

On projection and the shadow of [wh]

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1 Introduction

- ♦ Some background assumptions that form a world view about language:
 - ▶ Languages all obey the principles that define Universal Grammar (UG).
 - E.g. If UG has certain constraints on movement in certain configurations, every language that realizes those configurations should obey those constraints on movement.
 - ▶ Languages all make use of the same set of syntactic ingredients.
 - E.g. Languages all use features that make reference to things like category (D, N, V...), phi (π , #...), $\bar{A}$ -properties ([wh]...), and contextual requirements ([D·], [$u\varphi$]...).
- ♦ What, then, is the source of variation across languages?
 - ▶ Languages have different lexicons, in which different combinations of the above ingredients may be realized.
 - For example, some languages may have lexical items corresponding to feature bundles like {[T],[$u\varphi$]} but not {[V],[$u\varphi$]}, while other languages might have the opposite.
 - Each language only realizes a subset of the full space of possible combinations of syntactic features.

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♦ A puzzle for this view:

- ▶ Voice-related extraction restrictions in different languages:
 - In some languages, wh-elements undergo $\bar{A}$ -movement without having to be the surface subject of their clause.
 - In other languages, wh-elements sometimes need to A-move to “subject” position before they can $\bar{A}$ -move.

- ▶ English does not have such restrictions: wh-direct objects simply $\bar{A}$ -move to Spec CP without needing to become subjects – no interaction between wh-movement and Voice.

(1) What did Wallace buy *t*?

- ▶ Tagalog *does* have such restrictions: wh-direct objects must first become the surface subject or “pivot” of the clause before they can wh-move to Spec CP.
 - This is evident from the fact that object questions must occur in a corresponding Object Voice – other Voices in which something else is the surface subject are disallowed.

(2) Agent Voice only permits external argument to move, not internal argument

- a. Sino ang [nagsu~sulat ng tula]?
who.NOM NOM AV.IPFV write GEN poem

‘Who is writing a poem?’ (Hsieh, 2020, ex. 5a, p. 3)

- b. *Ano ang [nagsu~sulat ang estudyante]?
 what.NOM NOM AV.IPFV write NOM student
 intended: ‘What is the student writing?’ (Hsieh, 2020, ex. 5b, p. 4)

- ◆ Assuming that transitive clauses have the same underlying verbal structure in both languages, what is it about English vs. Tagalog that leads them to exhibit different restrictions on their object questions?

► **My proposal:** English and Tagalog distribute wh-probes differently in the middle of the clause.

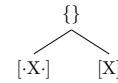
- More concretely, English groups [·wh·] with [V] in its lexicon, but Tagalog does not.

- How does this produce the different extraction restrictions?
 - I take up a modified projection rule, based on Zeijlstra (2020), which cares about the distribution of wh-probes in the following way:
 - ◇ When a head lacks a wh-probe, a [wh] feature on its sister projects beyond the maximal projection that it starts on, creating larger domains bearing [wh].
 - ◇ These domains become islands for wh-movement but not for A-movement.
- Languages whose wh-probes aren’t low enough allow [wh] to project too high, which blocks wh-movement but not A-movement!

- (3) Domain bearing [wh] is an island for wh-movement, but not for A-movement

- a. Wh-movement blocked
 * [_{CP} wh-phrase ... [_{wh}] ... ~~wh-phrase~~ ...]
- ↑
wh-movement
- b. A-movement licensed
 ✓ [_{XP} wh-phrase ... [_{wh}] ... ~~wh-phrase~~ ...]
- ↑
A-movement

- (4) The checking rule
 When a feature [·X·] is sister to a corresponding feature [X], neither is projected on the mother node.



- (5) The projection rule
 Every feature that the checking rule fails to apply to projects to the mother node.

- ◆ Implications:

- We maintain the world view that all languages make use of the same ingredients and obey the same constraints.
 - We don’t need to posit different kinds of probes with different locality restrictions, e.g.
- The distribution of wh-probes makes predictions about other aspects of wh-movement in a language, beyond just Voice-related restrictions, which we can test.
 - While we won’t see every prediction tested, we will find connections to properties of successive cyclic movement, pied-piping, and multiple questions in these languages, which support the overall approach.
- The new projection rule is arguably simpler than the original one, and can unify pied-piping-related phenomena across domains.

2 Voice-related restrictions on wh-movement

- ◆ A proposed description of the cross-linguistic landscape:

Things above a certain point in the clause get to wh-move without Voice-related promotion, while things below that point need Voice-related promotion to wh-move; languages differ as to where that point is. (inspired by discussion in Keine and Zeijlstra 2025)

- a. Mamono ny akoho amin'ny antsy **ny mpamboly**.
AV.kill DET chicken with-DET knife DET farmer
'The farmer is killing the chickens with the knife.'
- b. Vonoin' ny mpamboly amin'ny antsy **ny akoho**.
PV.kill DET farmer with-DET knife DET chicken
'The chickens, the farmer is killing with the knife.'
- c. Amonoan' ny mpamboly ny akoho **ny akoho**.
CV.kill DET farmer DET chicken DET knife
'The knife, the farmer is killing the chickens with.'

(8) Dinka Voices

- a. **Áyén** à-càm cuḡin nè pǎal.
 Ayen 3S-eat.SV food P knife
 ‘Ayen is eating food with a knife.’ (van Urk, 2015, ex. 30a, p. 74)
- b. **Cuḡin** à-cέem Áyèn nè pǎal.
 food 3S-eat.OV Ayen.GEN P knife
 ‘Food, Ayen is eating with a knife.’ (van Urk, 2015, ex. 25b, p. 71)
- c. **Pǎal** à-cέem-ε̣ Áyèn cuḡin.
 knife 3S-eat.OBLV Ayen.GEN food
 ‘With a knife, Ayen is eating food.’ (van Urk, 2015, ex. 30b, p.74)

- ◆ Pivots in Dinka and Malagasy are often proposed to end up in Spec CP (Pearson, 2005; van Urk, 2015).

- ▶ Pearson (2005); Keine and Zeijlstra (2025) suggest that pivots first stop in Spec TP before moving to Spec CP.
 - I'll assume they're right → Voice chooses an element to move to Spec TP; that element then moves to Spec CP to become the pivot.

(9) Pivots in Dinka and Malagasy

-

- Adjuncts may use an oblique Voice to become the pivot.

- 3

♦ Both Dinka and Malagasy have a “pivot-only” extraction restriction.

- Agents, patients, obliques, adjuncts must first promote to pivot before they can wh-move.¹

(10) Malagasy pivots can wh-move (Pearson, 2005, ex. 43, p. 415)

- Iza** no mamono ny akoho amin’ny antsy?
who FOC AV.kill DET chicken with-DET knife
‘Who is killing the chickens with the knife?’
- Inona** no vonoin’ ny mpamboly amin’ny antsy?
what FOC PV.kill DET farmer with-DET knife
‘What is the farmer killing with the knife?’
- Inona** no amonoan’ ny mpamboly ny akoho?
what FOC CV.kill DET farmer DET chicken
‘What is the farmer killing the chickens with?’

(11) Malagasy non-pivots cannot $\bar{A}$ -move

- *Inona no mamono amin’ny antsy **ny mpamboly**?
what FOC AV.kill with-DET knife DET farmer
intended: ‘What is the farmer killing with the knife?’ (Pearson, 2005, ex. 44, p. 416)
- *Ny mpamboly no vonoina amin’ny antsy **ny akoho**.
DET farmer FOC PV.kill with-DET knife DET chicken
intended: ‘It’s the farmer who is killing the chickens with the knife.’ (Pearson, 2005, ex. 40b, p. 415)
- *Ny antsy mamono ny akoho (amin’) **ny mpamboly**.
DET knife AV.kill DET chicken with DET farmer
intended: ‘the knife that the farmer is killing the chickens with’ (Pearson, 2005, ex. 38a, p. 413)

(12) Same restrictions in Dinka (van Urk, 2015, ex. 11, p. 66)

- móny [_{CP} cà̀m/*cé̀em/*cé̀emè cùin nè pãal]
man.CS eat.SV/eat.OV/eat.OBLV food P knife
‘the man who is eating food with a knife’
- cùin [_{CP} cé̀em/*cà̀m/*cé̀emè mǒc nè pãal]
food eat.OV/eat.SV/eat.OBLV man.GEN P knife
‘the food that the man is eating with the knife’

- pãal [_{CP} cé̀emè/*cà̀m/*cé̀em mǒc cùin]
knife eat.OBLV/eat.SV/eat.OV man.GEN food
‘the knife that the man is eating food with’

♦ If Dinka and Malagasy have a threshold, above which things may wh-move freely but below which they must first undergo Voice-related promotion, that threshold must be high (TP-level).

2.3 Tagalog and Malay

♦ Both have rich Voice-systems, to different degrees.

- Tagalog has four Voices, tracking what kind of element becomes the surface subject or “pivot” of the clause.
- Malay has three, one of which looks like a classic passive (not discussed here for space), and the other two look somewhat similar to the Agent and Patient voices found in Tagalog.

(13) Tagalog Voices (Hsieh, 2020, ex. 7, p. 35)

- B<**um**>i~bili ako ng tsokolate.
AV.IPFV~buy 1SG.NOM GEN chocolate
‘I’m buying/I buy chocolate.’ *Agent Voice*
- Bi~bilh-**in** ko ang tsokolate.
FUT~buy-PV 1SG.GEN NOM chocolate
‘I will buy the chocolate.’ *Patient Voice*
- Bi~bilh-**an** ko ng tsokolate si Sisa.
FUT~buy-LV 1SG.GEN GEN chocolate NOM.P Sisa
‘I will buy Sisa the chocolate.’ *Locative Voice*
- I**-pa~pa-bili ko kay Crispin ang tsokolate.
CV-FUT~CAUS-buy 1SG.GEN OBL.P Crispin NOM chocolate
‘I will make Crispin buy the chocolate.’ *Circumstantial Voice*

► Malay *meN*- Voice only allows the external argument to be the surface subject.

- Malay $\emptyset$ -Voice allows either the external argument or an internal argument to appear sentence-initially.

(14) Malay *meN*- Voice:

¹Paul (2000) reports some examples in Malagasy in which a high adjunct (e.g. *why*, *when* and some locatives) apparently can wh-move without being promoted to pivot. The examples are scarce and may have confounds, but support the analysis pursued here if this is true.

- a. **Ali** telah mem-baca buku itu.
Ali PFV MEN-read book the
'Ali has read the book.' (Soh, 1998, ex. 6, p. 2)
- b. ***Buku itu** adik saya mem-beli.
book that brother my MEN-buy
intended: 'My brother bought that book.' (Cole and Hermon, 1998, ex. 28a, p. 232)

(15) Malay $\emptyset$ - voice:

- a. **Ali** telah baca buku itu.
Ali PFV read book the
'Ali has read the book.' (Soh, 1998, ex. 1, p. 2)
- b. **Buku itu** Ali baca.
book the Ali read
'Ali read the book/the book was read by Ali.' (Soh, 1998, fn. 3)

♦ Is the object really a pivot in (15b)?

- Not so clear: Chung (1976) originally argued yes, based on control and raising profiles
- But Soh (1998) shows that wh-objects in the $\emptyset$ - Voice are subject to Weak Crossover, a hallmark of $\bar{A}$ -movement.

(16) Malay fronted objects subject to Weak Crossover (Soh, 1998, ex. 21, p. 6)

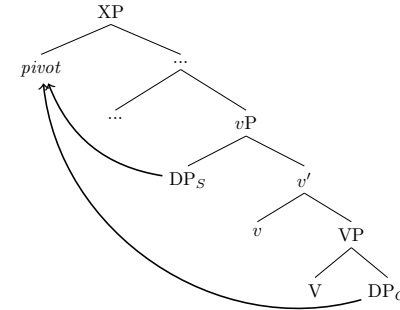
- a. Emaknya_i sayang Ali_i.
mother-his love Ali
'His mother loves Ali.'
- b. *Siapa_ikah yang emaknya_i sayang t_i ?
who-Q that mother-his love
intended: 'Who does his mother love?'

♦ Consensus from the literature: object Voices in Tagalog and Malay promote the object at least as high as Spec vP (McGinn, 1988; Aldridge, 2004, 2008; Cole et al., 2008; Rackowski and Richards, 2005; Hsieh, 2020).

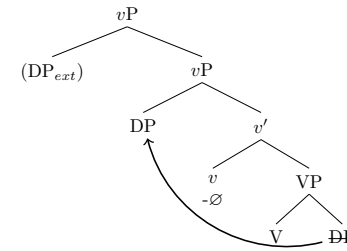
- In Tagalog, it moves to a "pivot" position above the base position of the external argument (17).
- In Malay, it moves to Spec vP , where either the external argument or the internal argument may end up sentence-initial.

▪ Further movement of the object past Spec vP has $\bar{A}$ -properties.

(17) Tagalog pivots raise above the base position of the external argument



(18) Malay $\emptyset$ -Voice brings object to Spec vP ; from there, the object might or might not $\bar{A}$ -move past the external argument to a higher position.



♦ In both languages, direct object extraction is Voice-sensitive: blocked in the *agent* Voice in Tagalog and *meN*- Voice in Malay.

- In both languages, the extraction of other phrases is not Voice-sensitive: permitted regardless of Voice.

(19) Tagalog: Agent Voice only permits external arguments, adjuncts, obliques to wh-move, not direct objects

- a. Sino ang [nagsu~sulat ng tula]?
who.NOM NOM AV.IPFV write GEN poem
'Who is writing a poem?' (Hsieh, 2020, ex. 5a, p. 3) *Wh* = *external argument*
- b. *Ano ang [nagsu~sulat ang estudyante]?
what.NOM NOM AV.IPFV write NOM student
intended: 'What is the student writing?' (Hsieh, 2020, ex. 5b, p. 4)
Wh = *direct object*

- c. Saan nag-lagay ang kusinero ng kaldero?
where AV.PFV-put NOM cook GEN pot
'Where did the cook put a pot?' (Hsieh, 2020, ex. 5, p. 230) *Wh = oblique argument*
- d. [Sa ilog /Saan] nali~ligo ang kalabaw.
OBL river where AV.IMPF~bathe NOM water.buffalo
'It's in the river that the water buffalo is bathing.'
'Where is the water buffalo bathing?' (Hsieh, 2020, ex. 19b, p. 88)
Wh = adjunct
- (20) Tagalog object Voices: anything can wh-move
- a. Ano ang [s<in>u~sulat ng estudyante]?
what.NOM NOM IPFV~write.PV GEN student
'What is the student writing?' (Hsieh, 2020, ex. 10b, p. 6) *Wh = direct object*
- b. ?Sino ang [pinaki~kingg-an ang mga podcast ng NPR]?
who NOM pa.IPFV~listen-LV NOM PL podcast GEN NPR
'Who listens to NPR podcasts?' (Hsieh, 2020, ex. 55a, p. 178) *Wh = external argument*
- c. Saan i-ni-lagay ng kusinero ang kaldero?
where CV-PFV-put GEN cook NOM pot
'Where did the cook put the pot?' (Hsieh, 2020, ex. 5, p. 230) *Wh = oblique argument*
- (21) Malay: *meN*-Voice licenses wh-movement of external argument, adjunct, oblique but not direct object
- a. Siapa₁-kah yang ____₁ telah **mem**-baca buku itu?
who-Q that PFV MEN-read book the
'Who has read the book?' (Soh, 1998, ex. 9a, p. 3) *Wh = external argument*
- b. *Apa₁-kah yang Ali telah **mem**-baca ____₁?
what-Q that Ali PFV MEN-read
intended: 'What has Ali read?' (Soh, 1998, ex. 9b, p. 3) *Wh = direct object*
- c. Kepada siapakah Minah **mem**-beri kucing kesayangannya?
to who-Q Minah MEN-give cat beloved-her
'To whom did Minah give her beloved cat?' (Soh, 1998, ex. 32b, p. 9) *Wh = oblique argument*
- d. Bagaimanakah Ali **men**-jawab soalan itu?
how-Q Ali MEN-answer question the
'How did Ali answer the question?' (Soh, 1998, ex. 32c, p. 9) *Wh = adjunct*
- (22) Malay: Ø-Voice licenses wh-movement of everything
- a. Apa₁-kah yang Ali telah baca ____₁?
what-Q that Ali PFV read
'What has Ali read?' (Soh, 1998, ex. 4b, p. 2) *Wh = direct object*
- b. Siapa₁-kah yang ____₁ telah baca buku itu?
who-Q that PFV read book the
'Who has read the book?' (Soh, 1998, ex. 4a, p. 2) *Wh = external argument*
- c. Kepada siapa Mary beri buku?
to who Mary give book
'To whom did Mary give a book?' (Cole and Hermon, 1998, ex. 26c, p. 232) *Wh = oblique argument*
- d. Di mana John beri Mary buku itu?
at where John give Mary book that
'Where did John give Mary that book?' (Cole and Hermon, 1998, ex. 26b, p. 232) *Wh = adjunct*
- ♦ **Summary:**

 - Things that need Voice-related promotion to wh-move in Tagalog/Malay: direct objects
 - Things that don't need Voice-related promotion to wh-move in Tagalog/Malay: agents, obliques, adjuncts
- What do agents/obliques/adjuncts have in common?
- **Proposal:** they always have the option of being higher than direct objects
- ◊ Seems straightforward for agents/adjuncts, less so for obliques, but here are two options:
1. Obliques introduced by other heads like Appl, which can show up above or below V
 2. Following Newman (2024): obliques are flexible – can optionally merge with V or *v*

3 Analysis: distributing wh-probes on different heads

♦ Summary of generalization:

- ▶ Some languages allow everything to wh-move without first undergoing A-movement.
- ▶ Some languages require everything to undergo A-movement before they can wh-move.
- ▶ Some languages allow some things but not others to wh-move without A-movement.

♦ Descriptively, it is as though there is a point that defines the floor for wh-movement without A-movement.

- ▶ Things higher than this floor just wh-move; things lower than this floor first A-move to that point or higher and then wh-move.

▪ Why should this happen?

▪ **Proposal:** “unselected” features project, and create barriers to their own movement.

(3) Domain bearing [wh] is an island for wh-movement, but not for A-movement

a. Wh-movement blocked

* [CP wh-phrase ... [_{wh}] ... wh-phrase ...]

↑
wh-movement

b. A-movement licensed

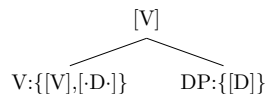
✓ [_{XP} wh-phrase ... [_{wh}] ... wh-phrase ...]

↑
A-movement

3.1 Selection and Projection

♦ Syntax 101 view of projection: heads project, phrases don't.

(23) Head selects phrase, projects its category feature



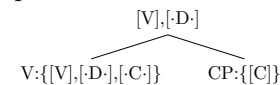
▶ Notice: not everything from the head projects.

- [_D] doesn't project, probably because it got checked by the [D] on DP.

♦ **Complete Syntax 101 projection rule:** heads project, phrases don't, and only “unchecked” properties of the head project.

▶ When the head has other features besides [V] and [_D], those presumably project (Adger, 2003).

(24) Projecting category features and selectional features from heads to phrasal nodes

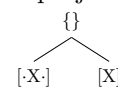


♦ A simpler rule (Zeijlstra, 2020): everything that isn't part of feature-checking projects (from either daughter).

▶ Maybe only [V] projects in (23) because [_D] and [D] (the only other features) check each other, and thus suppress each other from projecting.

(4) The checking rule

When a feature [_X] is sister to a corresponding feature [X], neither is projected on the mother node.

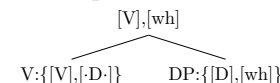


(5) The projection rule

Every feature that the checking rule fails to apply to projects to the mother node.

▶ A consequence: properties from non-heads can sometimes also project, depending on the selectional properties of their sisters.

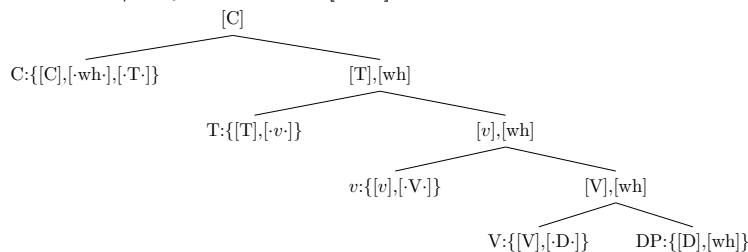
(25) When phrases have multiple features: unselected features project



3.2 Deriving successive cyclicity

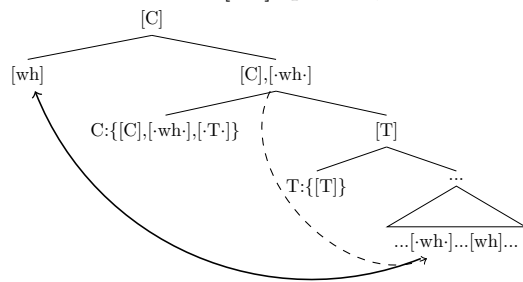
- ♦ What does this projection rule do for us?
 - ▶ Wh-movement cannot proceed unless there are (at least) two wh-probes in a clause.
 - If there is only one wh-probe: [wh] projects from the wh-phrase unimpeded to the sister of the probe.
 - ◊ If the probe's sister is its goal, it doesn't search at all → no wh-movement.

(26) If the first/only instance of $[\cdot\text{wh}\cdot]$ were on C:



- ◆ A lower instance of $[\cdot\text{wh}\cdot]$ prevents $[\text{wh}]$ from reaching C's sister, licensing wh-movement.
 - ▶ Only if C's sister does not bear $[\text{wh}]$ will $[\cdot\text{wh}\cdot]$ project and license a wh-specifier. In short, a clause-medial instance of $[\cdot\text{wh}\cdot]$ is a precondition for wh-movement.

(27) For C to attract a [wh]-specifier, its sister must not bear [wh]:



- ◆ **Takeaway:** we know that intermediate heads (e.g. v) can be a stopping off point for successive-cyclic wh-movement.

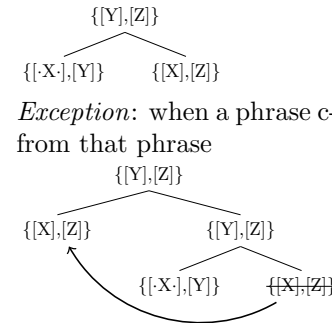
- This approach helps us understand why: if there were no intermediate heads with wh-probes, wh-movement would be impossible.
 - Such a head might not trigger movement if its sister bears [wh], but it could if wh-movement already started in a lower clause.

- ◆ An aside: I'm assuming copies don't feed the projection rule over and over again (leads to a lot of redundant information).

- ▶ Maybe future work will show that this isn't true, but for now, I'll adopt the following amendment (copies don't project).

(28) The projection rule

Every feature that the checking rule fails to apply to projects to the mother node.



- ♦ Summary: Intermediate instances of [·wh·] in a clause enable wh-movement, and also trigger successive cyclic movement in certain circumstances.

- If this is right, the framework doesn't care which heads have $[-wh]$ – we just need some head below C to have $[-wh]$ if C is ever going to attract a wh-element by movement.

- Varying the location of intermediate $[\cdot\text{wh}\cdot]$ provides a typological space.

- Three distinctions are important:

1. whether $[\cdot\text{wh}\cdot]$ is on the lowest argument-introducing head, or
2. the highest argument introducing head, or
3. above all argument introducing heads.

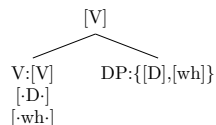
- For simplicity, I'll call these positions V, *v*, and T, but there might be other heads that have [*wh*] instead, with similar effects.

3.3 If [*wh*] is on V

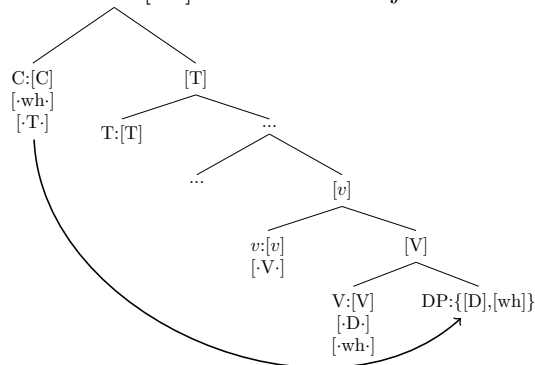
- ♦ If [*wh*] is on V, derives English-type languages: anything can wh-move without A-movement.

(29) Object questions

- a. Objects check their [*wh*] features against [*wh*] on V



- b. [*wh*] on C remains unchecked upon merging with TP, so it searches the tree for [*wh*] and finds the object

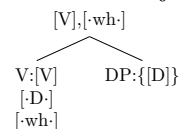


- Subject questions are possible because the projection rule allows *everything* not consumed by selection to project.

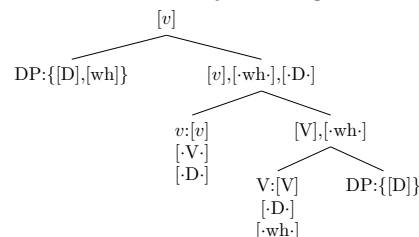
- If the object isn't a wh-phrase, the unused [*wh*] on V projects until it finds the subject.

- When the [*wh*] on C looks for a wh-element to attract, the highest one it finds is the subject.

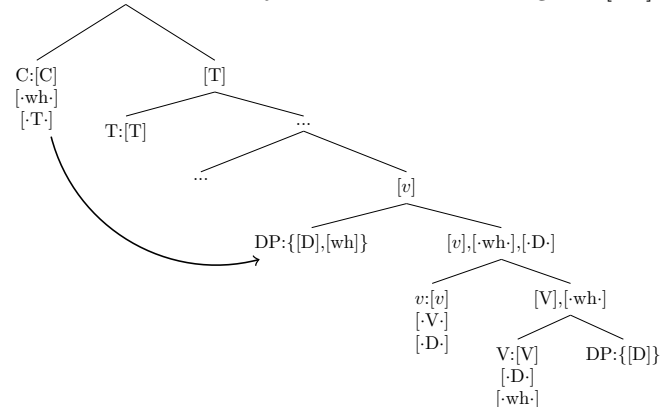
(30) When the object is not a wh-phrase: projection of [*wh*]



(31) When the wh-subject merges, it checks the [*wh*] from V



(32) C attracts the wh-subject because it is the highest [*wh*]-bearer



- ♦ Summary: if [*wh*] is on V, nothing prevents wh-subjects or wh-objects/adjuncts from wh-moving normally.

- Movement will be successive cyclic through Spec VP from embedded clauses

- Strange implication for multiple questions: multiple wh-elements should prevent any wh-movement, if [*wh*] is the only intermediate probe – to be revisited in Section 4.1.

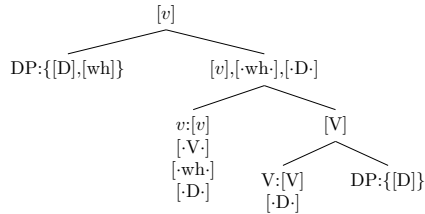
- ♦ As we will see, the results are different if the lowest instance of [*wh*] is higher – restrictions on wh-movement begin to emerge.

3.4 If $[\cdot\text{wh}\cdot]$ is on v

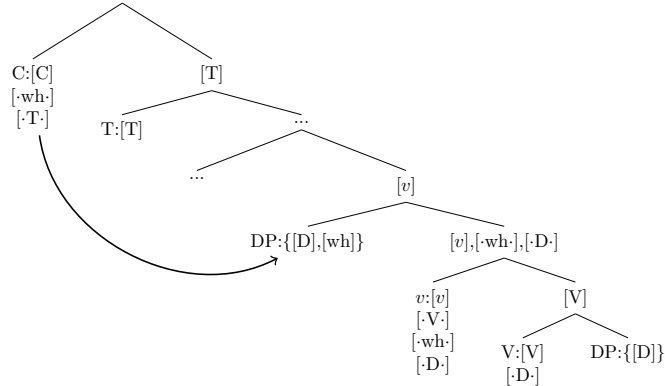
- ♦ If the lowest instance of $[\cdot\text{wh}\cdot]$ is on v , wh-elements that merge in vP or higher get to wh-move.

- ▶ Lower wh-elements get trapped, unless they pied-pipe or A-move.
- ▶ First, a subject wh-question: wh-external argument checks $[\cdot\text{wh}\cdot]$ and does not project $[\text{wh}]$.
 - May extract normally – the wh-subject is the highest bearer of $[\text{wh}]$ accessible to C.

(33) Wh-subjects have their $[\text{wh}]$ suppressed by $[\cdot\text{wh}\cdot]$ on v .



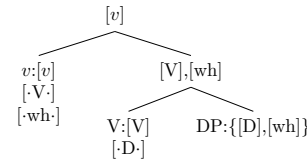
(34) As the highest bearers of $[\text{wh}]$, wh-subjects wh-move normally.



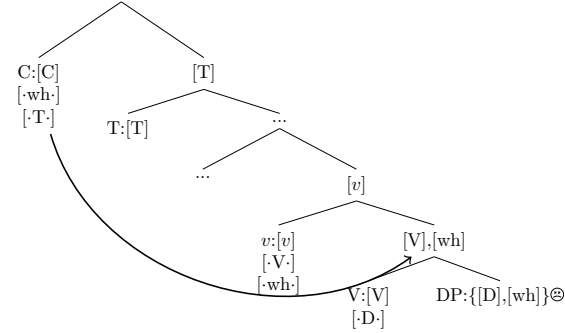
- ♦ The picture is different for wh-direct objects.

- ▶ Without a $[\cdot\text{wh}\cdot]$ on V to suppress the $[\text{wh}]$ on an object, $[\text{wh}]$ on an object projects to the sister of v .
- ▶ In this case, wh-objects are *not* the highest bearers of $[\text{wh}]$ – they are dominated by a node that bears $[\text{wh}]$. As a result, C cannot directly attract the direct object without violating minimality conditions on movement.

(35) An object wh-phrase projects its $[\text{wh}]$ until v is merged: object is not the highest bearer of $[\text{wh}]$



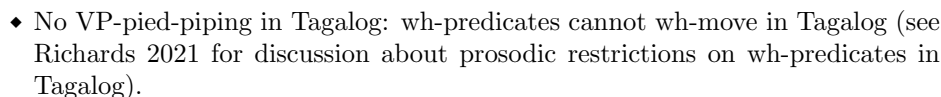
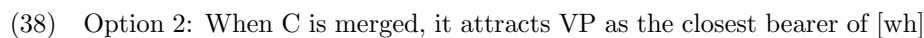
(36) Result: objects can't wh-move, because they're not the most local bearer of $[\text{wh}]$: they are dominated by a node that bears $[\text{wh}]$



- ♦ Two options for wh-moving the direct object:

- ▶ A-movement (interacts with Voice): A-move past the highest instance of $[\text{wh}]$.
- ▶ Pied-pipe VP.

(37) Option 1: Voice-related promotion of a wh-object can circumvent the wh-intervention problem.



- (39) *Gavião*: Object questions pied-pipe VP (Moore, 1984, ex. 7.17, 7.20, p. 107)

- (40) Subject and adjunct questions do not pied-pipe VP

- a. [T á tígi] té pa-zé-e-na sa-ga váneè-p ké-e-na?
 which place NASR 1PL-NASR-TH-LK 3S-kill (3S)-exit-NZ IN-TH-LK
 ‘Where do we kill him when he comes out?’ (answer: ‘On the head.’)
 (Moore, 1984, ex. 7.22, p. 108)

- b. [A á-nám-dígi] té ɛ-záno sá a-ka tírí-á?
 which-number-time NASR 2S-brother NASR 3C-field burn-S.M
 ‘When does your brother burn his field?’ (Moore, 1984, ex. 7.24, p. 108)

- c. [A á-na māt] té saká-ka a-vít ígí ɛ-gá
 which-LK SB.NZ NASR 3S+NASR-go 3C-food take+out 2S-field
 pí-á?
 from-S.M
 ‘Who gets food from your field?’ (Moore, 1984, ex. 7.54, p. 126)

- ◆ Summary:

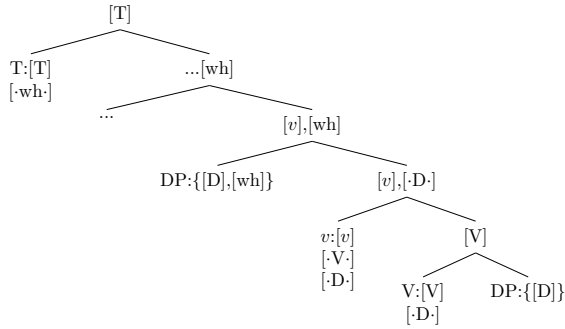
- Languages that treat subjects/adjuncts/obliques differently from direct objects wrt wh-movement likely have $[\cdot\text{wh}\cdot]$ on v .

- Elements that merge with *v* or higher may wh-move normally by having their [wh] suppressed. Elements that merge lower (e.g. direct objects) have their [wh] projected too high – requires A-movement or pied-piping to move to Spec CP.

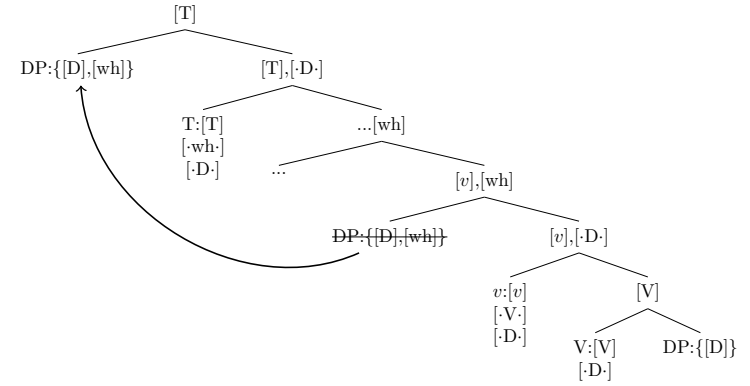
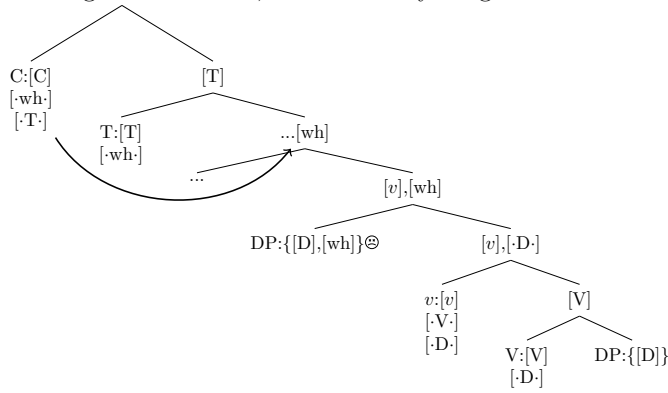
3.5 If $[\cdot\text{wh}\cdot]$ is on T

- ◆ If the lowest instance of $[\cdot\text{wh}\cdot]$ is on T, everything merged below T must either A-move or pied-pipe in order to wh-move to Spec CP.

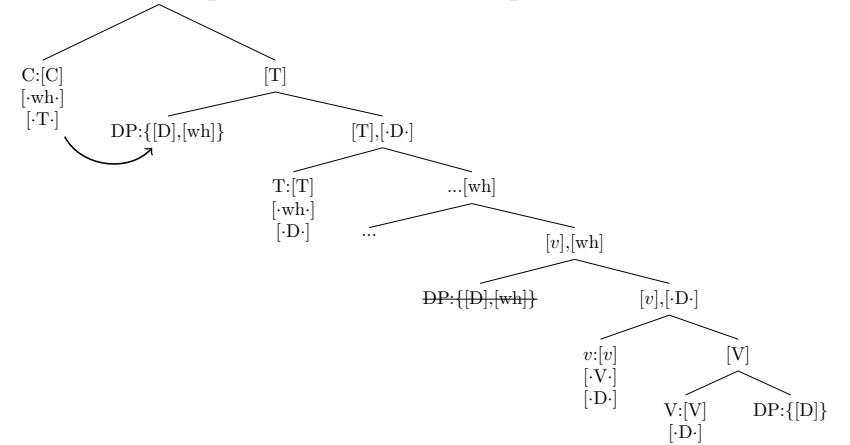
- (41) Wh-subjects project [wh] up until T is merged



(42) Nothing can wh-move, because everything is dominated by [wh]



(44) Whatever is in Spec TP can wh-move to Spec CP



♦ The same two options are available:

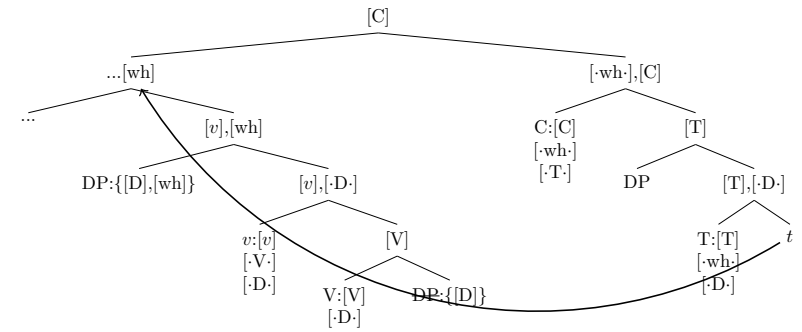
► A-movement (interacts with Voice)

► Pied-piping

■ The difference from Tagalog/Malay is that *everything* must make use of one of these options.

(43) EPP-driven, Voice-sensitive movement to Spec TP: makes the moved element the highest bearer of [wh]

(45) If T's sister wh-moves instead



♦ Do we find evidence of TP pied-piping in Dinka and Malagasy?

- Both languages alternatively permit wh-in-situ, which is insensitive to Voice.

- This could be derived if the [wh]-bearing sister to T is pied-piped by the wh-phrase to Spec CP!

(46) Nanasa lamba **tamin'inona** Rakoto?
 PST.AV.wash cloth PST.P.GEN.what Rakoto
 ‘What did Rakoto wash clothes with?’ (Paul, 2000, ex.92a, p.200) *Malagasy*

- A potential caveat for Dinka: moved clauses linearize to the right and are island sensitive (van Urk, 2015; van Urk and Richards, 2015).

◊ May indicate that something else is going on for Dinka wh-in-situ.

♦ Summary:

- Varying the position of [·wh·] in the clause makes predictions about which elements may wh-move without A-movement or pied-piping, and which can wh-move straightforwardly on their own.

- The lower [·wh·] is, the less restricted wh-movement should be.

4 Extentions

4.1 Multiple questions

- ♦ We have looked at cases with a single wh-element in various places.

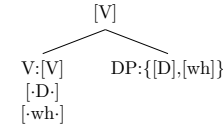
- Some interesting predictions arise when we add more wh-elements.

- First consider a language with just [·wh·] on V and C: wh-objects may move without promoting to subject position.
- But what if the subject is also a wh-phrase?

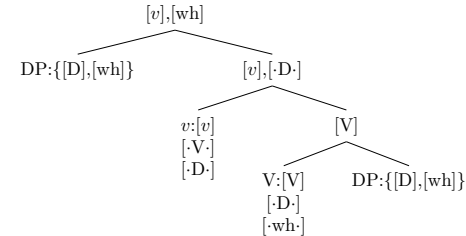
◊ Wh-movement is blocked because [wh] projects to C's sister.

(47) When both the subject and object are wh-elements

a. Object checks [·wh·]



b. When the wh-subject merges, [wh] projects, blocking any wh-movement



- ♦ Is this a bad prediction?

- Yes for English – English has multiple questions, derived by movement.

(48) Who did Maggie say *t* bought what?

- ♦ It's not a bad prediction for other languages, however!

- Many languages allow object questions without A-movement (like English), but disallow multiple questions (unlike English).

- Stoyanova (2008) discusses some languages like Italian: Somali, Berber, and Irish

- **Proposal:** these languages have [·wh·] on V and C.

(49) Italian has wh-movement but not multiple questions

a. Che cosa hai letto?
 what have.2SG read

‘What have you read?’ (Stoyanova, 2008, ex. 61a, p. 44)

b. *Chi ha scritto che cosa?
 who have.3SG written what

intended: ‘Who wrote what?’ (Stoyanova, 2008, ex. 70b, p. 51, citing Calabrese 1984)

c. *Chi crede che Giovanni abbia baciato quale ragazza?
 who thinks that Giovanni have.COND.3SG kissed which girl

intended: ‘Who thinks that Giovanni has kissed which girl?’ (Stoyanova, 2008, ex. 63b, p. 47)

♦ What derives the English pattern then?

- Consider that Dinka (Yuan 2013, Coppe van Urk, p.c.) and Malagasy (Paul 2000) both have multiple questions.

(50) Yee kāŋö ŋji Abul ke [ke ke cii ŋa ke ʏɔɔc]?
 what.PL know.NSV Abul PL COMP PL PRF.NSV who PL bought
 ‘What does Abul know that who bought?’ (Yuan, 2013, ex. 18, p. 9)
Dinka

♦ The fact that Dinka and Malagasy have multiple questions is unsurprising if we think that features determine set membership.

- As [wh] features from phrases project up the clause, they coalesce and get suppressed together upon reaching an unchecked [·wh·] on T.

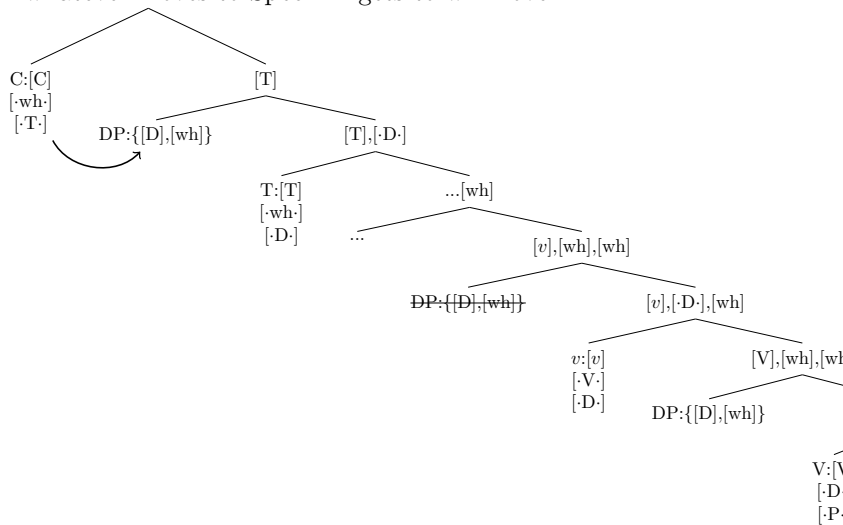
(51) What these features mean:

- [X] = has the property of X
- [·X·] = wants to merge with [X]

(52) Set notion of features:

- {[X],[X]} is equivalent to {[X]}
- {[·X·],[·X·]} is equivalent to {[·X·]}

(53) Multiple instances of [wh] coalesce and then check [·wh·] on T together – whatever moves to Spec TP gets to wh-move



- ♦ The emerging relationship between the distribution of [·wh·] and restrictions on wh-questions:

- (54) The lowest head that bears [·wh·] defines how wh-movement will interact with Voice: lower instances of [·wh·] remove Voice-related restrictions on wh-movement.
- (55) The presence or absence of [·wh·] on a higher head, e.g. T, predicts the availability of wh-movement in multiple questions.

- English presumably has [·wh·] on V (to account for lack of Voice-related restrictions) and T (to allow for multiple questions) in addition to C (the final landing site).

- ♦ Another property of multiple questions in some languages: order-preserving movement.

- In Bulgarian, for example, multiple (non-D-linked) wh-phrases all front, but *tuck in* (Richards, 1997) to preserve their base word order.

(56) Multiple questions with multiple movement in Bulgarian (Richards, 1997, p.54,ex.2, citing Rudin 1988, 472-473)

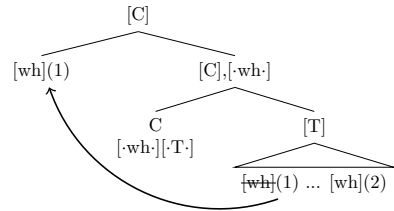
- Koj kogo vižda?
 who whom sees
 ‘Who sees whom?’
- *Kogo koj vižda?
 whom who sees
 intended: ‘Who sees whom?’

- Tucking in is expected on the present approach: [·wh·] never gets deleted, even when “checked”, and can therefore license multiple instances of Merge.

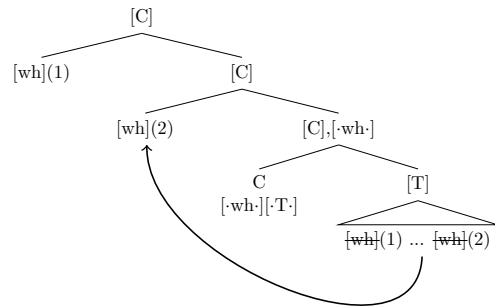
- However, once “checked”, [·wh·] fails to project, meaning additional Merge steps must target a non-root projection → tucking in.

(57) Multiple movement tucks in

- a. First wh-specifier prevents $[\cdot\text{wh}\cdot]$ from projecting to the root



- b. A second wh-specifier is only licensed if it feeds the checking rule – must merge with the node bearing $[\cdot\text{wh}\cdot]$ (Tucking in)



♦ **Summary:**

- The distribution of wh-probes ($[\cdot\text{wh}\cdot]$) has many interrelated consequences for restrictions on wh-questions.
 - This creates implicational relationships between these properties: if you're Dinka-like for the purposes of Voice-related restrictions on extraction, you should also be Dinka-like in allowing multiple questions.
 - By contrast, if you're English-like in allowing object extraction without Voice promotion, you may or may not permit multiple questions (depending on the presence of higher $[\cdot\text{wh}\cdot]$).
- And lastly, multiple movements to check the same feature must *tuck in*, because the feature that licenses this movement fails to project to the root.

5 An argument against DP-intervention

- ♦ In pursuing this analysis, I am arguing against a family of proposals that treat $\bar{A}$ -movement as being sensitive to the distribution of DPs (I'll call these "DP-intervention approaches"; Campana 1992; Ordóñez 1995; Bittner and Hale 1996; Aldridge 2004, 2008; Coon et al. 2014; Tollan and Clemens 2022; Branagan and Erlewine 2022; Keine and Zeijlstra 2025).

- On this alternative view, objects may need to undergo A-movement before $\bar{A}$ -movement to avoid the configuration in (58), which is proposed to be ruled out in some languages but not others.

(58) The DP-intervention account:
 $[_{CP} XP[\text{wh}] \dots DP \dots \overline{XP}[\text{wh}]]?$

- ♦ This kind of proposal is attractive for languages like Dinka and Malagasy, where every ungrammatical example *does* appear to violate (58).

- But how does this account extend to the grammatical cases of non-pivots wh-moving in Tagalog and Malay?

- And why do these languages have such a locality restriction but languages like English, Italian, etc. do not?

- ♦ Keine and Zeijlstra's (2025) answer: different languages and constructions have different probes with different locality restrictions.

(59) Conjunctive probes with different locality profiles

- a. $[u\delta + uD]$: wh-attracts the closest DP (PPs are not interveners)
- b. $[u\delta + uP]$: wh-attracts the closest PP (DPs are not interveners)
- c. $[u\delta + uAdv]$: wh-attracts the closest AdvP (arguments are not interveners)

- Conceptually, our world view guidelines require all languages to have access to the same ingredients and obey the same locality restrictions.

- It is unclear whether this world view can be maintained if language X has non-conjunctive probes, but language Y has conjunctive probes – these are different kinds of ingredients.

- And empirically, this still incorrectly predicts that Tagalog/Malay non-pivot agents should not be able to wh-move!

6 Conclusion

- ♦ Observation: Languages exhibit different interactions between wh-movement and Voice.
 - ▶ Hypothesis: the ways in which languages do and don't vary in this matter might tell us something fundamental about how wh-movement works.
 - ▶ Proposal: it's showing us how "unselected" features like [wh] behave when phrases bearing [wh] merge at various points in the clause
- ♦ Recap:
 - ▶ The projection rule isn't about heads vs. phrases – it's about features involved in checking vs. not (Zeijlstra, 2020)
 - [wh] features project until a head with [-wh] is merged, creating intervention problems for themselves
 - If [wh] is allowed to project, for a wh-phrase to move, it must first move outside the scope of its [wh], using whatever means the language provides → usually a Voice alternation
 - Languages distribute [-wh] differently, leading to languages with no wh-movement/Voice interactions, some wh-movement/Voice interactions, and only wh-movement/Voice interactions.

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