changed from 'want' to a future marker.
Similarly, the verb 'lagɳe' has undergone bleaching and (its remnant) has been reanalysed as an aspectual marker. Hence, this seems to be an example of a content word getting reanalysed as a function word.

3.3.4 Obligatorification

Obligatorifiaction is a process in which the choice of a grammatical entity or category becomes obligatory in certain contexts. It can be seen that, the sense (of an action which is already in progress) that the verb sequence 'kəraj laglaj' (or 'kərajlaj') conveys, cannot be conveyed by using any other construction in Kolhapuri Marathi (except by using the standard form- 'kərʈ̪oj'). So, the use of this construction seems obligatory in this context.

3.3.5 Semantic Bleaching

The element which undergoes grammaticalization loses its lexical meaning. The term grammaticalization is self-explanatory as it is defined as 'a process by which a content word becomes a function word.'
The verb 'lagɳe' appears with various meanings in Marathi, including 'to get hit', 'to touch', 'to meet', etc.

10) *ʈja-la bɔl lag-l-a*

3.SG.M-DAT ball get hit-PST-3.SG.M

He got hit by the ball (the ball hit him).

The verb has already been grammaticalized to an extent in Marathi that it assigns inchoative meaning to the sentence. It implies that the action described has started.

11) *mi nokəri-la lag-l-o*

1.SG.M job-DAT get hit-PST-1.SG.M

I started working.

12) *ʈo poh-aj-l-aj*

3.SG.M swim-INF-PROG-3.SG.M

He is swimming.

Here, by taking a look at these examples, it becomes clear that example 10 shows verb 'lagɳe' in its lexical meaning, i.e. 'to get hit.' Example 11 shows that the verb has an inchoative sense and the usage of the verb 'lagɳe' draws listener's attention to the beginning of the event. In the example 12 and other examples from Kolhapuri Marathi given in this paper, it is evident that the verb 'lagɳe' has further been grammaticalized in Kolhapuri Marathi to give a progressive sense as opposed to the inchoative one assigned by the standard Marathi speakers in certain contexts.
This illustrates how the verb 'lagɳe' has lost its lexical sense and in this particular context, is perceived as having a completely different meaning. Hence, the semantic bleaching is evident in this case.
Here, it should be noted that the bleaching is partial in nature. The verb 'lagɳe' is used in the language with its primary lexical meaning as well as with the inchoative sense.

4. Conclusion

From the given data and arguments presented in sections 3.3.1 to 3.3.5, it becomes clear that the verb 'lagɳe' from the verbal sequence 'kəraj laglaj' (which marks present progressive in Kolhapuri Marathi) has lost its lexical meaning and the verbal sequence has undergone various processes that are characteristic of the process of grammaticalization. Therefore, it can be said that the present progressive forms 'kəraj laglaj' and 'kərajaj' are the resultants of grammaticalization. This grammaticalization goes beyond the usual inchoative reading which verb 'lagɳe' sometimes gets (as in example 11) and gives a progressive reading. As these verb forms are areal features of the Kolhapuri variety spoken in Maharashtra-Karnataka boundary region, the present progressive from the border varieties of Kannada needs to be investigated as well which might throw some light on the contact aspect of this process.

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Kinship terms in Koch as Reference and Address: A Sociolinguistic Study

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ABSTRACT

Kinship relations are blood relations or those relations which are created naturally. Kinship is a method of acknowledging relations and it is a social bond initiated by blood or genetic as well as marriage. Kinship is important in all cultures and in all human interaction. Kinship is important to anthropology because anthropology is the study of human behavior and human behavior is variable. According to M. Lamp to understand fully the nature of kinship systems it is necessary to understand what kind of linguistic elements these are, and what kind of linguistic relationships. The kinship terminology of any language is a natural meeting point for the disciplines of anthropology and linguistics. According to UNESCO (ISO 639-3) is a severely endangered language India. Koch, an indigenous community of northern portion West Bengal, in the past they were the majority people of North Bengal, particularly in the districts of Alipurduar, Jalpaiguri, Rangpur, Dinajpur and the plain areas of Darjeeling district and the Cooch Behar. The present study is based on the data collected from the speakers and inhabited at Alipurduar , Jalpaiguri and Cooch Behar (district) which are one of the largest and oldest Koch villages in West Bengal. There are many villages where speak Koch language in Cooch Behar district of West Bengal. The 2011 census of India put the number of speakers at 31,119. This paper describes the kinship terms as terms of reference and address through a sociolinguistic perspective. The aim of this paper is to investigate the following concept such as the kinship terms as terms of reference and the alternative addressing terms for them, the power and politeness exercised by younger in the paternal and maternal family, the role-play assigned to the various kinship terms of the gender due to the paternal and maternal family system.

সারাংশ

এই প্রবন্ধের আলোচ্য বিষয় সম্পর্কবাচী শব্দ। সম্পর্কবাচী শব্দের আলোচনায় বিশ্লেষণ করে দেখা হয়েছে কোচ ভাষা থেকে সংগৃহীত উপাত্তগুলিকে। উপাত্তগুলি সংগৃহীত হয়েছে আলিপুরদুয়ার, জলপাইগুড়ি, এবং কোচবিহার থেকে। সম্পর্কবাচী এই আলোচনার মুখ্য বিষয় (ক) সম্বোধনে ব্যবহৃত শব্দ সমূহ, এবং, (খ) সম্বোধনে ব্যবহৃত হয় না অথচ সম্পর্কবাচী শব্দের সংকলন।

1. Introduction

Man is social by nature. He establishes many types of relations with a number of persons. The most important of these relationships is known as kinship and it is a method of acknowledging relationship. It is a social bond initiated by genetic or blood ties as well as marriage. Kinship ties are of fundamental importance in every society all over the world. Family is the point of departure for studying kinship. Koch language is a Sino-Tibeto- Burman language family which is spoken by the people of Koch-Kamtapuri of North Bengal in West Bengal. According to UNESCO (ISO 639-3) is a severely endangered language India. Koch, an indigenous community of northern portion West Bengal, in the past they were the majority people of North Bengal, particularly in the districts of Alipurduar, Jalpaiguri, Rangpur, Dinajpur and the plain areas of Darjeeling district and the Cooch Behar.
The present study is based on the data collected from the speakers and inhabited at Alipurduar , Jalpaiguri and Cooch Behar (district) which are one of the largest and oldest Koch villages in West Bengal. There are many villages where speak Koch language in Cooch Behar district of West Bengal. The 2011 census of India put the number of speakers at 31,119.

2. A brief history of Koch

Dr. Rabati Mohan Saha said, the true history of the North-Eastern India was unknown till the Ahom invasion in the soil of India. Before this nothing definite some known, except some scattered facts from ancient coins and inscriptions as well as the records of the Greek and Chinese travelers may be considered as a worthy documents. But before then, the history of several thousand years mentioned in the Vedas, Upanisads, Mahabharata, Ramayana, Tantras and Puranas, which is not always beyond doubt as well as fragmentary. The Sino-Tibetan speaking mongoloids were confirmed only to a part of India, i.e, Northern and North-Eastern tracts corresponding to the present day Nepal and sub-Himalyan areas, North-Bihar, North-Bengal, East-Bengal as well as Assam and its adjacent six states of North-Eastern India.
According to Dr. Rebati Mohan Saha (quoted.in Dr. Suniti Kumar Chatterjee), they came to India in a period not earlier than 1500 B.C. He also remarks that the early Mongoloid people entered probably through Assam, and their advent in the east might have been as old as that of the Aryans in the West.
The Koches created a glorious history in the 16th Century A.D. The have conquered the vast area of the North-Eastern India. They were also ruling many areas Chieftains, Zamindars or Kings of the tribal groups, after they had entered in the North-Eastern India.

3. Terms of Address

When we address a person, we should use suitable term depending on the appropriate situation where we are in. Terms of address are decided based on the relationship with the addressee depending on his/her age, sex, social status etc. According to Wardaugh (2009:264) address terms implies that the person must consider about the classification of address terms such as; addressing using name, addressing of closing relationship, intimate term, addressing of kinship term, addressing respectful term, even addressing of mockeries. As Koul (1989: 9) points out “A study of terms of address in any language plays a very important role in sociolinguistic research. These are determined by certain factors, namely social structure, cultural pattern and geographical setting. The role of human beings varies in a particular society according to the requirements of that society…the terms of address are determined by socio-economic status, caste, age and sex. The section of terms of address is influenced by different historical and social factors. Individual differences between speaker and speaker depend on individual personality differences.”

4. Terms of Reference

Terms of reference are determined by the way that a word is currently used in non-address contexts. Terms of reference indicate the address relationship with the addresser. These terms or reference are used to refer to the third person's relationship with the addresser in the social context.

5. Objectives

- To find out how kinship terms are used in Koch hierarchy in terms of relationships.
- Through this study, the researchers attempt to find out the linguistic terms use for to express kinship relation.
- Koch is an endangered language. Here my aim at understanding and documenting the data in order to, preserve the language for the future generations.

6. Theoretical background

Koch is included in the Linguistic Survey of India by Grierson and knows in the early 20th Century (1903), which represents the first attempt at classifying Tibeto –Burman languages. There are various traditions as to the origin of this line of Kings, and according to Mr. Gait, it is most probable that it has descended from a Mech ancestor, by two Koch mothers. According to Grierson (1903) there is a little doubt that the original Koches were the same as the Bodo, Mech all connoted the same tribe, or, at most, different sets of the same tribe. This is well shown by the traditional origin of the Koch Kings from a Mech father and Koch mothers.

7. Methodology

Data primarily has been collected by observing people and based on researcher's own encounters with people in different situations. Data has been collected through interviews with the Koch speakers. The study has been dedicated to the relevant literature of this area which has been helped to write this paper.

a. Method: Interviews, audio-visual recording and questionnaire
b. Participants: About 30 informants (equal number of male and female subjects).
c. Age: This study has been adopted Labov's (1963) age groping and the age group in the study has been divided into five. So the age groupings are
    i. 14 to 30 yrs
    ii. 31 to 45 yrs
    iii. 46 to 60 yrs
    iv. 61 to 75 yrs
    v. 76 and above

9. Analysis of Data

There are some terms which are used as only terms of reference not to address and they can be addressed by the other terms, i.e. 'kelaŋ'(daughter's husband) is address by the term 'bao' and 'first name', 'bɯʈɯɪsa'(brother's son father and mother side) is address by the terms 'bɯʈɯɪ' or 'first name', 'ɖeora' (husband's younger brother) is address by the terms 'adʒoŋ' and 'first name', 'bʰwmur'

(husband's elder brother is address by the terms 'aḍa', 'nwɪ'(mother-in-law) is address by the terms 'amaɪ', hwu' (father-in-law) is address by the terms 'bao', 'bɯʈɯɪsa'(brother's daughter) is address by the terms 'bɯʈɯɪ'' or 'first name'. Here interesting example is that there is no gender distinction between them ' bɯʈɯɪsa'(brother's son father and mother side) is address by the terms 'bɯʈɯɪ' or 'first name' and 'bɯʈɯɪsa'(brother's daughter) is address by the terms 'bɯʈɯɪ'' or 'first name'. Some more kinship terms as terms of reference and their alternative addressing terms are given below in the table:

Terms of Reference	**Terms of Address**
kabok (elder and younger sister's husband)	Kabok, first name (use bymale), awnŋ (use by female)
bɯʈɯɪsa (brother's son ;mother's and father's side)	bɯʈɯɪ, first name
bɯʈɯɪsa (brother's daughter; father's and mother's side)	bɯʈɯɪ, first name
ḍeora(husband's younger brother)	adʒoŋ, first name
bʰwmur (husband's elder brother)	aḍa, addressing by his son's or daughter's name
nwɪ (mother-in-law)	amaɪ
hwu (father-in-law)	bao
sabɯʈɯɪ (son)	ḍwbou, first name
samɪʧɪg (daughter)	mao/ first name
namsa (son's wife)	mao, first name
aɯnɯŋsa (Wife's younger brother)	first name
nouʃɪl (wife' younger sister)	first name
aaoa ḍoŋka (step father)	Bao
amaɪ ḍoŋka (step mother)	amaɪ
mɪʧɪg (wife)	mɪʧɪgbuḍɪ
dʒɯg (husband)	maragwḍa
aɯʧusa (grand -son)	first name
aɯoɪsa (grand –daughter)	first name
adʒoŋ pɯmur (younger brother)	first name
anao pɯmur (younger sister)	first name
aɯnɯŋsa (husband's elder sister)	aya gɔḍa
aɯnɯŋsa (husband's younger sister)	first name
nouʃɪl (wife's younger sister)	first name
kelaŋ (daughter's husband)	bao, First name
aɯnɯŋ (wife's elder brother)	namdʒɪr
aɯʧusa ʈapal (great grandson)	first name
bʰɯsɪn (younger brother's wife)	first name
bʰɯsɪn (elder brother's wife)	dʒabok, first name (male), awnam (female)

Table 1: Terms of Reference and Terms of Address in Koch

9. How Gender, power, impoliteness and politeness in Koch community

In many different languages, kinship terms can be used in order to address or refer to the kin or non-kin. These terms can be very polite. However, in some languages, terms can be very impolite. They show the more power in the paternal community rather than maternal community. I have tried to show the differences between polite, impolite, gender and power in the Koch or Kamtapuri society. Interestingly, they use non-honorific pronoun for parents. They do not hesitate to use impoliteness manner towards the paternal family. Because they feel, they have blood relation with them. But they behave with maternal family politely. It is all about the distance relationship. If we take the example above data 'bʰɯsɪn' (elder brother's wife) and 'd̪eora' husband's younger brother) relation as example, elder brother's wife is allowed to address husband's younger brother by the term first name by the addressee. Whereas, husband's younger brother is not allowed to address elder brother's wife by the term of first name. Here this phenomenon states that domination of gender and power. There are many examples like this above the data.

10. Conclusion

Kinship terms generally replace an individual's given name, both as a term of address and for reference. Moreover the metaphorical usage of kinship terms to non-kin is widely observed among the Koch language.. The present study has analyzed the Koch kinship terms as terms of reference and address with sociolinguistic and socio-cultural interest. This section recapitulates the observations and findings of using kinship terms in Koch. The use of kinship terms in order to address or refer to non-kin is a wide spread phenomenon. In Koch, kinship terms can be used as both terms of reference and address, and sometimes terms of reference cannot be used as terms of address. It has been observed that Koch does not have appropriate terms of address for some kin such as wife and husband and son-in-law. This study has investigated that Koch kinship system is gender biased. According the results of the present study, women are not allowed to use certain terms to address due to paternal family system. This study also states that women are more polite than men. This study also states that men are more powerful than women in using terms of address.

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