A unified syntax for logophors and anaphors: evidence from verbal agreement in Tamil

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1 Overview

Based on evidence from verbal agreement triggered under an anaphor, in the Dravidian language Tamil, I will argue that anaphoricity and logophoricity are built up from the same two dependencies:

(i) a purely structural relationship, formalized as Agree, between the anaphor and a DP in the specifier of a Perspectival Phrase (PerspP) in the local phase of the anaphor, that "stands in" for its linguistic antecedent.

(ii) a predominantly conceptual relationship, which is the equivalent of non-obligatory control (Williams, 1980), between the DP representing the linguistic antecedent and the DP in the [Spec, PerspP] of the anaphor's local phase.

☞ I will thus show that a unified syntactic treatment of logophoricity and anaphoricity is not only possible but empirically warranted.

Before embarking on this task, however, I'd like to discuss the theoretical reasons why this is a goal worth pursuing.

2 The need for a better binding theory

☞ It has been long recognized, particularly in the realm of nominal anaphora (see e.g. Clements, 1975; Kuno, 1987; Sells, 1987), that discourse perspective (mental and/or spatio-temporal) guides the nature of binding relations.

This is nicely illustrated by the Icelandic minimal pair below (Sells, 1987):

(1) Barnið$_i$ lét ekki í ljós [$_{CP}$ að það hef-ði verið hugsað vel um
child.DEF put not in light that there had-SBJV been thought well about
sig$_{\{i,*j\}}$].
ANAPH
"[The child]$_i$ didn't reveal [$_{CP}$ that she$_{\{i,*j\}}$ had been taken good care of]."

(2) * Barnið$_i$ bar þess ekki merki [$_{CP}$ að það hef-ði verið hugsað vel
child.DEF bore of it not signs that there had-SBJV been thought well
um sig$_i$].
about ANAPH
"[The child]$_i$ didn't look [$_{CP}$ as if she$_i$ had been taken good care of]."

As Reuland (2001, 345), describing these sentences, reports:

> "The difference in acceptability between [(1)] and [(2)] can be attributed to the fact that in [(1)] the report is made from the child's point of view, i.e., it is the child, and not the speaker, who didn't reveal that he/she had been taken good care of, whereas in [(2)], it is the speaker who reports that the child didn't look as if he/she had been taken good care of."

- In other words, the linguistic antecedent of the anaphor in these structures must denote an individual who holds a perspective toward the (minimal) predication containing the anaphor.
- This isn't an isolated instance: parallels can be found in a wide range of languages ranging from other Germanic languages like Faroese (Strahan, 2010), Dutch and Norwegian (spatial anaphora patterns reported in Rooryck and vanden Wyngaerd, 2011; Lødrup, 2007, respectively) to non-Germanic ones like Italian (Giorgi, 2006), Japanese (Kuno, 1987; Oshima, 2007), Malayalam (Jayaseelan, 1997), and Chinese (Huang and Tang, 1991).

☞ However, the traditional wisdom in the literature has been to treat perspective as a purely discourse-pragmatic concept, one that, furthermore, doesn't feed into the core grammatical modules of syntax and semantics.

☞ So strong is this assumption that evidence indicating that binding is sensitive to structural constraints, like locality, minimality, and c-command (Chomsky, 1981; Pica, 1987; Huang and Tang, 1991; Progovac, 1993), has automatically been taken as evidence *against* the involvement of perspective.

☞ Conversely, evidence supporting binding sensitivity to discourse-pragmatic factors, as in the case of the so-called "logophoric" phenomena, has automatically been taken as evidence against the involvement of structure.

☞ This has led to a splitting up of binding phenomena into (at least) two categories: those that are structurally regulated and those that are conceptually driven.

The problem is that such a strict dichotomy doesn't seem to be empirically justified:

(i) The "well-behaved" structural binding phenomena (involving e.g. anaphors that obey c-command and locality conditions) frequently also display the effects of thematic and discourse-pragmatic factors (Reinhart and Reuland, 1993; Kuno, 1987).

(ii) Conversely, phenomena that have been treated as being predominantly conceptual/semantico-pragmatic manifest sensitivity to structural constraints (e.g. indexical pronouns may be variable bound (Kratzer, 2009)).

(iii) Pro-forms, like logophors, whose distribution is putatively purely conceptually driven, as well as anaphors, whose distribution is putatively purely structurally driven, frequently look morphophonologically alike crosslinguistically.

☞ In an elegant system, these crosslinguistically robust correlations would be treated, not as a coincidence or accident, but as the result of a principled mapping between discourse perspective and syntactico-semantic structure.

☞ But such an approach would necessarily require giving up the assumption that perspective is non-structural.

The central goal of this talk is to demonstrate that a unified syntactic treatment of logophoricity and anaphoricity (in certain languages) is not only possible, but empirically warranted.

3 Evidence against structural involvement: conditions on antecedence

☞ The involvement of structural restrictions on binding dependencies in a language like Tamil is, however, far from clear.

☞ On the face of it, all binding dependencies in this language seem to be conceptually driven.

3.1 Exceptions to "well-behaved" antecedence

Here is a "well-behaved" binding structure in Tamil:

(3) Raman$_i$ Krishnan-kiṭṭærundŭ$_j$ [$_{CP}$ taan$_{\{i,*j\}}$ paris- æ
Raman[NOM] Krishnan-ABL ANAPH[NOM] prize- ACC
ʤejkka-poo-r-aan-nnŭ] kaɳɖupiɖi-tt-aan.
win-go-PRS-3MSG-COMP find.out-PST-3MSG
"Raman$_i$ found out from Krishnan$_j$ [$_{CP}$ that he$_{\{i,*j\}}$ was going to win the prize.]"

Such sentences suggest that a DP that qualifies as an antecedent has the following structural properties:

(i) It is a syntactic subject, not an object.

(ii) It c-commands the anaphor.

☞ The problem is that there is a principled "exception" to each of the characteristics in (i)-(iii) above.

☞ Such evidence comes from logophoric structures, binding under psych predicates, as well as "standard" cases of long-distance binding.

3.1.1 The logophoric "exception"

☞ In the so-called "logophoric" structures, the subjecthood and c-command restrictions on antecedence are trivially violated – since the antecedent is not clause-internally represented, to begin with.

This is illustrated below:

(4) Seetha-vŭkkŭ$_i$ oɳɳum purija-læ. Taan$_{\{i,*j\}}$ maʈʈum een ivvaḷavŭ
Seetha-DAT anything understand-NEG. ANAPH.NOM alone why this.much
kašʈappaɖa-ɳum?
suffer-must?
Seetha$_i$ didn't understand at all. Why must she$_{\{i,*j\}}$ alone suffer this much?

- However, the standard wisdom (Reinhart and Reuland, 1993; Hicks, 2009; Rooryck and vanden Wyngaerd, 2011), is that logophoricity is an extra-grammatical phenomenon that is intrinsically different from anaphoricity.
- As such, we might claim, the rules for anaphoric binding aren't expected to apply to logophoric binding.

3.1.2 The psych predicate "exception"

☞ The problem is that even non-logophoric binding involves exceptions to the antecedence conditions laid out in (i)-(iii).

Consider the following psych-predicate structure:

(5) [$_{CP}$ [$_{DP}$ Taan$_i$ avvaḷavŭ eeɻæ-jaaga irŭnd-adŭ] [$_{DP}$ [$_{DP}$
ANAPH[NOM] so poor-ADJ be-PST-3NSG.NOM
Raman-ooɖ-æ]$_i$ aɳɳaavæ] rombæ-vee baadi-jirŭ-kkir-adŭ.]
his-GEN brother-ACC very-EMPH affect-be-PRS-3NSG
"[$_{DP}$ His$_i$ having been so poor] has really affected [$_{DP}$ [$_{DP}$ Raman's$_i$] brother]."

- In (5), the antecedent *Raman* is a possessor contained inside the experiencer DP.
- Regardless of whether this experiencer DP itself is analyzed as a "deep" subject or object (Beletti and Rizzi, 1988), as c-commanding or non-c-commanding, it is clear that the possessor DP *Raman* is not the clausal subject; nor does it c-command the anaphor.

3.2 Structural ill-formedness in "well-behaved" binding

- One way of getting out of such problems would be to claim that binding under psych-predicates, like logophoric binding, is outside the purview of standard binding conditions. E.g. Minkoff (2003) treats instances of "backward" binding ((5)), as instances of logophoricity.

- Another option would be to enrich the existing binding conditions to accommodate argument-structural sensitivity to the psych vs. non-psych distinction (Reinhart and Reuland, 1993).

The problem with both approaches is that:

☞ Logophoric binding, for all its surface similarities to anaphoric binding, must still be treated as an underlyingly distinct phenomenon.

☞ Even the putatively well-behaved instances of binding involve principled violations of structural well-formedness. Specifically, long-distance binding in Tamil and other languages, appears to violate syntactic conditions of locality, minimality, and determinacy.

Non-locality: Long-distance binding in Tamil really is long-distance – in principle, *ta(a)n* can be bound by any superordinate subject regardless of how many clausal boundaries may intervene:[1]

(6) [$_{CP}$ Raman Anand-kiṭṭæ [$_{CP}$ Seetha tann-æ$_i$
Raman[NOM] Anand-ALL Seetha[NOM] ANAPH-ACC
kaappaatt-in-aaḷ-ŭnnŭ] so-nn-aan-nnŭ] Krishnan$_i$
save-PST-3FSG-COMP] say-PST-3MSG-COMP Krishnan[NOM]
paar-tt-aan.
saw-PST-3MSG
"Krishnan$_i$ saw [$_{CP}$ that Raman told Anand [$_{CP}$ that Seetha saved him$_i$.]]"

Non-minimality: (6) also shows that the antecedent may also bind *ta(a)n* across other DPs (potential antecedents and non-antecedents alike), in apparent violation of Relativized Minimality.

Optionality: The choice of antecedent for the anaphor is not deterministic but can be chosen from a range of suitable candidates, both sentence-internally and in the discourse. The choice of antecedent may even be optional within a given clause (7):

(7) Krishnan$_i$ [$_{CP}$ Seetha tann-æ$_{\{i,j\}}$ kaadali-kkir-aaḷ- ŭnnŭ]
Krishnan[NOM] Seetha[NOM] ANAPH-ACC love-PRS-3FSG- COMP
Raman-æ$_j$ nenekka-vej-tt-aan.
Raman-ACC think-CAUS-PST-3MSG
"Krishnan$_i$ made Raman$_j$ believe [$_{CP}$ that Seetha loved him$_{\{i,j\}}$]"

3.3 Enter perspective

The antecedent-anaphor relationship in the logophoric and backward binding sentences in (4), (5) and standard long-distance binding structures in (3), (6) and (7) doesn't seem to be structurally driven, but seems to be governed by the following descriptive generalization:

[1] Restrictions on interpretability are, of course, imposed due to difficulties in processing – but there is no *theoretical* restriction on how far away an antecedent must be from the anaphor.

(8) the antecedent denotes a DP that holds a mental perspective towards the minimal predication containing the anaphor.

However, mental perspective is not the only kind of perspective an antecedent may hold. Consider the following sentences involving binding into CP, PP, and DP adjuncts:

(9) *ta(a)n* **vs. deictic pronoun inside spatio-temporal PP:**

a. Tan-akkŭ$_{\{i,*j\}}$ pinnaalæ orŭ perijæ poṯṯi irŭ-kk-æ, Raman- aalæ$_i$ vaṇḍi-æ
ANAPH-DAT behind one big box be-PRS-REL Raman- INS car-ACC
ooṯṯæ-muḍija-læ.
drive-could-NEG
"With a big box behind him$_{\{i,*j\}}$, Raman$_i$ couldn't drive the car."

b. Avan-ŭkkŭ$_{\{i,j\}}$ pinnaalæ orŭ perijæ poṯṯi irŭ-kk-æ, Raman- aalæ$_i$ vaṇḍi-æ
he-DAT behind one big box be-PRS-REL Raman- INS car-ACC
ooṯṯæ-muḍija-læ.
drive-could-NEG
"With a big box behind him$_{\{i,j\}}$, Raman$_i$ couldn't drive the car."

(10) *ta(a)n* **vs. deictic pronoun inside possessive DP:**

a. Raman$_i$ tann-ooḍæ$_{\{i,*j\}}$ eḍædŭ-pakkattŭ-læ irŭ-nd-æ paamb-æ
Raman ANAPH-DAT left-side-LOC be-PST-REL snake-ACC
ko-nn-aan.
kill-PST-3MSG
"Raman$_i$ killed the snake that was to his$_{\{i,*j\}}$ left."

b. Raman$_i$ avan-ŭkkŭ$_{\{i,j\}}$ eḍædŭ-pakkattŭ-læ irŭ-nd-æ paamb-æ
Raman he-DAT left-side-LOC be-PST-REL snake-ACC
ko-nn-aan.
kill-PST-3MSG
"Raman$_i$ killed the snake (that was) to his$_{\{i,j\}}$ left."

(11) *ta(a)n* **vs. deictic pronoun in temporal CP adjunct:**

a. Ramanæ$_i$ poruttæ varækkum, avan$_i$ [$_{CP}$ Seetha$_j$ tann-æ$_{\{i,*j\}}$
Raman-ACC concerning until, he Seetha ANAPH-ACC
tiṯṯ-in-appo-daan viiṯṯæ-viṯṯŭ ooḍ-in-aan].
scold-PST-3NSG-WHEN-only house-leaving run-PST-3MSG-EVID
"As far as Raman$_i$ is concerned, he$_i$ ran away from the house [$_{CP}$ only when Seetha$_j$ scolded him$_{\{i,*j\}}$]."

b. Ennæ poruttæ varækkum, Raman$_i$ [$_{CP}$ Seetha$_j$ avan-æ$_{\{i,j\}}$
Me-ACC concerning until, Raman Seetha he-ACC
tiṯṯ-in-appo-daan viiṯṯæ-viṯṯŭ ooḍ-in-aan].
scold-PST-3NSG-WHEN-only house-leaving run-PST-3MSG-EVID
"As far as I am concerned, Raman$_i$ ran away from the house [$_{CP}$ only when Seetha$_j$ scolded him$_{\{i,j\}}$]."

The sentences in (9)-(11) show the following:

- *ta(a)n* may be bound not only into complement CPs, but also into adjunct CPs, PPs, and DPs.

- In these cases, a deictic pronoun like *avan* (HE) may occur in apparent alternation with the anaphoric *ta(a)n* form.

- However, the following interpretive difference obtains between the deictic and anaphoric variants:[2,3]

  1. The deictic variants in (9b), (10b), (11b) report the (spatio-temporal or mental) perspective of the utterance context speaker (or are underspecified with respect to whose perspective they report) towards the minimal predication containing the bound pro-form.
  2. The anaphoric variants (in (9a), (10a), (11a) explicitly denote the spatio-temporal (or mental) perspective of the entity denoted by the antecedent DP with respect to the minimal predication containing the anaphor. E.g. in (10a), the "left-ness" of the snake is evaluated from Raman's perspective.

To put it another way, the sentences in (9)-(11) show that:

(12) the *ta(a)n*-antecedent may also denote an entity that holds a spatio-temporal perspective toward the minimal predication containing the anaphor.

Combining the insights in (8) and (12), we get the following descriptive generalization:

(13) **Condition for potential antecedence in Tamil:**
A potential antecedent for *ta(a)n* is a nominal which denotes an individual that holds a mental or spatio-temporal perspective with respect to the minimal predication in which the anaphor is a participant (i.e. thematic argument).

4 Evidence for structural involvement: verbal agreement patterns

☞ The description in (13) raises the valid possibility that all binding dependencies in Tamil and languages with similar binding patterns are triggered by non-structural factors and that any evidence of structural sensitivity is either apparent or epiphenomenal.

☞ However, verbal agreement patterns triggered under the simplex anaphor *ta(a)n* in Tamil, show conclusively that binding *is* sensitive to structure.

☞ By extension, both conceptual and structural factors must be invoked in the establishment of a given binding dependency.

[2]I am generalizing over the details here for reasons of time. But I'll be happy to walk through the interpretive differences in these examples in greater detail in the question period, if necessary.

[3]See also Rooryck and vanden Wyngaerd (2011) for similar observations about deictic vs. anaphoric variants in spatial binding structures in Dutch.

4.1 Crucial insights from verbal agreement

- Tamil uniformly manifests subject agreement on the verb.

(14) [Nii paris-æ tookkapoo- gir-aaj-ŭnnŭ] Raman namb-in-aan.
you[NOM] prize-ACC lose.go- PRS-2SG-COMP Raman believe-PST-3MSG
"Raman$_j$ believed [$_{CP}$ that you would lose the prize]."

- Tamil *ta(a)n* may occur both in object and (agreement-triggering) subject position – a typologically rather rare phenomenon.

But the nature of agreement triggered under subject *ta(a)n* is revealing:

(15) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{i,*j,*k\}}$ paris-æ tookkapoo-gir-**aa**ɭ-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3FSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaɭ-kiṯṯæ]$_k$ kaaṯṯ-in-aaɭ.
believe-PST-3MSG-COMP boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that she$_i$/*he$_j$/*them$_k$ would lose the prize]]."

(16) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{j,*i,*k\}}$ paris-æ tookkapoo-gir-**aan**-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3MSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaɭ-kiṯṯæ]$_k$ kaaṯṯ-in-aaɭ.
believe-PST-3MSG boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that he$_j$/*she$_i$/them$_k$ would lose the prize]]."

(17) Seetha$_i$ naḍandadæ-patti joosi-čč-aaɭ. Taan$_i$ een
Seetha[NOM] happening-ACC-about reflect-PST-3FSG. ANAPH[NOM] why
kašṭappaṯṯ-iru-kk-**aa**ɭ?
suffer-PRF-PRS-3FSG
"Seetha$_i$ reflected about what had happened. Why had she$_i$ suffered?"

Patterns:

- When the intended antecedent is 3FSG *Maya* (15), the agreement under *ta(a)n* is also 3FSG.

- But in the minimally varying (16), the agreement under *ta(a)n* is 3MSG, with the only possible antecedent being *Raman*.

- In (17), *ta(a)n* refers "logophorically" to the extra-sentential attitude-holder *Seetha*, but the agreement under *ta(a)n* must still reflect the ϕ-features of this antecedent: if *Seetha* were replaced by 3MSG *Raman*, the agreement-marking would be 3MSG *-aan* instead.

☞ **Descriptive generalization:** The agreement tracks the antecedent of the anaphor *ta(a)n*.

Analytic option I: Given (14), it is tempting to think that the source of agreement under *ta(a)n* is *ta(a)n* itself.

- However, since the agreement triggered under *ta(a)n* may vary, this would be tantamount to proposing three different *ta(a)n*-s in (15)-(17).
- Further evidence against the idea that *ta(a)n* directly triggers agreement comes from "monstrous" agreement patterns (the term "monster" alluding to a shifted indexical Kaplan, 1989) as in (18).
- Robust crosslinguistic evidence showing that anaphors are incapable of triggering regular ϕ-agreement (Rizzi, 1990; Woolford, 1999, "Anaphor Agreement Effect") and often fail to unambiguously identify the full set of ϕ-features of their antecedents (Pica, 1987; Reinhart and Reuland, 1993; Kratzer, 2009) – should also make us skeptical.

Analytic option II: The agreement on the verb under *ta(a)n* is triggered by the antecedent of this anaphor – e.g. via long-distance agreement or something like it.

- Crucially, (18) also shows that this cannot be the case.

(18) Raman$_i$ [$_{CP}$ taan$_{\{i,*j\}}$ ʤej-pp-**een**-nnŭ] so-nn-aan-nnŭ] Krishnan$_j$
Raman ANAPH[NOM]$_i$ win-FUT-1SG-COMP say-PST-3MSG-COMP Krishnan
nene-čč-aan.
say-PST-3MSG
"Krishnan$_j$ thought [$_{CP}$ that Raman$_i$ said [$_{CP}$ that he$_{\{i,*j\}}$ would win]"

- In (18) *taan*'s antecedent, *Raman*, is 3MSG, but the agreement under *ta(a)n* is 1SG.
- But this 1SG agreement only obtains when the antecedent is the AGENT of a speech-predicate; if the antecedent were *Krishnan*, 3MSG agreement would obtain instead.

In Sundaresan (2012), I propose that the 1st-person agreement under *ta(a)n* instantiates a type of Kaplanian indexical shift (Kaplan, 1989; Schlenker, 2003). What is relevant at this juncture is that these facts show that the agreement under *ta(a)n*:

(i) is sensitive to the properties of *ta(a)n*'s antecedent (e.g. it must be the AGENT of a speech predicate).

(ii) is nevertheless not *directly* triggered by the antecedent itself (since the ϕ-features on the agreement $\neq$ those on the antecedent).

(iii) is also not *directly* triggered by *ta(a)n* (this would force us to claim that *ta(a)n* in (18) $\neq$ that in (15)-(17), leaving opaque why 1st-person agreement obtains only in the clausal complement of a speech-verb).

Observation I: ϕ-feature agreement under subject *ta(a)n* is not directly triggered by *ta(a)n*.

Observation II: ϕ-feature agreement under subject *ta(a)n* is not directly triggered by the antecedent of *ta(a)n*.

Observation III: ϕ-feature agreement under subject *ta(a)n* nevertheless tracks the antecedent of *ta(a)n*.

Assumption: ϕ-feature agreement is locally implemented in the Narrow Syntax.

Conclusion I: The ϕ-features of the nominal that gets interpreted as the antecedent of *ta(a)n* are represented on a local entity in the Narrow Syntax, which is responsible for triggering verbal agreement under the anaphor.

Conclusion II: The antecedent is itself not a local entity with respect to the anaphor (in long-distance and logophoric structures). Thus, the local entity "standing in" for the antecedent must be distinct from both the antecedent and the anaphor.

Conclusion III: Logophoricity and anaphoricity both involve a core syntactic subcomponent, and a unified approach to both is empirically warranted.

5 Putting it all together: a two-step model of binding

- We have thus far seen evidence for the involvement of conceptual (specifically, perspectival) as well as structural factors, in the instantiation of binding relations in Tamil.
- Crucially, the conceptual and structural factors don't operate on separate types of binding dependency. I.e. it is not the case that some binding phenomena are perspective-sensitive whereas others are structure-sensitive.

The central claim is thus as follows:

Two-step binding:

☞ *Every instance* of binding (logophoric, long-distance, backward etc) in Tamil (and languages like it) is restricted by both perspectival and structural factors.

☞ Binding is thus a hybrid syntactico-pragmatic phenomenon that is comprised of two separate dependencies:

(i) A perspectival relationship between the entity denoted by the antecedent and the minimal predication containing the anaphor.

(ii) A syntactic relationship between the anaphor and some local object that "stands in" for the antecedent of this anaphor.

5.1 Introducing the perspectival center

☞ The optimal way to relate the perspectival and structural dependencies above would be to claim that the linguistic object that "stands in" for the antecedent in the local phase of the anaphor = the object that hosts the perspective of the antecedent.

- Fillmore (1997) proposes that every sentence has a *deictic center* – a reference point with respect to which deictic expressions are to be interpreted – including, among other things, the present time, location, and thematic information pertaining to the speaker.

- A similar notion is that of Kaplan (1989)'s context which is envisioned as a tuple containing coordinates pertaining to the $Speaker, Addressee, Time$, and $World$ of the actual context of utterance.

☞ Extending these insights, I introduce the notion of a "*perspectival center*" which contains information pertaining to the time, world, location, and mental attitude of the anaphoric antecedent.[4]

(19) **The Perspectival Center**:

i. The *perspectival center* contains the coordinates pertaining to the time, location, world, and/or mental information of a salient perspective holder.

ii. Certain predicational structures, specifically phases (= PPs, DPs, CPs), contain a perspectival center by virtue of what they inherently "mean". In a proper subset of these cases, the representation of the perspectival center in a phrase can be traced back to the selectional properties of its immediately superordinate predicate.

(20) The perspectival center in the local phase of an anaphor mediates the relationship between an anaphor and its antecedent as follows:

- it hosts the mental and/or spatio-temporal coordinates of this antecedent, and must therefore have "access" to this antecedent in some way.
- it enters into a syntactic dependency with the anaphor.
- when the anaphor is in subject position, it enters into a syntactic dependency with the T head in that phase, yielding the "antecedent tracking" effect of verbal agreement.

6 The Antecedence-PerspectivalCenter relation

Descriptively, we have seen evidence for the following types of antecedents:

[4]The perspectival center is similar to the enriched intensional index of Lewis (1979) which is supposed to contain information pertaining to the time, world, and location of an attitude-holder and to Bianchi (2003)'s concept of "internal logophoric center", but is broader in both conception and implementation in the following ways: (i) it may be associated with other eventualities besides those of speech and attitude. (ii) it may be introduced by linguistic strategies other than complementation.

- Logophoric antecedents, as in (4), where the antecedent DP is located in a different clause from that containing the anaphor.
- "Backward" antecedents (5), where the antecedent is in the same clause as the anaphor but doesn't c-command it.
- Antecedents in long-distance binding structures like (3), (6) and (7), which c-command the anaphor but seem to violate structural wellformedness conditions of Relativized Minimality and determinism.

☞ There are no (obvious) structural constraints placed on the distribution of the antecedent.

☞ By extension, the relationship between the antecedent and the perspectival center in the local phase of the anaphor must be a non-structural one.

Here, I will show that this relationship is very reminiscent of another type of non-structural relationship, namely that of "non-obligatory control" (in the sense of Williams, 1980) – instantiated by sentences like the following:

(21) $[_{CP}$ EC_i to leave] would be Max_i's pleasure.
(22) $[_{CP}$ EC_{arb} to leave] would be a pleasure.
(23) She_i is relying on Max_j $[_{CP}$ $EC_{\{i,j\}}$ to get everything done].

- (21) above shows that the antecedent may follow the clause containing the controlled element and need not c-command it;
- (22) shows that there need not be a syntactically represented antecedent at all.
- (23) shows that this antecedent is not uniquely determined.

(24) **Non-obligatory control** (Williams, 1980, 212):

a. No antecedent is necessary.
b. If there is an antecedent, it need not c-command.
c. The antecedent may follow S [the clause containing PRO].
d. The antecedent is not uniquely determined.
e. Lexical NP can appear in the position of PRO.

The controller in a non-obligatory control relationship may be sentence-internally absent, need not c-command, and is not uniquely determined, just like the antecedent in the binding structures discussed above. [5] I will thus propose that:

[5]The potential exception is the final property given in (24), i.e. the possibility of having an overt NP/DP in the place of the silent controlled element. This does not apply to the binding cases we have been discussing. But this is not a serious problem since there are NOC environments where no overt subject is possible as well; conversely, there are obligatorily controlled (OC) environments where an overt subject is possible (Szabolcsi, 2009; Sundaresan, To Appear).

☞ The relationship between the antecedent and the perspectival center instantiates a type of non-obligatory control.

☞ In a clause containing a successfully bound anaphor, the antecedent DP non-obligatorily controls a silent pronoun denoting the perspectival center, in the local phase of the anaphor.

☞ Unifying this idea with proposals in Koopman and Sportiche (1989) and Baker (2008) that certain types of referential dependency are regulated by a pronominal operator in the specifier of a functional projection along the clausal spine – I will also propose that this perspectival pronoun is hosted in the specifier of a functional projection– call it Perspectival Phrase (or PerspP) for now.[6]

7 The PerspectivalCenter-Agreement relation

Recall that when *ta(a)n* is in subject-position, the verbal agreement triggered under it reflects the ϕ-features of the actual antecedent of *ta(a)n*, as given in the minimal pair below:

(25) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{i,*j,*k\}}$ paris-æ tookkapoo-gir-**aa**ɭ-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3FSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaɭ-kiʈʈæ]$_k$ kaaʈʈ-in-aaɭ.
believe-PST-3MSG-COMP boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that she$_i$/*he$_j$/*them$_k$ would lose the prize]]."

(26) Maya$_i$ [$_{CP}$ Raman$_j$ [$_{CP}$ taan$_{\{j,*i,*k\}}$ paris-æ tookkapoo-gir-**aan**-nnŭ]
Maya Raman ANAPH[NOM] prize-ACC lose.go-PRS-3MSG-COMP
namb-in-aan-ŭnnŭ] [pasaŋ-gaɭ-kiʈʈæ]$_k$ kaaʈʈ-in-aaɭ.
believe-PST-3MSG boy-3PL-ALL show-PST-3FSG
"Maya$_i$ showed [the boys]$_k$ [$_{CP}$ that Raman$_j$ believed [$_{CP}$ that he$_j$/*she$_i$/them$_k$ would lose the prize]]."

- We have explained this by proposing that, in such structures, the verbal agreement under *ta(a)n* is triggered by the perspectival center.

- The perspectival center must thus be a DP that itself has valued ϕ-features – e.g. a deictic pronoun.

- Our conclusion above that the perspectival center is hosted on a silent *pro* in [Spec, PerspP] thus receives extra support from the agreement facts.

[6]It is possible that PerspP is not a separate functional projection at all, but may be instantiated as MoodP in some languages (e.g. Icelandic and Italian), or TopicP in others.

8 The PerspectivalCenter-Anaphor relation

☞ Given standard assumptions within Minimalism, I will assume that the syntactic dependency between an anaphor and the perspectival center in its local phase, is formalized as Agree.

☞ The anaphor, being referentially deficient, is the Probe (see Zeijlstra, 2010, and Wurmbrand (2011) for arguments in support of upward Agree) and the silent pronoun in [Spec, PerspP] the Goal.

What is left to be determined is what feature(s) is/are Agreed for in this relationship, which in turn has to do with what the featural representation of nominal anaphoricity is. Here, there are two opposing theories in the literature:

(i) Nominal anaphoricity $\leftrightarrow$ ϕ-defectiveness (see Kratzer, 2009; Reuland, 2001, 2011; Rooryck and vanden Wyngaerd, 2011, for different instantiations of this proposal).

(ii) Nominal anaphoricity $\nleftrightarrow$ ϕ-defectiveness. Nominal anaphoricity is encoded by a different feature (Adger and Ramchand, 2005; Hicks, 2009).

Here, I will adopt a version of the second analytic position, for the following reasons:[7]

- As Heinat (2008) illustrates, there are many languages with anaphoric forms that are not ϕ-defective. Here is an example from Zapotec – the availability of sloppy readings shows that we are not dealing with a case of accidental coreference, but of variable-binding:

  (27) **Sloppy readings under co-argument binding of an R-expression: Zapotec**

  B-gwi'ih Gye'eihlly$_i$ lohoh Gye'eihlly$_{\{i,*j\}}$ zë'cy-cahgza' Li'eb$_j$
  PRF-look Mike at Mike likewise Felipe

  "Mike$_i$ looked at himself$_{\{i,*j\}}$ and Felipe did too." (i.e. Felipe$_j$ looked at himself$_j$/*Mike)

- In many dialects of Tamil (Annamalai, 1999), a deictic pro-form like *avan* (HE) may be variable bound, even locally, just like the dedicated anaphoric form *ta(a)n*. Thus, both (28a) and (28b) are licit:

  (28) **Local binding with deictic pronoun and *ta(a)n*:**
  a. Ovvorŭ paijan-ŭkk-um$_i$ avan-æ$_{\{i,j\}}$ piḍikka-læ.
  Every boy[DAT-Q] he-ACC like-NEG
  "[Every boy]$_i$ didn't like himself$_i$/him$_j$."
  b. Ovvorŭ paijan-ŭkk-um$_i$ tann-æ$_{\{i,*j\}}$ piḍikka-læ.
  Every boy-[DAT-Q] ANAPH-ACC like-NEG
  "[Every boy]$_i$ didn't like himself$_{\{i,*j\}}$."

[7] For more detailed empirical argumentation in favor of this position, see Sundaresan (2012).

☞ I will take the evidence from (27)-(28b to show that: Nominal anaphoricity ↮ ϕ-defectiveness.

☞ We thus need a different feature to encode nominal anaphoricity.

8.1 Introducing the DEP-feature

I propose that the syntactic correlate of nominal anaphoricity is a feature labelled "DEP", and defined as follows:

(29) **The DEP feature:**

i. A DEP feature marks two DPs X and Y that are in a syntactic binding dependency with one another.
ii. DEP is an attribute that takes letters as value.
iii. An anaphor has an unvalued DEP feature – this is the syntactic correlate of anaphoricity; the silent pronoun in [Spec, PerspP] is born with a valued DEP feature.

- The DEP-feature is similar in many ways to Hicks (2009)'s VAR feature on nominals. But unlike VAR, the DEP-feature is not a featural attribute of every nominal, only occurs on a DPs that is in a *syntactic* dependency with another.

- In addition to the DEP feature, I will assume, in line with Kratzer (2009) and others, that *ta(a)n* has unvalued ϕ-features that must be checked in the course of the derivation. Thus, subject *ta(a)n* cannot itself value the agreement on clausemate T in sentences like (25)-(26).[8]

- In sentences like (25)-(26), the anaphor and clausemate T head enter into a feature-sharing relationship for unvalued ϕ-features (Pesetsky and Torrego, 2007): both get simultaneously valued by the pronoun in [Spec, PerspP].

8.2 LF issues

The DEP-feature must be visible to the Narrow Syntax because it has direct relevance for operations at LF.[9] Specifically:

☞ The assignment function maps the values of DEP to salient entities in the evaluation context.

[8]This is entirely consistent with my position that ANAPHORICITY ↮ ϕ-DEFICIENCY. E.g. we could assume instead that *ta(a)n* has no ϕ-feature *attributes* at all, and my account would still carry over essentially unchanged. The advantage of assuming that *ta(a)n* has unvalued ϕ-features is that it makes it possible to claim that all agreement goes through the subject position in Tamil, regardless of whether the subject is born with its ϕ-features or itself gets them valued in the course of the derivation.

[9]Thus, while it might be possible to maintain that ϕ-agreement is post-syntactic in the Bobaljik (2008) sense, DEP-agreement must be narrow-syntactic.

☞ Two elements with matching DEP values – e.g. the pronoun in [Spec, PerspP] and the anaphor – will thus denote the same entity in the evaluation context and are construed to be in a binder-bindee relationship with one another.

☞ The pronoun in [Spec, PerspP] will be construed as the binder at LF because it asymmetrically c-commands the anaphor (Heim and Kratzer, 1998).

But we still need to ensure that the entity that the DEP-value of the anaphor is mapped to denotes a mental/spatio-temporal perspective-holder with respect to the minimal phase containing the anaphor.

- Heim and Kratzer (1998) propose that ϕ-features introduce presuppositional restrictions on the denotation of a nominal in terms of partial functions that apply to the assignment function.
- I will follow them in making this same assumption about ϕ-features and will, further, extend this intuition to potential antecedence as well.

Specifically, in order for the function to successfully map the features on the operator in [Spec, PerspP] to an individual in its range, two conditions must simultaneously hold:

(i) The linguistic representation of the individual must match the ϕ-feature values of the operator in [Spec, PerspP] in the same evaluation context. In other words, the choice of referent must be *consistent* with all of the information about its possible reference derived from its ϕ-featural specification in the evaluation context.

(ii) The individual must qualify as a potential antecedent, in the sense defined above. I.e. the individual must hold a mental, spatial, and/or temporal perspective toward the minimal phase containing the anaphor.

(iii) These presuppositional restrictions constrain reference assignment in the form of partial functions on the denotation of the pronoun in [Spec, PerspP].

(iv) If more than one individual in the range of the assignment function satisfies both (i) and (ii) above, the decision of which individual is chosen for reference-assignment will depend on the intention of the speaker, common ground, and other discourse-pertinent factors – thus, antecedent optionality is accounted for.

9 A sample derivation: Logophoric and long-distance binding

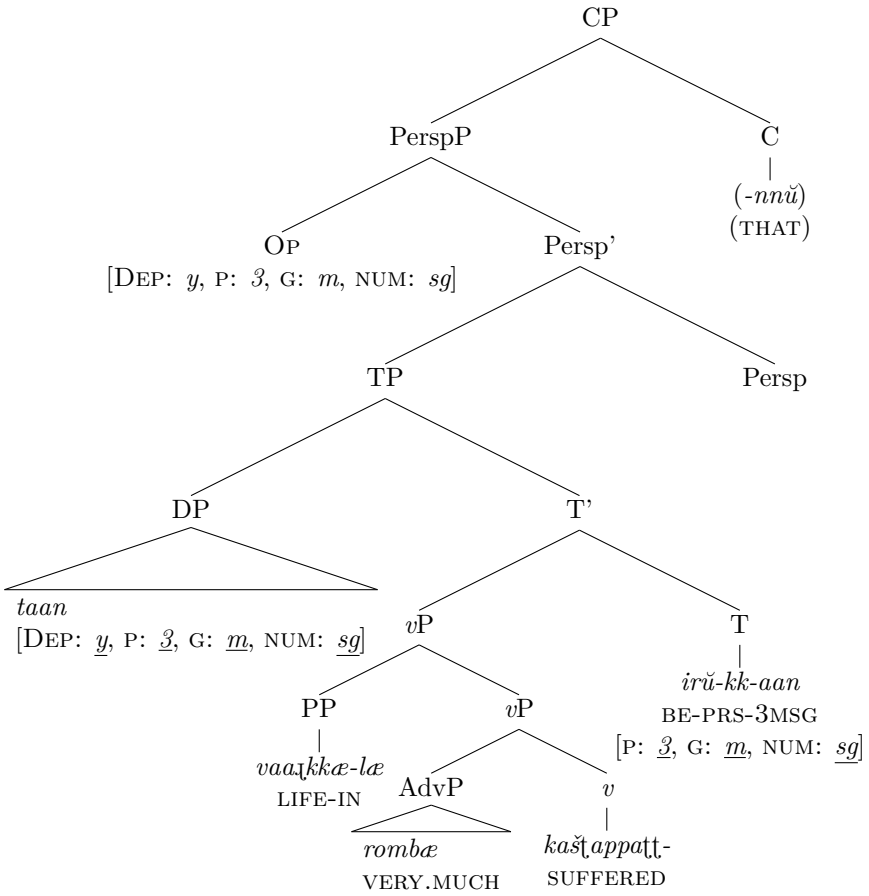
(30) involves logophoric reference of *ta(a)n*. (31) reframes the pair of sentences in this example as a single complex clause involving long-distance binding of subject *ta(a)n*:

(30) Raman$_i$ Krishnan-kiʈʈæ$_j$ polamb-in-aan. Taan$_i$ vaaɻkkæ-læ
Raman[NOM] Krishnan-ALL complain-PST-3MSG. ANAPH[NOM] life[ACC]
rombæ kašʈappaʈʈ-irŭ-kk-aan.
very difficulty-felt-be-PRS-3MSG.
"Raman$_i$ complained to Krishnan$_j$. He$_{\{i,*j\}}$ had suffered very much in life."

(31) [$_{CP}$ Raman$_i$ Krishnan-kiṯṯæ$_j$ [$_{CP}$ taan$_{\{i,*j,*k\}}$ vaaɻkkæ-læ rombæ
Raman[NOM] Krishnan-ALL ANAPH[NOM] life[ACC] very
kašṯappaṯṯ-irŭ-kk-aan-nnŭ polamb-in-ad-æ] Maya
difficulty-felt-be-PRS-3MSG complain-PST-3NSG-ACC Maya[NOM]
paar-tt-aaḷ.
see-PST-3FSG.
"Maya$_k$ saw/observed [$_{CP}$ [$_{DP}$ Raman's$_i$ complaining to Krishnan$_j$ [$_{CP}$ that he$_{\{i,*j,*k\}}$ had suffered very much in life.]]]"

Given the two-step binding model, the only relevant structure for the syntactic component of binding is the minimal CP containing the anaphor, which is the same for both (30) and (31). Here is its tree-structure:

(32)



9.1 Derivation of logophoric binding: (30)

- The anaphor *ta(a)n* probes upward to get its DEP feature valued. The closest c-commanding Goal is the operator in [Spec, Persp].

- Thus, *ta(a)n* enters into an Agree relationship with this Goal with the result that it ends up with the following feature-specification at the end of the syntactic derivation: [DEP: *y*, P: *3*, G: *m*, NUM: *sg*].

- At LF, the matching y feature on the operator and anaphor results in them being construed as a binder-bindee pair under semantic variable binding.

- The assignment function g will try to map y to one of the individuals in its range. Crucially these individuals will be selected not just from the sentential structure but also from the salient discourse (an assumption that standard views on reference assignment have to make anyway).

- In the sentence in (30), the range of the assignment function g will consist of a set with at least the following members: {Raman, Krishnan}.

- The mapping of the DEP-feature to value to one of these individuals will, however, be restricted such that the individual chosen must satisfy the presuppositions placed by the ϕ-features on the operator (Heim and Kratzer, 1998).

- The second requirement is that the chosen individual fulfill the thematic, semantic and discourse requirements for potential antecedence – described as in (13) above.

- Both *Raman* and *Krishnan* fulfill the ϕ-feature requirement, since both are specified 3MSG. However, only *Raman* denotes a mental perspsective holder with respect to the minimal predication containing the anaphor – thus only it satisfies the potential antecedence presupposition on its denotation.

- This yields: $y \rightarrow$ Raman by g with the result that *ta(a)n* refers to Raman "logophorically", as desired.

9.2 Derivation of long-distance binding: (31)

All the differences between (30) and (31) have to do with the nature of reference assignment. In the syntax, the derivation for both is exactly the same.

- In the long-distance embedded sentence in (31), the range of the assignment function g is at least: {Maya, Raman, Krishnan}.

- The DP that denotes Maya fulfills the conditions on potential antecedence. However, since *Maya* is 3FSG, it doesn't fulfill the ϕ-feature requirements, and is disqualified on these grounds.

- The DPs denoting Raman and Krishnan fulfill the 3MSG ϕ-feature requirements on proper assignment; however, only *Raman* fulfills the requirements on potential antecedence (in the unmarked discourse scenario).

- Result: *Raman* is the only possible antecedent for subject *ta(a)n* in this structure, in the pragmatically unmarked case.

9.3 Deriving verbal agreement under *ta(a)n*

The pronoun in [Spec, PerspP] triggers the agreement under *ta(a)n* in both structures:

- T starts out with unvalued PERSON, NUMBER and GENDER features. It tries to get these valued by the clausemate subject in [Spec, TP], as usual but in this case, the subject is *ta(a)n* which also has unvalued ϕ-features.
- As discussed above, T and *ta(a)n* enter into a feature-sharing relationship for ϕ-features (Pesetsky and Torrego, 2007).
- These get simultaneously valued on both by the operator in [Spec, PerspP] in the local CP phase. At PF, the features on T get spelled out as *-aan*.
- We also have the desired result that the agreement under *ta(a)n* tracks the features of the antecedent of *ta(a)n*.

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