

CONTROL IN ASSAMESE, BANGLA AND GUJARATI

*Dissertation submitted in partial fulfilment of the requirements for the
Degree of Master of Philosophy in Linguistics*

by

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DECLARATION BY THE CANDIDATE

This dissertation titled '**Control in Assamese, Bangla and Gujarati**' is an original research study by me, submitted to the Centre for Advanced Studies in Linguistics, Department of Linguistics, University of Delhi, Delhi, for the award of the degree of **Master of Philosophy** in Linguistics. I declare that it has not been submitted to any other university/institution or for any other degree partially or fully.

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CERTIFICATE

This is to certify that the dissertation titled '**Control in Assamese, Bangla and Gujarati**' submitted by **Kaustubh Ghoshal** to the Centre for Advanced Studies in Linguistics, Department of Linguistics, University of Delhi, Delhi for the award of the degree of **Master of Philosophy** in Linguistics. This dissertation has not been submitted, in part or full for any other degree or diploma in this or any other university/institution. The thesis conforms to the standards of the University of Delhi. This dissertation therefore can be put before the examiners for evaluation.

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ABBREVIATIONS

• ABS	Absolutive
• ACC	Accusative
• ADV	Adverbial suffix
• AUX	Auxiliary
• CAUS	Causative
• CL	Classifier
• CNJ	Conjunction
• CNP	Conjunctive participle
• COMP	Complementiser
• DAT	Dative
• DECL	Declarative
• ERG	Ergative
• EVID	Evidential
• FUT	Future
• GER	Gerund
• GEN	Genitive
• HON	Honorific
• INF	Infinitive
• LOC	Locative
• NEG	Negation
• NOM	Nominative
• PERF	Perfective
• PL	Plural
• PPL	Participle

- PRES Present
- PST Past
- TOP Topic

ABSTRACT

The study aims to investigate the syntactic variation in control phenomena in three Indo-Aryan languages: Assamese, Bangla, and Gujarati. In providing an analysis for the observed variation pattern, the study hopes to contribute to the debate within the Minimalist framework about whether or not control configurations arise due to movement. (Chomsky and Lasnik 1993; Hornstein 1999, 2003; Landau 1999, 2000, 2004) The particular phenomena under study are: control shift under causativisation, control into gerunds, partial control, and backward control.

While control theory has been a major area of research in generative syntax, there has been little discussion in the literature of control phenomena in Indo-Aryan languages. Bhattacharya and Sharma (2005) is an early but experimental study showing the importance of case in processing of control structures in Assamese and Bangla. Haddad (2007, 2011) discussed control in Assamese, but the scope of the data was limited, and its empirical validity questioned in later work (Subbarao 2017). Nath (2013) briefly discusses control in Assamese in the broader framework of non-finite complementation, but of the phenomena under investigation in this study, only partial control is discussed in that work. Moreover, Pitteroff and Sheehan (2017) justifies the need for a re-examination of partial control. Subbarao et al (2013) discusses control data from Hindi-Urdu, but not from the languages under study here. Moreover, there has not been any comparative syntactic study of control phenomena in Indo-Aryan languages.

The present study shows a surprising pattern of syntactic variation in control phenomena across these three languages. In essence, Assamese patterns rather differently from Bangla and Gujarati, an interesting finding as it is contrary to both genetic and geographical proximity. On the basis of the data, an analysis is proposed using the Movement Theory of

Control (MTC) and microparametric variation. An attempt has been made to reduce the observed variation to the presence or absence of a single parameter in these languages. Conversely, it is argued that the data provide support to a movement-based approach to control, and the present work is thereby situated within the wider debate regarding the nature of control in the literature.

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Chapter 1: Introduction and Theoretical Background

This chapter contains the aim and justification for the study, information about the languages under study, an introduction to control phenomena and a brief summary of the different theoretical approaches to control over the years. Sections 1.1 and 1.2 outline the aim and justification for the present study. Section 1.3 provides an overview of the languages under study. Section 1.4 presents an introduction to different types of control with examples and a summary of control theory in Government and Binding Theory and Minimalism. Sections 1.5 to 1.8 go into more detail on each of the theoretical approaches to control, culminating in the differing theories of control within minimalism in Section 1.8. The debate between movement and non-movement approaches to control is still alive today, and this dissertation is an attempt to consider the data from Assamese, Bangla and Gujarati in that context. Sections 1.9 and 1.10 discuss backward control and partial control which are relevant to the data to be considered in Chapter 2. Finally, Section 1.11 mentions the methodology and sources of the data.

1.1 Aim of the Study

The study aims to investigate the syntactic variation in control phenomena in three Indo-Aryan languages: Assamese, Bangla, and Gujarati. In providing an analysis for the observed variation pattern, the study hopes to contribute to the debate within the Minimalist framework about whether or not control configurations arise due to movement. (Chomsky and Lasnik 1993; Hornstein 1999, 2003; Landau 1999, 2000, 2004) The particular phenomena under study are: control shift under causativisation, control into gerunds, partial control, and backward control. Data from the three languages shows a clear pattern of behaviour as

regards these phenomena and the present study proposes that the Movement Theory of Control (MTC) provides an explanation.

1.2 Justification for the Study

While control theory has been a major area of research in generative syntax, there has been little discussion in the literature of control phenomena in Indo-Aryan languages. Bhattacharya and Sharma (2005) is an early but experimental study showing the importance of case in processing of control structures in Assamese and Bangla. The study used a reading-time (RT) experiment to show that being verb-final languages, in Assamese and Bangla, the parser cannot rely on the matrix verb to determine the nature of the filler-gap dependency in control structures. Rather, the embedded verb along with case information is used by the parser to fill the gap. Interestingly, scrambling in these languages results in a reduction in RT. Haddad (2007, 2011) discussed control in Assamese, but the scope of the data was limited, and its empirical validity questioned in later work (Subbarao 2017). Nath (2013) briefly discusses control in Assamese in the broader framework of non-finite complementation, but of the phenomena under investigation in this study, only partial control is discussed in that work. Moreover, Pitteroff and Sheehan (2017) justifies the need for a re-examination of partial control. Subbarao et al (2013) discusses control data from Hindi-Urdu, but not from the languages under study here. Moreover, there has not been any comparative syntactic study of control phenomena in Indo-Aryan languages. Preliminary research shows a surprising pattern of syntactic variation in control phenomena across these three languages. In essence, Assamese patterns rather differently from Bangla and Gujarati, an interesting finding as it is contrary to both genetic and geographical proximity. The data is discussed in detail below.

1.3 Languages Under Study: Assamese, Bangla and Gujarati

Assamese, Bangla, and Gujarati are all Indo-European languages belonging to the Indo-Aryan subgroup. Assamese and Bangla are Eastern Indo-Aryan languages which developed from Magadhan Prakrit, whereas Gujarati is a Western Indo-Aryan language that developed from Sauraseni Prakrit. All three are recognised under Schedule VIII of the Indian Constitution.

Assamese is spoken mainly in the North-East Indian state of Assam, and as a secondary language in some parts of Nagaland and Arunachal Pradesh. It has 14.8 million speakers according to the 2011 census of the Government of India.

Bangla, also known as Bengali, is spoken primarily in the Eastern state of West Bengal in India as well as in Bangladesh and the North-East Indian state of Tripura. In addition, it is also spoken in Assam (Barak Valley), Andaman and Nicobar Islands, and Jharkhand, and by a smaller number of people in several other states. Bangla is subject to a large amount of regional variation, and the line between dialect and language can become blurred in the case of some of the varieties. According the 2011 census, there are 228 million native speakers of Bangla.

Gujarati is spoken in the Western state of Gujarat and the Union Territories of Daman and Diu, and Dadra and Nagar Haveli. It is also spoken by a large number of migrants in many other Indian states, especially neighbouring Maharashtra and Rajasthan. It has 56 million native speakers according the 2011 census.

1.4 Control in Generative Grammar: An Overview

Control is the name given to the phenomenon wherein two predicates share a thematic argument, such as in the sentence, *Shyam tried to leave*. The Noun Phrase (henceforth NP) *Shyam* is the shared argument of the predicates *try* and *leave*; more specifically, the agent of *try* and *leave*.

In Government and Binding Theory (GB), a separate module of the language system is responsible for control, namely the Control Module. It was posited that there is a phonologically null element PRO, which occupies the subject position of the embedded clause, and is controlled by a c-commanding antecedent in the main clause. The explicit argument is called the controller and the phonologically null one (here, PRO) the controllee. The controller could be the subject (subject control) or the object (object control) of the matrix clause. There is also the case of PRO occurring without an explicit antecedent in the sentence (arbitrary control).

- | | |
|---|---------------------|
| 1. John ₁ tried [PRO ₁ to leave] | (Subject Control) |
| 2. John ₁ persuaded Bill ₂ [PRO _{2/*1} to leave] | (Object Control) |
| 3. [PRO _{arb} to err] is human | (Arbitrary Control) |

PRO is to be differentiated from *pro*, a null-subject pronominal, which many languages allow for in matrix clauses, for example, in Romance, Indo-Aryan, Mandarin.

It was observed that:

- (i) PRO cannot occur in a non-subject position.
- (ii) PRO cannot occur in finite clauses.
- (iii) PRO must be co-indexed with closest c-commanding DP and inherits its features.

The third point above can be seen in example (4).

4. *John₁ asked Mary₂ [PRO_{*1/2} to shave himself_{1/*2}]

A famous exception in this regard is *promise*-type verbs. According to Larson (1991), *promise* differs from object control verb as its underlying structure is that of a double object verb.

5. John₁ promised Mary₂ [PRO_{1/*2} to shave himself_{1/*2}]

The generalisation is that PRO can only occur in non-case-marked positions. Also, no overt DP can occur in such a position (case filter) so PRO necessarily occurs in the subject position of non-finite clauses. This led to the PRO Theorem in GB, and a specific module for interpretation, the Control Module.

Although not obvious from English data, control can also be backward as opposed to forward control outlined above. Backward control arises when the matrix subject is silent and the embedded subject is explicit. This has been reported cross-linguistically (Fukuda 2008; Subbarao 2017; Pollinsky and Potsdam 2002a,b, Monahan 2003, etc.). Some examples of backward control are given below. (6) is an example of backward subject control in Tsez from Pollinsky and Potsdam (2002). (7) is an example of backward object control in Korean from Monahan (2003).

6. PRO₁ [kid-bā₁ ziya b-išr-a] y-oq-si
 girl.II-ERG cow.III.ABS III-feed-INF II-begin-PST.EVID

‘The girl began to feed the cow.’

7. Chelswu-nun PRO_i [Yenghi-ka_i kakey-ey ka-tolok] seltukha-ess-ta
 Chelswu-TOP Yenghi-NOM store-LOC go-COMP persuade.PST.DECL
 ‘Chelswu persuaded Yenghi to go to the store’

It is moreover important to distinguish between Obligatory Control (OC) and Non-Obligatory Control (NOC). OC is the familiar type shown in (8), and NOC is a more long-distance relation between the antecedent and PRO as in (9) (from Boeckx et al (2010)). Hornstein (1999) formulated a series of differences between the two types of control. In NOC, the PRO may or may not have an antecedent, and further the antecedent need not be local or c-commanding. An arbitrary reading is also permitted for PRO. In OC, there must be a local c-commanding antecedent. For example, in (9), even if the closest NP (*Mary*) were masculine (say, *Bill*), PRO could still take either of *John* or *Bill* as an antecedent, which would not be possible with OC.

8. John₁ expects PRO₁ to win.
 9. John₁ thinks that Mary said that PRO₁ shaving himself is vital.

In Minimalism, the Control Module was sought to be eliminated as the trend of the framework was towards minimising the language-specific apparatus or FL (Chomsky 1995), thus making such separate modules of the grammar undesirable as explanatory tools. Two major approaches to control theory have been made within the minimalist tradition. One is the —traditional PRO theory, but now subsumed within more general grammatical principles. Various specific implementations differ as to the details such as whether PRO is case-marked (Sigurdson 1991, Subbarao et al 2007).

The other, more radical approach is that of Hornstein's (1999) (and others following this work) Movement Theory of Control or MTC. Such an approach does away with PRO entirely. Instead, the proposal is that the argument positions (controller and controllee) are linked through A-movement, with one of the copies being deleted at PF. Such an account has advantages in that it does away with the stipulative PRO, as well as unifying the explanations for forward and backward control (differ in terms of which copy is deleted). However, there have been strong arguments both against the MTC, and for the validity of PRO (Landau 2013).

1.5 Equi-NP Deletion

One of the first attempts to explain control was the *Identity Erasure Transformation* proposed by Rosenbaum (1967, 1970), later renamed *Equi-NP Deletion*. Rosenbaum was working within the framework of Transformational Generative Grammar, wherein meaning was related to Deep Structure (DS) and various transformations were applied to derive the surface order of sentences, i.e. the Surface Structure (SS). The basic idea of *Equi-NP Deletion* was that a control sentence like (10a) is derived from the basic DS (10b) by deleting the extra elements, namely the complementizer *for* and the repeated NP. The motivation is easy to see: (10a) essentially means (10b).

10. a. Amit hoped to win the prize.

b. Amit hoped for Amit to win the prize.

The theory at the time emphasised linear structure rather than hierarchical structure and Rosenbaum (1970)'s formulation of the rule refers to linear ordering:

11. W	NP	X	{for, POSS}	(NP)	Y	(NP)	Z	
1	2	3	4	5	6	7	8	$\Rightarrow$
1	2	3	$\emptyset$	$\emptyset$	6	7	8	

(i) 5 is erased by 2 (under identity)

(ii) where a constituent A is erased by a constituent B, e.g., $A \Rightarrow \emptyset$, in case A and B meet the conditions imposed by the Principle of Minimal Distance (PMD).

This deletion rule applies only to identical and coreferential NPs. There is also a locality factor, given by the PMD, which was later reformulated in terms of minimal c-command. I shall not go into the exact details of Rosenbaum's theory.

The main advantages of such a theory are that it does not propose a separate entity such as PRO, instead it used already available technology (deletion) to explain the control phenomena. Moreover, such an approach could easily be extended to account for backward control, by deletion of the higher NP instead of the lower NP (Counter Equi, Kuroda 1978).

However, this approach fails to account for the diversity of cross-linguistic control phenomena. Firstly, the kind of *for*-complementiser plus non-finite complement sentence structure used is not widely attested cross-linguistically. Suppose the rule is more loosely defined as a copy-deletion rule. There are still two major problems with the theory. One is the now famous exception to locality of *promise*-type control structures (Larson 1991; also noted by Rosenbaum himself):

12. I₁ promised Akash₂ [PRO₁ to read the article]

Here, the subject of the non-finite *read* seems to be *I* rather than the closer *Akash*, as contrasted with the situation in (11), which is object control.

13. I₁ persuaded Akash₂ [PRO₂ to read the article]

The second problem with the theory arises due to “deletion of an identical lexical NP”, and is of a semantic nature. This was discussed in McCawley (1988). When the NP contains a quantifier, such as *every*, then (14a) and (14b) should have the same meaning. However, this is clearly not the case.

14. a. Every student expected PRO to top the exam.

b. Every student expected every student to top the exam.

c. Every student expected himself to top the exam.

In fact, (14b) seems like an absurd and self-contradictory proposition, assuming only one student can top the exam. The paraphrase of (14a) is more like (14c). This kind of problem could not be explained by a Deletion rule as used in Equi-NP Deletion.

Other critiques of Rosenbaum’s theory were provided by Postal (1970), Clements (1975), Fodor (1975), and Brame (1976). These addressed problems such as free control, split control, reasons for non-coreferential subjects not being allowed in control structures, and various semantic issues that arise from deletion of a lexical NP. Some suggestions were to use a null element called *Doom* (Postal 1970), or to delete a bound variable rather than a lexical NP (Morgan 1970), or an underlying reflexive (Fodor 1975).

The problems that arose in response to Equi-NP Deletion led many linguists to question whether non-finite complements are clausal at all. In the 1970s and 1980s, the idea that control complements are bare VPs gained support (Thomason 1974, Brame 1976, Bresnan 1978, Bach 1979, Chierchia 1984, etc.)

1.6 Control in Government and Binding Theory

Within the Government and Binding framework (henceforth GB), the idea of the null element PRO was put forward. In GB, the controllee is a base-generated NP containing no lexical material, i.e. PRO. The possibility for this kind of formative is available within GB as there are separate phrase structure and lexical insertion rules. So, PRO, a null NP, is generated by Phrase Structure (PS) rules but is not subjected to lexical insertion.

Interestingly, the requirement that PRO have an antecedent falls out naturally from the principle of full interpretation which does not tolerate structures which lack “content”. This can be provided either by lexical insertion or linking with an antecedent, binding, agreement, etc. Note Chomsky’s (1980) statement in this connection: “If Coindex does not apply and the embedded clause contains PRO, then we end up with a ‘free variable’ in LF; an improper representation, not a sentence but an open sentence.”

On the other hand, if PRO is considered to be a lexical element, it is hard to explain why it is always phonetically null and must have a grammatical antecedent; moreover, not just any co-referring NP will do, there are the additional requirements of c-command and minimality. Stating such structure-dependent properties as idiosyncratic properties of a particular lexical item goes against the modular approach to grammar and has the drawback of reduced explanatory adequacy. Thus, there is considerable advantage to the idea of PRO as non-lexical, as also argued by semanticists such as Postal (1970).

In terms of its nature, Chomsky (1977) compares PRO to standard NP-traces of A-movement, stating that the only differences are in how they enter the derivation and the way in which the index is assigned: “We may take PRO to be just a base-generated $t(x)$, x a variable; i.e. as a

base generated NP_x, an NP without an index” (Chomsky 1977: 82). PRO is inserted at D-structure, but is coindexed only later in the derivation. NP-traces receive their index as part of the movement operation in which they are created. Thus, Chomsky (1977: 82) considers trace and PRO to be the same element: “they differ only in the way the index is assigned — as a residue of a movement rule in one case, and by a rule of control in the other.” Thus, after the indexes are assigned, PRO and NP-traces are practically indistinguishable. Advocates of movement approaches to control use this resemblance as a point in favour of their arguments.

Within GB, the distribution of PRO is also given an explanation arising from independent grammatical principles rather than being stipulated. The explanation, called the PRO theorem, derives from binding theory as follows (Chomsky 1981). PRO is considered to be a pronominal anaphor, thus being subject to both Principles A and B of Binding Theory. Principle A states that an anaphor must be bound in its binding domain. Principle B states that a pronominal must be free in its binding domain. These are contradictory and incompatible with one another if an entity must be subject to both. The only way to simultaneously satisfy both is to not meet the necessary condition; i.e. if there is no binding domain. So PRO cannot have a binding domain. This can be achieved if PRO is ungoverned. Non-finite Infl is not a governor, so it follows that the only possible position for PRO in the sentence is in the subject position of non-finite clauses.

Another property of PRO, its being phonetically null, derives naturally from Case Theory. The Case Filter requires that all NPs with phonetic content must be assigned a Case. However, Case is assigned under government, and since PRO only occurs in ungoverned positions, it cannot be assigned Case. Thus, it must be phonetically null, or it would violate the Case Filter.

Taking PRO to be a non-lexical element also solves the problem raised by quantificational elements in the earlier theory, as PRO is interpreted as a bound variable in the sentence (15).

15. Everyone wants [PRO to win]

Thus it seems that the GB approach to control has numerous advantages over the earlier approaches. Moreover, the distribution, the phonetic nullness, and requirement of an antecedent, all fall out naturally from independent grammatical principles. However, this approach required the addition of a new module, the Control Module, to the grammar in order to explain the specific interpretation of PRO in a given structural configuration. Within this module, two types of control are allowed: Obligatory Control (OC) and Non Obligatory Control (NOC) as mentioned earlier.

In the earlier theory, these were termed Equi NP Deletion (END) and Super Equi NP Deletion (SEND) respectively. In OC, the controller is specified as an argument of the embedding control predicate. In NOC, there is a non-local relation. Moreover in the case of OC, PRO resembles an anaphor, and in NOC, PRO resembles a pronominal in its distribution, as shown in the examples below.

16. John₁ expects PRO₁ to win. (OC)

17. John₁ expects himself₁ to win.

18. John₁ thinks that Bill₂ said that PRO_{1/2} shaving himself is vital. (NOC)

19. John₁ thinks that Bill₂ said that him_{1/2} shaving himself is vital.

This is in fact the basis of one of the criticisms of the PRO theorem. PRO is assumed to be a pronominal anaphor but it resembles either one or the other depending on the type of control (OC or NOC). It never simultaneously behaves as both. Instead, “it is tacitly assumed that the

control module somehow obliterates the pronominal specification of PRO in OC constructions, and, conversely, its anaphoric specification in NOC constructions” (Boeckx et al 2010).

In fact, on closer inspection, the distribution of PRO as accounted for by the PRO theorem also seems to be less convincing. The explanation hinges on the fact that for PRO to lack a binding domain it must be ungoverned. But there are other ways for PRO to lack a binding domain, for example, if there is no accessible subject. Consider the definition of binding domain from Chomsky (1981) in this connection:

“ α is a binding domain for β iff α is the minimal NP or S containing β , in which β is governed and α has a subject accessible to β .”

Thus, there are other ways in which PRO could lack a binding domain, and so the PRO theorem no longer works so well in predicting the distribution of PRO.

Cross-linguistic evidence further undermines one of the key assumptions of the PRO theorem: finite Infl is a governor but non-finite Infl is not. Languages like Brazilian Portuguese have agreeing infinitives and allow obligatory control into finite indicative clauses (Ferreira 2004, 2009; Rodrigues 2002, 2004). In order to include such cases, finite Infl must be considered an optional governor. How this would be implemented is unclear. As government is a structural relation, it cannot be listed as a lexical property. Additionally, if a finite Infl can govern its Spec, then a non-finite Infl should be able to do so too as there is no structural difference in the configurational relation, both are Spec-Head relations.

Even the seemingly desirable outcome that PRO lacks case causes problems. Chomsky (1981) states the requirement that an A-chain must be headed by a case-marked position unless it is headed by PRO. Aoun’s (1979) visibility condition requires that θ -roles be

associated with case in order to be visible at LF. PRO is associated with θ -positions so it should also be subject to such a requirement. The last part of Chomsky's statement seems like a stipulation. Note that A-chains headed by phonetically null pro are not exempt from the case requirement, so phonetic nullness is not a decisive factor.

Architecturally, the addition of the construction-specific control module goes against the goals of the Principles and Parameters approach of deducing properties from the interaction of more basic features.

1.7 Siggurdson's (1991) Case-Marked PRO

Siggurdson (1991) argues with evidence from Icelandic that PRO is case-marked. He dissociates case-marking from 'proper government'. He argues that PRO is governed by virtue of the non- finite verb moving up to Infl in Icelandic, but that Infl [-Agr] is not a 'proper governor' unlike Infl [+Agr] and so the Spec position of the former cannot be lexicalised, despite being case-marked. This paper has the novel suggestion that PRO is case-marked. The data from Icelandic is reliant on features not present in other related European languages and is thus hard to generalise. Moreover, it relied strongly on the concept of government, which has fallen out of favour in the theory since.

1.8 Control in Minimalism

1.8.1 Null Case

There have been many different approaches to control proposed within the framework of minimalism. Chomsky and Lasnik (1993) was one of the first, which invoked the concept of *null case* to account for the distribution of PRO. In this approach, the pronominal-anaphoric nature of PRO which sparked debate was abandoned. On the basis of the following type of contrast (data taken from Boeckx et al 2010), it was proposed that as the contrast parallels a similar contrast found in ECM constructions (21), the key is that movement cannot take place from a case-marked position to another case-marked position, and the subject position of non-finite clauses is indeed a case-marking position.

20. (a) John_i hoped [PRO_i to be elected t_i]

(b) *John_i hoped [PRO_i to appear to t_i [that Bill was innocent]]

21. (a) We expected [John_i to be hired t_i]

(b) *We never expected [John_i to appear to t_i [that the job was easy]]

So, unlike in GB, A-chains headed by PRO are not exceptional in terms of case licensing. PRO is licensed by a new kind of case, called null case, which is checked by some non-finite Infl heads. Thus, movement in 20(a) is allowed as PRO moves from a caseless to a case-checking position, but not in 20(b) where the movement would be from a case position to another case position. This by extension explains why PRO does not appear in the subject position of finite clauses and object position of transitive verbs, as these are not positions which check null case (since they are case-marked positions), which in turn licenses PRO.

The obvious problem that arises is that such an approach cannot distinguish between control on the one hand and ECM and raising structures on the other, in a principled manner, as both

contain non-finite Infl, but only in control constructions does it license null case. Martin (1996, 2001) attempted to give a systematic explanation for this distinction, using Stowell's (1982) idea that control infinitives are tensed whereas ECM and raising infinitives are tenseless. Martin proposed that only tensed infinitives can check case, making null case similar to nominative.

However, Wurmbrand (2005) showed that Stowell's distinction fails to hold up on careful examination of the data. Moreover, PRO may occur in gerunds, and these are generally considered tenseless. (Stowell 1982; Pires 2001, 2006)

22. John_i loves [PRO_i dancing]

If null case is decoupled from tense, it seems little more than a stipulative tool used to account for the distribution of PRO, and lacks explanatory adequacy. On the other hand, as PRO is no longer considered to be a pronominal anaphor, the problems raised by such an assumption are alleviated. PRO can be thought of as ambiguous, exhibiting either a reflexive character (as in OC constructions) or a pronominal character (NOC) with the requirement of an antecedent following from whichever character it takes in a given construction. It is not clear how the grammar decides which predicates show OC and which show NOC in this version of Control.

1.8.2 Control through ATTRACT

Manzini and Roussou (2000) proposed a rather different minimalist account of control and A-movement. Their proposal was that DPs merge directly in their surface positions, dispensing with A-movement altogether. From their surface positions, DPs ATTRACT predicates, and θ -theory is carried out between predicates and DPs in their surface positions via this

mechanism. In this system, control is treated as the special case where one DP ATTRACTS more than one predicate. Arbitrary control is treated as ATTRACT of a predicate by an operator in C. Minimality is enforced by a proposed ‘Scopal MLC’ and the Last Resort criterion of Chomsky (1995), as well as Kayne’s (1984) Connectedness.

The advantage of this model is that it can easily account for both forward and backward control, and avoids many problems faced by Chomsky’s (1995) approach to A-movement and control, as control is just a special case of a more general θ -linking operation between DPs and predicates, and A-movement is done away with. The obvious disadvantage is that the model relied on the notion of ATTRACT, which has since lost currency.

1.8.3 Control through Agree

Landau (1999, 2000, 2004) proposed a theory of control based on Agree. In this model, PRO gets case just like regular DPs. The determination of where PRO can or cannot occur is decided by the interaction of tense and agreement features in its local environment. Interpretation of PRO is carried out by Chomskyan Agree (Chomsky 2000):

“Matching is a relation that holds of a probe P and a goal G. Not every matching pair induces Agree. To do so, G must at least be in the *domain* D(P) of P and satisfy locality conditions. The erasure of uninterpretable features of the probe P and goal G is the operation called Agree.”

The main proposal regarding distribution of PRO, based on empirical data from multiple languages, is that if the T head has [+T, +Agr], then there cannot be control. On the other hand, if any one of these features is specified as negative, there will necessarily be obligatory control. So control is the elsewhere condition. This predicts that finite indicative clauses

cannot display OC. However, data from Brazilian Portuguese negates this (Ferreira 2004, 2009; Rodrigues 2002, 2004).

In order to explain the controller-controllee relation, Landau proposes that DPs be specified for a feature [R] which dictates whether or not they can have an independent reference of their own. Thus, lexical DPs and *pro* are [+R] and *PRO* is [-R]. This latter specification makes *PRO* a goal for Agree. Landau (2004: 843): “this feature acts as an instruction to coindex the κ -features of *PRO* with that of an antecedent; Agree is a way of achieving that.” The exact details of how this is done are complex, with mediating involvement of T and C heads, which are also assigned an [R] feature through an R-Assignment Rule.

Landau’s feature-driven system allows him to chalk out a typology of control phenomena in different languages, and account for a large amount of empirical data. On the other hand, in addition to the problems with Brazilian Portuguese data noted above, Landau himself admits that his use of the feature [R] is an “honest stipulation”. Thus, the model lacks explanatory adequacy as it merely describes the distribution without explaining why it is so through independent principles.

1.8.4 Control as Movement or the Movement Theory of Control (MTC)

In the Minimalist Program (Chomsky 1995), Chomsky argues for the abandonment of D-structure. With this came the possibility of dispensing with the necessity to have a unique NP being associated with each and every θ -role, with θ roles perhaps being feature-like. Based on the surface similarity of raising and control sentences like (23a,b) (Hornstein 1999), advocates of the Movement Theory of Control (or MTC) argue that the null hypothesis should be that they are both derived by a similar A-movement, with the difference being that

in control sentences, the moved NP gets associated with a θ -role of the matrix predicate after movement. In MP, NPs get assigned a θ -role at Merge, and movement to another θ -position is banned. Hornstein (1999) argues that this is a vestige of D-structure, as the idea that θ -roles must be assigned before movement and the same NP cannot receive another θ -role is a remnant of the fact that θ -role assignment takes place in D-structure and movement subsequently creates S-structure.

23. (a) John seemed to win.

(b) John expects to win.

Thus, the need for PRO is dispensed with as the same NP can be assigned a θ -role twice, and controlled PRO is nothing but a trace of A-movement. Properties such as its phonetic nullness, its requirement for a local c-commanding antecedent follow naturally as these are also valid of traces of A-movement. According to Chomsky's (2001) activation condition, only elements which have not checked/valued their case feature are active for A-movement. Thus it follows that traces always occur in caseless positions, just like PRO. So controllees never occur in case positions (but see Sigurdson 1991). The GB stance that A-chains headed by PRO are exempt from the requirement of being headed by a case-marked position is also gone, as these A-chains are now just like other A-chains.

In non-movement minimalist accounts of control, PRO is treated as a lexical formative; but it is a very strange lexical item as it is phonetically null and its only semantic features is that it is a variable which is to receive its reference from an antecedent. Its properties, including its phonetic nullness, must be stipulated as lexical properties of this lexical item PRO. The MTC has the advantage that it dispenses with the need for such a stipulated lexical item, and the

properties and distribution follow naturally from its nature as a trace of A-movement which arises during the computation.

Adopting the copy theory of movement (Nunes 1995), PRO reduces to a lower copy being deleted at PF. This leaves open the possibility of the higher copy being deleted instead, which would result in backward control. Thus the MTC has empirical advantages such as being equipped to explain backward and copy control (both copies spelled out under certain circumstances) as well as finite control in Brazilian Portuguese, among other phenomena, while also simplifying the architecture.

1.9 Backward Control

Backward control is when the matrix and embedded clauses share a subject, but the lower one is overt; that is, the order of controller and controllee is reversed. Subbarao (2017) presents extensive data from Telugu and carries out a number of tests to show that the overt subject is indeed in the embedded clause. Polinsky and Potsdam (2002a) discuss backward control in Tsez, a Nakh-Daghestanian language spoken in the Caucasus. They suggest an analysis based on the MTC, with backward control arising when movement of the controller to the matrix clause is covert, and the verb has a [+D] feature to satisfy EPP (which explains the restricted nature of the phenomenon in Tsez). Backward control has also been attested in Japanese (Kuroda 1965, 1978; Fujii 2004, 2006), Malagasy (Polinsky and Potsdam 2002b; Potsdam 2006), Jacaltec (Mayan) (Craig 1974, 1977), Brazilian Portuguese (Farrell 1995), among other languages. Monahan (2003) discusses backward object control in Korean. So backward control is a phenomenon seen across language families and further study of the world's languages might reveal it is not as rare as one may think.

While backward control is easily accommodated in the MTC and indeed is a natural possibility within the theory, non-movement approaches to control have difficulty explaining it.

1.10 Partial Control

Partial control (PC) is a form of obligatory control where the controllee is a superset of the controller. For example, the controller might be singular but the controllee plural (13; from Pitteroff and Sheehan 2017).

24. John₁ wants [PRO₁₊ to meet at 9am (*without him₁)]

Landau (1999, 2000, 2004) claims that PC is dependent on the type of the matrix predicate with PC predicates being desideratives, factives, interrogatives and epistemics. Partial control is an important part of Landau's Agree-based theory of control.

Pitteroff and Sheehan (2017) discuss partial control in French, German and English. They argue for distinguishing two types of partial control: fake partial control and true partial control. In fake partial control, the embedded predicate has a comitative alternate form (25), and thus the argument goes that the embedded subject is not in fact plural but rather that there is a covert comitative. True partial control is possible with any kind of predicate. They conclude that French has only fake PC but German and English have both true and fake PC.

25. Marie₁ voulait [PRO₁ se réunir *pro_{comitative}* dans la cuisine]

Marie wanted se=meet in the kitchen

'Marie wanted to meet in the kitchen'

1.11 Methodology

The current study is based on acceptability judgements from two native speakers of each of the languages (excluding the author). The data was collected from speakers from the following regions: Duliajan (Assamese), Kolkata (Bangla), and Ahmedabad (Gujarati).

Chapter 2: Control Phenomena in Assamese, Bangla and Gujarati

Chapter 1 introduced the typology of control phenomenon in syntax and considered important theoretical landmarks in the study of the phenomenon. However, a true understanding of the phenomenon would require illustrating the working of the operation of control in some languages; also, since a mere illustration of control in some select languages will not necessarily help us to critically examine the data with a theoretical lens, Chapter 3 lays out a brief analysis of the phenomenon as operating in some select languages of the region. However, in order for an analysis to take shape, it is essential to first observe how the various types of control work in these languages. This chapter presents relevant data for discussing certain control phenomena in Assamese, Bangla and Gujarati. Section 2.1 briefly outlines subject and object control configurations in each of the languages. Section 2.2 is about control shift with causativisation. Section 2.3 is about control into gerunds. Section 2.4 presents data demonstrating the absence of partial control. Section 2.5 discusses the possibility of backward control in these languages. Section 2.6 contains a summary of the data in tabular form.

As pointed out in Chapter 1, the choice of languages to test the proposed analysis is interesting for various reasons. Although all the three languages are Indo-Aryan (IA) languages, Gujarati is the western branch of IA languages, having originated from northern-western variety of middle Indic, namely, the Sauraseni Prakrit variety. On the other hand, Assamese and Bangla both belong to the eastern or the Magadhan branch of middle IA. However, historically, it has been found that languages belonging to both the eastern and western branch constitute the so-called “outer ring”, and show certain similarities which are

absent from the later, inner IA languages. Interestingly, beside the various similarities among the eastern IA languages, we also find various points of dissimilarity among them; the study of control presented in the present dissertation is a contribution towards this axis of comparison as well.

2.1 Subject and Object Control

2.1.1 Assamese

Some examples of subject control in Assamese are as follows. The case marking on the subject is from the matrix verb, and is independent of the embedded verb as seen in (2-3) below. In both (1) and (2) the subject gets ergative marking, but the embedded verb in (2) does not assign ergative as seen in (3).

1. Pranab-e₁ [PRO₁ axomiya ko-bo] na-dʒan-e
 Pranab-ERG Assamese speak-INF NEG-know-3
 ‘Pranab does not know how to speak Assamese’

2. Saurabh-e₁ OkOI [PRO₁ xu-bo] dʒan-e
 Saurabh-ERG only sleep-INF know-3
 lit. ‘Saurabh only knows how to sleep’ impl. ‘Saurabh sleeps a lot/is lazy’

3. Saurabh xu-l-e
 Saurabh sleep-PST-3
 ‘Saurabh slept/fell asleep’

4. mOi₁ [PRO₁ piano bOdʒa-bo-le] xik-im
 I piano play-INF-DAT learn-1.FUT
 ‘I will learn to play the piano’

The embedded verb is in the infinitive form and does not carry any agreement markers. Person agreement is seen between the subject and the matrix verb, and the subject takes ergative case depending on the matrix verb. There can sometimes be a meaning shift in control situation as the verb *bisOra* with an NP object (5) means ‘to look for/to search for’ but in control sentences (6-7) it means ‘to want’.

5. raj-e prOthOm-Ote kitap-khOn bisar-il-e
 Raj-ERG first-LOC book-CL search-PST-3
 ‘First of all, Raj looked for the book’

6. xoru lOra-tu-e₁ [PRO₁ gaan ga-bo-le] bisar-i-s-il-e
 small boy-CL-ERG song sing-INF-DAT want-CNP-AUX-PST-3
 ‘The little boy wanted to sing’

7. dʒunak-e₁ [PRO₁ dʒa-bo-le] bisOra nai
 Junak-ERG go-INF-DAT want.PPL NEG.AUX
 ‘Junak doesn’t want to go’

Subject control is also observed when the matrix predicate is a complex predicate, as seen in the following examples, where the complex predicates are italicised.

8. mOi₁ aji [PRO₁ kOm bhat kha-bo-le] *sesta kor-il-u*
 I today less rice eat-INF-DAT try do-PST-1
 ‘Today, I tried to eat less’

9. Lizam-e₁ [PRO₁ dʒoldi xu-bo-le] *sesta kor-i-s-e*
 Lizam-ERG early sleep-INF-DAT try do-CNP-AUX-3
 ‘Lizam is trying to sleep early’

10. ta-r₁ [PRO₁ momo kha-bo-le] *mOn go-i-s-e*
 he.GEN momo eat-INF-DAT heart go-CNP-AUX-3
 ‘~He feels like eating momos’

11. tai-r₁ [PRO₁ dOrOb kha-bo-le] *ketia-u mOn-Ot nO-pOr-e*
 she-GEN medicine eat-INF-DAT never mind-LOC NEG-fall-3
 ‘She never remembers to take her medicines’

The following examples are of object control, with simple and complex predicates.

12. mohan-e₁ ordʒun-Ok₂ [PRO_{*1/2} bhal-ke porh-ibo-le] *kO-l-e*
 Mohan-ERG Arjun-ACC good-ADV study-INF-DAT tell-PST-3
 ‘Mohan told/asked Arjun to study well’

13. moi₁ ram-Ok₂ [PRO*_{1/2} dilli-le dʒa-bo-le] manti kOr-a-l-u
 I Ram-ACC Delhi-DAT go-INF-DAT agree do-CAUS-PST-1
 ‘I persuaded Ram to go to Delhi’

In addition, object control is observed with certain causativised predicates, as seen below.

14. mOi₁ ta-k₂ [PRO*_{1/2} football khel-ibo-le] xik-a-l-u
 I he-ACC football play-INF-DAT learn-CAUS-PST-1
 ‘I taught him how to play football’

15. xi₁ mak-Ok₂ [PRO*_{1/2} TV sOl-a-bo-le] dekh-a-l-e
 he mother-ACC TV run-CAUS-INF-DAT see-CAUS-PST-3
 ‘He showed his mother how to put on the TV’

Further, while such object control is observed only with certain causatives, a wide class of causatives seem to be able to object-control into an adjunct.¹

16. moi₁ ta-k₂ [PRO*_{1/2} xust^hO hO-bo-le-ke] mas khua-l-u
 I he-ACC healthy become-INF-DAT-ADV fish eat-CAUS-PST-1
 ‘I fed him fish in order to make him healthy’

1 The -ke suffix in Assamese has a number of functions, but it is most often used as an adverbial marker. More generally, it occurs on purpose and manner adjuncts.

17. mak-e₁ tai-k₂ [PRO_{*1/2} exam-Ot pass hO-bo-le-ke] OnkO
 mother-ERG she-ACC exam-LOC pass be-INF-DAT-ADV sums
 kOr-a-le
 do-CAUS-PST-3

‘Her mother made her practice sums in order (for her) to pass the exam’

2.1.2 Bangla

Bangla behaves rather similarly to Assamese, the main difference being the absence of ergative case, as well as in the causativised structures. As in Assamese, the embedded verb is in the infinitive form, and agreement is between the subject and the matrix verb. The following are some examples of subject control in Bangla.

18. ami₁ [PRO₁ guitar badʒa-te] Sikh-ch-i
 I guitar play-INF learn-AUX-1

‘I am learning to play the guitar’

19. sunil₁ [PRO₁ mobail cala-te] dʒan-e na
 Sunil mobile run-INF know-3 NEG

‘Sunil doesn’t know how to use a mobile (phone)’

Bangla also shows object control similar to Assamese, both in causativised predicates and otherwise.

20. robi₁ ta-r₁ bondhu-ke₂ [PRO_{*1/2} taRataRi aS-te] bol-l-o
 Robi he-GEN friend-ACC quickly come-INF tell-PST-3
 ‘Robi asked his friend to come quickly’

21. bacca-Ta₁ dadu-ke₂ [PRO_{*1/2} TV cala-te] Sekh-a-l-o
 child-CL grandfather-ACC TV run-INF learn-CAUS-PST-3
 ‘The child taught his grandfather how to put the TV on’

2.1.3 Gujarati

In contrast to Assamese and Bangla, in which the canonical control configurations have the embedded verb in the infinitive form, Gujarati surprisingly shows control only into gerunds. Control into gerunds will be discussed in detail in Section 2.3. Some examples of subject control in Gujarati are as follows. There is grammatical gender in Gujarati, and the gerund form of the verb is in the genitive case, and agrees with the following nominal element in the sentence, if present. If there is no nominal to agree with, default neuter agreement is seen.

22. mə-ne₁ [PRO₁ dʒə-wa-n-i] aSa chε
 I-DAT go-GER-GEN-f hope(f)be.PRES
 ‘I hope to go’

23. ε-ŋε₁ [PRO₁ ũŋgh-wa-n-i] koʃiʃ kər-y-i
 he-ERG sleep-GER-f try(f) do-PERF-f
 ‘He tried to sleep’

Object control in Gujarati follows a similar pattern, as shown in the following example.

24. mē ₁	ε-ne ₂	[PRO _{*1/2}	kam	kər-wa-n-u]	kə-y-u
I	he-DAT		work	do-GER-GEN-n	tell-PERF-n
‘I told him to work’					

Another configuration in which object control occurs is when the embedded clause occurs as an adjunct, with the use of the complementiser *maTe* ‘~for the purpose of’. This, however, is identical in meaning with the regular counterpart using the gerund. (25) and (26) have the same meaning.

25. mē ₁	ε-ne ₂	[PRO _{*1/2}	dʒə-wa	maTe]	kə-y-u
I.ERG	he-DAT		go-GER	for-purpose	tell-PERF-n
‘I told him to go’					

26. mē ₁	ε-ne ₂	[PRO _{*1/2}	dʒə-wa-n-u]	kə-y-u
I.ERG	he-DAT		go-GER-GEN-n	tell-PERF-n
‘I told him to go’				

2.2 Control Shift in Causatives

This section investigates the phenomenon of control shift in causatives in Assamese, Bangla and Gujarati. When the matrix predicate in a subject-control configuration is causativised, the result is an object-control configuration. This phenomenon is known as control shift. In the languages under study, causativisation occurs morphologically through the use of a causative

suffix to the root. In some cases, the resulting causative form may be suppletive (30). The three languages show similar patterns of control shift with causativisation, as shown below.

In Assamese, morphological causativisation of the matrix verb results in a shift from subject control to object control.

27. mOi₁ [PRO₁ football khel-ibo-le] xik-il-u
 I football play-INF-DATlearn-PST-1
 ‘I learnt how to play football’

28. mOi₁ tak₂ [PRO_{2/*1} football khel-ibo-le] xik-a-l-u
 I he.ACC football play-INF-DATlearn-CAUS-PST-1
 ‘I taught him how to play football’

This is especially productive with control into adjuncts:

29. moi₁ [PRO₁ xusthO hO-bo-le-ke] mas kha-l-u
 I healthy become-INF-DAT-ADV fish eat-PST-1
 ‘I ate fish in order to become healthy’

30. moi₁ tak₂ [PRO_{2/*1} xusthO hO-bo-le-ke] mas khua-l-u
 I he.ACC healthy become-INF-DAT-ADV fish eat.CAUS-PST-1
 ‘I fed him fish in order to make him healthy’

Bangla and Gujarati similarly show control shift with causativisation.

31. bacca-Ta₁ [PRO₁ TV cala-te] Sikh-l-o
child-CL TV run-INF learn-PST-3
'The child taught his grandfather how to put the TV on'
32. bacca-Ta₁ dadu-ke₂ [PRO_{2/*1} TV cala-te] Sekh-a-l-o
child-CL grandfather-ACC TV run-INF learn-CAUS-PST-3
'The child taught his grandfather how to put the TV on'
33. mē₁ [PRO₁ cricket rəm-wa-n-u] sikh-y-u
I.ERG cricket play-GER-GEN-n learn-PERF-n
'I learnt how to play cricket'
34. mē₁ ε-ne₂ [PRO_{2/*1} cricket rəm-wa-n-u] sikh-waD-y-u
I.ERG he-DAT cricket play-GER-GEN-n learn-CAUS-PERF-n
'I taught him how to play cricket'

Strikingly, however, while both subject and object control are possible with matrix complex predicates, their causativisation results in ungrammatical sentences rather than control shift in all the three languages.

35. mOi₁ [PRO₁ bhat kha-bo-le] sesta kOr-il-u
 I rice eat-INF-DAT try do-PST-1
 ‘I tried to eat rice’

36. *mOi₁ tak₂ [PRO₂ bhat kha-bo-le] sesta kOr-a-l-u
 I he.ACC rice eat-INF-DAT try do-CAUS-PST-1
 Intended: ‘I made him try to eat rice’

37. ami₁ [PRO₁ gan ga-wa-r] ceSTa kor-l-am
 I song sing-GER-GEN try do-PST-1
 ‘I tried to sing’

38. *ami₁ o-ke₂ [PRO₂ gan ga-wa-r] ceSTa kOr-a-l-am
 I he-DAT song sing-GER-GEN try do-CAUS-PST-1
 ‘I tried to make him sing’

39. ε-ne₁ [PRO₁ ũŋgh-wa-n-i] koʃiʃ kər-y-i
 he-ERG sleep-GER-GEN-f attempt.f do-PERF-f
 ‘He tried to sleep’

40. *mẽ₁ ε-ne₂ [PRO₂ ũŋgh-wa-n-i] koʃiʃ kər-a-y-i
 I.ERG he-DAT sleep-GER-GEN-f attempt.f do-CAUS-PERF-f
 Intended: ‘I made him try to sleep’

This is not a problem when the complex predicate has no uncausativised form. For example, the predicate in (41) is not derived from an uncausativised form such as (42), which is ungrammatical. In this case, incorporation happens *after* causativisation of the do-verb. In this case we can assume that the complex predicate is “born” as a causative for the purposes of syntax, and it is a case of a lexicalised causative that comes to syntax as a single V, unlike in the preceding examples where the incorporation and causativisation take place in syntax.

41. moi_1 ram-Ok_2 $[\text{PRO}_{2/*1}$ dilli-le $\text{ja-bo-le}]$ manti kOr-a-l-u
 I Ram-DOM Delhi-DAT go-INF-DAT agree do-CAUS-PST-1
 ‘I persuaded Ram to go to Delhi’

42. $*\text{moi}_1$ $[\text{PRO}_1$ dilli-le $\text{ja-bo-le}]$ manti kOr-il-u
 I Delhi-DAT go-INF-DAT agree do-PST-1
 ‘I agreed to go to Delhi’

In summary, Assamese, Bangla, and Gujarati all show control shift with causativisation of simple predicates. However, none of the languages allow this for complex predicates.

2.3 Control into Gerunds

Assamese control into gerunds is not in fact Obligatory Control, as the ‘controllee’ need not be co-referring, given the appropriate context.²

43. moi₁ ei-bar [PRO_{1/2} xOfOl hua-r] axa kor-i-s-u
 I this-time successful be.GER-GEN hope do-CNP-AUX-1
 ‘I hope to be successful this time’

44. ram-e₁ [PRO_{1/2} OnkO xik-a-r] kOtha bhab-i-s-e
 Ram-ERG maths learn-GER-GEN matter think-CNP-AUX-3
 ‘Ram is thinking of learning maths’

45. [PRO_{1/2} porisrOm kOr-a-r karone] xi₁ sakOri pa-l-e
 effort do-GER-GEN because of he job get-PST-3
 ‘He got the job as a result of his effort’

Indeed, all such constructions allow overt non-identical subjects in place of ‘PRO’.

46. moi₁ ei-bar [xi₂ xOfOl hua-tu] axa kor-i-s-u
 I this-time he successful be.GER-CL hope do-LP-AUX-1
 ‘I hope that he is successful this time’

² PRO in the following examples is simply used to show the position of the embedded subject and its coreference possibilities. In the subsequent analysis, it is shown that these elements are actually *pro* and not PRO.

47. Ram-e₁ [nij-Or sattrO-bur-Or₂ OnkO xik-a-r] kOtha
 Ram-ERG own-GEN student-PL-GEN maths learn-GER-GEN matter
 bhab-is-e
 think-AUX-3
 ‘Ram is thinking about his students learning maths’

48. [mOi₁ porisrOm kor-a-r karone] xi₂ sakOri pa-l-e
 I effort do-GER-GEN because of he job get-PST-3
 ‘He got the job as a result of my effort’

It appears that ‘control’ into gerunds in Assamese consists of a covert pronominal element, *pro_k*, rather than a co-indexed PRO. *pro* obtains its referent from the discourse context, and may or may not be co-indexed with the subject of the matrix clause depending on the context. Assamese being a null subject language, there is nothing extraordinary about this.

Bangla seems to differ substantially from Assamese as regards control into gerunds. The corresponding sentences in Assamese use the non-finite ending with dative case-marking - *(i)bo-le* instead of the gerund.

49. tumi₁ [PRO_{1/*2} ram-ke ciThi paTha-no-r] ceSTa kore-ch-il-e
 you Ram-DAT letter send-GER-GEN attempt do-AUX-PST-3
 ‘You had tried to send a letter to Ram’

50. masTarmOSai₁ ama-ke₂ [PRO_{2/*1/*3} utor da-wa-r] Sujog
 Master/teacher me-DAT answer give-GER-GEN chance
 di-l-en
 give-PST-3.HON
 ‘The teacher gave me a chance to answer’

In these sentences, the only interpretation is where the subject of the gerund is co-indexed with the subject (49) and the object (50) respectively. Moreover, no overt DP is allowed as the subject of the gerund. So it looks as if Bangla allows OC into gerunds, while Assamese does not.

Coming to Gujarati, the most common strategy in control constructions is to have the embedded verb in gerund form with a genitive ending which shows gender agreement with the following noun (51). In object control cases, a similar structure is possible (52). If there is no subsequent noun to agree with, default neuter agreement arises (53). Thus, setting aside the adjunct control seen earlier (25), complement control configurations in Gujarati always have the embedded predicate in gerund form.

51. ε-ŋe₁ [PRO₁ ũŋgh-wa-n-i] koʃiʃ kər-y-i
 he-ERG sleep-GER-GEN-f attempt.f do-PERF-f
 ‘He tried to sleep’

52. tẽ₁ ε-ne₂ [PRO_{2/*1} bhəŋ-wa-n-i] səlah ap-y-i
 you.ERG he-DAT study-GER-GEN-f advice.f give-PERF-f
 ‘You advised him to study’

53. mẽ₁ ε-ne₂ [PRO_{2/*1} kam kər-wa-n-u] kə-y-u
 I.ERG he-DAT work do-GER-GEN-n tell-PERF-n
 ‘I told him to do the work’

2.4 Partial Control

True partial control does not seem to be present in Assamese as there are no predicates that strictly require semantically plural subjects. However, certain verbs semantically require multiple parties to be involved. One such example is the predicate *kajia kOra* ‘to fight/argue’. This predicate normally takes one of the disputing parties as a syntactic argument and the other is expressed comitatively with a *lOgOt* ‘with’ adjunct, as seen in (54). However, one can also express the single argument as a plural and leave out the adjunct (55), naturally with a loss of specificity. Alternatively, the one argument can be expressed as a conjunct (56).

54. robin-e gita-r lOgOt kajia kOr-il-e
 Robin-ERG Gita-GEN with fight do-PST-3
 ‘Robin fought with Gita’

55. robin-het-e kajia kOr-il-e
 Robin-PL-ERG fight do-PST-3
 ‘The Robins (Robin and some associated person(s)) fought with each other’

56. robin aru gita-e kajia kOr-il-e
 Robin and Gita-ERG fight do-PST-3
 ‘Robin and Gita fought (with each other)’

When embedded under a control predicate with a singular antecedent (57-59), this might seem to be partial control of the type seen in English (60), where the controllee includes the controller plus at least one other entity. However, such cases fall under the criteria for ‘fake partial control’ as defined by Pitteroff and Sheehan (2017), where there is a covert comitative (with *pro_k*) and the PRO is semantically singular. (61) is an example from French from the aforementioned paper. Other similar predicates in Assamese, such as *lOg pua* (meet/happen to meet), *kOtha pOta* (speak to s.o.), all have an alternative comitative form.

57. robin-e [xodai kajia kOr-ibo] bisar-e
 Robin-ERG always fight do-INF want/look to-3
 ‘Robin always wants to fight/looks to pick a fight’

58. anand-e robin-Ok kajia kOr-ibo-le kO-l-e
 Anand-ERG Robin-ACC fight do-INF-DAT tell-PST-3
 ‘Anand told Robin to fight/pick a fight (with s.o., maybe even Anand)’

59. mOdahi-tu-e robin-Ok ghOr-Ot kajia kor-ibo-le xujug
 drunkard-CL-ERG Robin-ACC home-LOC fight do-INF-DAT chance
 di-l-e
 give-PST-3
 ‘The drunkard gave Robin a chance to pick a fight (with s.o.) at home’

60. John₁ wants [PRO₁₊ to meet at 5pm (*without him₁)]

61. Marie₁ voulait [PRO₁ se réunir *pro_{comitative}* dans la cuisine]
 Marie wanted se=meet in the kitchen
 ‘Marie wanted to meet in the kitchen’

Note that without the adjunct ‘at home’ in (59), there is a bias towards Robin picking a fight with the drunkard himself, probably because of real world knowledge. But adding an adjunct shows that this is not semantically required, so we can thus rule out a case of split control.

In all of the above examples, an overt comitative can be inserted into the embedded clause. So it seems Assamese has only fake PC, similar to French, unlike English and German. Moreover, Assamese, like Bangla and Gujarati, allows covert comitatives as part of the more general phenomenon of argument-dropping when the arguments are retrievable from context, even in simple sentences so the criticism that covert comitatives are a stipulation for theoretical convenience does not hold for the present case.

62. robin-e (karba-r lOgOt) kajia kor-il-e
 Robin-ERG (someone-GEN with fight do-PST-3
 ‘Robin fought (with someone)’

There is one exception however; the predicate *lOg kOra* ‘meet by arrangement’ does not have a comitative alternant. However, the second party can be expressed as a dative-marked object, and this object can be overtly present in ‘partial’ control constructions.

63. xi tai-k (orjun-Ok) lOg kor-ibo-le kO-l-e
 he she-DAT Arjun-DAT meet do-INF-DAT tell-PST-3
 ‘He told her to meet someone/(Arjun).

Thus, extension of the fake PC theory to allow covert dative-marked objects (*pro_k*) in addition to covert comitatives, unifies such cases under fake PC. Such covert dative-marked objects are allowed in Assamese in any case, as evidenced in discourse-dependent argument-dropping.

Bangla partial control exactly parallels Assamese, that is, it only shows up in verbs which show comitative alternation, so it is fake PC.

64. o tin-Te-r Somoy dEkha kor-te cay-e
 he 3-CL-GEN time meet do-INF want-3
 ‘He wants to meet at 3.’

Gujarati partial control is similar to Assamese and Bangla. There are the canonical cases of fake PC, verbs with comitative alternations.

- | | | | | |
|---|------------------------------|------------------------------|-----------------|----------------------------------|
| 65. ε - $\eta\epsilon$ | $m\grave{a}$ - ne (Ram-n-i | $sath\epsilon/jod\epsilon$) | $c\grave{a}rca$ | $k\grave{a}r$ - wa - n - u |
| he -ERG | I-DAT Ram-GEN-f | with | discussion | do-GER-GEN-n |
| $k\grave{a}$ - y - u | | | | |
| do-PERF-n | | | | |
| 'He ₁ told me to discuss with s.o. _{1/2} /(with Ram)' | | | | |

But like in Assamese, there are also the following type of verbs, which do not have a comitative alternation, but have dative objects:

- | | | | |
|--|-------------------------------------|-------------------------------------|-----------------------------|
| 66. ε - $\eta\mathfrak{e}_1$ | $m\mathfrak{a}$ - $n\mathfrak{e}_2$ | $m\mathfrak{a}L$ - wa - n - u | $k\mathfrak{a}$ - y - u |
| he-ERG | I-DAT | meet-GER-GEN-n | tell-PERF-n |
| 'He ₁ told/asked me ₂ to meet (him _{1/3})' | | | |

- | | | | | |
|--|---------------------------|-----------------|----------------|-----------------|
| 67. ε - ηe_1 | $m\bar{a}$ - $n\bar{e}_2$ | $m\bar{a}$ L-wa | $m\bar{a}$ Te | $k\bar{a}$ -y-u |
| he-ERG | I-DAT | meet-GER | for.purpose.of | tell-PERF-n |
| 'He ₁ told/asked me ₂ to meet (him _{1/3})' | | | | |

These are not canonical true partial control, as the agent of *tell* need not be involved in the action *meet*. In such sentences, an overt non-co-referring DP can be inserted as the dative-marked object of the gerund.

68. ϵ - ηe_1 $m\acute{a}$ - ne_2 Ram- ne_3 $m\acute{a}L$ - $w\acute{a}$ - nu $k\acute{a}$ - y - u
 he-ERG I-DAT Ram-DAT meet-GER-GEN-n tell-PERF-n
 ‘He₁ told/asked me₂ to meet Ram₃’

māL type verbs have two alternating forms, one with a subject (necessarily plural) and no object, and one with a subject and a dative-marked object. Semantically the verb cannot select just a singular entity. So again having a covert dative-marked object (*pro_k*) reduces the Gujarati data to fake PC.

2.5 Backward Control

Assamese has a verb showing possible backward control, namely the (modal) verb *para* ‘to be able to’ and its negative counterpart *nuara* ‘to not be able to’. The evidence is in the fact that the case of the subject is dictated by the embedded verb, but agreement is triggered on the finite matrix verb. The modal meaning ‘*might*’ appears as an alternative meaning when present tense is used, so the future and past tense are used here. The contrast shown in (69-70) is, however, robust when tested by varying the embedded lexical verb.

69. $dada$ $guwahati$ - le ja - bo par - ib - O
 Brother Guwahati-DAT go-INF able to-FUT-3
 ‘Dada (elder brother) will be able to go to Guwahati’

70. $dada$ - e kam - tu kor - ibo par - ib - O
 Dada-ERG work-CL do-INF able to-FUT-3
 ‘Dada will be able to do the work’

71. tuma-luk mOndir-Ot xuma-bo par-il-a
 you-PL temple-LOC enter-INF able to-PST-2
 ‘You all were able to enter the temple’

72. tuma-luk-e bhat-khini xekh kor-ibo par-il-a
 you-PL-ERG rice-CL finish do-INF able to-PST-2
 ‘You all were able to finish the rice’

Note that in case of dative and genitive subjects, as these are unable to enter agreement relations with the verb, we get default 3rd person agreement. However, in any case, it seems sentences like (73-74) which have verbs with dative subjects, inherently do not allow the ‘be able to’ meaning of para, due to a semantic clash. Instead, the verb has a modal meaning similar to might and thus arguably the subject is not an argument of the matrix verb in such cases; thus, they are not control sentences.

73. dada-k ei-khOn kitap lag-ibo par-e
 Dada-DAT this-CL book need-INF might-3
 ‘Dada might need this book’

74. dada-r rasta-t bhuk lag-ibo par-e
 Dada-GEN road-LOC hunger feel-INF might-3
 ‘Dada might feel hungry on the road’

The data show that:

(I) Case on the subject is dependent on the embedded predicate.

(II) Agreement of matrix *par-* with subject.

This is in contrast with ordinary subject control in Assamese, where case and agreement are both dependent on the matrix verb, as seen in the following sentences:

75. saurabh-e₁ OkOI [PRO₁ xu-bo] jan-e (Intr. emb. verb)
Saurabh-ERG only sleep-INF know-3
lit. 'Saurabh only knows how to sleep' impl. 'Saurabh sleeps a lot/is lazy'

76. pranab-e₁ [PRO₁ axomiya ko-bo] na-jan-e (Tr. emb. verb)
Pranab-ERG Assamese speak-INF NEG-know-3
'Pranab does not know how to speak Assamese'

The presence of backward control in Bangla is harder to test directly, as there is no ergative -e marking. Testing can potentially be done with NPIs. A negated embedded clause should be able to license an NPI subject only if that subject is within the embedded clause (backward control), otherwise the sentence should be ungrammatical, as the NPI would be outside the scope of the negation. However, under the MTC, this test would always fail as there are two copies of the NP, and the higher of them is outside the scope of the negation, no matter which is overt. The diagnostics found in the literature are highly language-specific, and not generalisable. This is left as an open question for the present purposes.

Gujarati stands in clear contrast with Assamese, as seen below:

77. $\varepsilon(*-\eta e)$	$\tilde{u} \eta g h-i$	$s \acute{a} k-y-o/i$
he/she(*-ERG)	sleep-CNP	able.to-PERF-m/f
'He/she was able to sleep'		

78. ε(*-ŋe)	kam	kər-i	sək-y-o/i
he/she(*-ERG)	work	do-CNP	able.to-PERF-m/f
'He/she was able to do the work'			

It should perhaps be noted that these constructions use a conjunctive particle ending on the embedded verb rather than a gerund or infinitive ending like in other control constructions in Gujarati. Further, when the embedded verb takes a dative subject, dative case is marked on the subject, and the agreement on *sək-* is default *-e* (3rd person singular). However, here the meaning is strictly the modal meaning ‘might’ and not the ‘able to’ meaning.

79. ε-ne b^huk lag-i sək-e
he-DAT hunger feel-CNP might-3
'He might feel hungry'/*'He is able to feel hungry'

Thus, this is not a control construction at all, and is not relevant for the question at hand.

2.6 Summary of the Data

In summary, this chapter discussed a number of control phenomena in Assamese, Bangla and Gujarati from a comparative, cross-linguistic perspective. All the three languages show identical patterns in control shift with causativisation, wherein causativisation of the matrix predicate results in a control shift from subject control to object control. However, such causativisation and associated control shift is not permitted with complex predicates. The three languages also behave identically as regards partial control. None of the languages show evidence of true partial control. Rather, in all of them, fake partial control as defined in Pitteroff and Sheehan (2017) is observed.

However, when it comes to control into gerunds and backward control, the languages diverge. Bangla and Gujarati allow control into gerunds, while Assamese does not. In Assamese, such sentences with embedded gerunds use a *pro* rather than a control configuration. Backward control, on the other hand, is observed in Assamese, but not in Gujarati or Bangla. The pattern of variation in these two phenomena hints at a potential link between them which will be discussed in the next chapter. The data are summarised in the table below. The next chapter proposes an analysis to account for the variation observed.

Phenomenon/Language	Assamese	Bangla	Gujarati
Control Shift with Causativisation	Yes	Yes	Yes
OC into Gerunds	No	Yes	Yes, (almost) exclusively
Backward Control	Yes?	?	No
Partial Control	Fake	Fake	Fake

Chapter 3: An MTC Analysis

As indicated previously, a movement theory of control (MTC) is supported by the typology of control constructions observed in the three languages taken up for study in this dissertation. This chapter elaborates the idea further, by way of providing a syntactic analysis of the same.

3.1 Support for the MTC

Partial control has been used as an argument against the MTC, as non-identity of features between controller and controllee (possibly) indicates that the two are not linked by movement. However, as seen in the data, the kind of partial control found in these languages is not really partial control at all. This kind of ‘fake’ PC is entirely compatible with the MTC. Moreover, backward control is a strong argument for the MTC, as under the Copy Theory of Movement and the MTC, backward control is easily derivable as deletion of the higher copy after movement. I will attempt to sketch an analysis of the phenomena and patterns discussed in the previous chapter, using the MTC.

3.2 An MTC Analysis

The two interesting cross-linguistic patterns in the data which need explanation are to do with backward control, and control into gerunds.

3.2.1 An Analysis for Backward Control

There are two main questions as regards the Assamese backward control data, repeated below:

1. dada guwahati-le ja-bo par-ib-O
 Brother Guwahati-DAT go-INF able to-FUT-3
 ‘Dada (elder brother) will be able to go to Guwahati’

2. dada-e kam-tu kor-ibo par-ib-O
 Dada-ERG work-CL do-INF able to-FUT-3
 ‘Dada will be able to do the work’

(A) Does ability *par-* select for a subject at all? Or does it take the entire complement clause as a single argument?

The ability *par-* seems to select for a subject, because it is selective about what kind of embedded subject it allows, in contrast to modal *par-* ‘might’, which selects the entire embedded clause as an argument. If so, then either there is PRO in the matrix subject position or under the MTC, a movement to the matrix subject position.

(B) How does the embedded subject get case?

This is the main problem. No verb other than *par-* shows this kind of pattern. There are three hypotheses:

Hypothesis 1: In these sentences, presence/absence of “ergative” marking is the crucial data. A possible hypothesis could be that this is not in fact ergative marking. The ergative marker

in Assamese is a matter of some debate. Unlike the Western Indo-Aryan ergative, it occurs regardless of Tense/Aspect, and unlike most ergative languages, it does not block agreement. That is, agreement continues to be with the marked subject rather than with the object the latter being the case in Western Indo-Aryan languages like Gujarati. Thus it could instead be analysed as semantic agentive marking, and the actual case marker is zero-NOM uniformly. So matrix T is the case-assigner. However, this way of dealing with the problem is equivalent to sidestepping the issue, and saying semantics takes care of the marking. However, there is reason to believe this marking is structural case-marking, such as the fact that it does not occur with unergatives, only with transitives.

Hypothesis 2: There is incorporation of the embedded V-INF into the *par-*, and the complex verb then determines the case on the subject based on its composition, so *able.to.go* vs *able-to-do-something*. There is some support for theta-roles being assigned by complex elements, but this seems particularly odd for case. Moreover, it is not clear why this should happen only with this particular predicate.

Hypothesis 3: Non-finite T is the case-assigner. Some mechanism is needed to rule this out in all the other cases, or there would be overgeneration. By the MTC + copy theory, there are two copies of the subject, one of which needs to get case, while the other is deleted. Normally, matrix T assigns case, and the higher copy is retained. But assuming there is something defective about the matrix T for *par-*, this forces the subject to look elsewhere for case. The proposal is as follows: the lower copy can get case from the non-finite T which is a “weak” case-assigner, and is only defaulted to when there is no other option. As per Chomsky (2010), the highest copy in a chain is spelled out unless something forces the system to

violate this. Here, the upper copy cannot get case which is why in this case the lower copy gets spelled out. In this mechanism, one would need to decouple case and agreement. This is illustrated with a labelled diagram and tree for the example below.

3. dada-e kam-tu kor-ibo par-ib-O
 Dada-ERG work-CL do-INF able to-FUT-3
 ‘Dada will be able to do the work’

[_{TP} Dada ... [_{VP} [_{TP} Dada .. [_{VP} kaam-tu kor-] .. T[-fin]] par-] T[uPhi]]

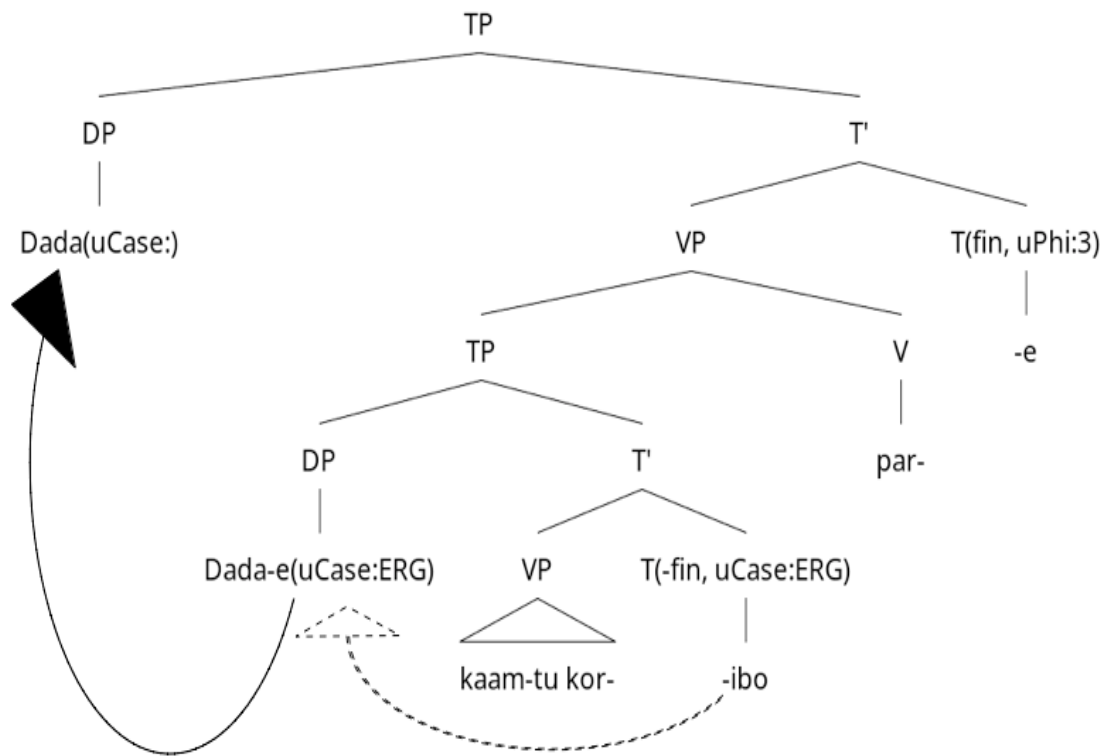


Fig. 1: A tentative proposal for backward control in Assamese

The two assumptions in the above mechanism are:

- (i) Matrix T_{MOD} is defective for *par-* and cannot assign case
- (ii) Non-finite T_{NFIN} is a “weak” case-assigner

Dealing with the second issue first, the “weakness” of non-finite T might be translated as its inability to enter a ϕ -agreement relation. There is no $u\phi$ probe on non-finite T, so it doesn’t probe in the first instance. There is some evidence that non-finite T in Assamese can in fact assign case: subjects of gerunds need not be genitive-marked unlike in Bangla. Instead, they can take either zero-NOM (4) or the ergative case marking (5) according to the verb. In (4), the subject of the gerund can be assigned NOM (*xi*) by the embedded non-finite T, whereas in (5), the subject *Ram* is assigned ERG by the embedded non-finite T.

4. mOi [tar/xi Oha-tu] bisar-i-s-u
 I his/he come.GER-CL want-CNP-AUX-1
 ‘I want him to come’
5. [Ram-e payOx-khini hex kor-i pelua-tu] ObhOdro
 Ram-ERG dessert-CL finish do-CNP throw.GER-CL ungentlemanly
 ‘It is ungentlemanly of Ram to finish all the payOx (a sweet dessert)’

Coming to (i) above, it is harder to account for why there is no [uCase] on matrix T, and why [uCase] on the lower T only gets activated after the cycle has passed, which is a violation of cyclicity. Moreover, one has to decouple Case from ϕ -agreement as these are now happening

separately. In order to avoid the cyclicity violation, I propose that non-finite T already has an active uCase, and these features are copied into uCase on the subject in the lower cycle, however this is not the same as feature valuation by finite T, as there is no $u\phi$ probe. These values are rather default values, and can be overwritten in the presence of a $u\phi$ probe, a “strong” case-assigner. As for why matrix T in this case does not have uCase, this has to be left as a stipulation at this point, but is potentially tied to the modal use of the predicate, which takes an entire proposition (TP) as its argument. Thus, it is proposed that T_{MOD} is case deficient.

However, there is perhaps a more general solution to this problem, as further evidence from serial-verb constructions shows that such a case-marking pattern is not specific to modal matrix verbs. In all cases, if any one of the verbs in a serial-verb construction takes an ergative subject, then the subject of the serial-verb construction is marked as ergative, regardless of the position of said verb in the structure. The agreement continues to be with the highest or matrix verb. Consider the following data:

6. Ram xu-i uth-i ah-ib-O
 Ram sleep-CNP get.up-CNP come-FUT-3
 ‘Ram will come after waking up from sleep.’

7. Ram-e ga dhu-i ah-ib-O
 Ram-ERG body wash-CNP come-FUT-3
 ‘Ram will come after taking a bath.’

8. Ram-e xu-i uth-i ga dhu-b-O
 Ram-ERG sleep-CNP get.up-CNP body wash-FUT-3
 ‘Ram will take a bath after waking up from sleep.’

In the pair (6) and (8), the matrix verb has changed to one that marks its subject as ergative, and accordingly the subject is marked as ergative. However in the pair (6) and (7), it is the embedded verb which is similarly changed. The matrix verb in (4) does not mark subjects for ergative, therefore this marking is coming from the embedded verb. This suggests that ergative marking supercedes any other case-marking on the subject.

The analysis then is as follows: (i) non-finite T in Assamese is always a case assigner; and (ii) ergative marking on the subject always supercedes zero-nominative marking. This implies that zero-NOM is a default case-marking which occurs when the subject does not receive any non-zero case marking. The subject continues to enter a checking relation with each T until its [uCase] feature is valued (by ERG in this case). If [uCase] remains unvalued, it is assigned the default value, which is zero-NOM. In essence, it is assumed that [uCase;ERG] trumps other possible subject cases. This implies that perhaps this case-hierarchy is assigned in a post-syntactic morphological component. The other alternatives are poorer in comparison; for example, comparing the tree diagrams given below, it is clear that sometimes a finite T and a nonfinite T are both able to value ergative, whereas in some other cases neither a finite T nor a nonfinite T is not able to assign ergative.

As for agreement, only the highest (matrix) T has [u ϕ], which it checks in the final cycle, getting its value from the subject. Therefore, agreement is always with the matrix verb. The

version of the subject which is phonologically realised is the one with [uCase] valued, i.e. the subject is realised in the position where it gets ergative-marking, or in the matrix position in case it receives no case-marking and ends up with the default zero-NOM. Therefore, in this analysis, there is no violation of cyclicity, nor is there a need to stipulate such a thing as a “weak” case-assigner or “defectivity” of the predicate “*par-*”. All of the cases are brought under this general mechanism of successive cyclic case-checking, and deletion of the copy/copies which do not have phonologically overt case-marking, perhaps on the basis of a post-syntactic morphological component which assigns a case-hierarchy.

The tree diagrams for (6), (7) and (8) are shown below. As discussed above, a case-checking relation takes place at each cycle, and the copy of the subject with uCase values as ERG is realised. If no such valuation takes place, the subject receives zero-NOM in the matrix clause. Agreement always takes place between the matrix T and the subject.

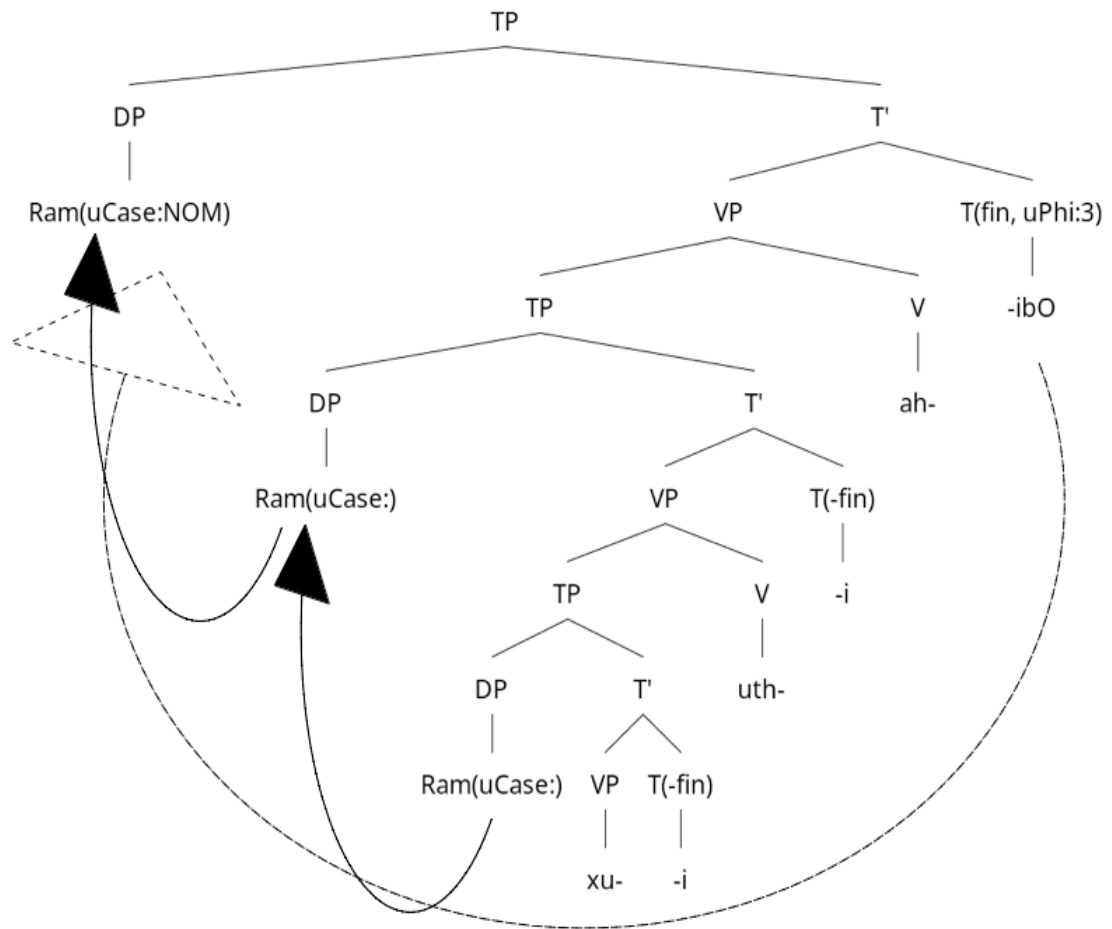


Fig. 2: No ERG assignment, subject receives zero-NOM

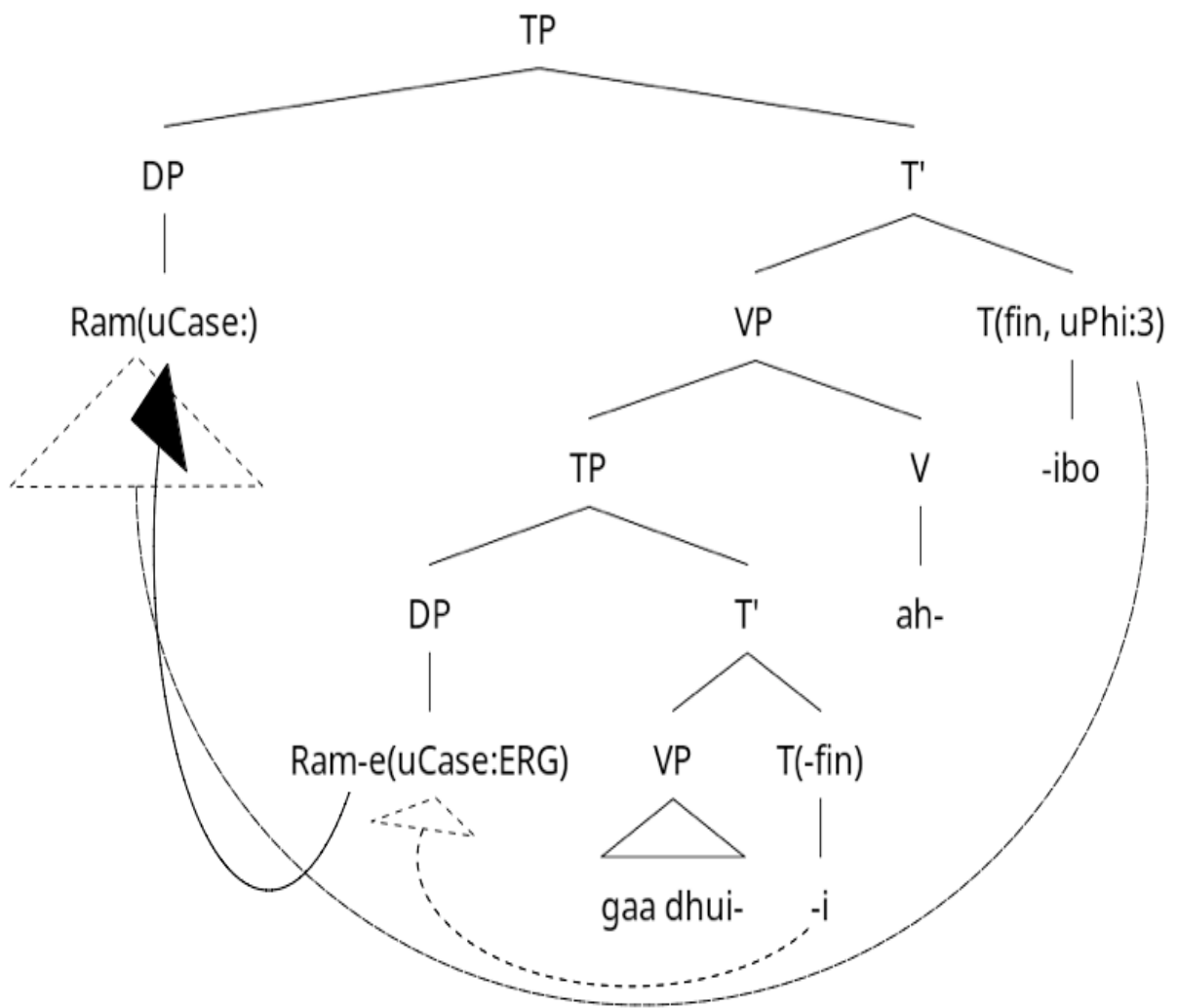


Fig. 3: ERG assignment by embedded non-finite T

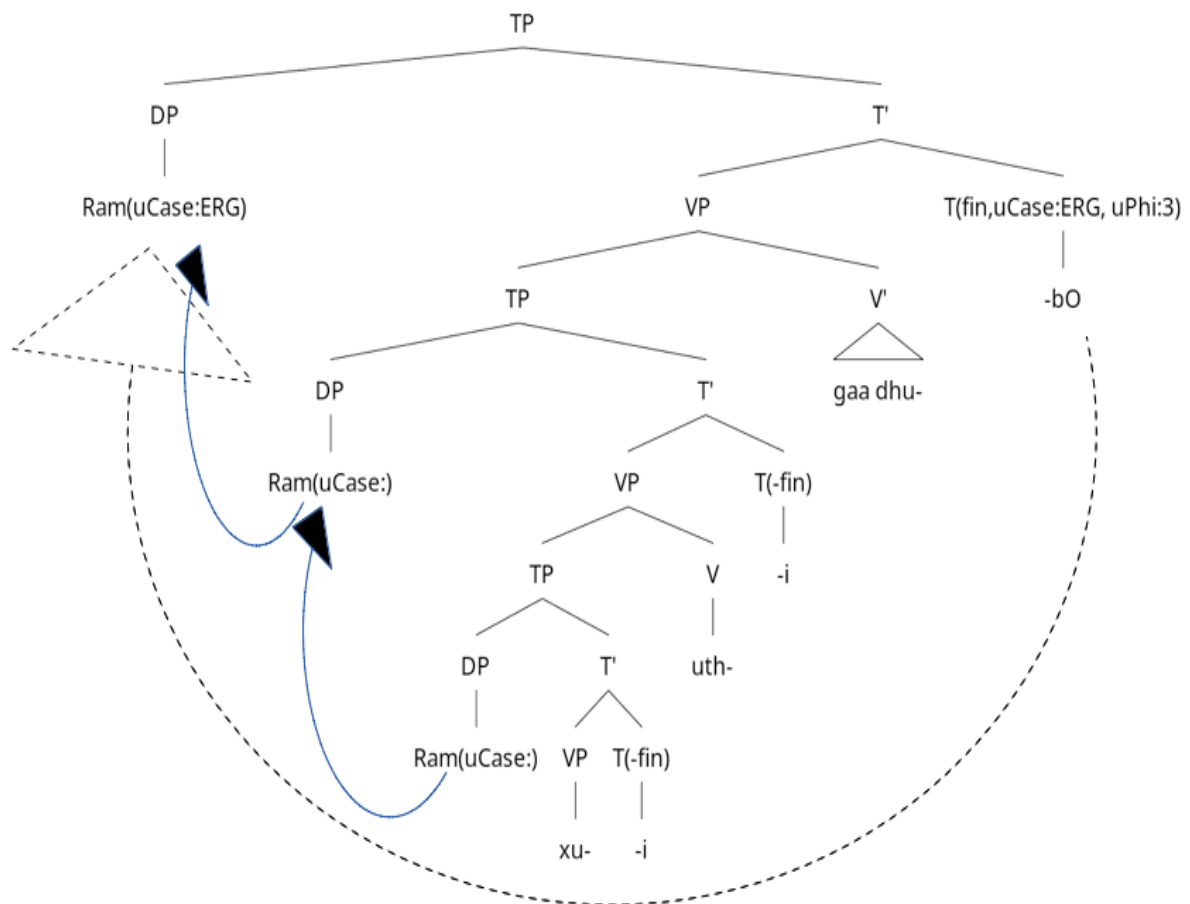


Fig. 4: ERG assignment by matrix finite T

The further details of this analysis are beyond the scope of the present work; however, it is clear that this mechanism depends on cyclic movement of the subject up to the matrix position, thus lending further support to a movement analysis rather than a non-movement analysis with PRO.

Taking a step back, Gujarati, in contrast, does not allow such case-marking dependent on the embedded predicate, as seen in the examples (9) and (10) below. Nor does Gujarati allow

case-marking with a lower verb in a serial-verb construction, as the examples (11) and (12) show, in contrast to the Assamese pair (6) and (7) above.

9. $\epsilon(*\text{-}\eta\epsilon)$ $\tilde{u}\eta gh\text{-}i$ $s\acute{a}k\text{-}y\text{-}o$
 $he(*\text{-}ERG)$ $sleep\text{-}CNP$ $able.to\text{-}PERF\text{-}m$
 ‘He/she was able to sleep’
10. $\epsilon(*\text{-}\eta\epsilon)$ $k\acute{a}m$ $k\acute{a}r\text{-}i$ $s\acute{a}k\text{-}y\text{-}o$
 $he(*\text{-}ERG)$ $work$ $do\text{-}CNP$ $able.to\text{-}PERF\text{-}m$
 ‘He/she was able to do the work’
11. $\epsilon(*\text{-}\eta\epsilon)$ $\tilde{u}\eta gh\text{-}i\text{-}n\epsilon$ $\alpha v\text{-}y\text{-}o$
 $he(*\text{-}ERG)$ $sleep\text{-}CNP\text{-}CNJ$ $come\text{-}PERF\text{-}m$
 ‘He slept and came’
12. $\epsilon(*\text{-}\eta\epsilon)$ $k\acute{a}m$ $k\acute{a}r\text{-}i\text{-}n\epsilon$ $\alpha v\text{-}y\text{-}o$
 $he(*\text{-}ERG)$ $work$ $do\text{-}CNP\text{-}CNJ$ $come\text{-}PERF\text{-}m$
 ‘He did the work and came’

Under this account, this can be explained by a feature-parametric difference: Assamese has [uCase] on non-finite T whereas Gujarati does not. This carries over into the explanation for the pattern seen in gerunds as well, as discussed in the section below.

Bangla, on the other hand, lacks an ergative case and these features are therefore harder to test since predicates which select dative and genitive subjects do not occur in serial-verb constructions in the language. However, Bangla does allow control into gerunds, and this would suggest, as outlined in the next section, that Bangla lacks [uCase] on non-finite T, similar to Gujarati.

3.2.2 An Analysis for OC into Gerunds

Under the MTC, control is movement, and movement would not take place unless: (a) there is an active probe on T above, or (b) the subject of the embedded clause has not received case. In the Assamese sentences, the probe on T values the matrix subject. If this were a controller, under MTC, it would have had to move from the embedded gerund. But as per the above hypothesis, the non-finite T of the embedded gerund, which has [uCase], would already have valued the case on its subject. The only solution that satisfies these conditions is that the subject of the embedded gerund is a phonologically non-overt *pro*, which is in line with the data in Chapter 2. It is impossible to derive a control-structure for gerunds in Assamese, as the subject of the gerund never has cause to raise to the matrix subject position in Assamese. The only possible way to derive these structures is by using *pro* in the gerund-subject position. This hypothesis gains credibility from the fact that the subject of the gerund can be made overt and non-identical (to the matrix subject) in these sentences.

This is ruled out in Gujarati as any such *pro* would not have gotten case within the gerund, as there is no [uCase] on non-finite T. So Gujarati and similarly Bangla allow for OC into gerunds, while Assamese does not. This would predict that Bangla does not have backward control either, and that overt subjects of gerunds in Bangla cannot have overt non-genitive

case in their base positions. The second of these is true, which lends support to this parametric view.

3.2.3 Partial Control and Control Shift with the MTC

Partial control has been shown to reduce to ordinary forward OC in these languages as per the fake-PC theory of Pitteroff and Sheehan (2017), and is thus perfectly compatible with the MTC. The last issue that remains is control shift under causativisation, and why this is blocked in complex predicates.

Firstly, control shift is an expected outcome under the MTC, as otherwise there would be a minimality violation, with the embedded subject “skipping” over the causee to move to the matrix causer position.

In complex predicates, the base structure can be hypothesised to be [[Subj Gerund/Infinitive] NP] V] T followed by incorporation of the N into the V. Causativisation introduces another argument. However, if semantically causativisation of the complex predicate is desired, this should happen after incorporation. If DP is a phase, the only way for noun incorporation to take place is if the rest of the DP, namely the Gerund/Infinitive and the PRO, have vacated the DP and the whole thing incorporates into the V. Then, before incorporation, the subject has already moved up to matrix T. Causativisation is now no longer possible as this would result in a cyclicity violation. The assumption here is that by whatever means incorporation takes place, it does not violate cyclicity. Turning things around, the present data is in fact indirect support for the idea that DP is a phase.

3.3 Summary of the MTC Analysis and a Feature-Parametric Approach to the Variation

The above sections lend support to a movement-based approach to control in the Indo-Aryan languages Assamese, Bangla and Gujarati. Such an approach is able to explain the cases of apparent backward control in Assamese, as well as the unrelated evidence of ergative-marking from lower verbs in serial-verb constructions. The absence of true partial control in these languages further supports a movement analysis, as does the data on control into gerunds. Moreover, the variation across the languages with respect to backward control and control into gerunds can be explained by a single feature-parametric difference, the presence of [uCase] on non-finite T in Assamese. The stipulation of this feature has independent justification in the possibility of ergative and nominative case on subjects of gerunds in Assamese, something that is impossible in the other two languages. Lastly, control shift in causatives is an expected outcome under the movement theory of control, due to the more general principle of cyclicity.

The variation seen in the table at the end of chapter 2 can now be summarised by a single feature-parametric difference: does the language have [uCase] on non-finite T? If yes (Assamese), the language has backward control but does not allow control into gerunds. If no, the language does not allow backward control, but allows control into gerunds. As Bangla does allow control into gerunds, the tentative conclusion must then be that it lacks [uCase] on non-finite T, which is demonstrably true as subjects of gerunds in Bangla are always genitive. This suggests further that the gap in the table, regarding backward control in Bangla, must be filled in the negative. We can thus add another row to the table and revise it as below, leaving out the phenomena where no variation is observed.

Phenomenon/Language	Assamese	Bangla	Gujarati
[uCase] on non-finite T	Yes	No	No
OC into Gerunds	No	Yes	Yes
Backward Control	Yes	? => No	No

The pattern of variation across the three languages has thus been reduced to a single feature-parametric difference.

Chapter 4: Conclusion

Section 4.1 restates the objectives and context for the present work. Subsequently, the observed pattern of variation and the proposed analysis are summarised in Section 4.2. Finally, Section 4.3 outlines the open questions and avenues for further research based on the present study.

4.1 Objectives of the Study

The major objective of the present study was to investigate the syntactic variation in control phenomena in three Indo-Aryan languages: Assamese, Bangla, and Gujarati. The analysis for the observed variation pattern was to be placed in the context of the debate within the minimalist framework about whether or not control configurations arise due to movement. (Chomsky and Lasnik 1993; Hornstein 1999, 2003; Landau 1999, 2000, 2004) The particular phenomena studied herein were: control shift under causativisation, control into gerunds, partial control, and backward control.

While control theory has been a major area of research in generative syntax, there has been little discussion in the literature of control phenomena in Indo-Aryan languages, and especially the languages under study in the present work. Bhattacharya and Sharma (2005) is an early but experimental study showing the importance of case in processing of control structures in Assamese and Bangla. Haddad (2007, 2011) discusses control in Assamese, but the scope of the data was limited, and its empirical validity questioned in later work (Subbarao 2017). Nath (2013) briefly discusses control in Assamese in the broader framework of non-finite complementation, but of the phenomena under investigation in this

study, only partial control is discussed in that work. Later work on partial control (Pitteroff and Sheehan 2017) justifies the need for a re-examination of partial control in Indo-Aryan languages. Subbarao et al (2013) discusses control data from Hindi-Urdu, but not from the languages under study here. Moreover, there has not been any comparative syntactic study of control phenomena in Indo-Aryan languages. Preliminary research showed a surprising pattern of syntactic variation in control phenomena across these three languages. In essence, Assamese patterns rather differently from Bangla and Gujarati, an interesting finding as it is contrary to both genetic and geographical proximity. Data from the three languages showed a clear pattern of behaviour as regards the control phenomena selected and the present study proposes that the Movement Theory of Control (MTC) provides an explanation.

4.2 Findings and Analysis

The pattern of variation observed in the data is summarized in the table below. This shows that Assamese patterns differently from Gujarati and Bangla with respect to obligatory control into gerunds and backward control.

Phenomenon/Language	Assamese	Bangla	Gujarati
Control Shift with Causativisation	Yes	Yes	Yes
OC into Gerunds	No	Yes	Yes, (almost) exclusively
Backward Control	Yes?	?	No
Partial Control	Fake	Fake	Fake

The present study proposes that the observed data provides support for the Movement Theory of Control (MTC), as summarized below. Partial control has been used as an argument against the MTC, as non-identity of features between controller and controllee (possibly) indicates that the two are not linked by movement. However, as seen in the data, the kind of partial control found in these languages is not really partial control at all. This kind of ‘fake’ PC (as in Pitteroff and Sheehan 2017) is entirely compatible with the MTC. Moreover, backward control is a strong argument for the MTC, as under the Copy Theory of Movement and the MTC, backward control is easily derivable as deletion of the higher copy after movement.

Based on additional evidence of ergative marking on subjects from embedded verbs in serial-verb constructions as well as non-genitive subjects of gerunds in Assamese, it is proposed in Chapter 3 that Assamese (but not Bangla or Gujarati) contains [uCase] on non-finite T, a feature-parametric difference which is able to account both for the observed cases of backward control as well as the impossibility of obligatory control into gerunds in Assamese.

Thus, the analysis in Chapter 3 lends support to a movement-based approach to control in the Indo-Aryan languages Assamese, Bangla, and Gujarati. Such an approach is able to explain the cases of apparent backward control in Assamese, as well as the unrelated evidence of ergative-marking from lower verbs in serial-verb constructions. The absence of true partial control in these languages further supports a movement analysis, as does the data on control into gerunds. Moreover, the variation across the languages with respect to backward control and control into gerunds can be explained by a single feature-parametric difference, the presence of [uCase] on non-finite T in Assamese. The stipulation of this feature has

independent justification in the possibility of ergative and nominative case on subjects of gerunds in Assamese, something that is impossible in the other two languages. Lastly, control shift in causatives is an expected outcome under the movement theory of control, due to the more general principle of cyclicity.

The variation seen in the table above can therefore be summarised by a single feature-parametric difference: does the language have [uCase] on non-finite T? If yes (Assamese), the language has backward control but does not allow control into gerunds. If no, the language does not allow backward control, but allows control into gerunds. As Bangla does allow control into gerunds, the tentative conclusion must then be that it lacks [uCase] on non-finite T, which is demonstrably true as subjects of gerunds in Bangla are always genitive. This suggests further that the gap in the table, regarding backward control in Bangla, must be filled in the negative. We can thus add another row to the table and revise it as below, leaving out the phenomena where no variation is observed.

Phenomenon/Language	Assamese	Bangla	Gujarati
[uCase] on non-finite T	Yes	No	No
OC into Gerunds	No	Yes	Yes
Backward Control	Yes	? => No	No

The pattern of variation across the three languages has thus been reduced to a single feature-parametric difference. Further, the present study provides evidence in favour of the movement-based approach to control.

4.3 Avenues for Further Research

The proposed analysis involving a [uCase] feature on non-finite T leaves open certain details and questions. In order to avoid over-generation, there must be a mechanism to prevent sentences without a finite verb from being licensed. Agreement is almost certainly the key to this problem; however, it has been left open in the present work. Further, the exact nature of the ergative in Assamese is a matter of much debate, given that it does not pattern similarly to other Indo-Aryan languages which have the ergative: there is no blocking of subject-agreement, and the Assamese ergative is not limited to perfective contexts. Perhaps diachronic work could shed some light on the nature of this marker, as well as its anomalies in the Indo-Aryan context.

The present study also leaves open the details of why complex predicates block control shift. The details of how noun incorporation in these cases prevents movement due to cyclicity are beyond the scope of this work. However, a future examination of this area would be beneficial as it appears to provide evidence in favour of DP being a phase.

Lastly, such a study would only benefit from checking more languages to form a larger cross-linguistic picture. For the specific aims of this study, investigating these phenomena in closely-related languages such as Oriya (EIA) and Marathi (WIA) should be the first step, followed by looking at Indo-Aryan languages such as Hindi. If geographical spread turns out to be decisive, looking at major contact languages among Dravidian, Tibeto-Burman, and Munda families might become relevant.

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