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Gerundial Aspect and NP Movement

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Abstract

The central assumption of this paper that DPs exhibit similar or identical behavior to that of clauses is a continuation of the investigation begun by Abney more than ten years ago. In earlier work, I have shown that DPs too involve NP movement. This paper\* is an attempt to investigate both the wider assumption of the similarity between clauses and DPs and the particular finding of DP-internal NP movement in terms of the structure of gerunds in Bangla. Towards the former goal, I show that certain sentential aspectual properties are reflected inside the gerund DP, proposing, in effect, that, the gerund head is a nominal aspectual head. Towards the latter goal, I show that the derivation of gerunds involves NP movement inside the DP.

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## 1.0 Introduction

In earlier work (Bhattacharya (1998a,b,c), Bhattacharya (1999a,b) and Bhattacharya (forthcoming)) I have shown clear instances of NP movement, rather than N movement, inside the DP in Bangla. This, I have claimed, derives by assuming an SVO underlying structure for a head-final language. This paper provides yet another evidence for such DP-internal NP movement. First, I claim that gerunds embed a nominal aspectual head inside the DP and secondly, gerund formation is shown to constitute evidence of NP movement.

## 2.0 Gerunds as complex event nominals

The place of nominalization in grammar revolved around the issue of the enrichment of one component of the grammar via a possible simplification in another since Chomsky (1970: 185). His study led to the generalization that regular correspondences between linguistic forms should be captured in the syntax (through transformations) and the irregularities in the lexicon. This in turn led to the lexicalist versus non-lexicalist debate. Thus we may derive from the verb give the derived nominal (DN) gift or the gerundive nominal (GN) giving, whereas the former is traditionally viewed as part of derivational morphology, the latter as inflectional or as part of syntax.<sup>1</sup>

The literature on nominalizations in English includes numerous arguments to show the difference between these two different nominalizations: differences which indicate, according to Chomsky, a transformational derivation of GNs (i.e. underlyingly GNs are sentences in this theory).<sup>2</sup> Due to these differences, Chomsky argued, it would be wrong to derive both from the same source by applying different transformations. He concluded that “derived” nominals are not derived at all but are rather listed in the lexicon.

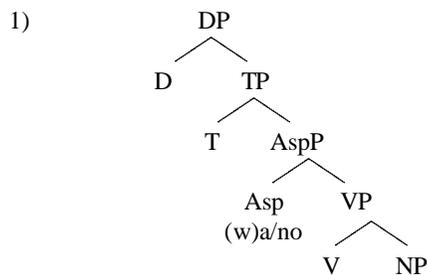
In this paper, I make use of a distinction of event classification put forward in Grimshaw (1990). I assume with her that gerunds denote complex event nominals (CEN) whereas gerundives and result nominals are simple event nominals (SEN). In this theory, CENs have an obligatory argument structure or an a-structure. Consequently, I argue that gerundial constructions (the ones formed with the gerundial suffix -(w)a/no, to be discussed in section 3) -- participles, gerunds, ‘gerundives’ and result nominals -- can be distinguished by virtue of their event (or aspectual) properties. That is, Grimshaw’s distinction between CENs and SENs translates in the current analysis as aspectual differences. In other words, gerunds in Bangla project an a-structure in the syntax with specific aspectual positions absent in

other nominals.

In sum, based on Grimshaw (1990), I assume that gerunds denote complex events and this is encoded in the aspect of the phrase. This suggests that gerunds contain a syntactic position for aspect. The structure of the Bangla gerund that I introduce in the next section (and discuss in the rest of the paper) makes use of this conclusion. Furthermore, I suggest that the gerund suffix, to be discussed shortly, heads this aspect phrase.

### 2.1 Structure of the Bangla gerund

Based on the introductory discussion in the preceding section, I suggest that gerunds in Bangla contain a fully projected VP containing the functional projections of AspP as follows:



Gerunds in Bangla (like in English) behave like a noun phrase justifying the DP structure in 1. The nominal character of the gerund is encoded in the  $D^0$  head which is nominal. I present further justifications for the above structure as we proceed. In section 3, I discuss the  $-(w)a/no$  gerund suffix in Bangla. The following section presents evidence in favour of the TP in 1. I postpone the discussion of nominal aspect as represented by AspP till section 4.

### 2.2 T in DP

The presence of tense inside nominals was first pointed out in Hockett (1958: 238).<sup>3</sup> Lecarme (1996: 162) shows that in Somali, tense morphology is associated with nouns. The distinction between past/non-past (see 2 below), parallels the identical distinction in the VP:

- (2) a. sannad-ka    dambe  
       year-det     next  
       ‘next year’
- b. sannad-kii/\*ka    hore

year-det.past before

‘last year’

Lecarme points out that nominal tenses in Somali can have an independent reading. Additionally, I suggest that in the context of the analysis of adjectives as specifiers of NPs (see Bhattacharya 1999b for this proposal), tense in adjectives in Japanese is another piece of evidence in favour of a TP inside the DP. Nakamura (1994: 375), in discussing the tense system in Japanese in general presents the following data which shows that the tensed adjectives in the non-past tense which end with *-i* contrast with those in the past which end with *-katta*.<sup>4</sup>

(3) a. aka-i kuruma

red-prs car

‘a red car’

b. aka-katta kuruma

red-past car

‘a car that was red’

Most crucially, however, the presence of the TP, apart from the reasons given so far, solves the problem of some Bangla gerunds where the gerund subject bears Nominative Case. I discuss this in section 3.1.

Finally, in the analysis of van Hout and Roeper (1998) a TP in a nominalization structure is needed in order to get the right event entailment of the nominal. Since gerunds are, by the assumptions of this paper, complex event nominals, the nature of this event as expressed through aspect is discussed in detail (see section 4) concluding that the event entailed by the gerund suffix is imperfect.

### 3.0 The gerund suffix in Bangla

Although the issue of what constitutes a gerund has been contentious, the study of gerunds in English within generative grammar, most thoroughly analyzed in Abney (1987) subsuming the work of Schachter (1976), Chomsky (1981) and Reuland (1983) among others, shows uniformity in the range of constructions considered to be gerunds, namely, POSS-ing, ACC-ing and Ing-of.<sup>5</sup> This has also been the case for studies in non-generative frameworks like GPSG/ HPSG as in Pullum (1991), among others, in English, and Dasgupta (1980) and De (1984) in Bangla. I do not see any reason to question this conformity in identifying the construction. However, since out of these three types of gerunds

ACC-ing and Ing-of do not obtain in Bangla, I will discuss the POSS-ing type as the only gerund type in Bangla in the rest of this paper. For the purpose of this study I will, therefore, assume any deverbal nominal which can have a possible Genitive subject (to be made explicit below in section 3.1) and which denotes a complex event as per Grimshaw (1990), as a gerund in Bangla.

Gerunds are formed in Bangla by adding a gerund suffix. There are four gerund suffixes in Bangla:

- (4) -a:    pOR-a    ‘reading’  
           -wa:    ga-wa    ‘singing’  
           -no:    pala-no    ‘escaping’  
           -ba:    kha-ba    ‘eating’

I will treat the first three suffixes as one group, the -(w)a/no group which contrasts with -ba in its distribution:

- (5) a. kha-  
       i. khawa    ‘eating’  
       ii. khaba<sup>6</sup>    ‘eating’ (dialectal)  
       iii.\* khaa  
       iv.\* khano  
   b. dEkh-  
       i.\* dEkhwa  
       ii. dekhba    ‘seeing’ (dialectal)  
       iii. dEkha    ‘seeing’  
       iv.\* dEkhno  
   c. taka-  
       i.\* takawa  
       ii. takaba    ‘staring’ (dialectal)  
       iii.\* takaa  
       iv. takano    ‘staring’

Let us briefly discuss these two groups in turn.

#### (w)a/ no

The suffixes -a/-wa occur after monosyllabic verb roots, -a occurs after consonant ending verb roots

while -wa occurs elsewhere. Their distribution could therefore be accounted for by a phonological feature. This is implicit even in Chatterji (1926) since he considers that suffixes like -aano (earlier form of -no) etc. must attach to causative and denominative verb bases, these being longer than monosyllabic forms. Although -wa and -no are in complementary distribution, diachronically they are from different sources and are phonologically distinct from each other. These two therefore form a suppletive morpheme -(w)a/no.

#### -ba

As shown in 4, this suffix contrasts with the other group in its distribution. This suggests that a verb root forming a gerund with -(w)a/no also has another form with -ba. This has two varieties among the speakers of the language -- ba and -iba.<sup>7</sup> An interesting observation which remains unexplained in De (1984) is that -ba gerunds, unlike -(w)a/no gerunds, do not occur independently (i.e. they must have a Genitive marker), rather, they appear in the template 6a as in 6b:

(6) a. V+ba+gen

b. ja-ba-r

go-ger-gen

'going'

The appearance of the Genitive marker is a consistent diagnostic for gerundives in Bangla. Following the Orientalists who study Sanskrit in English, there has been an attempt (e.g. in De (1984) and Dasgupta (1986)) to distinguish the terms gerund and gerundive, identifying the latter with forms V+ nominalizer + adjectivalizer/ Genitive marker. It is important to see that the term gerundive has been wrongly used as the simple adjective of gerund in Chomsky (1970) onwards. However, given that there are various opinions on the gerundive in the classical usage itself as in Vedic/ Sanskrit (see Peterson (1997) for a review), it is not clear whether gerundive is the right term for these constructions in Bangla. However, pending a more satisfactory analysis, I will continue to use the classical term "gerundive" for these constructions. That is, the term gerundive will be reserved for constructions where the -ib (or -ba) morpheme is used to form the gerund and furthermore is followed by the Genitive Case marker.<sup>8</sup>

It is important to point out that the morphological identification of the gerund suffixes is not sufficient to identify a gerund phrase. The following example shows constructions sharing the gerund suffix.

- (7) a. amar naTok lekha holo na (gerund)  
 my play writing happened not  
 ‘my play writing never happened’
- b. amar lekha naTok (participle)  
 my written play  
 ‘a play written by me’
- c. khabar ghOr (gerundive)  
 eating-ger room  
 ‘dining room’
- d. apnar duTo lekha dekhlam (Result nominal)  
 your two write-ger saw  
 ‘(I) saw two of your articles’

Based on the analysis of Bhattacharya (1999b), I will consider, without argument, Gerundives and Result Nominals in Bangla to be pure nominals and will not discuss these in this paper any further.

### 3.1 Case of the gerund subject: T in DP revisited

In this section, I show that the presence of a T head inside the DP additionally accounts for the subject Case properties of the gerund. First, let us briefly review the subject Case possibilities. The following example shows that the class of Ps which mark their complements zero, mark the gerund subject as a Nominative (i.e. zero) or Genitive:

- (8) [rukun-(er) baRi aS-a] matro  
 Rukun-(gen) home come-ger as soon as  
 ‘by the time of Rukun(’s) coming home’

The example in 9 shows that the Ps which mark their complement Genitive, can also mark the gerund subject Genitive optionally:

- (9) [rakhal-(er) pOr-a]-r phOle  
 Rakhal-(gen) read-ger-gen as a result of  
 ‘as a result of Rakhal(’s) reading it’

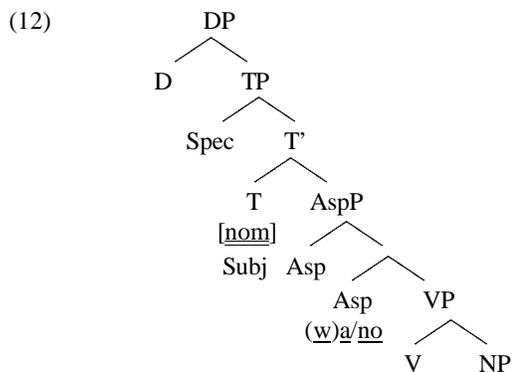
These examples show that the subject can optionally appear without the Genitive in all cases. Therefore the optionality of the subject appearing in Genitive has nothing to do with the Case of the gerund

phrase as a whole.

Note that in 8-9 it is implied that the Genitive gerundial subject and Nominative gerundial subject do not differ in terms of interpretation of the gerund phrase as a whole. This has been standardly assumed to be the case (see De (1984) and Dasgupta (1994)). Looking closely, however, we find that though in both cases the gerund itself denotes an event, the interpretation of the gerund with a Nominative subject entails a temporal event or at any rate a ‘sequential’ interpretation of events as the salient interpretation. With a Genitive subject the event highlights not a sequential interpretation but a causal or at any rate an agentive interpretation. This difference is most clearly visible in the case of temporal Ps like pOr ‘after’, SOng SOng ‘immediately’, etc. on the one hand and causal Ps like jonno ‘because of’, phOle ‘as a result of’, dorun ‘because of’, etc. on the other. As a result, in the case of Nominative constructions a causal P behaves like a temporal/ sequential P and in the case of Genitive constructions a temporal P behaves like a causal P. In 10, a and b are respectively Nom with temporal P and a causal P both resulting in a sequential meaning. In 11a,b a Gen subject is used, where both the temporal P and the causal P result in a causal meaning:

- (10) a. rOmen aSa-r pOr kaj Suru holo  
 Romen coming-gen after work start happened  
 ‘after Romen coming, the work got started’
- b. rOmen aSa-r phOle kaj Suru holo  
 Romen coming-gen result-of work start happened  
 ‘after the event of Romen coming, the work got started’<sup>9</sup>
- (11) a. rOmen-er aSa-r pOr kaj Suru holo  
 Roman-gen coming-gen after work start happened  
 ‘because of Romen’s coming, the work started’
- b. rOmen-er aSa-r phOle kaj Suru holo  
 Roman-gen coming-gen result-of work start happened  
 ‘because of Romen’s coming, the work started’

This distinction, can now be captured in the gerund structure that I have proposed in 1 in terms of the aspectual properties of the gerund. Anticipating the discussion in section 4 and 5 somewhat, the difference between the two gerund phrases in 10-11 above is based on the following argument structure of the gerund (repeated from 1 plus the external argument position shown):



The temporal/ sequential interpretation is due to the T head which the V moves to (via the Asp head) in the case of 10 since the gerund head contains an appropriate aspectual feature. This forces the internal argument to check nom at [Spec,TP]. In the case of the 11 interpretation, Genitive Case is checked at the [Spec,DP] domain which supplies the agent/ causer interpretation as well. Consider in this connection the observation that the light verb v in a vP-shell structure can have a limited inventory of meanings in Hale & Keyser (1993) and cause is one of them. It is therefore possible for the NP to check for an appropriate aspect at the Spec of Asp at Merge before it moves to Spec of D. However, in the predicate-based theories of Tenny (1987) and Borer (1993) only objects can check for Case at [Spec,AspP]. The subject argument therefore moves up to [Spec,DP] and checks for Genitive. The fact that the subject in 10 does not go all the way up to [Spec, DP] is evident from the following contrast:

- (13) a.\* rOmen ei baRi aSa-r pOr  
 Romen this home coming after
- b. ei rOmen baRi aSa-r pOr  
 'After this act of Romen coming home'
- c. rOmener ei baRi aSa-r pOr  
 Romen's this home coming after

That is, the Nom marked subject in 13a cannot move across the Dem, which is lower than D since [Spec,DP] is the domain of the Genitive case checking. However when there is a Genitive subject as in 13c it must move up to this position.

### 3.2 The gerund and the participle

The construction which is most closely related in structure and -- as I shall claim -- derivation to the

gerund is the participle. The gerund and the participle have been treated as two sides of the same coin in Bangla grammar. The morphological identity of the gerundial and participial suffix (both being –wa/no) and the similarity of word order between the two forms cannot be accidental. In fact Dasgupta (1980) in his dissertation treats the participial as derived from the gerund. He proposes a gerund-participle rule (in the lexicalist framework) where the participle is derived by the addition of a null affix to the nominal head of the gerund. Thus, only gerunds are identified in the lexicon and not participles.

I will argue for a syntactic derivation of gerunds from the same verbal source as the participle. First, let us see that Bangla gerunds and participles freely convert from their verbal source:

- (14) a. amar kobita lekh-a  
 my poetry write-ger  
 ‘my poetry writing’
- b. amar lekh-a kobita  
 my written poetry  
 ‘poetry written by me’

However, as pointed out in Dasgupta (1980: 139) there are cases of gerunds which do not function as participles:

- (15) a. ramer baje kOtha bole bERa-no  
 Ram’s nonsensical saying say-and go around-ger  
 ‘Ram’s going around talking nonsense’
- b.\* ramer bole bERa-no baje kOtha  
 ‘nonsense Ram has been talking’
- (16) a. ramer Sastrio Songit ERa-no  
 Ram’s classical music avoid-ger  
 ‘Ram’s avoiding classical music’
- b.\* ramer ERano Sastrio Songit  
 ‘classical music avoided by Ram’

Dasgupta uses this fact to argue that it is therefore natural to expect participles to be derived from gerunds, since all participles can also function as gerunds but the reverse is not true. That is, gerunds constitute a superset, consequently, gerunds which undergo this rule are marked lexically as such.

I will show, first of all, that consideration of a bigger set of predicates will lead us to interesting consequences for the theory of Bangla nominalization in general and of the exceptional cases in particular. A consideration of predicate types (i.e. unaccusative/ unergative nature of the predicate) is needed for a fuller account (see section 6). First, I will discuss the properties of nominal aspect to justify the Asp head in gerund DPs as in 1.

#### 4.0 Nominal aspect

In this section I will look into the type of aspectual information instantiated by the -ing morpheme in English and the -wa/na gerund suffix in Bangla and show that both encode imperfective aspect in gerunds. By nominal aspect, I mean aspectual information available inside the DP similar to the aspectual information at the clausal level. In this section, I hope to show that a clear cut case for nominal aspect can be made. In particular, I propose that the gerund suffix in the case of true gerunds (i.e. in exclusion of gerundives and result nominals) carries aspectual features which must be checked in the overt syntax. In accordance with Grimshaw (1990), the difference between different nominals would seem to follow from their difference in aspectuality which in turn indicates their difference in event readings. I show that the -wa/na suffix in Bangla encodes imperfective aspect in gerunds.

This demonstration rests on the theory that grammatical gerunds by their very function display event properties through morphological or abstract aspect. Such a putative “semantic universal”, I claim, is derivable from Grimshaw’s formulations mentioned earlier.

Furthermore, notwithstanding the pitfalls of finding historical motivation for any aspect of synchronic grammar, it may be noted that at least one historical interpretation of the connection between the current progressive in -i(t)- in Bangla and the older verbal noun in the locative exists in Chatterji (1926: 1025).

The well-attested similarity between the clausal and the NP structures is reflected in the fact that event verbs pattern with count nouns and state/ activity verbs pattern with mass nouns. Thus, as Brinton (1995) points out, event verbs can be counted (as in 17a) like count nouns which take number morphemes, and activities can be modified by mass adverbials (as in 17b) just as mass nouns are modifiable with adverbials like much, a little, etc.

- (17) a. John arrived three times/ \*a lot  
 b. John knew a lot/ \*three times

The analogy between event verbs and count nouns and between stative/ activity verbs and mass nouns is supported by English deverbalising suffixes. The -ing suffix makes the situation atelic, durative and dynamic by converting the situation into an activity. This is a shift from count to mass interpretation:

(18) Count + ing → Mass

This is called debounding or the process of imperfectivising in the verbal domain (Jackendoff (1991)) by the progressive -ing. The process equivalent to debounding in the nominal domain has been identified as grinding in Jackendoff (1991). This is shown for Bangla in 19a,b. Furthermore, 19c-g show that the effect of the gerund suffix on the aktionsart of the verb:

- (19) a. ghOre    roSuner    gOndho  
           in room    garlic's    smell  
           'there is a smell of garlic in the room'
- b. tOrkaRi-te    murgi            pelam  
           curry-loc    chicken    found  
           '(I) found chicken in the curry'
- c. probiner        kobita    lekha    eggocche  
           Probin.gen    poem        write.ger    progress.prog.3  
           'Probin's poetry wrting is progressing'
- d. bar    bar    ghOnTa    beje        oTha  
           again    again    bell        sound.inf    rise.ger  
           'ringing of the bell again and again'
- e. robiner            mOraTa    OSSabhabik  
           Robin.gen    die.ger.cla    abnormal  
           'Robin's dying was/is abnormal'
- f. baRi    bhaNgaTa    taRataRi    holo  
           house    break.ger.cla    quick        happened  
           'the breaking of the house was quick'
- g. SaStrio    SoNgitSonaTa            Sabhabik  
           classical    music        listen.ger.cla    normal  
           'listening to classical music is normal'

The analysis of the -ing (and the -i(t)-) in the verbal domain with the -ing or the -(w)a in the gerund in

the nominal domain is best expressed through different aktionsart effects like continuous activity in 19c, iterative in 19d, achievement in 19e, accomplishment in 19f, and state in 19g. The gerund focuses on the activity in 19c,d and on process in 19e-f. In 19g the gerund gives an activity a temporary sense. The nominal counterpart to perfectivizing has the effect of turning a mass expression into a count one<sup>10</sup>. This process, analogous to the temporal bounding of verbal situation, is called packaging and is shown by the following example:

- (20) a. amake mOd-Ta dao  
           to me     drink-cla give  
           ‘give me the drink’
- b. jOI-Ta porISkar kOro  
           water-cla clean     do  
           ‘clean up the (spilled) water’

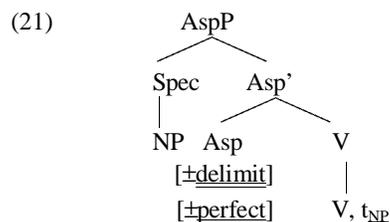
In conclusion, packaging therefore constitutes the second instance of nominal aspect, i.e., the DP equivalent of the clausal aspect. As the preceding discussion shows, nominal aspect can be either in the form of packagers or grinders. However, keeping the topic of discussion in focus, this proposal translates into minimalism as the gerund suffix selecting a [-perfect] feature for the numeration whereas the participle selects a [+perfect] feature.

#### 4.1 Syntactic account of Aspect

Given Grimshaw’s (1990) position on CENs (see section 2) to have an internal aspectual structure and thus an argument structure (which by definition denote thematic and aspectual properties of the predicate), I will consider event identification in terms of aspectual features. That is, I will adopt a feature checking approach to aspect in line with many predicate-based accounts of aspect (Tenny (1987) and Borer (1993) in particular). Such theories are based upon Verkuyl’s (1972) suggestion that the semantic nature of the object determines the telicity of the entailed event. Telic and atelic predicates respectively require bounded and unbounded NP complements.

Syntactically, telicity of the verb is checked by an NP (which is an event measurer or delimiter) in the specifier of an aspectual head in the theory of Borer (1993). In other words, the NP carries a feature of [delimiter] or [event measurer] or [bounded] which is checked against the telicity feature of the Asp head like [±perfect].

In Borer's account, Case and aspect are linked by postulating an Asp head over the VP. Borrowing from Tenny (1987), Borer assumes that a feature [delimit] of the Asp head is responsible for checking the corresponding feature of delimited direct arguments which pass through its Spec in the process, checking an Accusative Case feature as well:



I have adopted a similar position for the gerund and the participle structure. In the case of nominalization the nominalizer-(w)a/no projects an AspP which takes a VP as a complement. That is, I take the position that the Asp head is equivalent to the light verb as in Hale and Keyser (1993) and Chomsky (1995). The internal argument of the verb is merged to the right. The nominal character of the construction is reflected in the presence of a nominal D and Asp heads.

Based inter alia on de Hoop's (1992) treatment of resultatives in Finnish, I assume that aspectual information encodes argument structure as Case. This would suggest that the Asp head checks both aspectual and Case features of the internal argument. Later, a distinction between the gerund and the participle is made based on the trigger for the NP movement. I assume that the external argument of the gerund is generated at the [Spec,AspP] position. Note that Asp therefore shares the similarity with y in being both a functional head by checking the Case (aspect) of the internal argument and a lexical head by virtue of having an external argument merged at its specifier.

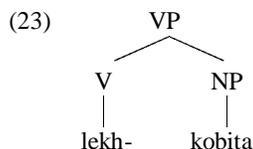
In sum, I have provided motivation for the presence of an aspectual head Asp inside the gerund DP in this section. I have thus motivated the gerund structure proposed in 1 in section 2.1 fully.

### 5.0 Deriving the gerund and the participle

Based on the conclusion that gerunds and participles in Bangla are syntactically derived from the same verbal base, I will now consider the derivation of the following pair of gerund and participle from the VP structure as in 23:

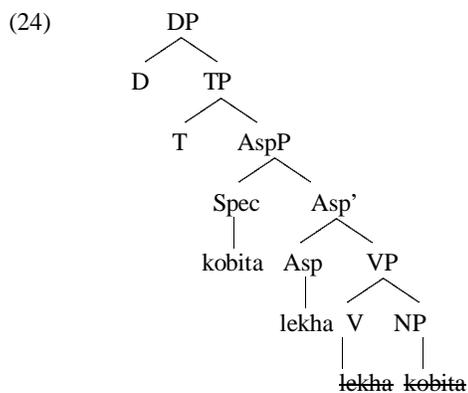
- (22) a. kobita    lekha  
          poetry    writing  
          'writing poetry'

- b. lekha    kobita  
       writing    poetry  
       ‘written poetry’



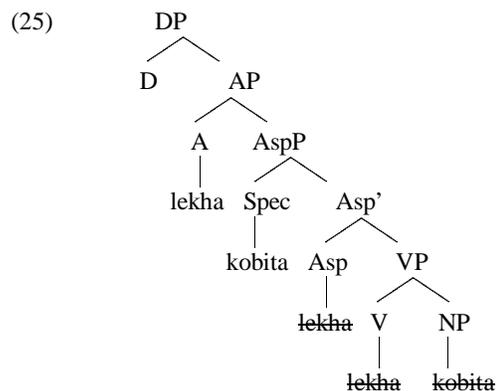
Given the preceding discussion, the verbal stem lekh- in 23 above maps into a syntactic structure where the gerundial aspect feature of the gerund head and the aspectual and Case features of the complement NP are checked against an aspectual functional/ lexical head Asp as in 24 below. I will assume with Chomsky (1995) (and what we have adopted in preceding chapters) that there may be multiple specifiers of functional projections. The AspP shell structure above is essentially identical to the  $\underline{v}$ P-shell structure in Chomsky (1995) which may therefore have the external argument generated at the outer spec of AspP which moves up to [Spec,DP] to check Genitive. Internal structure of the AspP is shown whenever required.

I will further assume with van Hout and Roeper (1998) that event anchoring is established trivially through an empty T in cases where the verbal head does not carry a Nom Case feature, if it does then Nom Case is checked at [Spec,T] along with the event feature checking. I will show the TP projection only when it is needed.



In line with our account of argument generation, the NP kobita checks the Case feature of the Asp head at [Spec,AspP]. The head movement of the V to Asp also involves an aspectual feature checking, this time [-perfect] for a gerund.

The participle in 22b above is derived as follows:



Notice that the NP movement to [Spec,AspP] takes place in the same way as in the case of gerund head except that the relevant aspectual feature in this case is [+delimit]. The V head first checks [+perfect] at Asp and then moves up to an Adj head. This is in keeping with the observation in Egerland (1996: 318) that adjectives in adjectival participles share the aspectual feature [perfect] with the verbal head.<sup>11</sup>

Comparing the derivation for a gerund in 24 and the one for the participle in 25, we can see that both involve NP movement inside the DP with an extra head movement in the case of the participle. Thus, gerund and participle formation is a matter of the argument structure that the LIs are mapped onto in the syntax. The difference between the two derivations lies in the fact that the participial -wa/no is unable to check for Case. Borer (1993) provides for this possibility in her theory. The delimited feature may be distinct from Case, as [Spec, AspP] may or may not be a Case position. Therefore, delimited arguments which do not carry accusative pass through a Spec which is specified as a place for checking [+delimit] but [-acc] (see Egerland (1996: 111) on this point). This is consonant with the conclusion in Bhattacharya (1999b) that the participial wa/no absorbs Case. However, as I will show in section 6.2, the mere presence of an object is not enough to guarantee participle formation.

#### 6.0 Unergative/ unaccusative gerunds and participles

In this section I return to the data set presented in 3.2. If we consider a bigger set of predicates which fail to have a participial form corresponding to a gerund (as in 15-16), it will become immediately clear

that there is a pattern among them. Let us first consider some clear-cut examples in this connection:

- (26) a. cheler    kaSa  
           boy's coughing
- b. radha-r    douRono  
           Radha's running
- c. rebar      haMSa  
           Reba's laughing
- (27) a.\* kaSa      chele  
           coughed boy
- b.\* douRono radha  
           run        Radha
- c.\* haMSa    reba  
           laughed Reba

That is, none of the predicates of 26 can have a corresponding participial reading. Notice that these verbs belong to the unergative class of verbs. Since unergatives' only apparent argument is an external one and they are marked by the apparent absence of an object, they are standardly assumed to have a structure where the verb does not subcategorize for an object argument position.

except certain unergative predicates which can take cognate objects (like sing, dance, talk, etc.)

unergatives in general cannot have corresponding participles.

Now let us look at another set of data:

- (28) a. chele-Ta-r    baRi    aSa  
           boy-cl-gen    home coming  
           'the boy's coming home'
- b. chele-Ta-ar    pherot jawa  
           boy-cl-gen    back    going  
           'the boy's going back'
- c. chele-Ta-r    baRi    pouMchono  
           boy-cl-gen    home arriving  
           'the boy's arriving home'
- (29) a.? baRi    aSa    chele-Ta

‘the come home boy’

b.? pherot jawa chele-Ta

‘the returned boy’

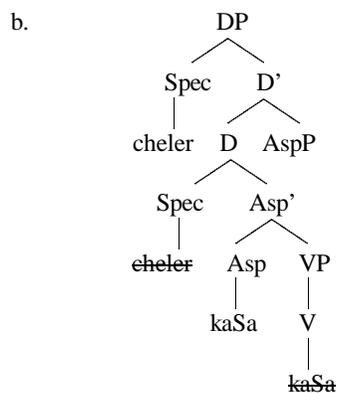
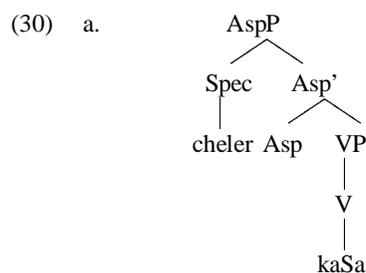
c.? baRi pouMchono chele-Ta

‘the arrived home boy’

That is, unlike the unergative set, here the intransitive predicates marginally allow the corresponding participles. The verbs in 28, belong to unaccusatives whose only argument is the internal one or in any event not the external one.

### 6.1 Deriving the unergative/ unaccusative gerunds and participles

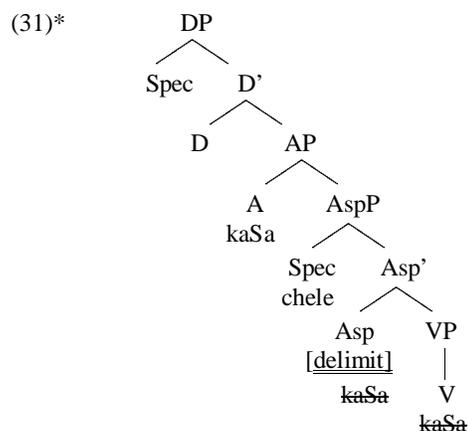
Let us look at the derivation of the gerund from an unergative verb and the non-derivability of the participle from unergatives. Since unergatives project a structure with an external argument position, I will assume that the derivation for 26a starts off with 30a and forms a gerund as in 30b:



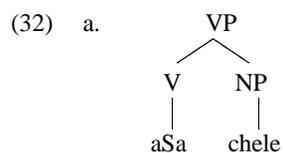
The V checks for its gerundial aspect feature [-perfect] by head movement to Asp. The subject moves to [Spec,DP] to check Genitive. The Asp does not select for a [delimit] as unergatives do not select an inner argument.

For the derivation of the participle in 27a the perfective aspect of the participle is contingent upon the

presence of an affected/ delimited object. If this is so then given the structure in 30a, the absence of an internal argument prevents participle formation since the nominal aspect feature of [delimit] of the Asp head remains unchecked and therefore the derivation crashes. The V may head move via Asp to A<sup>0</sup> checking [perfect] at Asp but the NP argument cannot check Case since participle wa/no absorbs Case. The difference between the two constructions therefore derive from the difference in their aspectual properties. All of this is visible in the structure below:



For the unaccusatives, recall that they do not project an external argument position. Given the discussion of unaccusatives in 6, the base structure from which a gerund 32b and a participle 32c are derived is as in 32a:



b. chele-r aSa (Gerund)

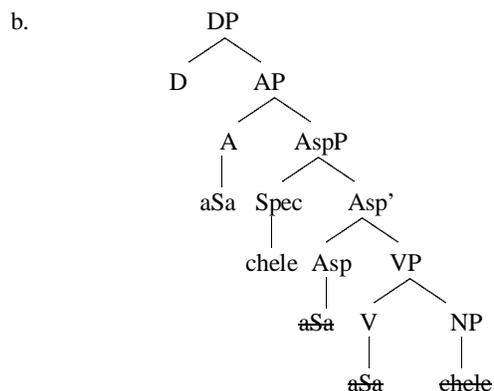
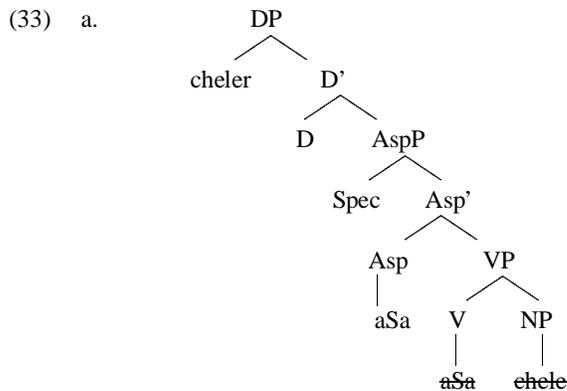
boy-gen coming

'the boy's coming'

c.? aSa chele (Participle)

'the having come boy'

Accordingly the gerund and the participles are derived as follows:



In the case of both 33a,b above the complement NP moves from an internal position to an external position (externalization of an argument) as per the nature of unaccusatives. In the present theory this is made possible by the presence of the [delimit] feature on the Asp for the participle and [poss] at D for the gerund and a matching feature on the argument chele. It is generally assumed that unaccusatives express a ‘change of state’. They refer to either ‘change of location’ (arrive, go, run, etc) or a ‘change of condition’ (improve, increase, diminish, etc). This semantic distinction is assumed to be captured by the [delimit] in the present proposal drawing on a similar proposal in Tenny (1987).

Additionally, since unaccusatives, by definition do not have an Accusative Case checking feature, the NP further moves up to [Spec,DP] to check Genitive in case of 33a. The derived position of the noun is different in 33b since chele is a full DP in the gerund and can therefore embed a Dem modifying the complement N, whereas a Dem can only modify the whole phrase in a participle. Recall that Dems are considered to be merged at a spec position of a head which is lower than D (see Bhattacharya 1999b).

## 6.2 Affectedness of the Object

We have mentioned at the end of section 5 that though both gerund and participle formation is a matter

of NP movement, the mere presence of an object does not guarantee the formation of participles.

Rather, given the aspectual account of gerunds proposed in this paper, the object must be affected. This accounts for the data in section 3.2 repeated below:

- (34) a. ramer Sastriyo Songit ERa-no (Gerund)  
 Ram's classical music avoid-ger  
 'Ram's avoiding classical music'
- b.\* ramer ERano Sastriyo Songit (Participle)  
 'classical music avoided by Ram'

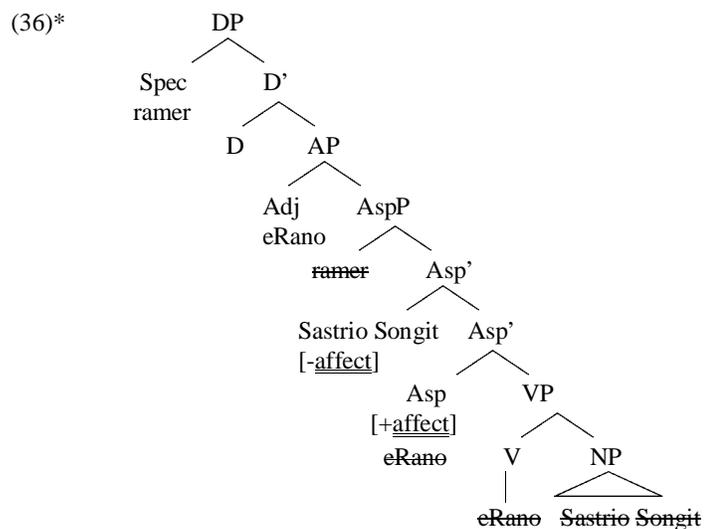
I suggest that the gerund is derived as in 35b from the base structure as in 35a below where the object NP is marked as an unaffected agent since the object of the activity of avoiding does not get affected in any way by the activity itself<sup>12</sup>:

- (35) a.
- 
- ```

graph TD
  VP --> V[V]
  VP --> NP[NP]
  V --- eRano[eRano]
  NP --- Sastriyo[Sastriyo]
  NP --- Songit[Songit]
  NP --- affected["[-affected]"]
  
```
- b.
- 
- ```

graph TD
  DP --> Spec[Spec]
  DP --> D_prime[D']
  Spec --- ramer1[ramer]
  D_prime --> D[D]
  D_prime --> AspP1[AspP]
  D --- ramer2[ramer]
  AspP1 --> AspP2[AspP]
  AspP2 --> Sastriyo[Sastriyo]
  AspP2 --> Asp_prime[Asp']
  Asp_prime --> Asp[Asp]
  Asp --- eRano[eRano]
  Asp_prime --> VP[VP]
  VP --> V[V]
  VP --> NP[NP]
  V --- eRano2[eRano]
  NP --- Sastriyo2[Sastriyo]
  NP --- Songit[Songit]
  
```

That is, although the object is marked non-affected, it still has to move up to [Spec,AspP] to check the Case feature. However, since the participle selects a [+perfect] Asp, it also requires an affected object. Thus, the derivation crashes due to reasons of feature mismatch with the result that participle formation does not take place<sup>13</sup>:



To conclude, I have shown that a feature theory utilising aspectual and Case properties of gerund and participle arguments can account for the data presented earlier. In particular, keeping the central theme of this paper in focus, I have shown that information about Case features in combination with the delimited/ non-delimited nature of the arguments drive NP movement inside the DP in the case of both gerunds and participles. The absence of this movement in the case of unergative participles as opposed to unaccusative participles is accounted for by the absence of either an aspectual or a Case feature in the former. The various possibilities of gerund and participle formation is summarized below:

(37)

Predicate Type	Object	Gerund	Participle
Transitive	[+affect]	✓	✓
Transitive	[-affect]	✓	✗
Unergative	nil	✓	✗
Unaccusative	[+affect]	✓	✓

Summary of gerund/ participle possibilities

## 7.0 Conclusions

In conclusion, in this paper I have shown that gerunds universally exhibit events through an Asp head either morphologically or abstractly. In continuation with the central theme of my earlier work, I have also shown that either Case (for gerunds) or a [±delimit] feature (for participles) of this Asp head drives NP movement inside gerundial and participial DPs in Bangla. The difference in the trigger on the other hand accounts for the unavailability of unergative participles in Bangla.

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<sup>1</sup>There is no general consensus in using these terms in the generative tradition. For example, in the same volume as Chomsky's paper, Bruce Fraser uses the term Factive Nominals for Chomsky's gerundive nominals and Substantive Nominals for Chomsky's Derived Nominals (Fraser 1970: 84-85). Further, gerundive nominals are often identified as verbal gerunds or imperfect gerunds as opposed to nominal or perfect gerunds (as in John's refusing of the offer) which in turn is also identified as Action Nominal (Fraser 1970, Grimshaw 1990) or as mixed nominals (Chomsky 1970: 215). A distinction is also made in the literature between Action/ Event/ Process nouns versus Result nouns (see Grimshaw 1990, Siloni 1997 among others). I discuss this terminological confusion further in section 3.

<sup>2</sup> Corresponding to the sentences in (i), there are GNs in (ii) and DNs in (iii) (from Chomsky (1970: 187)):

- (i) a. John is eager to please
- b. John has refused the offer
- c. John criticized the book
- (ii) a. John's being eager to please
- b. John's refusing the offer
- c. John's criticising the book
- (iii) a. John's eagerness to please
- b. John's refusal of the offer
- c. John's criticism of the book

<sup>3</sup> In Potawatomi, the tense morpheme -an can appear on both event and common object nouns. It is the same morpheme which is affixed to verbs to express tense or aspect relations:

- (i)a. nos                    b. nosan                    c. nciman                    d. ncimanpan
- 'my father'            'my deceased father'    'my canoe'                'my former canoe'
- (ii)a. nkasatas            b. nkasataspan
- 'I am happy'            'I was formerly happy'

<sup>4</sup> I ignore the possibility that 3 may be considered to exhibit relative clause properties.

<sup>5</sup> This is another name for the "mixed form" in Chomsky (1970: 215).

<sup>6</sup> All the (ii) forms with -ba in 5 also act as a stem for the corresponding gerundive khabar 'of eating', dEkhbar 'of seeing' takabar 'of staring' (more on gerundives shortly).

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<sup>7</sup>This is shown below:

(i)a. lekh-ba/ Son-ba/ kor-ba ‘writing/ hearing/ seeing’ (Standard)

b. likh-ba/ Sun-ba/ kor-ba ‘writing/ hearing/ seeing’ (Dialectal)

In case of (b) the high vowel of -iba raises the preceding vowel and deletes (see Dasgupta 1980 for details).

<sup>8</sup>The -ib/ba form is sometimes reduced to -a making it similar to the -wa/no gerund structure.

However, a gerundive always takes a Genitive marker after the affix. Notice that the template suggested in Dasgupta (1986) conflates two identifiable forms of the gerundive:

(i) <u>So-ba-r ghOr</u>	(ii) <u>So-ba-r jonno</u>
sleep- <u>ger-gen</u> house	sleep- <u>ger-gen</u> for
‘bedroom’	‘for sleeping’

The construction in (ii) is now classified according to Dasgupta (p.c.) as Dependent gerund. However, due to a lack of analytical work nothing definitive can be concluded from this distinction. Moreover, since this paper is not concerned with the correct analysis of the gerundive, I leave the investigation of this distinction for future research.

<sup>9</sup> A sequential reading of a causal P is harder to get than a causal reading of a temporal P (as in (10b)), but it improves with a temporal adverb. The point that this data establishes is that the agentive/ causal reading is stronger (more salient) with the Genitive.

<sup>10</sup> This process is identified as ‘packaging’ in Jackendoff (1991) where a portion of the stuff is spatially demarcated by referring to a serving, a kind or a quantity of it.

<sup>11</sup> Note that, therefore, the Asp head contains two aspectual features in case of participles, one to attract the delimited/ affected NP and the other to head attract the V with participial perfective aspect.

<sup>12</sup> Anderson (1979: 44) argues on similar line for the following contrast:

(i) a. <u>The Mongols’ destruction of the city</u>
b. <u>The city’s destruction by the Mongols</u>
(ii) a. <u>John’s avoidance of Bill</u>
b.* <u>Bill’s avoidance by John</u>

The difference in event types is responsible for the contrast above. In order to be affected an object must be changed or moved by the action of the head nominal. Tenny (1987) re-interprets this as the delimited/ non-delimited dichotomy that I have adopted for this study. However, I will continue to use

---

affected/ delimited interchangeably in this and other sections.

<sup>13</sup> So far, I have ignored in this discussion the other type of counterexample of Dasgupta (1980) in section 3.2 – bole bERano ‘talk and going around’. At present, I have no clue as to the aspect of complex predicates. However, it can be argued that if the aspect of the complex is determined by the aspect of the head, then this particular complex predicate would pattern with unergatives explaining the absence of the participial form.