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# **Locality in Malayalam Anaphor Binding**

## **Athulya Aravind**

#### 1. Introduction

The Dravidian languages have a long-distance reflexive anaphor *taan*, which is generally thought to be anti-local: a clause-mate subject cannot serve as its antecedent (Amritavalli 1984, Jayaseelan 1997, 2017, Mohanan 1983a). (1)-(2) shows this property illustrated for Tamil and Kannada.

- (1) Kannada (Lidz 1995)
  - a. \*Hari **tann-annu** hogaL-id-a Hari self-ACC praise-PST-3sm 'Hari praised himself.'
  - b. Raamu<sub>i</sub> [Shyaamu<sub>j</sub> tann-annu<sub>i/\*j</sub> priitis-utt-aane anta] namb-utt-aane Raam Shyaam self-ACC love-NPST-3SM COMP believe-NPST-3SM 'Raam believes that Shyaam loves him.'
    Unavailable: 'Raam believes that Shyaam loves Shyaam.'
- (2) Tamil (Sundaresan 2012)
  - a. \*Raman tann-ai aDi-tt-aan.
    Raman self-ACC hit-PST-3SM
    'Raman hit himself.'
  - b. Krishnan $_i$  [Raman $_j$  tann-ai $_{i/*j}$  aDi-tt-aan-nnu] paar-tt-aan. Krishnan Raman self hit-pst-3sm-comp see-pst-3sm 'Krishnan saw Raman hit him.'

However, many researchers have noted a pattern wherein local anaphora, otherwise ungrammatical, is licensed in the presence of a morpheme koL, found suffixed onto the verbal stem (Amritavalli 1984, Lidz 1995, 2001, 2004, Subbarao & Saxena 1984). This pattern of selective *anti*-antilocality is demonstrated in (3) and (4). In the koL-less (a)-examples, *taan* in object position is ill-formed, presumably because the only possible antecedent is the local subject *Hari*. However, the addition of koL in the (b)-variants rescues the structure.

- (3) Kannada (Lidz 2004)
  - a. \*Hari **tann-annu** hogaL-id-a Hari self-ACC praise-PST-3SM 'Hari praised himself.'
  - b. Hari tann-annu
    Hari self-ACC
    hogaLi-koND-a
    praise-KOL-PST-3SM

- (4) Tamil (Sundaresan 2012)
  - a. \*Raman **tann-ai** aDi-tt-aan. Raman self-ACC hit-PST-3SM 'Raman hit himself.'
  - b. ✓Raman tann-ai aDi-ttu-<u>koND</u>-aan. Raman self-ACC hit-PST-KoL-3SM

A prominent analytic route to anti-antilocality has been to take the correlation between appearance of *koL* and local anaphora as causal in nature. The marker has been argued to be a "verbal reflexive", analogous to Romance *se* or German *sich* (Amritavalli 1984, Lidz 1995 *et seq.*). Though technical details vary across theories, a core shared idea is that the presence of *koL* is tied to argument-structural manipulations

<sup>\*</sup> Athulya Aravind, MIT, aravind@mit.edu. Thanks to audiences at MIT Syntax Square and WCCFL 39 for feedback. Unless cited, all data are my own, confirmed with two other native speakers.

that serve to meet requirements introduced by reflexivity, e.g. that semantically reflexive predicates must be morphologically reflexive-marked (e.g. Reinhart & Reuland 1993).

This paper present novel evidence from Malayalam in support of a reductionist view. Focusing on one set of constructions involving *koL*-driven anti-antilocality, I show that the apparent exceptional behavior with respect to locality is only apparent. The relevant environments involve a periphrastic progressive construction, which, crucially, bifurcates the clause into two binding domains. The morpheme *koL* is argued to be an adpositional element which: (*i*) heads a PP complement of certain light verbs and (*ii*) embeds a nominalized clause headed by what would, in *koL*-less variants, constitute the main verb. Consequently, these constructions are consistent with the general anti-local profile of *taan*. I begin in the next section by discussing the core data patterns. §3 presents the analysis, supporting arguments for which are laid out in §4. §5 compares the analysis to other approaches to *koL*-driven anti-antilocality and §6 briefly concludes.

## 2. Taan and koL in Malayalam

## 2.1. Basic patterns of anaphor-binding

Like its relatives in Tamil and Kannada, Malayalam *taan* is generally anti-local. As shown in (5-a), it resists antecedence by a DP within the same locality domain. In such cases, a complex or reduplicative form must be used (5-b).

(5) \*Hari<sub>i</sub> tanne<sub>i</sub> pukhazthi Hari self praised 'Hari praised himself.

(6) Hari<sub>i</sub> avane-tanne<sub>i</sub>/tanne-tanne<sub>i</sub> pukhazthi Hari him-self/self-self praised 'Hari praised himself.'

Besides clauses, DPs and PPs also instantiate locality boundaries across which *taan* can be non-locally bound. This can be seen in (7-a) and (7-b), where the subject DP *Raman* can antecede an anaphor inside a possessive DP or a PP.

- (7) a. Raman<sub>i</sub> [ $_{DP}$  tan-te<sub>i</sub> kuTTi]-ye pukazhth-i Raman [ self-GEN child]-ACC praise-PRF 'Raman<sub>i</sub> praised his<sub>i</sub> child.'
  - b. Raman<sub>i</sub> Hari-ooDe [<sub>PP</sub> tann-e<sub>i</sub> patti] samsaarich-u Raman Hari-soc [self-ACC about] talk-PRF 'Raman<sub>i</sub> talked to Hari about himself<sub>i</sub>.'

Anti-locality disappears, however, in certain environments involving the morpheme *koL*. In (8), the anaphor *taan* is successfully anteceded by *Hari*. We thus reproduce in Malayalam the anti-antilocality effects already seen in Kannada and Tamil.

(8) Hari<sub>i</sub> **tann-e**<sub>i</sub> pukazhthi-**koND**-irikk-unnu Hari self-ACC praise-KOL-AUX-IMPF 'Hari is praising himself.'

The remainder of this section will discuss the distribution of *koL* in Malayalam more generally, and specifically in environments like (8).

#### 2.2. The role of koL

Unlike Kannada and Tamil, *koL* in Malayalam cannot freely attach to verbs, and direct counterparts of (3-b) and (4-b) would be ungrammatical in Malayalam. This is not to say that the morpheme is rare or absent in the language. On the contrary, *koL* appears in a grab-bag of environments in Malayalam and introduces a range of meanings like affectedness, means of action, simultaneity and continuation of action. We see it serving as an instrumental post-position in (9-a) and a while-type adverbial in (9-b). In select modal environments, it can receive a benefactive-like interpretation, (10).

(9) a. Amma katti-**konDu** manga muriccu mother knife-кол mango cut

'Mother cut the mango with a knife.'

b. kaTTil-il kiDannu-**konDu** Amma pustakam vaayichu bed-loc lay-KOL mother book read 'Mother read the book, laying on the bed.'

(10) Amma pustakam vaayich-**koLL**-um mother book read-KoL-fut 'Mother will go ahead and read a book.'

Finally, when combined with the auxiliary verb *irikk*-, the addition of *koL* contributes an event-in-progress reading, (11), which will be our focus.

(11) Amma pustakam vaayichu **koND**-irikk-unnu mother book read KOL-AUX-IMPF 'Mother stays reading the book.'

The event-in-progress construction with *koL* shows canonical interpretive properties of progressives. Within the language, it patterns with imperfectives formed with the aspect marker *-unnu* across various tests. Unlike perfectives, imperfectives do not license an inference to the culmination of the event with accomplishment predicates. In this respect, the *koL*-construction and *unnu*-imperfectives pattern together.

#### (12) Culmination entailments

a. avaL Raman-e English paDippi-chu

she Raman-ACC English teach-PRF

'She taught Raman English.' ⇒ Raman knows English

[perfective]

b. avaL Raman-e English paDippikk-unnu

she Raman-ACC English teach-IMPF

'She is teaching Raman English.' 

Raman knows English

[imperfective]

c. avaL Raman-e English paDippichu koND-irikk-unnu

she Raman-ACC English teach KOL-AUX-IMPF

'She keeps teaching Raman English.' 

Raman knows English [koL-construction]

A second test has to do with interaction with aksionsart. Statives like *understand* and *remember* do not generally occur in progressives. As expected, neither the *unnu*-imperfective nor the *koL*-construction is compatible with such predicates.

## (13) Interaction with aksionsart

 avaL-kke sangathi manasilaa-yi she-DAT issue understand-PRF 'She understood the issue.'

b. avaL avane oormich-u

she him remember-PRF

'She remembered him.'

Sne remembered nim.

[perfective]

c. #avaL-kke sangathi manasilaak-unnu

she-dat issue understand-IMPF

'She is understanding the issue.'

d. #avaL avane oormikk-unnu

she him remember-IMPF

Unavailable: 'She is remembering him.'

[imperfective]

e. #avaL-kke sangathi manasilaayi koND-irikk-unnu

she-DAT issue understand KOL-AUX-IMPF

Unavailable: 'She is understanding the issue.'

f. #avaL avane oormichu koND-irikk-unnu

she him remember KOL-AUX-IMPF

Unavailable: 'She is triggering his memory.'

[koL-progressive]

It is in these event-in-progress constructions where we observe anti-antilocality effects with taan, but

crucially, with no other interpretive differences. In reflexive and non-reflexive environments, these *koL*-constructions retain their progressive meaning and pattern the same way with respect to event-culmination (14) and interaction with statives (15).

#### (14) Culmination entailments

- a. avaL tanne English paDippichu koND-irikk-unnu she self English teach KOL-AUX-IMPF 'She keeps teaching herself English.' ⇒ She knows English
- b. avaL tanne English paDippichu koND-irikk-unnu, pakshe ithuvare paDichittilla she self English teach KOL-AUX-IMPF but yet learn-PERF-NEG 'She keeps teaching herself English, but she has yet to learn it.'

#### (15) Interaction with aksionsart

- a. #avaL-kke tanne manasilaayi koND-irikk-unnu she-DAT self understand KOL-AUX-IMPF 'She keeps understanding herself.'
- b. ??avaL tanne oormichu koND-irikk-unnu she self remember KOL-AUX-IMPF Punctual reading OK: 'She keeps triggering memories of herself.'

## 3. Analysis

## 3.1. Locative building blocks

The data seen in §2 support the following generalization about Malayalam *taan*: anti-antilocality of *taan* obtains in a species of progressives formed with *koL*. This raises a new question: why do *koL*-progressives show a different anaphor-binding pattern from the rest of Malayalam grammar? Though not in the realm of anaphora, splits based on aspect has been noted cross-linguistically when it comes to nominal case marking. In many ergative languages, ergative marking on transitive subjects is aspect-dependent, disappearing in the imperfective aspect. (16) illustrates with Basque.

## (16) **Basque split-ergativity** (Laka 2006)

- a. emakume-a-k ogi-ak ja-n d-it-u woman-DET-ERG bread-DET.ABS eat-PRF 3A-PL-have3E 'The woman has eaten the bread.'
- b. emakume-a ogi-ak ja-ten ari da woman-DET.ABS bread-DET.ABS eat-NMZ-LOC PROG AUX 'The woman is (stays) eating bread.'

One explanation for this pattern (Coon 2010, Coon & Preminger 2017, Laka 2006) is that these imperfective constructions involve added structure, and in fact comprise of two locality domains. In the Basque example in (16-b), for example, the higher clause involves the progressive auxiliary *ari*, which subordinates a locative clause containing the lexical verb and its internal argument. Support for such an analysis comes from the fact that locatives in Basque have parallel structure:

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(17) Emakume-a [PP Bilbo-n ] dago woman-DET.ABS Bilbao-at is 
'The woman is in Bilbao' (Laka 2006: 182)
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On the complexity approach to these progressive constructions, the apparent transitive subject is not a *bona fide* transitive subject, but rather, the intransitive subject of a higher verb. Ergative-marking proceeds in the expected way, failing to apply to subjects of intransitives. The specific directionality of the split — imperfectives triggering the loss of ERG — has to do with the fact that across languages, it is the non-perfective aspects that are constructed periphrastically, using locative building blocks (Coon 2010).

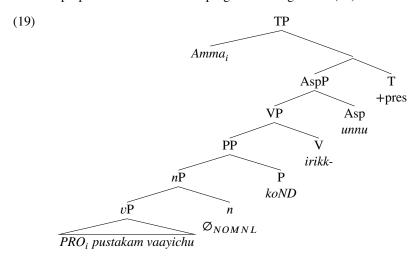
The Malayalam *koL*-progressives fit this picture: they involve locative components and a complex structure. The auxiliary *irikk*- that appears with *koL* in these progressives is a locative verb meaning 'to be located/situated. It is what appears in otherwise verbless locative constructions like (18).

(18) Paalu fridg-il irikk-unnu milk fridge-LOC locate-IMPF 'The milk is in the fridge.'

The presence of locative elements forms the basis of the crucial distinction between *koL*-progressives on the one hand, and *unnu*-imperfectives and perfectives: the former involves two clauses and the latter just one.

### 3.2. Complex structure

The proposed structure for *koL*-progressives is given in (19).



There are three components to it that are substantive and which, together, sets the present analysis apart from previous accounts. First and foremost is the fact that the structure in (19) involves two clauses. There are two predicates, one in the locative clause, headed by *irikk*-, and one in the embedded clause, headed by what would be the sole predicate in the non-periphrastic variants. Second, even though there is no overt marker of nominalization, the subordinate clause is taken to be nominalized. The *n*P introduces a locality boundary. This is consistent with what we find elsewhere in the language, where nominals constitute their own locality domain. The nominalized nature of the embedded clause is to be expected on the present analysis of *koL*, which is analyzed as a P<sup>0</sup>-head and which takes the nominalized clause as its argument. Its presence is mandated by selectional needs of the locative higher verb, an unaccusative taking PP, but not DP complements. This is sufficient to enough to explain the aspect split in binding: since there are two distinct locality domains, and *taan* in the lower clause bound by the surface-subject, i.e. the subject of the higher predicate, does not in fact involve local binding. The following section provides supporting evidence for each of the three main ingredients of the analysis.

## 4. Further evidence

### 4.1. Evidence for biclausality

If *koL*-progressives are bi-clausal, involving two separate locality domains, the resultant clause boundary should disrupt operations requiring strict locality. One such operation is the licensing of (certain) NPIs, which require clausemate negation. An illustrative case is in (20) and (21).

(20) Amma onnum vaayich-illa Mother a.thing read.PERF-NEG Mother didn't read a thing.'

(21) \*Amma onnum vaayich-u
Mother a.thing read-PERF
'Mother read a thing.'

Crucially, an NPI object in a *koL*-progressive cannot be licensed by negation on the auxiliary verb. Compare (22-a) with the *unnu*-imperfective in (22-b). Only in the latter is negation sufficiently close.

- (22) a. \*Amma onnum vaayichu koND-irikk-unn-illa
  Mother a.thing read KOL-AUX-IMPF-NEG
  'Mother didn't read a thing.'
  - b. Amma onnum vaayikk-unn-illa Mother a.thing read-IMPF-NEG 'Mother didn't read a thing.'

## 4.2. Evidence for silent nominalizer

In the structure in (19), *koL* takes a nominalized clause as its argument. Though there is no overt nominalizer present, the lower clause behaves like nominals. Malayalam conjunctive particle *-um* can coordinate nominals, but not verbal elements, as shown in (23) (Bhatt 2014, cf. Jayaseelan 2014).

- (23) a. Raman-um Sita-um wann-u Raman-conj Sita-conj come-prf 'Raman and Sita came.'
  - b. \*Raman wannu-um, Sita pooyi-um.
    Raman came-conj Sita went-conj
    Intended: 'Raman came and Sita went.'
  - c. \*Raman paaD-unn-um aaD-unn-um.
    Raman sing-IMPF-CONJ dance-IMPF-CONJ
    Intended: 'Raman is singing and dancing.'

If the lower verb in the *koL*-progressive is nominalized, we should find a contrast in its ability to be coordinated with *um* compared to the higher, non-nominalized one. This is indeed what we see. As expected, coordination of the lower predicate with *um* is grammatical, (24-a). In contrast, it is impossible to coordinate the higher predicate, (24-b).

- (24) a. Raman paaDi-um aaDi-um konD-irikk-unnu.
  Raman sing-conj dance-conj kol-aux-impf
  'Raman stays singing and dancing.'
  - b. \*Raman paaDi konD-irikk-unn-um Sita aaDi konD-irikk-unn-um. Raman sing коl-аux-імрр-сому Sita dance коl-аux-імрр-сому 'Raman stays singing and Sita stays dancing.'

## 4.3. Adpositional nature of koL

The morpheme *koL* has resisted a unified analysis: it has varyingly been analyzed as an aspect marker (Asher & Kumari 1997, Hany Babu 1997, Mohanan 1983b), durative adverb (Jayaseelan 2004), and lexical-aspect modifier (Swenson 2019). The present analysis treats *koL* as an adposition, in keeping with its distribution elsewhere in the language. Its role across environments, including in the progressive, is to license its nominal argument.

Such a treatment wins on conceptual grounds: the morpheme functions transparently as an post-position in some environments, and Occam's Razor militates against positing two *koLs*— one adpositional, one not— when one would do. Empirical evidence for treating *koL* in verbal environments as adpositional is more indirect, and based on what the morpheme can and cannot combine with. First, the negation marker *-illa* can generally attach to verbs and aspect, (25), whereas it cannot with *koL* (26).

(26)

- (25) a. Amma pustakam vaayikk-um Mother book read-FUT 'Mother will read a book.'
  - b. Amma pustakam vaayikk-illa Mother book read-NEG 'Mother will not read a book.'
- a. Amma pustakam vaayich-koLL-um mother book read-KOL-fut 'Mother will read a book.'
- b. \*Amma pustakam vaayich-koLL-illa mother book read-kol-neg 'Mother will not read a book.'

Distribution of intervening emphatic particles similarly group koL with adpositions and not with aspectual

elements. Typically, the emphatic particle *tanne* can intervene between a  $P^0$  and the main verb, but not between the  $P^0$  and its complement. This is illustrated in (27) with the instrumental use of koL.

- (27) Amma [<sub>PP</sub> katti (\*tanne) konDu ] (tanne) manga muriccu mother knife EMPH KOL EMPH mango cut 'Mother (really) cut the mango with a knife.'
- (28) a. \*Amma pustakam vaayich **tanne** unnu mother book read EMPH IMPF 'Mother is (really) reading the book.'
  - b. \*Amma pustakam vaayich **tanne** iTTunde mother book read EMPH PERFECT 'Mother has (really) read the book.'

Crucially, in koL-progressives, the emphatic particle can appear linearly between koL and the auxiliary verb, which would be surprising if koL was an aspect marker. It cannot, however, intervene between koL and the lower verb, (30). On the present account, the ill-formed configuration is entirely parallel to the ill-formedness in (27): both involve the particle intervening with  $P^0$  and its complement.

- (29) Amma pustakam vaayichu koND **tanne** irikk-unnu mother book read KOL EMPH AUX-IMPF 'Mother (really) stays reading the book.'
- (30) \*Amma pustakam vaayichu **tanne** konD-irikk-unnu mother book read EMPH KOL-AUX-IMPF 'Mother (really) stays reading the book.'

## 5. Comparison with alternatives

The present account of anti-antilocality effects stands in contrast to the standard view of Dravidian long distance anaphora, which appeals to salvation by the morpheme koL. The precise role of the morpheme varies across proposals, and I will limit the discussion here to two representative proposals. Lidz 1995 proposes that koL is a verbal reflexive that serves to reflexive-mark a predicate. His proposal is couched within the framework of Reinhart & Reuland 1993, where reflexive meanings require special morphosyntactic marking. Crucially, unlike complex anaphors like English *themselves*, monomorphemic anaphors like Dutch *zich* cannot by themselves reflexive-mark a predicate. They can therefore only combine with inherently reflexive predicates. Lidz proposes that Kannada instantiates a third pattern, where a verb can be made reflexive by the addition of a verbal suffix, making it possible for simplex anaphors to serve as its argument. koL is taken to be such an element.

The main challenge for this approach is the fact that koL is not restricted to reflexive environments. Recognizing this, Lidz 2004 proposes a modification. Building on proposals that treat reflexives as having unaccusative syntax (e.g. Embick 2004), he argues that koL spells out specifier-less v. However, as convincingly demonstrated by Sundaresan 2012, this approach, too, makes the wrong empirical predictions. For example, the morpheme can appear in clearly transitive environments.

Sundaresan's own proposal, focusing on Tamil, takes the well-formedness of *taan* in *koL*-environments to be epiphenomenal, much like in the present work. Specifically, she analyzes *koL* as a light verb with affectedness semantics, whose presence bifurcates the clause into two locality domains. The external argument raises from a lower verbal domain to [Spec, *koLP*]. The fact that *taan* is licit in *koL*-constructions, therefore, is no surprise: it fits the broader anti-local profile of the anaphor. The present work and the Malayalam data support the broad conclusions in Sundaresan (2012), though the nuts and bolts are different. In particular, the Malayalam data are not amenable to Sundaresan's treatment of *koL*. As argued above, *koL* does not show the distribution or behavior of verbal elements. In terms of its semantics, affectedness is not obviously part of the contribution of *koL* in the progressives. Rather, taking away the morpheme results in a loss of the progressive meaning, (31).

This is somewhat oversimplified. For Lidz, reflexives do not start out with the right structural environment for *koL* in having a specifierless *v*, but *becomes* so in the course of the derivation for independent factors.

(31) Hari Sita-e pukazhthi-irikk-unnu Hari Sita-ACC praise-AUX-IMPF 'Hari has praised Sita.'

#### 6. Conclusions

We started with an observation from the literature on Dravidian long distance anaphora: the typically anti-local anaphor *taan* seems to exceptionally allow for local binding in in the presence of the morpheme *koL*. I gave a novel characterization of one such exceptional environment in Malayalam as involving a periphrastic progressive, comprising of two distinct binding domains. If correct, the present analysis eliminates a counter-example to the anti-local profile of Dravidian anaphors: apparent local binding is only apparent.

On the present account, *koL* does no special work: it is an adposition that is inserted to meet the subcategorization requirements of the locative predicate. Extending beyond progressives, such an analysis makes possible a simple and unified analysis of the morpheme and provides a straightforward explanation for its wide distribution and interpretive range. It is uniformly an adposition that assigns a range of oblique theta-roles. The observed interpretive variability is due, in part, to the expressions the PP combines with. Finally, albeit tentatively, I suggest that parallel solutions could be extended to other cases of *koL*-driven anti-antilocality, making possible a characterization of long distance anaphora across Dravidian as uniformly anti-local.

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