

Clausal restructuring in the complex nominal: Evidence from participial LVCs in Kannada

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Abstract

Restructuring of infinitival complements within complex VPs, or Verbal Restructuring, is a well-known cross-linguistic phenomenon. In contrast, there is a dearth of empirical evidence for restructured complements within complex NP/DPs, even though the theory posits equivalence between nominal and verbal domains. Here, we provide novel evidence for the presence of restructuring within complex NP/DP complements in Kannada light verb constructions, and claim on this basis that clausal restructuring within the nominal domain is a possibility in natural languages.

1 Introduction

Restructuring of infinitival complements within the complex VP¹ (or *Verbal Restructuring*) is a well-known crosslinguistic phenomenon, attested across languages such as German, Dutch, and Italian among others (Wurmbrand, 1998; Rizzi, 1978; Aissen & Perlmutter, 1983). An example of a restructured sentence in German, from Wurmbrand (2012), is shown in (1). Here, the infinitival complement of the matrix verb *try* does not project to a clausal projection CP, but projects instead to a smaller VP phrase. Typically, as in (1), the process of restructuring results in mono-clausality of the sentence, despite the presence of the clause-like infinitival element in it.

- (1) weil Hans [[den Traktor zu reparieren]VP versuchte]complex VP
since John the tractor-ACC to repair tried
since John tried to repair the tractor

Analogous to complex VPs, languages also commonly contain complex NP/DPs, i.e., nominal phrases that take propositional or other clause-like complements. However, to the best of our knowledge, there have been no attested instances of clausal restructuring within the nominal domain. This gap is somewhat surprising (cf. Klockmann 2017), given that the theory has long posited equivalence between the nominal and verbal domains (Chomsky et al., 1970; Abney, 1987; Szabolcsi, 1994; Klockmann, 2017).

In this paper, we provide evidence from Kannada, a Dravidian SOV language, for clausal restructuring within the nominal domain. To do so, we investigate two types of Light Verb Constructions (LVCs) in the language. In the first type, the light verb complex selects for an infinitival complement (*Infinitival LVCs*), and in the second type, the light verb complex selects for a participial complement (*Participial LVCs*). Infinitival LVCs have previously

¹An NP or a VP is complex if it takes clausal or clause-like complements.

been claimed to involve verbal restructuring (Agbayani & Shekar, 2007). Here, we argue that there are compelling reasons to believe that participial LVCs are restructured as well, albeit within the nominal domain.

The rest of the paper is structured as follows. In the remainder of the introduction, we will first provide an overview of the prominent ideas related to verbal restructuring, and then discuss the motivation for expecting that an analogous phenomenon must also occur within the nominal domain. §2 introduces the readers to participial LVCs in Kannada, and §3 delineates a restructuring based analysis for participial LVCs that is able to explain a range of data related to these constructions. §4 concludes.

1.1 Background on verbal restructuring

Early analyses of verbal restructuring by the likes of Aissen & Perlmutter (1983) and Rizzi (1978) posited that the process by which infinitival complements are restructured explicitly involves a structure pruning transformation. Under this proposal, an ultimately restructured sentence starts out as a bi-clausal structure, but is later transformed into a mono-clausal structure through some kind of movement or deletion operation.

As an alternative to the bi-clausal approaches, Wurmbrand (1998) suggests a mono-clausal analysis. Here, no explicit pruning operation is assumed. Instead, complements of restructured sentences are simply generated as smaller categories, making the sentence mono-clausal right from the beginning (traditionally, they are VP complements). More recent discussions of restructuring commonly take a mono-clausal analysis to be the default starting point (e.g., Wurmbrand (2015), Agbayani & Shekar (2007), Cable (2004), Klockmann (2017)). This is also what we will assume in the current paper.

The canonical diagnostic for identifying the presence of restructuring is concerned with whether elements contained within the infinitival complement can grammatically participate in long-distance movement operations. Examples of long-distance movement operations include clitic climbing (Italian; Rizzi (1978)), long passives (German and Dutch; Wurmbrand (1998)), and long distance scrambling (Japanese; Saito (1992)). Other diagnostics to help identify clausal restructuring have to do with whether the embedded clause allows for an overt embedded subject or unrestricted temporal reference. In particular, in restructured sentences, neither an overt subject nor an independent tense specification is expected to be possible.

1.2 The case for clausal restructuring within the nominal domain

Clausal restructuring across languages has so far been identified exclusively as a property of (infinitival) complements of complex verbal predicates. In particular, no instance of restructuring has been attested within complex NP/DP domains, in spite of such phrases co-occurring with clausal or clause-like complements. An example of a complex NP/DP as discussed here is the English noun *claim*, which can take a propositional complement.

- (2) Mary made the claim that John had cheated her.

Such an empirical gap between restructuring within the verbal domain *vs.* the nominal domain is surprising because of the structural and behavioral equivalence between these two domains that has long been posited in various independent contexts in the literature (Chomsky et al., 1970; Abney, 1987; Szabolcsi, 1994). To start with, we know that nouns and verbs are the two basic lexical categories to be found in every language. Moreover, as Abney (1987) points out, there are languages in which a possessed nominal agrees with its possessor in the same manner that a verb agrees with its subject.

Complex NP/DPs (such as possessed nominals and event nominals) and sentential TP/CPs show distributional similarities as well. For instance, in (3) below from Abney (1987), the derived nominal in (3-a) and the sentential element in (3-b) play the same grammatical role of Subject. Examples such as these have in fact led Chomsky (1970) to propose that a structural subject-object distinction should be present at the NP level just like at the sentence level. As Klockmann (2017) observes, any grammatical system that expects such parallelism between the nominal and verbal domains might also expect the structural possibilities in the two domains to overlap—specifically, one might expect to see restructured clauses in the nominal domain.

- (3) a. [Nero’s destruction of Rome]_{DP} dismayed the senate.
b. [That Nero destroyed Rome]_{CP} dismayed the senate.

It has been attested that there is a core class of restructuring predicates across languages, which commonly includes modal verbs (e.g., *must*, *may*, *can*, *should*), motion verbs (e.g., *come* and *go*), aspectual verbs (e.g., *begin*, *continue*), and causatives (e.g., *make*, *let*) (see full list in Wurmbrand (2012)). Such an observation points to the prospect that any clause-like complement of such predicates can potentially be restructured. Given this, Kannada offers a unique opportunity in which restructuring within the nominal domain could be identified, if any, since it is a language where LVCs are extremely productive and predicates occur rampantly in their nominalized forms. Therefore, we may hope to find clause-like complements modifying the restructuring nominal predicate within the Kannada LVCs.

2 Light verb constructions in Kannada

Light verb constructions are very productive in Kannada. Many content nominals, e.g., *thought*, *decision* and *desire*, commonly combine with the light verb *do* to form complex light verb predicates (giving rise to the meanings *to think*, *to decide* and *to desire* respectively). Below, we introduce two types of LVCs in Kannada. First, the infinitival LVCs, which have been previously analyzed as involving verbal restructuring (Agbayani & Shekar, 2007). The second type of LVCs in Kannada are the Participial LVCs, and these are of crucial interest to us in the current paper.

2.1 Infinitival LVCs

In one of their distributions, light verb complexes in Kannada select for infinitival complements. We refer to such constructions as the *Infinitival LVCs*. Examples are shown in (4) and (5). The infinitival morpheme *-alu* is suffixed to the embedded verb in both these examples.

- (4) Rama-nu [mane-ge hog-alu] nirdhara maaDidanu
Rama-NOM house-DAT go-INF decision did-3.SG.M
Rama made the decision to go home.
- (5) Rama-nu [hann-annu tar-alu] yochane maaDidanu
Rama-NOM fruit-ACC bring-INF thought did-3.SG.M
Rama thought to bring fruit.

In accordance with the claim made by Agbayani & Shekar (2007) that all infinitival constructions in Kannada are instances of clausal restructuring within the verbal domain, the infinitival LVCs show restructuring properties like long object scrambling, as shown in (6).

- (6) hann-annu_k Rama-nu [t_k tar-alu] yochane maaDidanu
fruit-ACC_k Rama-NOM [t_k bring-INF] thought did-3.SG.M
Rama thought to bring fruit.

2.2 Participial LVCs

There exists a second type of LVC in Kannada also containing the light verb *do*, that we refer to here as the *Participial LVC*. In participial LVCs, the light verb complex selects for a participial complement, which is characterized by the presence of the Relative Participle (RP; Caldwell 1961) morpheme *-a* on the embedded verb. Examples of participial LVCs are shown in (7) and (8), analogous to the infinitival LVCs in (4) and (5). All light verb complexes that occur with infinitival complements can also occur with participial complements.

- (7) Rama-nu [mane-ge hogu-a] nirdhara maaDidanu
Rama-NOM house-DAT go-RP decision did-3.SG.M
Rama made the decision to go home
- (8) Rama-nu [haNN-annu taru-a] yochane maaDidanu
Rama-NOM fruit-ACC bring-RP thought did-3.SG.M
Rama thought of bringing fruit

In the following section, we introduce a novel analysis for participial LVCs in Kannada which claims that they involve restructuring within the nominal domain (analogous to infinitival LVCs which involve restructuring in the verbal domain).

3 A restructuring analysis for Kannada participial LVCs

3.1 Details of the proposal

Our main contribution in this paper is to provide a novel structural analysis for Kannada participial LVCs, wherein the embedded constituent involves clausal restructuring. Moreover, we show that the participial phrase, unlike the infinitival phrase, is not a verbal complement, but a complement of the nominal head within the light verb complex. Not only is such an analysis able to successfully address a wide range of data involving the participial LVCs (as discussed in more detail below), but it also provides the first piece of empirical evidence showing that clausal restructuring in the nominal domain is a possibility within natural languages. In the next two subsections, we provide additional evidence for two novel claims. The first set of arguments in §3.2 show that the participial phrase in Kannada participial LVCs are complements of the LVC nominal, and crucially that they are not complements attached to the verb itself. The second set of arguments in §3.3 show that the participial phrase is in fact restructured.

3.2 The participial phrase is a nominal complement

3.2.1 *-a* is a common nominal modifier in Kannada

First, we note that *-a* in Kannada is nominal morphology which commonly appears on adjectival elements modifying a nominal head N. It can occur in relative clause constructions like (9). It also acts as the genitive modifier of noun phrases as shown in (10). Finally, *-a* can also occur in complex noun constructions like (11). This does not hold of the infinitival morpheme *-alu*, as shown in (12).

- (9) Mane-ge baru-**a** nenTaru haNNu taru-(v)aru
house-DAT come-RP guests fruit bring-FUT-3.PL
Guests who come home will bring fruit
- (10) Avan-**a** gaLipaTa
He-GEN kite
His kite
- (11) Naanu [[Rama-nu America-ge hogu-a] vishaya]_{NP} keLide
I-NOM Rama-NOM America-DAT go-RP news heard-1.SG
I heard the news that Rama is going to America
- (12) *Naanu [[Rama-nu America-ge hog-alu] vishaya keLide]_{VP}
I-NOM Rama America-DAT go-INF news heard-1.SG
I heard the news that Rama is going to America

3.2.2 Intervening adverbs are not allowed

The participial *-a* construction does not allow intervening adverbial modification, but the infinitival *-alu* construction does. As shown in (13), no intervening adverb is allowed

between the embedded participial phrase and the nominal part of the LVC. This is not surprising if the participial phrase and the nominal part of the LVC together form an NP, or in other words, if the participial phrase is a nominal modifier.

- (13) *Ravana-nu [[Rama-nannu kollu-a] nenne yochane]_{NP} maaDidanu
Ravana-NOM Rama-ACC kill-RP yesterday(ADV) thought did-3.SG.M
Ravana thought of killing Rama yesterday
- (14) Ravana-nu [[Rama-nannu koll-alu] nenne yochane maaDidanu]_{VP}
Ravana-NOM Rama-ACC kill-INF yesterday(ADV) thought did-3.SG.M
Ravana thought of killing Rama yesterday

3.2.3 The participial complement together with the N head can act as a sentential subject

We further note that the participial *-a* complement together with the LVC nominal can be separated from the light verb *do* itself, and can act as a Subject in other independent constructions. This is shown in (15). However, the infinitival *-alu* constituent is not capable of behaving in this manner.

- (15) [Mane-ge hogu-a yoche]_{NP} Rama-nannu kaaDitu
house-DAT go-RP thought Rama-ACC troubled
The thought of going home troubled Rama
- (16) *[Mane-ge hog-alu yoche]_{VP} Rama-nannu kaaDitu
house-to go-INF thought Rama-ACC troubled

3.2.4 The participial complement is ungrammatical with lexical verb constructions

Consider the infinitival LVC in (4) (reproduced below in (17)), and the participial LVC in (7) (reproduced below in (18)).

- (17) Rama-nu [mane-ge hog-alu] nirdhara maaDidanu
Rama-NOM house-DAT go-INF decision did-3.SG.M
Rama made the decision to go home.
- (18) Rama-nu [mane-ge hogu-a] nirdhara maaDidanu
Rama-NOM house-DAT go-RP decision did-3.SG.M
Rama made the decision to go home.

(17) and (18) do not differ from each other in their meaning. They also resemble each other very closely in their surface forms, only differing with respect to the morpheme that occurs on the embedded verb. However, when the light verb is denominalized into its lexical verb form² (i.e., “do decision” is replaced with “decide”), we find that only the

²LV nominals often have a denominalized, lexical verb form in Kannada.

infinitival morpheme *-alu* can be grammatically embedded under the lexical verb. The analogous lexical verb construction with RP *-a* is ungrammatical. This contrast is shown in (19) and (20).

- (19) Rama-nu [mane-ge hog-alu] nirdharisidanu
Rama-NOM house-DAT go-INF decided-3.SG.M
Rama decided to go home.
- (20) *Rama-nu [mane-ge hogu-a] nirdharisidanu
Rama-NOM house-DAT go-RP decided-3.SG.M
Rama decided to go home.

If the participial phrase is, as we claim in our analysis of participial LVCs, indeed a complement of the LVC nominal, then the ungrammaticality of (20) which completely lacks the nominal is unsurprising. In (20), the presence of the participial phrase indicates that there must be an NP projection dominating it. However, a nominal head is absent, indicating a violation of the endocentricity constraint (Jackendoff et al., 1977).

The arguments presented above show clearly that the constituent containing the relative participle *-a* modifies a nominal head, and is therefore an argument within the nominal domain. In the next section, we show that the participial complement phrase in Kannada participial LVCs are indeed restructured.

3.3 The participial phrase is restructured

3.3.1 Lack of tense in the embedded constituent

First, we note that restructured constructions across languages are generally known to lack tense inflections on the embedded verbs. This is true of participial LVCs in Kannada as well. An example is shown in (21). In contrast, independent embedded tense does seem to be allowed on non light verb, complex noun constructions, as shown in (22). Such an observation strongly suggests the lack not only of a CP in the embedded complement of participial LVCs, but also of a finite TP projection containing a tense head that holds the [+tense] feature.

- (21) *Naanu_i [haNN-annu tand-a] nirdhara maaDide
I-NOM fruit-ACC bring-RP-PST decision did-3.SG
I did the decision of fruit having been brought
- (22) Naanu [haNN-annu tand-a] vishaya keLide
I-NOM fruit-ACC bring-RP-PST news heard-3.SG
I heard the news of Rama having brought the fruit.

Furthermore, no embedded subjects are allowed within the participial phrase in these LVCs, as shown in (23), corroborating the lack of a finite TP. Once again, in contrast, embedded subjects are allowed on other complex noun constructions as in (24).

- (23) *Naanu [Rama-nu haNNu taru-a] nirdhara maaDide
 I-NOM Rama-NOM fruit bring-RP decision did-1.SG
 I did the decision of Rama bringing the fruit
- (24) Naanu [Rama-nu haNNu taru-a] vishaya keLide
 I-NOM Rama-NOM fruit bring-RP news heard-1.SG
 I heard the news of Rama having brought the fruit.

3.3.2 Long-distance scrambling

Long-distance scrambling, where an argument from the embedded clause is fronted to the beginning of the sentence, is allowed in participial LVCs but not in other complex noun constructions. This contrast is shown in (25)-(26). We take this to be further evidence that participial LVCs in Kannada simply lack a CP boundary.

- (25) haNN-annu_k naanu [t_k tinnu-a] yochane maaDide
 fruit-ACC I-NOM [t_k eat-RP] thought did-1.SG
 I thought of eating fruit.
- (26) *haNN-annu_k naanu [Rama-nu_k tinnu-a] vishaya keLide
 fruit-ACC I-NOM Rama-NOM_k eat-RP news heard-1.SG
 I heard the news of Rama eating fruit.

3.3.3 Extraction is allowed out of participial LVCs

The relative participle *-a* is also known to occur in complex noun constructions such as (27), paralleling the participial LVC in (18) (repeated below in (28)). The surface forms of (27) and (28) are very similar, differing only in the choice of the main verb.

- (27) Rama-nu_i [pro_k mane-ge hogu-a] nirdhara keLidanu
 Rama-NOM pro_k house-DAT go-RP decision heard-3.SG.M
 Rama heard the decision to go home.
- (28) Rama-nu [mane-ge hogu-a] nirdhara maaDidanu
 Rama-NOM house-DAT go-RP decision did-3.SG.M
 Rama made the decision to go home.

However, (27) differs in its extraction behavior from the participial LVC in a crucial way. The complex noun construction acts as a strong island in that it does not allow the extraction of arguments out of the embedded constituent (CNPC; Ross (1967)). A similar constraint does not seem to apply to the participial LVC, as seen in (29)-(30).

- (29) *Rama-nu_i [pro_k t_j tinnu-a] nirdhara keLida haNNu_j koLetittu
 Rama-NOM_i pro_k t_j eat-RP decision hear-PST-RP fruit_j rotted
 “The fruit that Rama heard the decision to eat had rotted”

- (30) Rama-nu [t_j tinnu-a] nirdhara maaDida haNNu_j koLetittu
 Rama-NOM t_j eat-RP decision do-PST-RP fruit rotted
 “The fruit that Rama decided to eat had rotted”

If things are as argued in §3.2, i.e., if the participial phrase is a nominal complement, then this makes the LVC nominal a complex noun construction. So all things being equal, the Complex Noun Phrase Constraint (CNPC; Ross (1967)), which states that extraction is not allowed out of complex NP/DPs, is expected to apply in participial LVCs. However, it fails to do so, and we claim this provides further evidence that the participial phrase in participial LVCs is restructured.

The reason that the CNPC is expected to apply to complex NP/DPs is originally due to the principle of *Subjacency* (Chomsky, 1973). In effect, according to this principle, extraction out of a complex DP violates a locality constraint, because of the movement crossing more than one bounding node. Bounding nodes involve cross-linguistic parametrization—e.g., they are parametrized to TP and DP in English (Chomsky, 1973) vs. CP and DP in Italian (Rizzi, 1978). Here, we take the bounding nodes in Kannada to be similar to those in Italian—i.e., not TP, but CP and DP—given that object extraction out of relative clause constructions is ungrammatical as seen in (31), but topicalizing a nominal out of an embedded wh-clause like in (32) is grammatical. Note that we assume that topicalization in Kannada is an instance of A-bar movement to spec-CP, where the topicalized nominals refer to given entities.

- (31) *haNN_k-anna [TPamma [DP[CPt_k tanda] nentar-ige] neeru koDuvudikke
 Fruit-ACC mother t_k brought guests-DAT water to.give
 heLidru]
 said
 “Mother said to give water to the guests who brought fruits”
- (32) [CPkathe_k-anna [TPnaanu [CPΦ[+WH] [TPavaru yaar-ige t_k heLidru] anta]
 Story-ACC I-NOM Φ[+WH] they-NOM who-DAT t_k told that
 yochisutidde]
 was.thinking
 “I was wondering who they told the story to”

Since restructured complements have a reduced functional structure, movement out of the restructured complement does not violate subjacency—due to the complete lack of the CP bounding node. If the participial complements in participial LVCs are restructured, as our analysis claims they are, then this should hold of them too. Thus, the reduced structure of participial LVCs accounts for why the expected strong island effects as per CNPC are mitigated.

The arguments outlined above provide strong support to show that there is indeed restructuring within the participial LVC constructions in Kannada. Given this result along with the result that the participial phrases are nominal (and not verbal) complements,

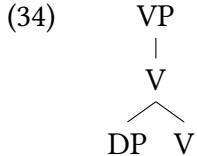
we can conclude that participial LVCs in Kannada are instances of restructuring within the nominal domain. This behavior is unlike previously attested cases of clausal restructuring which occurred exclusively within the verbal domain, and establishes that clausal restructuring within the nominal domain is a possibility within natural languages.

3.4 Syntactic tree

In this section, we present a possible syntactic structure for a sentence such as in (33), that incorporates the restructuring analysis developed in this section.

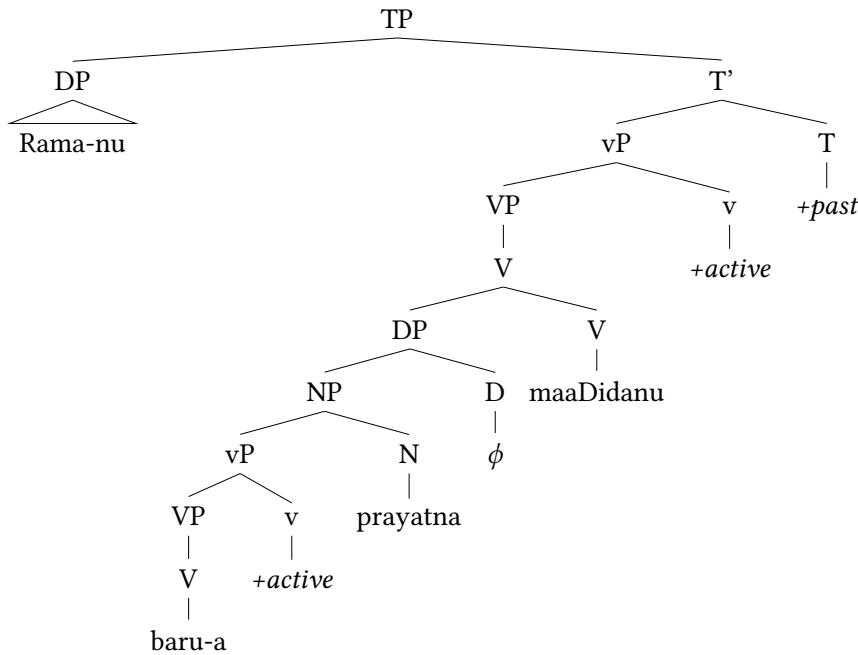
- (33) Rama-nu [baru-a] prayatna maaDidanu
 Rama-NOM come-RP try did-3.SG.M
 Rama tried to come

We take the structure in (34), inspired from Gallmann (1999), to represent the internals of the LVC. Here, the LVC nominal is attached to the verbal head via adjunction. However, the exact structure of the LVC itself does not critically affect any part of our main proposal presented here, so alternative tree structures for the LVC should in principle be equally acceptable. We also assume nominals in Kannada to be syntactic DPs containing a null determiner head.



The proposed structure for (33) is as shown in (35). Notice that in this tree, the highest projection on the participial complement is not a CP projection, but a smaller vP projection. This follows from our arguments showing that the participial phrase is restructured. The exact size of the restructured complement (i.e., VP vs. vP vs. TP) may depend on the specific predicate that occurs as the LVC nominal, however in every case, the highest projection in the restructured participial phrase is smaller than CP.

(35)



Notice also that the participial complement headed by vP is sister to the nominal head within the LVC, and is therefore an instance of clausal restructuring within the nominal domain.

4 Conclusion

In this paper, we have provided evidence to demonstrate that clausal restructuring in Kannada (and by extension, possibly in other natural languages as well) can occur not only in the verbal domain, but also within the nominal domain, where the restructured complement appears as the sister to N-head. Such a finding establishes further equivalence between the verbal and nominal domains, and bridges a theoretical gap in the literature.

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