INTRODUCTION

Agreement phenomena and Agree theory

Selected Topics in Syntax
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8–January–2025

Baker, Mark C. 2013. "Agreement and Case" [§17.1–17.2]. In: Den Dikken, Marcel (ed), *The Cambridge handbook of generative syntax*. Cambridge University Press.
Deal, Amy Rose. To Appear. "Current models of Agree" [§1–5]. In: Crippen, James, Déchaine, Rose-Marie, & Keupdjio, Hermann (eds), *Move and Agree: towards a formal typology*. John Benjamins. Available at: `https://ling.auf.net/lingbuzz/006504`.

1 INTRODUCTION

- ☑ We will start our examination of agreement phenomena.
- ☑ We will also examine what agreement does *not* look like.
- ☑ First-pass theory of Agree to account for both.
- ☑ Logistics: syllabus

1.1 WHAT AGREEMENT LOOKS LIKE

- Across different languages, certain features may appear repeated in more than one node.
- One example: so-called subject–verb agreement in languages like English and Brazilian Portuguese.[1]

(1) a. **Sindhu** own-s/*own-Ø a house in St. John's.
b. **Sindhu and Mary** *own-s/own-Ø a house in St. John's.

▷ In (1), the verbal affix crossreferences the number and person features of the subject (in the examples, [3SG] or [3PL]).
▷ More generally, they agree in ***φ*-features** ('phi-features').

DEFINITION 1

'*φ*-feature' is a cover term for nominal features such as gender/class, number, and person.

[1] We will refine this description shortly—subject agreement does not appear on the verb exactly.

(2) *Brazilian Portuguese* (Romance)

a. **A** **Rosa** sempre visit-**a** o-s pai-s.
the.FEM.SG Rosa always visit-PRES.3SG the.MASC-PL father-PL
'Rosa always visits her parents.'

b. **Eu** sempre visit-**o** o-s meu-s pai-s.
I always visit-PRES.1SG the.MASC-PL POSS.1SG-PL father-PL
'I always visit my parents.'

▷ In (2), the verbal affix also crossreferences the number and person features of the subject (in the examples, [3SG] or [1SG]).

- Besides agreement and person and number, agreement can also be in gender/class. This can be illustrated with Bantu noun class agreement.

(3) *Zulu* (Bantu)

a. **uZinhle** **u**-xova ujeqe.
AUG.1.Zinhle 1SUBJ-make AUG.1.steamed.bread
'Zinhle is making steamed bread.'

b. **omakhelwane** **ba**-xova ujeqe.
AUG.2.neighbor 2SUBJ-make AUG.1.steamed.bread
'The neighbors are making steamed bread.'

c. **iqhawe** **li**-xova ujeqe.
AUG.5.hero 5SUBJ-make AUG.1.steamed.bread
'The hero is making steamed bread.' (Halpert, 2012: (34))

▷ The numbers do **not** represent [1 2 3] persons, but rather encode class and number (SG/PL) in the Bantu literature tradition.

Noun class (SG)	Indicative AGR	Noun class (PL)	Indicative AGR
1	*u-*	2	*i-*
3	*u-*	4	*ba-*
5	*li-*	6	*a-*
7	*si-*	8	*zi-*
9	*i-*	10	*zi-*
…			

Table 1: Zulu noun class agreement (based on Halpert 2012; Ngcobo 2010)

EXERCISE 1

Describe the agreement pattern in (3).

1.2 DEFINING AGREEMENT AND AGREE

DEFINITION 2

Agreement is a phenomenon whereby the features [F] of one node *N* appear in another node *M*. [F] usually consists of *φ*-features (e.g. gender/class, number, and person). *N* is usually some nominal expression, i.e. a DP.

- **Agree** is the syntactic operation responsible for establishing a dependency between syntactic nodes, which may be realized as the above-mentioned agreement.
- **Agree Theory** studies agreement phenomena as well as the nature of the operation Agree and the factors that condition it.
- It is common (and useful) practice to distinguish between *agreement* with lower-case 'a,' the phenomenon, and *Agree* with capital 'A,' a theory-specific operation.

☑ The main goals of this course are twofold:

1. Empirical: investigation of a series of agreement phenomena across different languages and language families
2. Theoretical: understand the workings of one of the fundamental operations of the grammar, viz. Agree

☑ Put this knowledge into practice by analyzing some agreement phenomenon of your choice.

1.2.1 MORE EXAMPLES OF AGREEMENT

- Besides the subject, verbal agreement can target other arguments as well.

(4) *Khanty/Ostyak* (Uralic)

a. ma tam kalaŋ-ət we:l-sə-l-am.
1SG.NOM this reindeer-PL kill-PST-3PL.O-1SG.S
'I killed these reindeer.'

b. ma tam kalaŋ-ŋəŋ we:l-sə-ŋil-am.
1SG.NOM this reindeer-DUAL kill-PST-DUAL.O-1SG.S
'I killed these two reindeer.'

c. ma naŋ-e:n wa:n-s-e:-m.
1SG.NOM 2SG-ACC see-PST-1SGS-SGO
'I saw you.' (Smith, 2020)

EXERCISE 2

Describe the agreement pattern in (4).

- So far, we have seen agreement in the verb. It can also appear in other elements.

(5) *West Flemish* (Germanic)

a. K peinzen [**da** / *da-n **dienen student** nen buot gekocht eet].
I think that.3SG that-3PL that student a boat bought has
'I think that that student has bought a boat.'

b. K peinzen [*da / **da-n** **die** **studenten** nen buot gekocht eet].
I think that.3SG that-3PL those students a boat bought has
'I think that those students have bought a boat.'

▷ This is called, of course, 'complementizer agreement.'

> A *complementizer* is a functional word which introduces clauses. e.g. in English: *that* and *if*/*whether*, the latter of which are interrogative complementizers.

EXERCISE 3

Describe the agreement pattern in (5).

- Finally, besides the verb, agreement may also appear inside the DP:

(6) *Brazilian Portuguese*

[$_{DP1}$ **A** **Rosa**] leu [$_{DP2}$ **o-s** **livr-o-s** **antig-o-s**].
the.FEM.SG Rosa read-PST.3SG the.MASC-PL book-MASC-PL old-MASC-PL
'Rosa read the old books.'

▷ DP1: *Rosa* is [FEM SG] (i.e., feminine singular), so the determiner preceding it (viz. *a*) bears the same features.
▷ DP2: *livros* 'books' is [MASC PL], so the determiner preceding it (viz. *os*) bears the same features. The same holds of the adjective *antigos* 'old-MASC-PL.'

- This type of nominal-internal agreement is called **concord**.[2]

EXERCISE 4

In the Kabardian example (7), what does the verb agree with?

(7) *Kabardian* (Northwest Caucasian)

wəe *pro* jeʁeǯ'aḳʷə-xe-r Ø-sə-b-ʁe-çə-xwaš'
2SG 1PL.OBL teacher-PL-ABS 3PL.ABS-1SG.OBL-2SG.ERG-CAUS-know-PST
'You made me know the teachers.'

N.B.: Kabardian is a head-final language. *wəe* '2SG' is an underspecified form that does not exhibit case distinctions. '*pro*' is a dropped (i.e. omitted) pronoun.

[2]Because of time constraints, we will not be able to cover concord.

1.3 WHAT AGREEMENT DOES NOT LOOK LIKE

- We just took a very quick tour of what agreement phenomena look like across different languages.
- However, a complete theory also has to explain **impossible** patterns of agreement.
- For instance, we saw that verbs in English agree with the subject. But why can't they agree with the object?

(8) a. **Taylor** always visit-**s** their parents.
b. … Their parents always visit-**s** **Taylor**.

- Likewise, complementizer agreement in Germanic languages cannot target objects across the subject:

(9) *Hellendoorn Dutch*
* Ik dèènke [dat-**e** **oons** zölfs Jan nie __ mag].
I think that-1PL us even Jan not likes
Intended: 'I think that us, even John doesn't like.'

- Finally, we also saw in (2) that, in Brazilian Portuguese, verbs agree with the subject. However, they cannot agree with an *embedded* subject:

(10) *Brazilian Portuguese*
a. **Os** **alunos** parece-**m** [$_{TP}$ __ ter visitado o zoológico].
the students seem-3PL have.INF visited the zoo
'The students seem to have visited the zoo.'
b. * Parece-**m** [$_{CP}$ que **os** **alunos** visitaram o zoológico].
seem-3PL that the students visited the zoo
Intended: 'It seems that the students visited the zoo.'

> If a sentence has more than one clause, the *embedded* or *subordinate* clause is a clause that is selected by the predicate of another predicate. The latter heads the *matrix* or *main* clause.
>
> (11) [Seb said [that Loredana will have finished the book]].
> *matrix* *embedded*

2 AN AGREE THEORY

2.1 OVERVIEW

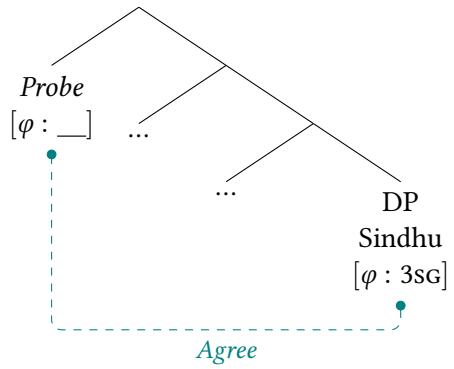
- Agree is first proposed by Chomsky (2000, 2001).
- It is defined as a dependency between a *Probe* and a *Goal*:

DEFINITION 3

A **Probe** is a syntactic constituent which features that need to be valued, i.e. [F: __]. It searches for a **Goal** a constituent that it c-commands and which bears matching, but valued features, i.e. [G: *val*], where F = G.

- In e.g. subject–verb agreement, the verb (to be refined) is the probe and the subject, its goal. They agree in φ-features.

(12)



- As a first approximation, we will outline the Agree Theory proposed by Chomsky (2000, 2001), for convenience using the neat summary of it in Deal (To Appear).
- Throughout this semester, we will discuss refinements over this theory, as well as challenges to it.

2.2 STRUCTURAL CONDITIONS

DEFINITION 4

(13) **Conditions for Agree to apply**

Agree holds between a probe and a goal *iff* all of the following conditions hold:

a. *Probe specification*
The probe bears [F : __], features that are unvalued.

b. *Structural condition*
The probe c-commands the goal.

c. *Match condition*
The [F : __] of the probe matches with valued matching [F : VAL] of the goal.

d. *Activity Condition*
The goal is active: it also has an unvalued feature [G : __].[3]

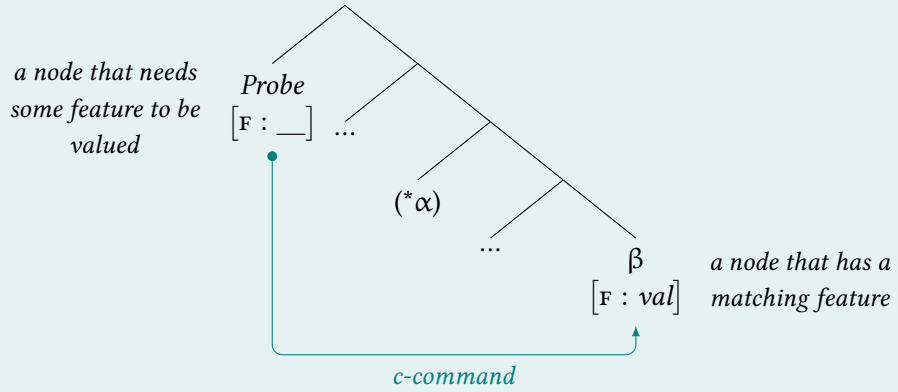
e. *Minimality condition*
The goal is the closest element to the probe meeting the conditions above.

(Deal, To Appear: (1), adapted)

[3] We will talk about the Activity Condition when we talk about Case.

- (14) below is a diagram that represents some the conditions imposed on Agree, as stated in DEFINITION 4.

(14) *Agree: structural conditions*



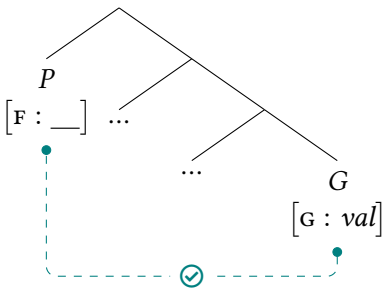
(where α bears the same features as β)

  - ▷ The *Probe* is looking for some constituent that bears valued [F] features.
  - ▷ β has just such features and, furthermore, it is c-commanded by the *Probe*.
  - ▷ *Agree*(*Probe*, β) can take place as long as there is no constituent α such that *Probe* c-commands α and α c-commands β.

2.2.1 MATCH CONDITION

- According to (13c) in DEFINITION 4, some node can serve as a goal to a probe only if it bears the same type of feature that the probe is looking for.

(15)



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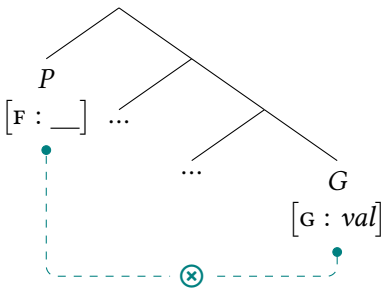


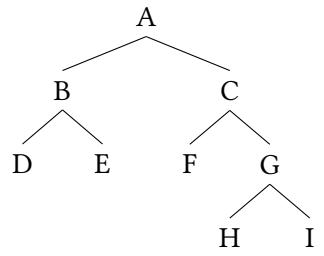
2.2.2 C-COMMAND CONDITION

(17) a. α dominates β *iff* β is contained in a branch that originates from α, i.e. α is β's mother or β is a descendant of α, though not necessarily its daughter.

b. α *immediately* dominates β *iff* β is contained in a branch that originates from α, i.e. α is β's mother.

(18) α c-commands β iff:
   a. α is γ's sister and γ dominates β, or
   b. α is β's sister.

(19)



- B and C are **sisters** (i.e. they are both immediately dominated by A, their mother).
  - ▷ B and C are in a **mutual** or **symmetric** c-command relationship, i.e. B c-commands C and C c-commands B.
- {F, G, H, I} are C's descendants.
  - ▷ B, which is C's sister, **asymmetrically c-commands** {F, G, H, I}.

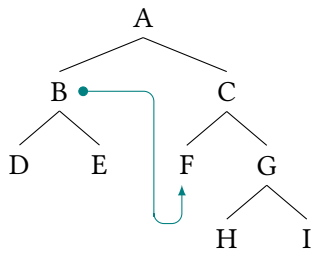
EXERCISE 5

a. In (19), does D c-command C?
b. Does D c-command any of C's descendants?
c. Which nodes does D c-command?

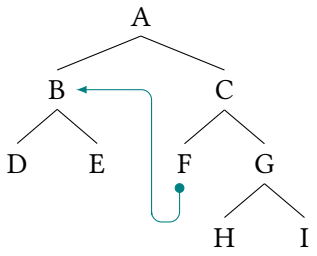
EXERCISE 6

B c-commands F (20a). Does F also c-command B (20b)?

(20) a.

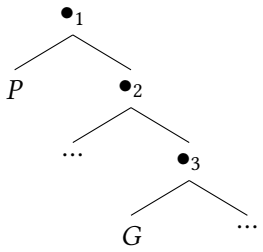


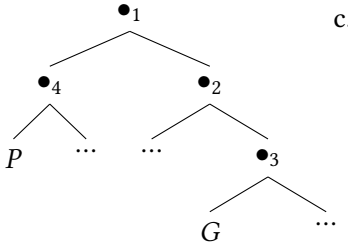
b.

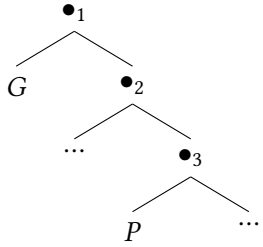


EXERCISE 7

According to (13b) in DEFINITION 4, a probe must c-command its goal. For a Probe P and a Goal G, is $Agree(P, G)$ possible in the configurations below?

(21) a. 

b. 

c. 

2.2.3 MINIMALITY

DEFINITION 5

(22) **Minimality**

Some syntactic dependency D can be established between α and β iff there is no γ such that:

a. γ has the same relevant property or feature as β (i.e. the property/feature that D is based on), and

b. γ is closer to α than β.

(adapted from Rizzi 2001: (4))

- According to (13e) in DEFINITION 4, if there are two potential goals for the same probe, the probe Agrees with the closest one.
- In other words, Agree obeys a general condition called *Minimality*, defined in DEFINITION 5.
- The same condition is obeyed in e.g. binding (23) and *Wh*-movement (24):

(23) a. … Mary_1 believes Anna_2 to have betrayed herself_1.

b. … Mary_1 believes Anna_2 to have betrayed herself_2.

(24) a. Eyglo introduced the student to the professor.

b. … Which student did Eyglo introduce __ to the professor?

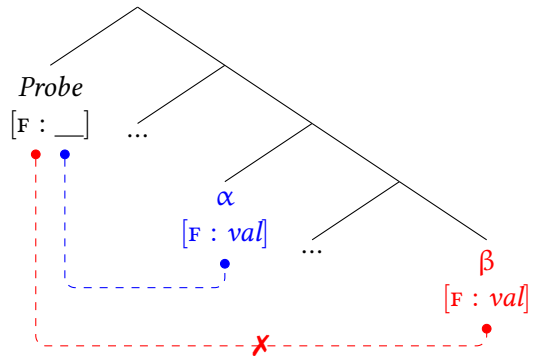
c. … Which professor did Eyglo introduce the student to __?

d. … Which student did Eyglo introduce __ to which professor?

e. … Which professor did Eyglo introduce which student to __?

- Agree obeys the same condition.

(25) *Agree: Minimality*



- ▷ Both α and β are potential goals for *Probe*, since they bear valued instances of the feature it is looking for.
- ▷ However, *Probe* cannot Agree with β because, by Minimality (DEFINITION 5):
  - α is *closer* to the probe than β, or
  - α *blocks* Agree between β and the probe, or
  - α *intervenes* between β and the probe.

2.3 THE OUTCOME OF AGREE

DEFINITION 6

(26) a. *Valuation*
[F : __]'s value is copied to the probe from the goal.

b. *Goal flagging*
The uninterpretable features of the goal are given values according to the nature of the probe.[4]

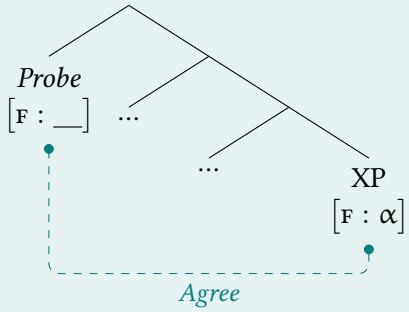
c. *Halting*
The probe stops probing once it is valued.

(Deal, To Appear: (2), adapted)

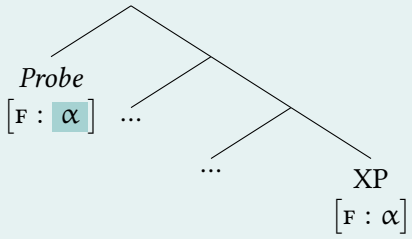
- DEFINITION 6 spells out the result of *Agree*(*P*, *G*), if the conditions in DEFINITION 4 are met.

[4] We will talk about Goal Flagging when we talk about Case.

(27) a. *Step 1: Agree*



b. *Step 2: valuation*



2.4 AGREE IN PRACTICE

- Let's see how Agree works, using one of our sentences in the beginning as an example.

(28) a. **Sindhu** own-s/*own-Ø a house in St. John's.
b. **Sindhu and Mary** *own-s/own-Ø a house in St. John's.

- We referred to the agreement observed in this sentence as 'subject–verb agreement,' keeping traditional terminology.
- However, the occurrence of the agreement morphology on the verb, crossreferencing features of the subject, is illusory.
- Agree Theory is tasked with identifying the precise syntactic nodes that trigger Agree.
- A theory of Agree has to account for:
  - ▷ Which elements trigger Agree (i.e. which nodes serve as probes)
  - ▷ Which elements are Agreed with (i.e. which elements are goals)
  - ▷ The features agreed in (e.g. φ-features).
  - ▷ The conditions that govern the dependency between the element that triggers agreement and the element it agrees with (i.e. the probe and the goal, respectively).
- Back to the locus of "subject–verb" agreement. In a language like English, only finite verbs bear agreement:

(29) … I convinced **Sindhu** [to own-**s** a house in St. John's].

Finite clause: a clause whose verb is inflected for tense and/or agreement. A finite clause can be a matrix (30a) or an embedded (30b) clause. In the latter case, in English, it may be headed by a complementizer such as *that*.

(30) a. Eyglo crossed the street.
b. Rizki saw [that Eyglo crossed the street].

Nonfinite clause: a clause that lacks tense/or agreement. There are different types of nonfinite clauses, which are classified depending on the form of the nonfinite verb, e.g.:

(31) a. Rizki believes [Eyglo to be guilty]. (*infinitival*)
b. Rizki saw [Eyglo cross the street]. (*bare*)
c. Rizki saw [Eyglo crossing the street]. (*gerund*)

- Assuming that finiteness is encoded at TP, then the probe where agreement with the subject appears is at T—and not in the verb per se.
- Converging evidence that agreement is in T and not the verb itself (in English) is provided by the fact that, when *do*-support is triggered, agreement appears in the dummy *do* and not in the lexical verb (in (32), *own*).

(32) a. Sindhu do-**es** not own an apartment in St. John's.
b. * Sindhu do not own-**s** an apartment in St. John's.

- The contrast in (32) can be accounted for if *do* realizes T when an element like negation occurs in a sentence.
  - ▷ Agreement appears in the lexical verb as a byproduct of an operation like *affix hopping* (see (37) below).
  - ▷ The presence of negation prevents affix hopping, forcing the occurrence of a dummy *do* which the agreement morphology can get affixed to.
- As a rule of thumb, probes appear in functional projections such as finite TP.
- It is also possible that agreement with the subject appear not along with tense and finiteness at TP, but at another functional projection, call it Agr(S)P, for concreteness.
- This is particularly useful in a language such as Brazilian Portuguese, where tense and agreement are realized by separate morphemes:

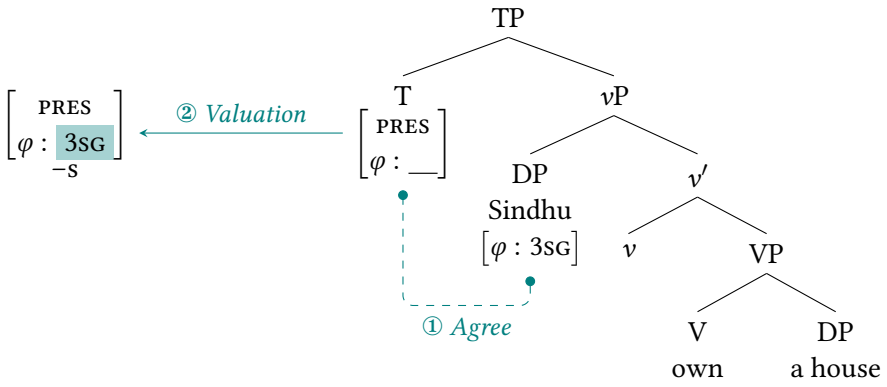
(33) Nós come-re-mos uma pizza. (*Brazilian Portuguese*)
we eat-FUT-1PL one pizza
'We will eat a pizza.'

- In Brazilian (and European) Portuguese, in fact, certain infinitival clauses may bear agreement. This is called *inflected infinitive*.

(34) A professora convenceu as alunas a le-r-**em** um livro. (*Brazilian Portuguese*)
the teacher convinced the students at read-INF-3PL one book
'The teacher convinced the students to read a book.'

- The derivation of (28a) is as follows:

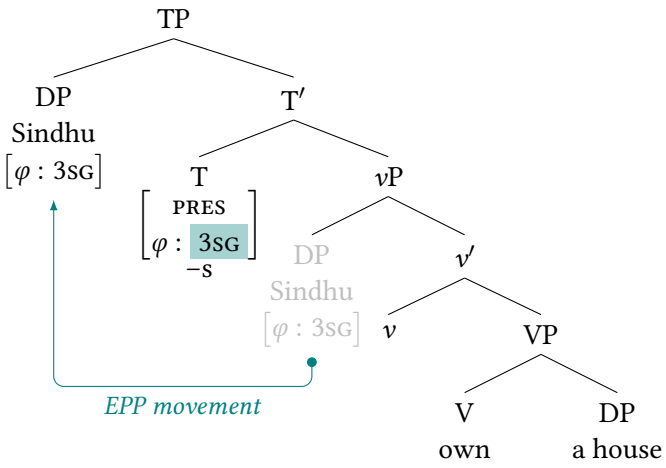
(35) **Sindhu** own-**s**/*own-Ø a house in St. John's.



- The subject, which is also the probe T's goal, moves to Spec-TP because of the EPP.

> **EPP**: Extended Projection Principle, the requirement that the grammatical subject position, viz. Spec-TP, be filled.

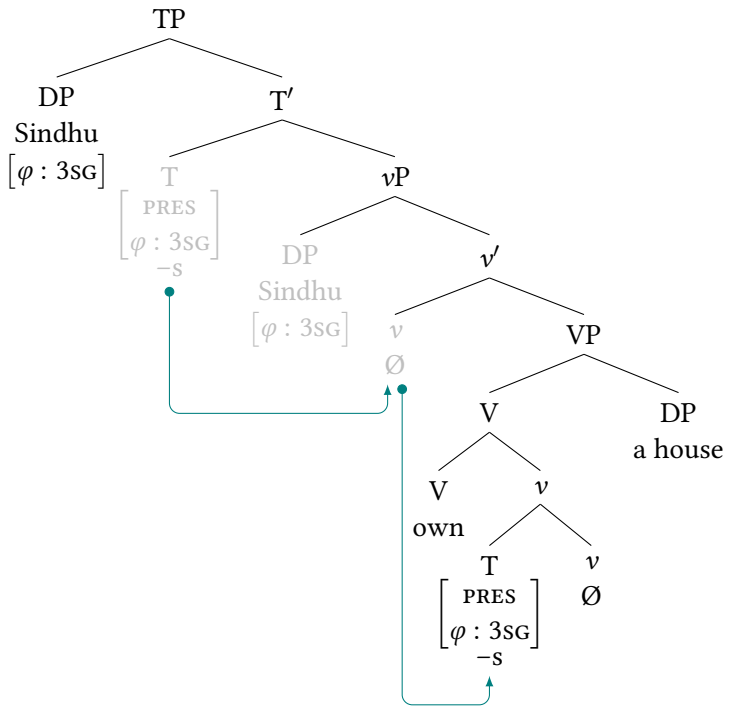
(36)



2.5 The morphosyntax of agreement

- The term "subject–verb" agreement, under our theory of Agree, is misleading, in that agreement, encoded as a probe–goal dependency, is triggered by features in a functional projection like T and not in the verb itself.
- However, the term does capture the fact that the exponent of the agreement appears on the verb.
- This is not part of Agree theory per se, but how to account for that?
- The answer depends on language-specific properties.
- In English, for instance, since Chomsky (1957), the morphology in the finite T is considered to undergo "affix hopping" onto the verb.

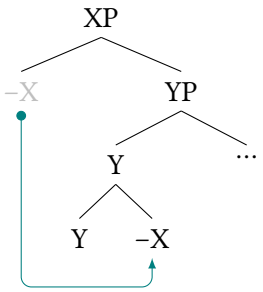
(37)



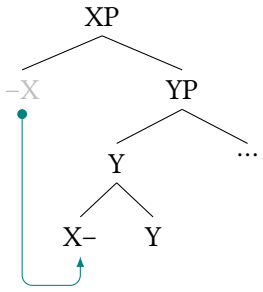
- Here, we will formalize affix hopping in terms of **Amalgamation** (Harizanov & Gribanova, 2019).

> **DEFINITION 7**
>
> ▷ Amalgamate a head *H1* to the next **c-commanded** head *H2*.
> ▷ *H1* adjoins to *H2*, so *H2* has to be duplicated.

(38) a.



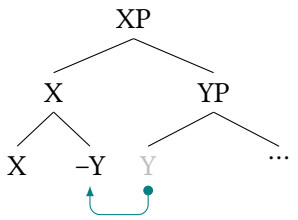
b.



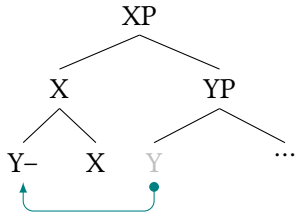
- In other languages (e.g. Brazilian Portuguese), Amalgamation is in the other direction, i.e. upwards:

> **DEFINITION 8**
>
> ▷ Amalgamate a head *H1* to the next **c-commanding** head *H2*.
> ▷ *H1* adjoins to *H2*, so *H2* has to be duplicated.

(39) a.



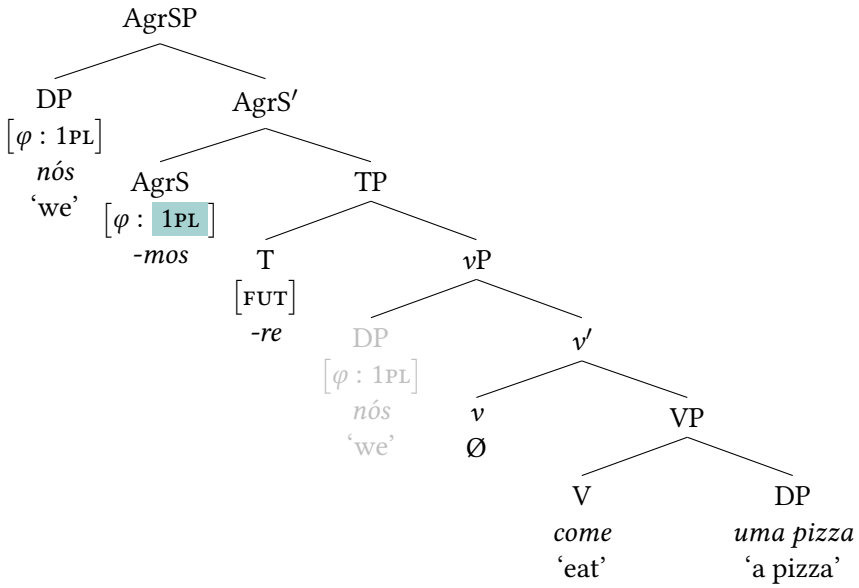
b.



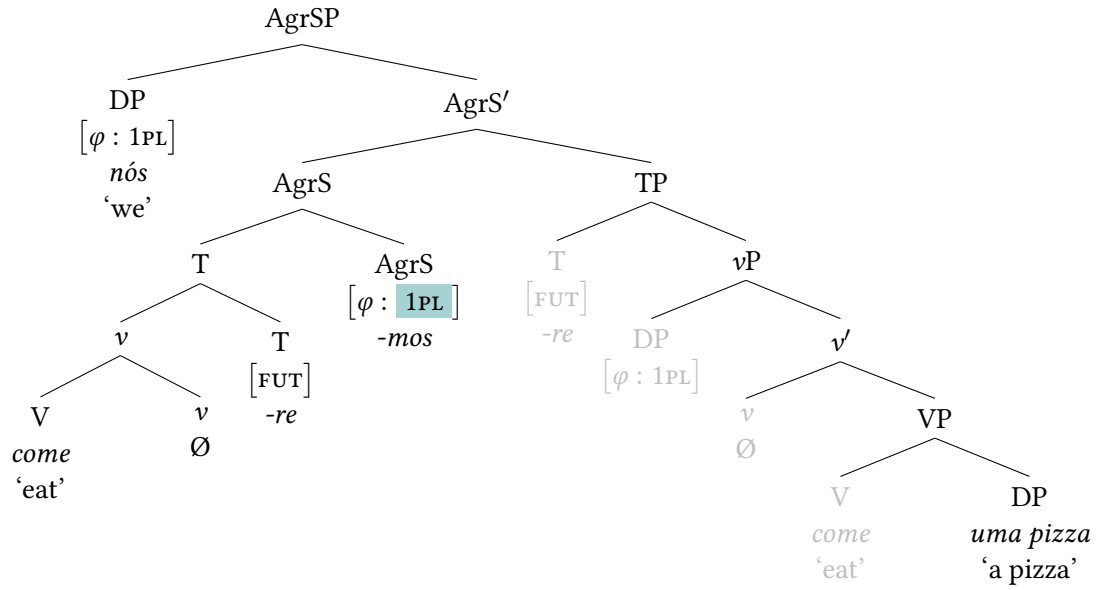
- A derivation of a BP sentence, then, goes as follows:

(40) Nós come-re-mos uma pizza. (*Brazilian Portuguese*)
we eat-FUT-1PL one pizza
'We will eat a pizza.'

a.



b.



▷ In Brazilian Portuguese, the different pieces of the verb undergo subsequent instances of head movement. Each iteration of this operation adds a morpheme to the inflected verb.

EXERCISE 8

Recall the following pair of sentences:

(41) a. **Taylor** always visit-**s** their parents.
b. * Their parents always visit-**s Taylor**.

a. Draw a diagram for (41a) indicating probes, goals, and Agree (no need to represent *always*).
b. Explain why (41b) is ungrammatical, pointing out the principle that is being violated.

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