Long-distance agreement

based on Bhatt & Keine, 2017

Julius Nguyen

Universität Potsdam

July 23, 2023

Section 1

Agreement in the Minimalist Program

Agreement in the Minimalist Program

Example: **Subject-verb agreement in English**

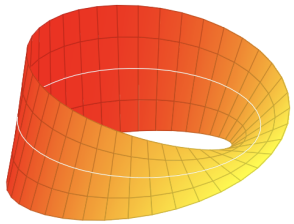
(1) a. Charlie paint-__ Möbius strips.

b. Charlie.3SG paint-**3SG** Möbius strips.

At spellout, using *Vocabulary Insertion* rule

s ↔ [3SG]

c. Charlie.3SG paint**s** Möbius strips.



Agreement in the Minimalist Program

Example: **Subject-verb agreement in English**

- T is the *locus* of finiteness
- T has an unvalued ϕ-feature
  T $:= \emptyset$ [ϕ :__]
- therefore it 'looks' for an element ϵ of the form
  $\epsilon := x$ [$\phi : \beta.\gamma$]

  where
  x is the string that ϵ represents,
  β the NUMBER,PERSON-value
  γ the GENDER-value

- and ϵ satisfies the following conditions:
  1. ϵ is c-commanded by T,
  2. bears valued ϕ-features, and
  3. is the structurally highest NP that T c-commands (Locality condition for Agree)

Agree

- If such an element ϵ has been found, features from that element are copied to T
- This whole operation is called **Agree**[1].

Agree

$\delta{:=}\ x_\delta\ [\phi{:}\_]\ \overrightarrow{c\text{-}command}\ \epsilon\ :=\ x_\alpha\ [\phi{:}\beta.\gamma] \longmapsto \delta\ :=\ x_\delta[\phi : \beta.\gamma]$

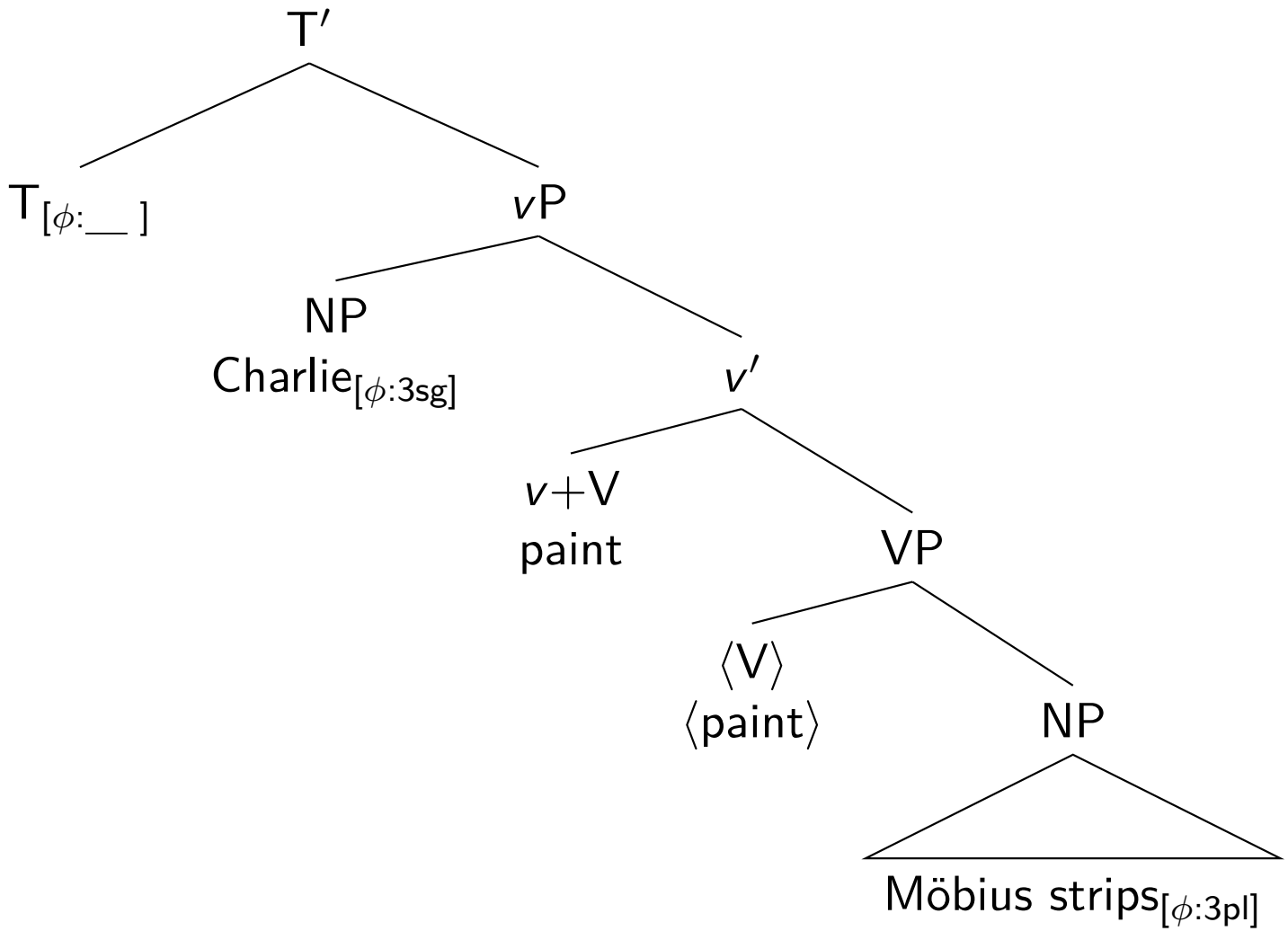
where
δ, ϵ are heads
x is the string of the head
$\beta.\gamma$ is NUMBER:PERSON, GENDER value respectively

Definition: δ is called **Probe** and ϵ is called **Goal**.

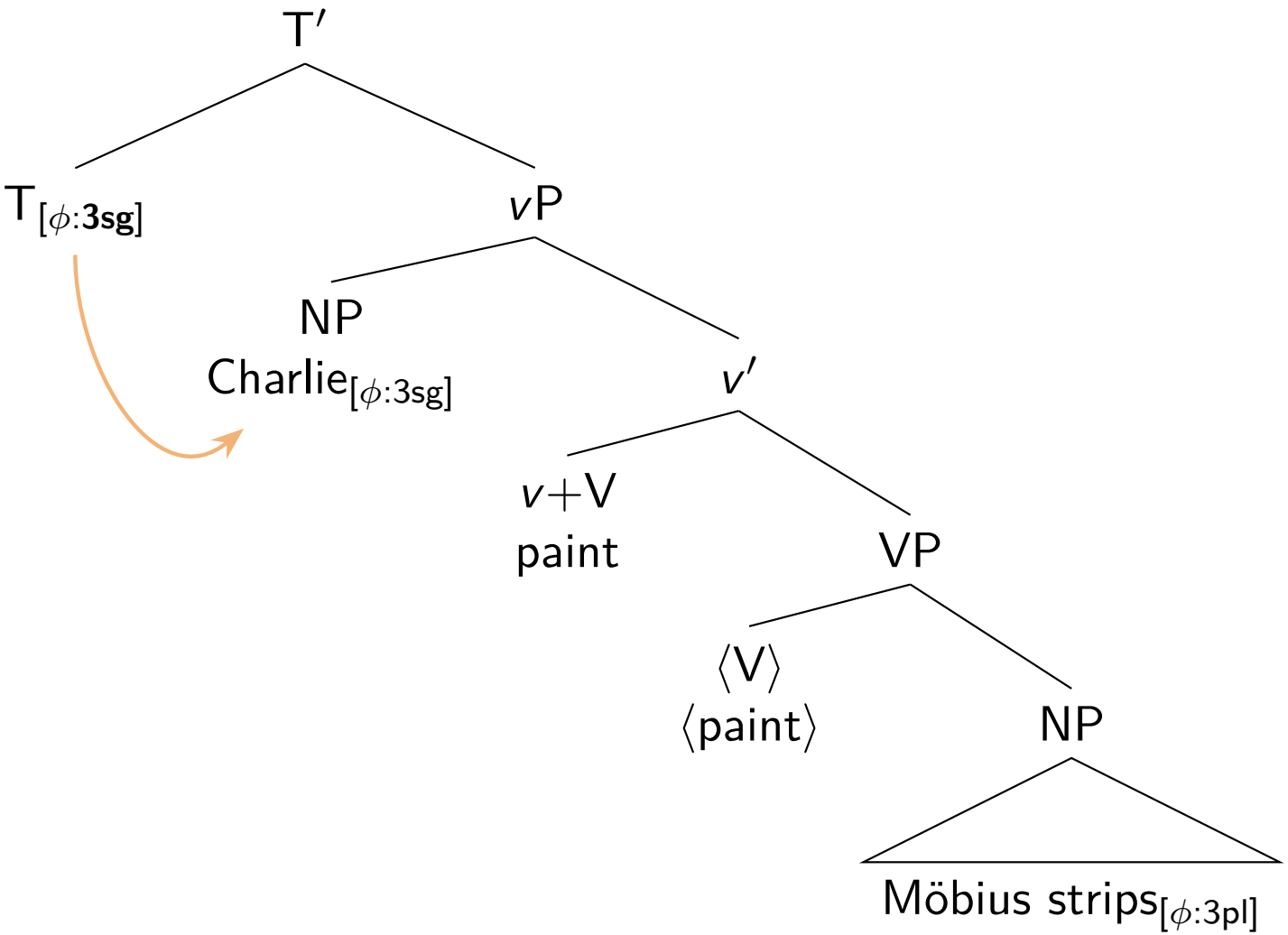
[1] def. applicable on binary structure

Agreement in the Minimalist Program

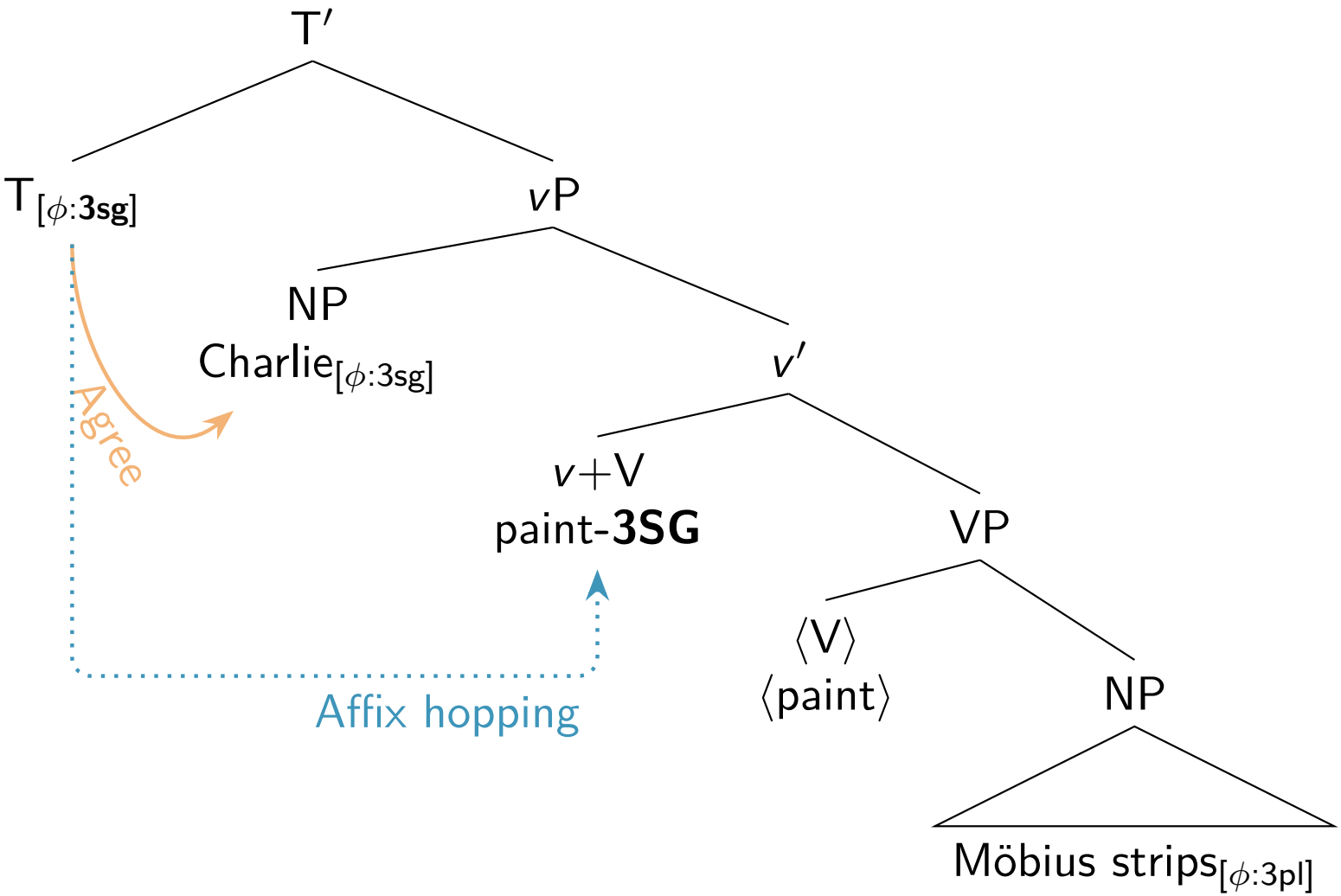
Which one is the Probe? Which are *potential* Goals?



Agreement in the Minimalist Program



Agreement in the Minimalist Program



Section 2

Long-distance agreement in Hindi

Long-distance agreement

Long-distance agreement is a particular type of agreement where agreement seems to 'cross' the local domain,
e.g. Probe is located in matrix clause, but agrees with a Goal in an embedded clause.

Can we model this using Agree which obeys the locality condition?

Verb-agreement in Hindi

Verb has unvalued ϕ-features and looks for an NP that has valued ϕ-features.

Rules for verb-agreement in Hindi

1. Find the structurally highest NP that has covert case-marking using Agree.
2. If such a NP has been found, copy its ϕ-features.
3. Otherwise, instantiate default $3SG$ as ϕ-value.

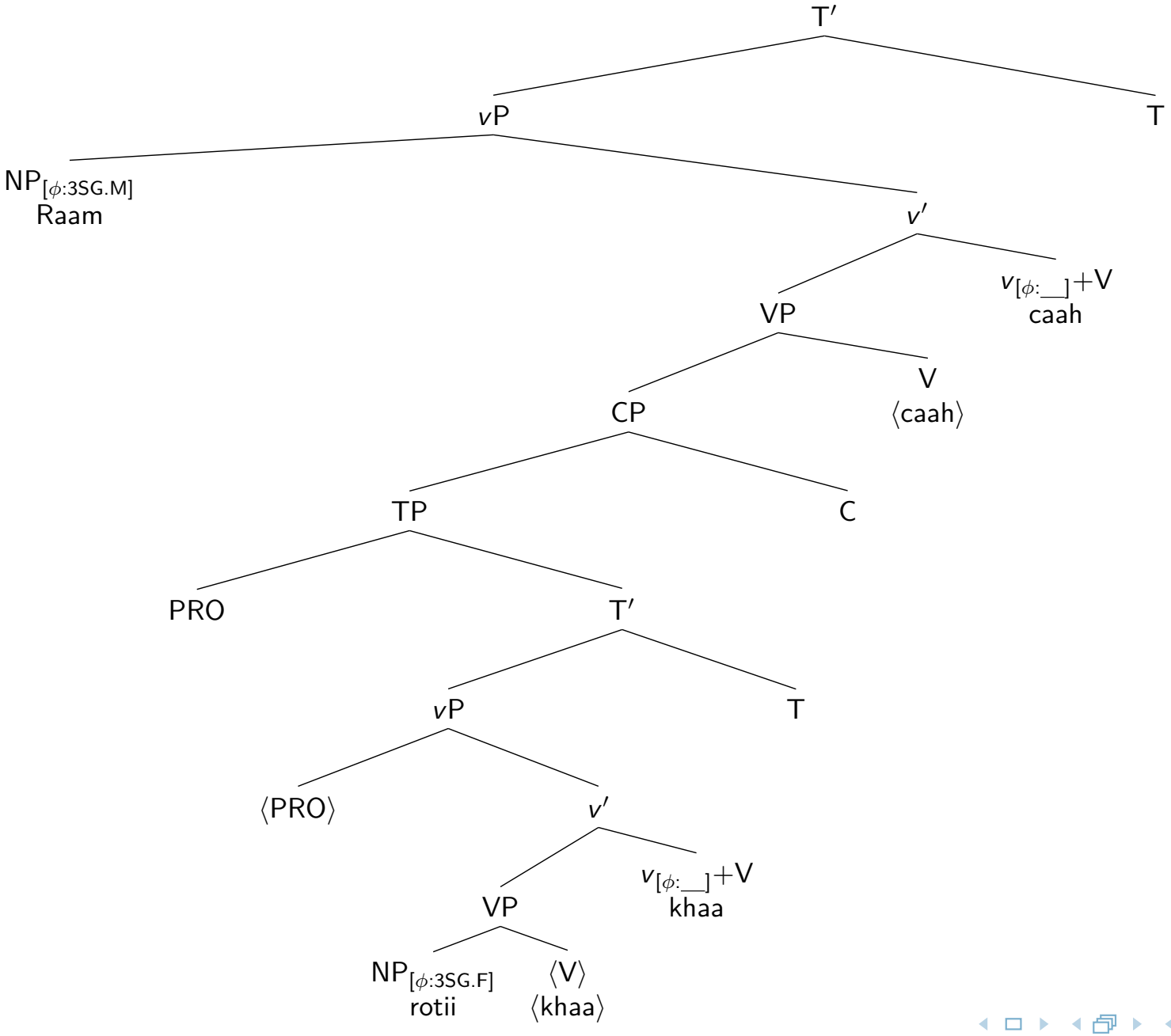
Verb-agreement in Hindi

(Optional) Multiple agreement

(2) a. Raam-ne [rotii khaa-__] caah-__
Ram-ERG bread.F eat-INF.__ wanted-__
'Ram wanted to eat bread.'

b. Raam-ne [rotii khaa-**nii**] caah-**ii**
Ram-ERG bread.F eat-INF.F.SG wanted-F.SG

Verb-agreement in Hindi



Verb-agreement in Hindi

However, multiple agreement is optional:

(3) Raam-ne [rotii khaa-**naa**] caah-**aa**
Ram-ERG bread.F eat-INF.M.SG wanted-M.SG

Verb-agreement in Hindi

Unless long-distance agreement is present:

(4) a. *Raam-ne [rotii khaa-**naa**] caah-**ii**.
b. Raam-ne [rotii khaa-**nii**] caah-**aa**.

Verb-agreement in Hindi

Long-distance agreement is not possible, if Goal is in a finite clause:

(5) a. *Firoz-ne soc-**ii** [ki Monaa ghazal
Firoz-ERG thought-F.SG that Mona.F ghazal.F
gaa-tii he]
sing-HABITUAL.F be.3SG
'Firoz thought that Mona sings ghazal'

b. Firoz-ne soc-**aa** [ki Monaa ghazal gaa-tii he]
Firoz-ERG thought-M.SG that Mona.F ghazal.F sing-F be.3SG

Verb-agreement in Hindi

Long-distance agreement is **asymmetric**. This means that Probe must always be structurally higher than Goal.

The definition of Agree includes this already.

Agree

$\delta{:=}\ x_\delta\ [\phi{:}\_]\ \overrightarrow{\quad\quad\quad}_{c-command}\ \epsilon\ :=\ x_\alpha\ [\phi{:}\beta.\gamma] \longmapsto \delta\ :=\ x_\delta[\phi : \beta.\gamma]$

where
δ, ϵ are heads
x is the string of the head
$\beta.\gamma$ is NUMBER:PERSON, GENDER value respectively

Verb-agreement in Hindi

(6) a. Monaa [kutto-ko dekh-**naa**] caah-**tii** thii
Mona.F dog.M.PL see-INF.M.SG want-HABITUAL.F be.F.SG
'Mona wanted to see the dogs'

b. *Monaa [kutto-ko dekh-**nii**] caah-**tii** thii
Mona.F dog.M.PL see-INF.F.SG want-HABITUAL.F be.F.SG
'Mona wanted to see the dogs'

Overview of properties

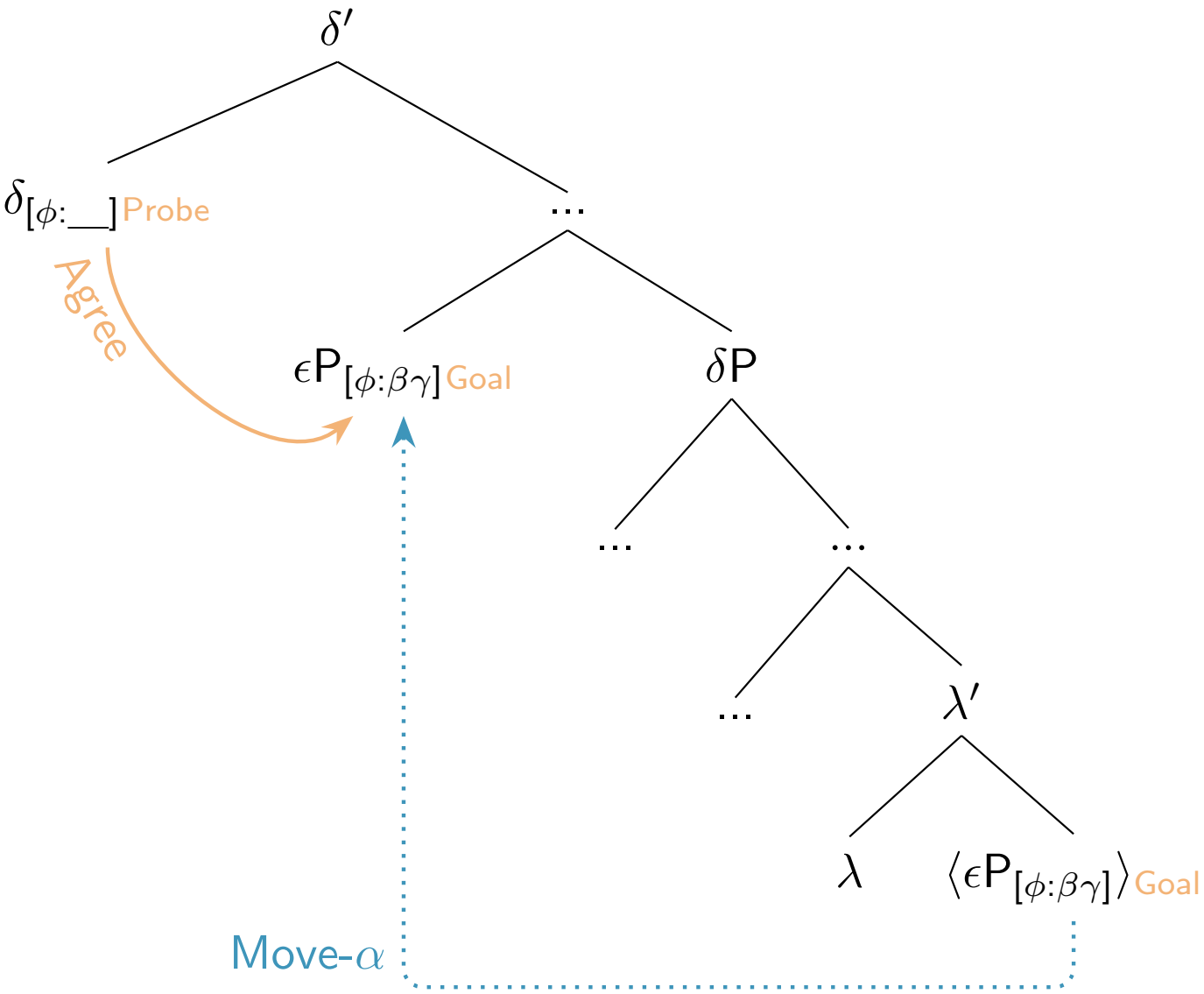
Properties of long-distance agreement:

- It is optional.
- If matrix verb agrees with embedded object, then embedded verb also has to agree with it.
- It can only target Goals in finite clauses.
- The agreement relationship is asymmetric.

Section 3

Implementing Long-distance agreement

Long movement

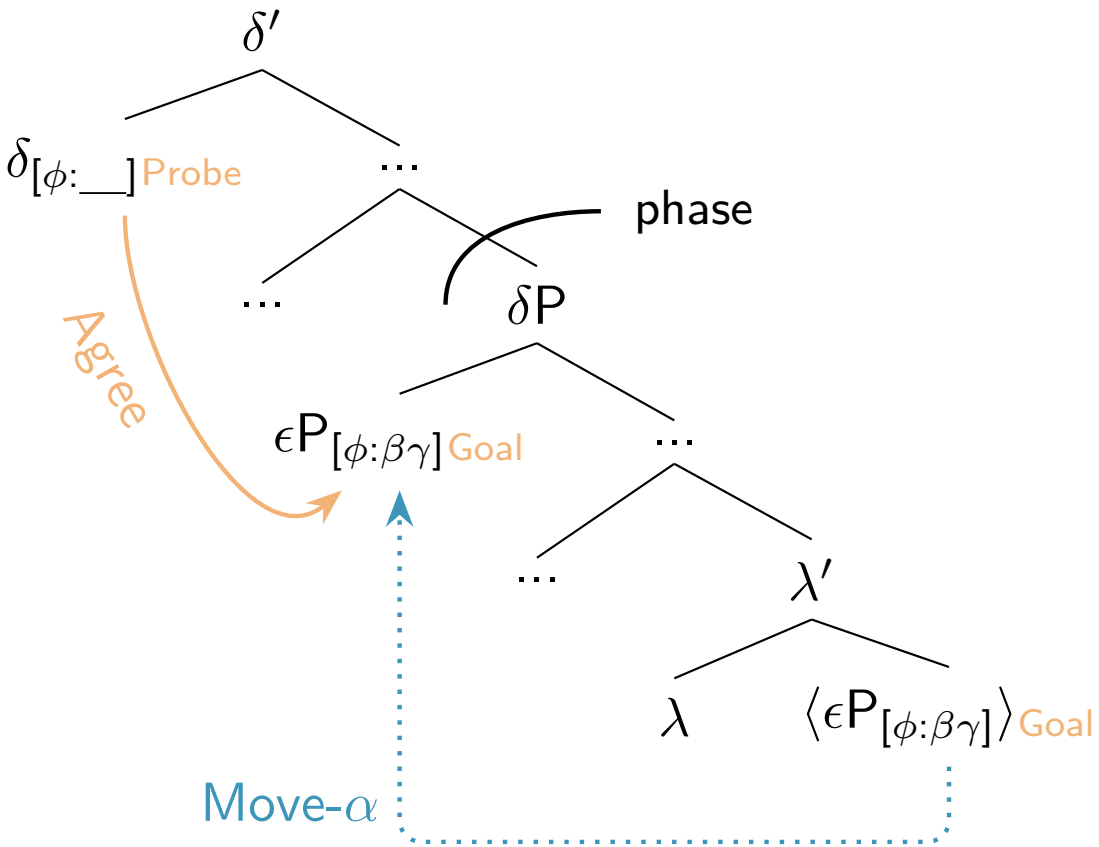


Long movement

Advantages:

- optionality can be explained by presence/absence of Move-α
- directionality of Move-α can be linked to the directionality of Agreement
- asymmetric subject/object extraction reflect asymmetric subject/object clause agreement

Edge movement



Edge movement

Goal moves to the edge in order to become **visible** outside of the phase (Phase Impenetrability Condition)

Advantages:

- optionality can be explained by presence/absence of Move-α
- directionality of Move-α can be linked to the directionality of Agreement

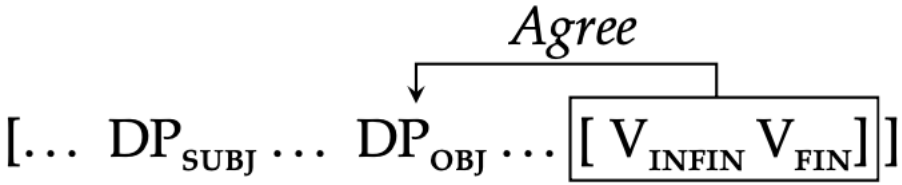
Issue:

- Why should an object be visible at the edge, but a subject shouldn't?

Restructuring

Type 1: Literal clause union

$V_{infinite}$ and V_{finite} form a **complex verb**.



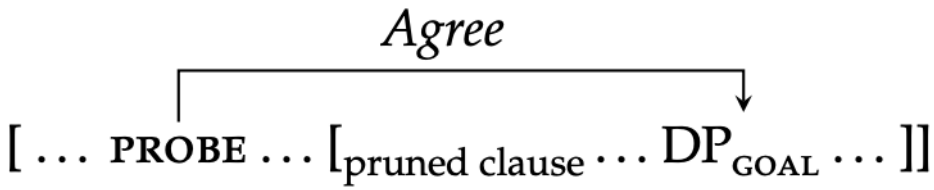
Advantages:

- explains why both verbs agree with one and the same element in the embedded clause

Restructuring

Type 2: Functional deficient clause

- For certain functional clauses it is impossible to penetrate from the outside.
- If such a clause is not present in the sentence, agreement can takes place between clauses



Advantages:

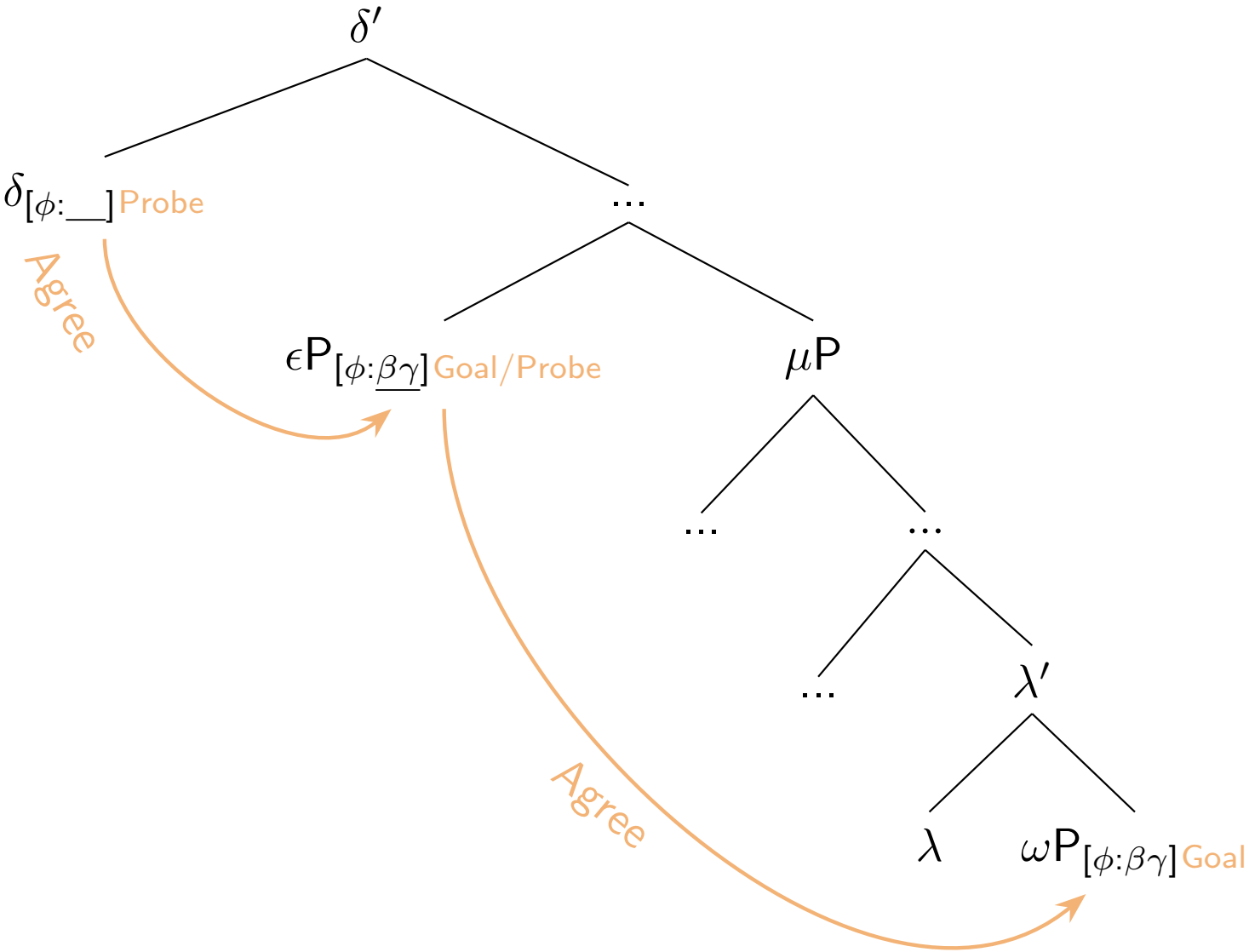
- Optionality can be explained by blocking of agreement by a Functional Projection

Issue:

- analysis would predict that phrase in which the subject is Goal would be blocked, whereas in a verb-object agreement, non such a blocking takes place

Cyclic Agree

Goal can be Probe, and vice versa.



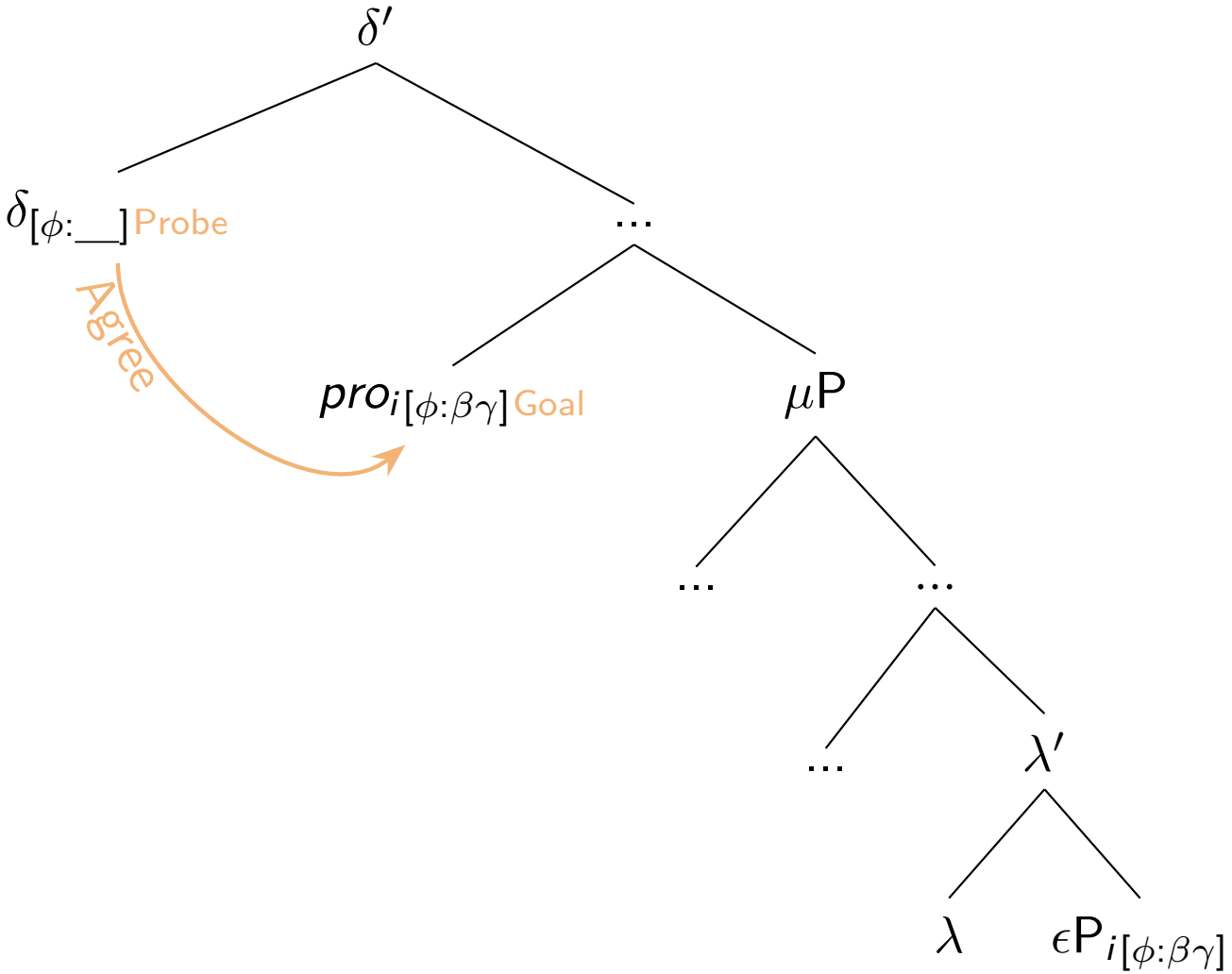
Cyclic Agree

Why should we have an intermediate element that maintains relationship between relevant Probe and Goal?

To implement optionality, we need an optional projection that 'breaks agreement chain'. No explanation for subject/object asymmetry.

Prothetic agreement

Goal is coindexed with a covert pronoun *pro* sharing same ϕ-features.



Testing proposals

'Adverb test'

1. Insert an adverb that has scope over the embedded object.
2. If this is possible, object has remained in the base position.
3. Otherwise, it has been moved.

(7) Vivek-ne [**jaldise** kitaab andhereme parh-**nii**] caah-**ii**
Vivek-ERG quickly book.F in the dark read-INF.F wanted.F.SG
'Vivek wanted to read the book quickly in the dark'

∴ Movement of Goal to matrix clause can be ruled out

Testing proposals

'Scope test'

1. If embedded quantifier-object under long-distance agreement can take scope over the matrix and embedded clause, then object has been moved.
2. Otherwise it has remained in its original position.

Testing proposals

(8) Naim-ne [har kitaab parh-**nii**] caah-**ii** thii
Naim-ERG every book.F read-INF.F wanted-F be
'Naim wanted to read every book'

Two readings:
every > *want*: For every book, Naim wanted to read it.
want > *every*: Naim's desire is to read every book.

Testing proposals

(9) Naim-ne [har kitaab parh-**naa**] caah-**aa** thaa
Naim-ERG every book.F read-INF.M.SG wanted-M.SG be
'Naim wanted to read every book'

Only one reading is possible:
want $>$ *every*: Naim's desire is to read every book.
$\therefore$ object is moved to matrix clause

Testing proposals

'NPI licensing test'

1. Place negation particle into embedded clause.
2. If negation has scope over matrix and embedded verb, and licenses NPI (Principle C, Binding theory), then verbs may form a complex unit.
3. Otherwise, verbs can be considered to be separate units.

Testing proposals

(10) a. Ek-bhii larke-ne [Sita-kii kitaab nahi parh-**nii**]
one-NPI boy-ERG Sita-GEN book.F not read-INF.F
caah-**ii**.
wanted-F.SG
'Not even a single boy wanted to read Sita's book'

b. *Ek-bhii larke-ne [Sita-kii kitaab nahi parh-**naa**]
one-NPI boy-ERG Sita-GEN book.F not read-INF.M
caah-**aa**
wanted-M.SG

Long-distance agreement seems obligatory, if matrix-NPI was licensed by embedded negation.

Summary

Locality assumption of Agree is maintained for long-distance agreement.

Implementation proposals:

- Long movement
- Edge movement
- Literal clause union
- Functional deficient clause
- Cyclic Agree
- Prothetic Agreement

Long-distance agreement doesn't seem to follow a unified approach. It is also unclear how tests can provide justification for proposals.