

# Bounded Space and Stratified Reference: A Look at Malayalam Directional Markers

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## Abstract

Malayalam exhibits two pairs of Directional markers, Coboundary and Approximative. This paper examines the distribution and interpretation of Coboundary markers and Approximative markers in Malayalam. The data reveals that in Malayalam, it is possible for the starting/ending point of a Path to be conceptualized as being bounded or unbounded, according to the Directional marker used. This paper also reveals that unboundedness of linguistic space corresponds to Stratified Reference, while Boundedness corresponds to the lack of it, thereby supporting and unifying the studies of Tortora [11] and [12], Evans & Tyler [13], Den Dikken [3] and Champollion [2].

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## 1 Introduction

In natural languages, spatial relations employ markers that can be broadly divided into two according to what they indicate: Locative markers indicate the static position of an entity, and Directional markers indicate the movement of an entity.

In his study of spatial relations and the patterns of linguistic coding across languages in *Space in Language and Cognition*, Levinson [6] makes certain observations about Tamil. He points out that location, goal, and source are distinguished using different markers in Tamil. To mark distinctions in ground in terms of dimensionality, case markers are often combined with adpositions in Tamil. Malayalam, like Tamil, is also a Dravidian language, spoken mainly in South India, along the Indian West Coast. Being an agglutinative language like Tamil, these observations are valid for Malayalam too. However, Malayalam does not just have three markers, but three pairs of markers: a pair for each of the three kinds of grounds:

- Location - Topological Locative markers [-iḷ] and [-attə]
- Goal - Directional Allative markers [LOC.e:kkə] and [vare]
- Source - Directional Ablative markers [LOC n̄n̄n̄ə] and [mut̄al]<sup>1</sup>

Previous research in Malayalam (Asher & Kumari [1], Nair [8]) has not discussed the difference between spatial relations expressed by the Directional Ablative markers [LOC n̄n̄n̄ə] and [mut̄al], and Directional Allative [LOC.e:kkə] and [vare]. In this paper, I try to present a unified theory that builds connections between three domains, which are often addressed separately: linguistic space, boundedness, and stratified reference, by examining the distribution and interpretation of Directional markers in Malayalam. This paper begins with a brief introduction, then provide an introduction to the concept of Boundedness in the spatial domain, and then with the help of examples from Malayalam, I try to explore how the

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<sup>1</sup> The Ablative marker [toTTə] is sometimes used interchangeably instead of [mut̄al].

Directional markers differ in terms of how they prompt the interpretation of (un)boundedness of the Ground. I will also provide examples to demonstrate that the bounded vs. unbounded distinction is characterized by the presence or absence of Stratified Reference.

## 2 Background

It is interesting that the idea of Boundedness by itself is very much related to the domain of space, and still, in the study of spatial language, the notion of Boundedness has not been examined in detail, with the exception of Tortora [11] and [12], Evans & Tyler [13], and Den Dikken [3].

Tortora [11] and [12] suggests that linguistic space, be it place or path, is conceptualized as bounded or unbounded. Based on data from Italian, Tortora showed the distinction between the two types of Locative PPs. One is the complex PP that denotes an unbounded space (i.e., a space that is allowed to flexibly expand and change shape, size, or dimension) and as such allows for a distributed interpretation of the object. The second is the simplex PP that denotes a space that is bounded and allows for a point-like interpretation of the object (Tortora [11], p311).

According to Evans & Tyler [13], a bounded Ground (or Landmark, in their terminology) possesses an interior, and thereby a boundary, and an exterior. Bounded Grounds are generally understood to be three-dimensional, but two-dimensional planar spaces can as well be construed as bounded, if they are construed as possessing an interior, with respect to a boundary and an exterior.

Den Dikken [3] notes that similar to the distinction between bounded and unbounded events, one can find distinctions in the spatial domain at the level of locative P(reposition) (Koopman's PlaceP) [4] and directional P (Koopman's PathP). For example, both the PPs in the phrases "walk into the house" and "walk around the house" denote a Path. While the former path is bounded with an endpoint, the latter is not.

## 3 Dataset 1

In Malayalam, Ablative markers [LOC *ninnə*] (ABL1) and [*mutal*] (ABL2) denote the source of a Path, and Allative markers [LOC:*kkə*] (ALL1) and [*vare*] (ALL2) denote the goal of a Path. The two sets of Ablative and Allative markers express different spatial configurations such that ABL1 and ALL1 convey similar spatial configurations and ABL2 and ALL2 convey similar spatial configurations. Let us look at the following examples

- 1 go:pi vi:TT-il *ninnə* *naDannu*  
Gopi house-ABL1 walk.PST  
'Gopi walked from the house'
- 2 g:opi vi:Də *mutal* *naDannu*  
Gopi house ABL2 walk.PST  
'Gopi walked from (somewhere around) the house'
- 3 go:pi vi:TT-ile:*kkə**naDannu*  
Gopi house-ALL1 walk.PST  
'Gopi walked to the house'
- 4 go:pi vi:Də *vare* *naDannu*  
Gopi house ALL2 walk.PST  
'Gopi walked towards the house'

While [LOC  $\underline{\underline{ninn\bar{n}\bar{a}}}$ ] (ABL1) and [LOC.e:kkə] (ALL1) implies that the Path starts/ends at the Ground in 1 and 3 respectively, [ $\underline{\underline{mutal}}$ ] (ABL2) and [ $\underline{\underline{vare}}$ ] (ALL2) implies that the Path need not start/end at the Ground but would if the Path extended to some unspecified distance in 2 and 4 respectively.

The movement described in 1, 2, 3, and 4 is that of a person walking from/to a Ground (house) in which the Figure can be contained before/after the movement. If we replace the Ground in the above sentences with a noun such as *maram* ('tree'), in which the Figure cannot be contained before/after the movement, use of ABL2 (*go:pi maram  $\underline{\underline{mutal}}\underline{\underline{naDannu}}$* ) and ALL2 (*go:pi maram  $\underline{\underline{vare}}\underline{\underline{naDannu}}$* ) is grammatical. However, we can see that use of [LOC  $\underline{\underline{ninn\bar{n}\bar{a}}}$ ] (ABL1) and [LOC.e:kkə] (ALL1) would lead to semantic incoherence. Look at examples 5 and 6.

5 \*go:pi maratt-il  $\underline{\underline{ninn\bar{n}\bar{a}}}$   $\underline{\underline{naDannu}}$   
 Gopi tree-ABL1 walk.PST  
 'Gopi walked from the tree'

5 can be interpreted in two ways. Gopi got down from the tree and walks away with the hearer assuming that the word *irayyi* "got down" was accidentally omitted from *go:pi maratt-il  $\underline{\underline{ninn\bar{n}\bar{a}}}$  irayyi  $\underline{\underline{naDannu}}$* . It can also be interpreted that Gopi gets out of a hole in the tree and walks away.

6 \*go:pi maratt-ile:kkə  $\underline{\underline{naDannu}}$   
 Gopi tree-ALL1 walk.PST  
 'Gopi walked to the tree'

Similarly, in 6, it leads to interpretations "Gopi walks to the tree and climbs it" and "Gopi walks to the tree and then gets inside it" (through a hole, possibly.)

From 5 and 6, we can see that when the Figure cannot be contained within the Ground before/after the movement, use of [LOC  $\underline{\underline{ninn\bar{n}\bar{a}}}$ ] (ABL1) and [LOC.e:kkə] (ALL1) is ungrammatical and leads to semantically incoherent sentences; and use of [ $\underline{\underline{mutal}}$ ] (ABL2) and [ $\underline{\underline{vare}}$ ] (ALL2) is grammatical.

#### 4 Marking strategies in Malayalam

After analysing the distribution of Directional Markers in spatial contexts, we can see that each Directional marker encodes a distinct spatial configuration. Therefore, I will be using distinct terms for these markers henceforth:

I borrow the terms Cointial and Cofinal from Kracht [5] to describe the Malayalam Directional markers [LOC  $\underline{\underline{ninn\bar{n}\bar{a}}}$ ] (ABL1) and [LOC.e:kkə] (ALL1) respectively. These markers imply that the Figure is contained within the Ground before/after the movement. Their Paths can be visualized as Zwarts' [14] and [15] representation of Source and Goal paths, with the Source path representing a transition from 'in the location' (+) to 'not in the location' (-), and the Goal path representing a transition from 'not in the location' (-) to 'in the location' (+).

In certain contexts, these markers rule out the interpretation that the Figure is not contained within the Ground before/after the movement. I shall use the term 'Coboundary markers' to include Cointial and Cofinal markers, since these markers imply that the motion starts/results in the Figure being located congruently with the boundary of the Path in the beginning/end.

I borrow Mel'čuk's [7] terms Recessive and Terminative for the Malayalam Directional markers [ $\underline{\underline{mutal}}$ ] (ABL2) and [ $\underline{\underline{vare}}$ ] (ALL2), respectively. These markers imply that the Path need not begin/end at the Ground but would if the Path were extended some unspecified

distance. In certain contexts, these markers rule out the interpretation that the Figure is contained within the Ground before/after the movement. The Paths described by these markers cannot be visualized as Zwarts' [14] and [15] representation of Source and Goal paths.

I shall use the term 'Approximative markers' to include Recessive and Terminative markers, as they describe an approximate location of the Figure before/after the movement, which is less exact than the location described by the Coboundary markers. However, this is different from the sense in which the term is used by Mel'čuk [7] and Kracht [5] to describe a movement approaching a configuration, such as English *towards the tunnel*.

To summarize, the data so far suggests that the criteria for distinction between Coboundary markers and Approximative markers is their ability to encode Interiority, like the difference between English *into*, *to* and *towards*. When location of Figure with respect to the Ground before/after motion is ambiguous in the sense that the Figure may or may not be contained within the Ground, Coboundary markers encode Interiority; Approximative markers prompt many interpretations of the topological relation between the Figure and Ground, out of which the most common one rules out Interiority.

However, Malayalam indicates the relationship between figure and ground by resorting to 'pragmatically inferencing marking strategy' (Pederson [9]); when the exact nature of the relationship is adequately recoverable from the context, it need not be specified. For example, the same locative marker is used in both the sentences *va:ṭil-il ciṭal uNDə* 'There are termites on the door' and *kiNatt-il veLLam uNDə* 'There is water in the well'. However, the former indicates location of figure on the surface of the ground while the latter indicates location of the figure inside a three-dimensional ground. This information is inferred from the context. When the relation between the figure and the ground is ambiguous, the exact nature is made clear with the use of postpositions such as *uLLil* 'inside' or *me:le* 'above/on top of' (similar observation has been made about Tamil by Pederson [9]).

7. paper meshayuDe me:le ṇṇṇə vi:Nu  
 paper table.GEN above ABL1 fall.PST  
 'The paper fell from the (surface of the) table'  
 8. meshayuDe uLLil ṇṇṇə njan paper eDuttu  
 table.GEN inside ABL1 I paper take.PST  
 'I took the paper from the (drawer in the) table'

Therefore, it seems less probable that a language like Malayalam that employs pragmatically inferencing marking strategy to indicate relationship between figure and ground would have two sets of Directional markers only to distinguish Interiority. It will be shown in the next section that there are further nuances to the distribution of these markers.

## 5 Dataset 2

In this section, I will demonstrate that the Malayalam Directional markers have distinct interpretations with respect to their ability to encode the notion of Stratified Reference (Champollion[2]). Let us look at following sentences:

9. aa vi:TTil ṇṇṇə pirivə va:ṇṇiyaṭə nja:n a:Nə  
 that house-ABL1 collection buy.PP 1.sg.NOM be.PST  
 'It is I who collected money from that house'  
 10. aa vi:Dəmuṭal pirivə va:ṇṇiyaṭə nja:n a:Nə  
 that house ABL2 collection buy.PP 1.sg.NOM be.PST  
 'It is I who collected money from that house (and from the houses after that)'

11.  $\text{in}\bar{\text{n}}\bar{\text{n}}\bar{\text{a}}$  ente vi:TTile:kkə sensas eDukka:n a:L va $\bar{\text{n}}\bar{\text{n}}\bar{\text{u}}$   
 today 1.sg.GEN house-ALL1 census take.INFIN person come.PST  
 ‘Today, a person came to my house to take census (report)’
12.  $\text{in}\bar{\text{n}}\bar{\text{n}}\bar{\text{a}}$  ente vi:Də vare sensas eDukka:n a:L va $\bar{\text{n}}\bar{\text{n}}\bar{\text{u}}$   
 today 1.sg.GEN house-ALL2 census take.INFIN person come.PST  
 ‘Today, a person came to my house (and to the houses before mine) to take census (report)’

In 9, ‘that house’ defines the place from which the speaker collected money. However, in 10, there is a Path of houses from which the speaker collected money, and ‘that house’ defines the starting point of that Path. Similarly, in 11, ‘my house’ defines the place to which the census taker went, while in 12, there is Path of houses to which the census taker went, and ‘my house’ defines the ending point of that Path.

From 9-12, we can see that Coboundary markers [LOC  $\text{n}\bar{\text{i}}\bar{\text{n}}\bar{\text{n}}\bar{\text{a}}$ ] (ABL1) and [LOC.e:kkə] (ALL1) imply that the Ground defines the location of the activity/movement; this leads to the interpretation that the activity/movement occurs once. Approximative markers [ $\text{mut}\bar{\text{a}}\bar{\text{l}}$ ] (ABL2) and [*vare*] (ALL2) imply that the activity/movement occurs in multiple locations that form a Path, and the Ground defines the starting or ending point of this Path. This leads to the interpretation that the activity/movement occurs multiple times over this Path.

In other words, the Approximative markers refer to the end points of a Path P, which can be divided into smaller paths p1, p2, etc. (strata). Coboundary markers imply the existence of only a single Path involved in the activity/movement. It has become clear that the feature Interiority is not sufficient to account for all the distinctions that the Directional markers encode.

## 6 Discussion

The Directional Allative markers [LOC.e:kkə] (ALL1) and [*vare*] (ALL2), and Directional Ablative markers [LOC  $\text{n}\bar{\text{i}}\bar{\text{n}}\bar{\text{a}}$ ] (ABL1) and [ $\text{mut}\bar{\text{a}}\bar{\text{l}}$ ] (ABL2), are semantically similar but not identical. ABL1 and ALL1 are the Coboundary markers in Malayalam, and ABL2 and ALL2 are the Approximative markers. I sketched a preliminary proposal to treat Interiority as the feature that distinguishes the semantic nature of Coboundary markers and Approximative markers. However, further analysis showed that Directional markers need a more detailed description, using criteria that can account for the distinctions with respect to feature of Interiority as well as nuances that deal with the partition or stratification of path.

Building on the works of Tortora [11] and [12], Evans & Tyler [13], and Den Dikken [3], we can ascertain that the Path referred by the Approximative markers are unbounded, and the Path referred by the Coboundary markers are bounded. Therefore, I argue that boundedness is the criteria by which the Directional markers differ. This can be supported from the data from section 3, in which we have seen that the paths described by both Coboundary and Approximative markers have end points but the end points described by Approximative markers are less exact than the end points described by the Coboundary markers. While Coboundary markers allow for a narrow and often single interpretation of the referred space, Approximative markers allow for multiple interpretations, the most common of which is a distributed interpretation of the referred space.

From section 5, we have seen that Approximative markers refer to a stratified path, while Coboundary markers imply the existence of only a single Path involved in the activity/movement. This concurs with my argument that the Path referred by the Approximative markers is unbounded and the Path referred by the Coboundary markers is bounded, since unboundedness corresponds to a stratified reference, and boundedness corresponds to lack of

stratified reference, as discussed in Champollion [2].

Boundedness not only takes Interiority and Stratified Reference into account, it also explains the semantic distinction between Coboundary markers and Approximative markers in greater detail. Further proof of bounded vs unbounded distinction exhibited by Coboundary markers and Approximative markers can be found in their (in)compatibility with telic vs atelic predicates. In temporal contexts, Coboundary markers are compatible with telic predicates but not with atelic predicates:

In temporal contexts, Coboundary markers are compatible with telic predicates but not with atelic predicates:

13. Mary varumboLekyū John ṭṭṇṇu ṭṭi:rṭu/\*Mary varumbolekyū John ṭṭṇṇukoNDirṇṇu  
By the time Mary came, John finished eating/\*John kept eating

Conversely, the Approximative markers are compatible with atelic predicates but not with telic predicates:

14. Mary varṇṇaṭu vare John ṭṭṇṇukoNDirṇṇu/\*Mary varṇṇaṭu vare John ṭṭṇṇu ṭṭi:rṭu  
Till Mary came, \*John finished eating/John kept eating

Telic versus atelic distinction is one of the manifestations of the bounded versus unbounded opposition in the verbal domains. From similar examples in English, Champollion [2] concludes that *for*-adverbials test for a spatial counterpart of atelicity because they reject telic predicates. Although compatibility with (a)telic predicates is not a test for (un)boundedness, it does provide support for our argument that (un)boundedness is another criterion that differentiates Approximative and Coboundary markers.

## 7 Conclusion

This paper investigates factors that impact interpretation of Directional markers in Malayalam. The results identify two sets of Directional markers: Coboundary markers (ABL1 and ALL1) that refer to bounded Paths, and Approximative markers (ABL2 and ALL2) that refer to unbounded Paths. The findings of this paper concur with previous works that posit that linguistic space can be conceptualized as bounded or unbounded. This study aims to include the concept of stratified reference to what is understood to be the defining properties of bound and unbound linguistic space. This paper also attempts to bring boundedness in linguistic space under the foray of stratified reference, thereby unifying Champollion's [2] work with studies in Boundedness in spatial domain by Tortora [11] and [12], Evans & Tyler [13], and Den Dikken [3]. In future work, I propose to apply Idealization and Abstractedness (Talmy [10]) to gain a more comprehensive picture of how we perceive a linguistic space as bounded or unbounded.

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