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The existence of a bundled CT head in Bahasa Indonesian*

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Park, Dongwoo. 2022. The existence of a bundled CT head in Bahasa Indonesian. *Linguistic Research* 39(2): 297-326. Regarding the formation of Bahasa Indonesian *wh*-questions, two main approaches have been proposed – the VP-fronting approach and the *wh*-movement approach. In this paper, I point out that these two existing approaches cannot fully account for the peculiar property of Bahasa Indonesian multiple *wh*-questions whereby either the subject *wh*-phrase or the object *wh*-phrase can be extracted and located in the scope position. In order to capture this, I propose that this language has a bundled CT head, which contains the featural requirements of C and T at the same time, and that an example of it is the overt interrogative head *yang*. The existence of a bundled CT head is also supported by an intriguing property found in copular constructions that a *wh*-element replacing the referential DP can be located in the post-copular position, but not in the pre-copular position. Additionally, it is argued that the lack of the complementizer-trace effect in this language also indicates that this language does have a bundled CT head. **(Korea National Open University)**

Keywords Bahasa Indonesian, multiple *wh*-questions, a bundled CT head, spec-to-spec anti-locality, copular constructions, complementizer-trace effect

1. Introduction

Bahasa Indonesian, as an Austronesian language, is standard Indonesian. This language and English have a similar property with respect to *wh*-questions in that *wh*-phrases can be located in the scope position through movement, as illustrated in (1).

(1) a. Siti mem-beli buku itu.
Siti MEN-buy book that
'Siti bought that book.'

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b. Siapa yang mem-beli buku itu?
who YANG meN–buy book that
'Who bought that book?'

Even though it has been widely accepted that the formation of Bahasa Indonesian *wh*-questions involves movement, there is no consensus on what kind of movement is involved in forming *wh*-questions. Regarding this, two influential approaches have been proposed – one is the VP-fronting approach suggested by Travis (2008) inspired by Paul (2001) and the other is the overt *wh*-movement approach proposed in Aldridge (2008) (see also Fortin 2006, 2009).

In spite of a number of researchers' seminal works on the derivation of *wh*-questions in this language, a serious consideration has not been taken into multiple *wh*-questions, exemplified in (2).

(2) a. Siapa yang suka apa?
who YANG like what
b. Apa yang siapa suka?
what YANG who like
'What is liked by whom?/Who likes what?'

Multiple *wh*-questions in Bahasa Indonesian are similar to those of English in that only one *wh*-element is located in the sentence initial position. However, they differ in that either subject *wh*-phrases or object *wh*-phrases can be located in the scope position in Bahasa Indonesian, while only the subject *wh*-phrases can in English, as shown in (3).

(3) a. Who bought what?
b. *What did who buy?

In this paper, I point out that multiple *wh*-questions are big challenge to both VP-fronting approach and the *wh*-movement approach, since they induce an undergeneration problem. Additionally, I propose a revised version of overt *wh*-movement approach to successfully capture the properties of Bahasa Indonesian *wh*-questions. First, it will be argued that the particle *yang* preceded by the sentence initial *wh*-phrase used

in *wh*-questions is the realization of a bundled CT head, which is a single head that bears the featural requirements of the C head and the T head simultaneously, adopting Erlewine (2018). Additionally, *v* in passive sentences (v_{Pass}P) is a strong phase head, which has an ability to draw a moving element to its specifier position (see also Legate 2003). The existence of bundled CT head is supported by an intriguing property found in copular constructions and by the fact that this language does not exhibit the complementizer-trace effect.

The rest of this paper is organized as follows. The section 2 provides some basic properties of Bahasa Indonesian. In Section 3, the two main approaches to *wh*-questions in Bahasa Indonesian are briefly discussed, and it is argued that these two have a non-trivial problem that they cannot account for the formation of multiple *wh*-questions. In section 4, I propose a revised version of *wh*-movement approach, whereby the interrogative head *yang* immediately following the sentence initial *wh*-elements is a bundled CT head, and v_{Pass}P is a strong phase. Additionally, I argue that an intriguing property found in Bahasa Indonesian copular constructions and the lack of the complementizer-trace effect lend further support to the existence of a bundled CT head. In Section 5, it is shown that the proposal advanced in this paper can also explain *wh*-questions in Tagalog, another Austronesian language. Section 6 concludes this paper.

2. Basic properties of Bahasa Indonesian

2.1 Basic word order and *wh*-extraction

The canonical word order of Bahasa Indonesian is SVO, and it has been widely reported that there are three types of sentence structures in this language, as shown in (4).

(4) a. Transitive/Active sentences
Dia me-lihat perempuan itu
He MEN-see woman that
'He sees that woman.'

b. Passive 1
Perempuan itu dia Ø-liat.
woman that he see
'That woman was seen by him.'
c. Passive 2
Buku itu di-baca (oleh) Amir.
book that PASS-read by Amir
'That book was read by Amir.'

The first type is the transitive structure, illustrated in (4a). The verb co-occurs with the prefix *meN*-, which represents the transitivity. Additionally, this language has two types of passive form, exemplified in (4b) and (4c). In the passive 1, the patient is in the sentence initial position and demotion of the agent to adjunct does not occur. In this type of sentence, the verb does not occur with the prefix *meN*-. The Passive 2 structure is similar to that of the passive construction in English – the verb is accompanied by the passive morpheme *di*, and the agent occurs with the preposition *oleh*.

The sentences in (5) shows that the subject and the object exhibit an asymmetry with regard to *wh*-extraction when the interrogative head *yang* is followed by the sentence initial *wh*-element.

(5) a. Siti mem-beli buku itu. (declarative sentence)
Siti MEN-buy book that
'Siti bought that book.'
b. Siapa yang membeli buku itu? (subject *wh*-question)
who YANG MEN-buy book that
'Who bought that book?'
c. *Apa yang Siti membeli? (object *wh*-question with the active verb)
what YANG Siti MEN-buy
'What did Siti buy?'
d. Apa yang Siti beli? (object *wh*-question with the passive verb)
what YANG Siti buy
'What did Siti buy?'

(5a) exemplifies a declarative transitive sentence, and (5b) is the subject *wh*-question

sentence corresponding to the sentence in (5a). In (5b), the subject *wh*-element *siapa* is followed by the morpheme *yang*. In this case, the prefix *meN-* can co-occur with the verb. However, as illustrated in (5c), when the object in the sentence with the transitive verb is located at the sentence initial position before *yang*, the sentence is ungrammatical. This subject-object extraction asymmetry is first reported as the subject-only restriction on extraction by Keenan and Comrie (1977). Such a restriction is found in constructions involving A-bar extraction in many Austronesian languages, as illustrated in (6) and (7).

(6) Cleft in Bikol

a. [$_{\text{focus}}$ Su babayi] su [$_{\text{background}}$ nag-kaon (*=siya) ning'sa keso].
NOM woman NOM AV-eat NOM.3sg GEN/DAT cheese
'It is the woman that ate (the) cheese.'

b. *[$_{\text{focus}}$ Su/ning/sa keso] su [$_{\text{background}}$ nag-kaon su babayi].
NOM/GEN/DAT cheese NOM AV-eat NOM woman
(Int.)'It's (the) cheese that the woman ate.' (Lim and Erlewine 2021: 8)

(7) Relativization in Tagalog

a. lalake=ng [h<um> a~habol ng babae]
man=NG <AV>IPFV~chase NG woman
'(the) man that is chasing a/the woman'

b. *babae=ng [h<um>a~habol ang lalake]
woman=NG <AV>IPFV~chase ANG man
'(the) woman that the man is chasing' (Tanaka et al. 2019: 3-4)

Due to this, it has been accepted that Bahasa Indonesian *wh*-questions involve A-bar extraction. The sentence in (5d) shows that subject-object asymmetry disappears when the verb is a passive form (i.e., when the prefix *meN-* is omitted from (5c)).

2.2 The presence/absence of *yang* and *wh*-questions

The following examples show that the type of displaced *wh*-elements determines the presence/absence of the interrogative complementizer *yang* in the clausal spine.

(8) a. Siapa yang membeli buku baru?
who YANG MEN-buy book new
'Who bought a new book?'
b. Apa yang Siti beli?
what YANG Siti buy
'What did Siti buy?'
c. Mengapa (*yang) John mererit tadi?
why YANG John shout just now
'Why did John shout just now?'
d. Di mana (*yang) Ali membeli buku itu?
at where YANG Ali MEN-buy that book
'Where did Ali buy that book?'
e. Bagaimana (*yang) Ali membeli buku itu?
how YANG Ali MEN-buy book that
'How did Ali buy that book?'

All the sentences in (8) show that *wh*-elements can be located in their scope positions. When the subject and object DPs are extracted, *yang* is present, as illustrated in (8a) and (8b). On the other hand, when non-DP *wh*-elements are extracted, *yang* cannot be present, as shown in (8c-e).

The sentences in (9) show that Bahasa Indonesian allows in-situ *wh*-questions only when the overt interrogative head *yang* is absent.

(9) a. (??Yang) Siti beli apa?
YANG Siti buy what
'What was bought by Siti?'
b. (*Yang) Fatimah menangis kenapa?
YANG Fatimah cry why
'Why does Fatimah cry?'
c. (*Yang) Ali membeli buku itu di mana?
YANG Ali MEN-buy book that at where
'Where did Ali buy that book?'

d. (*Yang) Ali membeli buku itu bagaimana?
YANG Ali MEN-buy book that how
'How did Ali buy that book?

The sentences in (9) all show that in in-situ *wh*-questions *yang* cannot occur in the clausal spine regardless of whether or not *wh*-elements are DPs. In particular, in (9a) where the DP *wh*-element is in its theta position, the presence of *yang* makes the sentence unacceptable. The sentences from (9b) to (9d) show that when non-DP *wh*-elements are in their in-situ positions, *yang* cannot be present in the sentence.

3. Two approaches to forming *wh*-questions

In this section, two existing main approaches to generating *wh*-questions – the VP-fronting approach and the overt *wh*-movement approach – are briefly discussed and it is argued that each has a non-trivial problem in accounting for multiple *wh*-questions.

With respect to the way of generating the grammatical sentence in (8b), repeated here as (10a), there have been two major analyses. The first one is VP-fronting approach proposed in Travis (2008) inspired by Paul (2001). In this approach, the sentence in (10a) is derived through VP-fronting. That is, the sentence (10a) conveying the meaning in (10c) is derived from the pseudocleft sentence in (10b), where the subject DP and the *wh*-element is linked by the phonologically null copula. Then, the whole VP containing the null copula and the *wh*-phrase undergoes VP-fronting. Paul (2001) suggests that VP-fronting is due to theme-rheme considerations.

(10) a. Apa yang Siti beli? (=(8b))
what YANG Siti buy
b. [TP [DP yang Siti beli] [VP ØCOP apa]]
SUBJECT (= *what Siti bought*) VP PREDICATE (= *is what*)
[$_{FocP}$ [Ø$_{COP}$ Apa]$_i$ [$_{TP}$ [$_{DP}$ yang Siti beli] [$_{VP}$ t_i]]
c. The thing that Siti bought is what?

As shown in (10b), this approach assumes that *yang* in the subject is a relative

particle in a headless relative, given the fact that relativization and *wh*-question use the same morpheme *yang*, as illustrated in (11) (See also Jeoung 2018).

(11) a. Orang yang duduk dekat jendela.
person YANG sit near window
'The person who is sitting near the window'
b. Siapa yang duduk dekat jendela
who YANG sit near window
'Who is the one sitting near the window?'
'The one who is sitting near the window is who?'
(Travis 2008: 1586)

The proposal that what is moved is a VP predicate containing the phonologically null copula and its following *wh*-element is based on the assumption that the fronted *wh*-elements have predicate-like properties.[1] One argument comes from the distribution of the focus particle *kah* in Malay and Bahasa Indonesian. The focus particle *kah* in Malay can appear on the focus elements in the predicate, but not on the focused subject, as shown in (12).

(12) *kah* in Malay
a. Fatimah kata Siti membeli buku itu-kah semalam?
Fatimah say Siti bought book that-KAH yesterday

1 Besides Malay and Bahasa Indonesian, many Austronesian languages have particles marking focused elements. In Malagasy, the particle *no* following the sentence initial focused constituent is used in both (pseudo-)clefts and *wh*-questions.

(i) a. Ny lamba no sasan-dRabe.
the clothes PART wash-N-Rabe
'It is the clothes that are being washed by Rabe.'
'What is being washed by Rabe are the clothes.'
b. Inona no sasan-dRabe.
what PART wash-N-Rabe.
'What is being washed by Rabe?'
'The thing that is being washed by Rabe is what?'
(Travis 2008: 1586)

b. *Fatimah kata **Siti**-kah membeli buku itu semalam?
Fatimah say Siti-KAH bought book that yesterday
'Did Fatimah say that Siti bought that book yesterday?'
(Cole et al. 1999: 17)

The sentences in (13) show that the particle *kah* can be able to appear with the *wh*-element in the scope position. Given this, Cole et al. (1999) argue that the fronted *wh*-element in (13) are predicates.

(13) *wh-kah* in Malay
a. Apa-kah yang Ali beli?
what-KAH YANG Ali buy
'What did Ali buy?'
b. Siapa-kah yang datang?
who-KAH YANG come
'Who came?' (Cole et al. 1999: 18)

Similar to Malay, Bahasa Indonesian has the same focus particle *kah,* as shown in (14).

(14) a. Siapa-kah yang mem-beli buku itu?
who-KAH yang MEN-buy book that
'Who bought that book?
b. Apa-kah yang John berikan ke Mary kemarin?
what-KAH YANG John give to Mary yesterday
'What did John give to Mary yesterday?'

Due to the similar syntactic behavior of *kah* between these two languages, it is not impossible to say that Bahasa Indonesian *wh*-questions are also formed through VP-fronting.

However, the VP-fronting approach has one non-trivial problem as follows: as mentioned before, Bahasa Indonesian allows multiple *wh*-questions, as shown in (15).

(15) a. Siapa$_i$ yang t_i suka apa?
who YANG like what
b. Apa$_j$ yang siapa suka t_j?
what YANG who like
'Who likes what?/What is liked by whom?'

In (15a) and (15b), the subject *wh*-phrase and the object *wh*-phrase are moved over *yang*, respectively. If the sentences in (15a) and (15b) were generated through VP-fronting, it would be erroneously predicted that the sentences would be ungrammatical. The reason is as follows: according to Prince (1978), the *wh*-clause in pseudoclefts is a discourse topic. Additionally, Den Dikken et al. (2000) argue that the *wh*-clause in pseudoclefts is located in a topic position. This means that the relative clause conveys a topic interpretation, namely old information. Suppose that *yang suka apa* in (15a) and *yang siapa suka* in (15b) were headless relatives with the relative particle, as the VP-fronting approach assumes. Then, this approach should assume that an *wh*-element can be included inside the topic element. However, this is not tenable since it induces informational structural contradiction. Due to this problem, we can say that the VP-fronting approach cannot properly capture the characteristics of Bahasa Indonesian *wh*-questions.[2]

The second approach is overt *wh*-movement approach, suggested in Aldridge (2008) (cf. Cole and Hermon 2005). This approach can explain the subject-only restriction on extraction exemplified in (16) as follows:

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2 The following sentences may indicate that *kah* in Bahasa Indonesian does not always occur with elements in predicate.

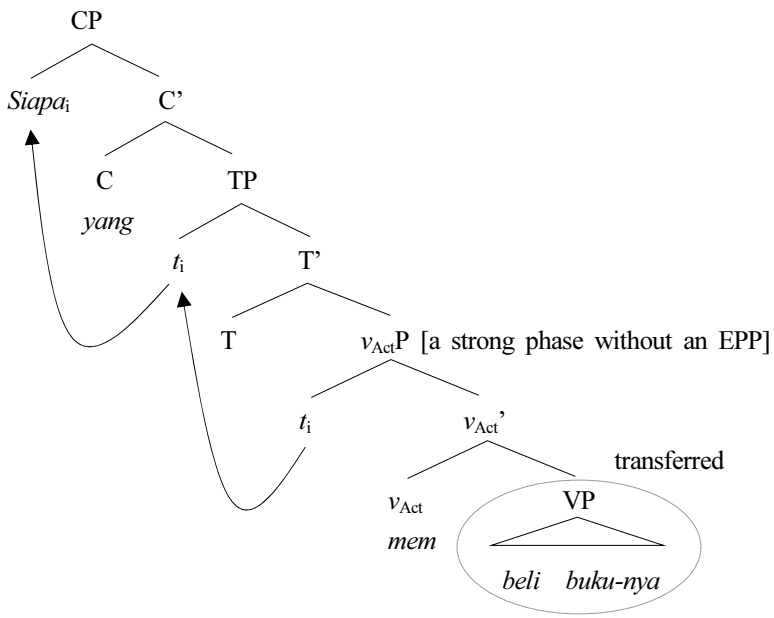
(i) a. Di mana-kah (*yang) Ali mem-beli buku itu?
at where-KAH YANG Ali MEN-buy book that
b. *Ali mem-beli buku itu di mana-kah?
Ali MEN-buy book that at where-KAH
'Where did Ali buy that book?'

In (ia), the particle *kah* is attached to the fronted adjunct *wh*-element. In order for this sentence to be grammatical, *yang* must be absent. In the case where the free relative morpheme is not present, it is not clear how the adjunct by itself can function as a predicate. If *di mana* cannot be a predicate, this can weaken the VP-fronting approach. Meanwhile in (ib) where the adjunct *wh*-phrase is in a in-situ position, the sentence is ungrammatical. If the *kah* cannot co-occur with the in-situ adjunct, it cannot be explained straightforwardly how the sentence in (ia) without *yang* is grammatical.

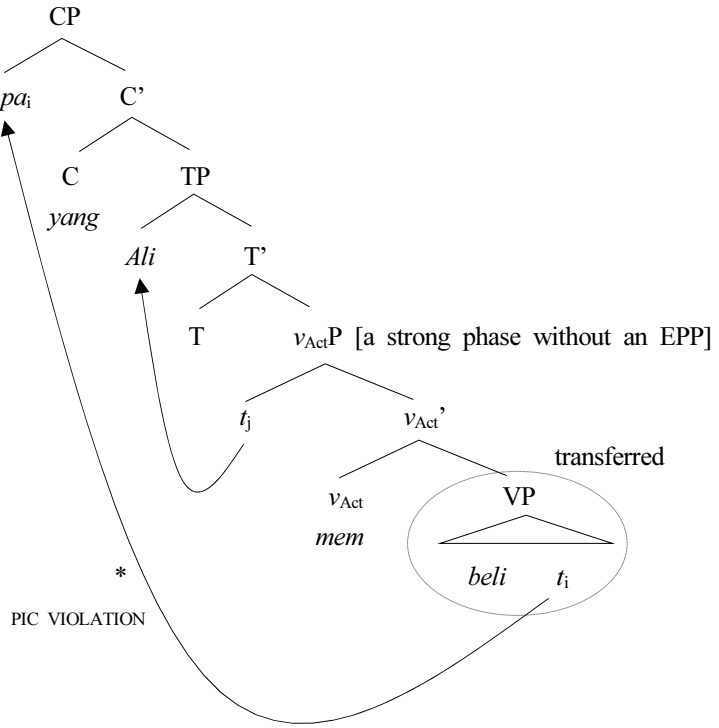
(16) a. Siapa yang mem-beli buku-nya?
who YANG MEN-buy book-nya
'Who bought the book?'
b. *Apa yang Ali mem-beli?
what YANG Ali MEN-buy
'What did Ali buy?'

In the case of (16) where the verb is an active form, the phase head in the verbal domain is v_{Act}, Even though this head is a phase head, it does not have an EPP feature. In (16a), the subject *wh*-phrase is accessible to the probe on interrogative C, and thus, it can undergo movement to its scope position. In this approach, *yang* is the realization of C containing the Q-feature. On the other hand, the reason (16b) is ungrammatical is that movement of the object *wh*-element violates the Phase Impenetrability Condition (PIC) – since v_{Act} does not have an EPP feature, when C is introduced into the derivation, the object *wh*-phrase has already been transferred, and thus, it is not accessible to the probe on C. This is illustrated in (17).

(17) a. the derivation of (16a)



b. the derivation of (16b)

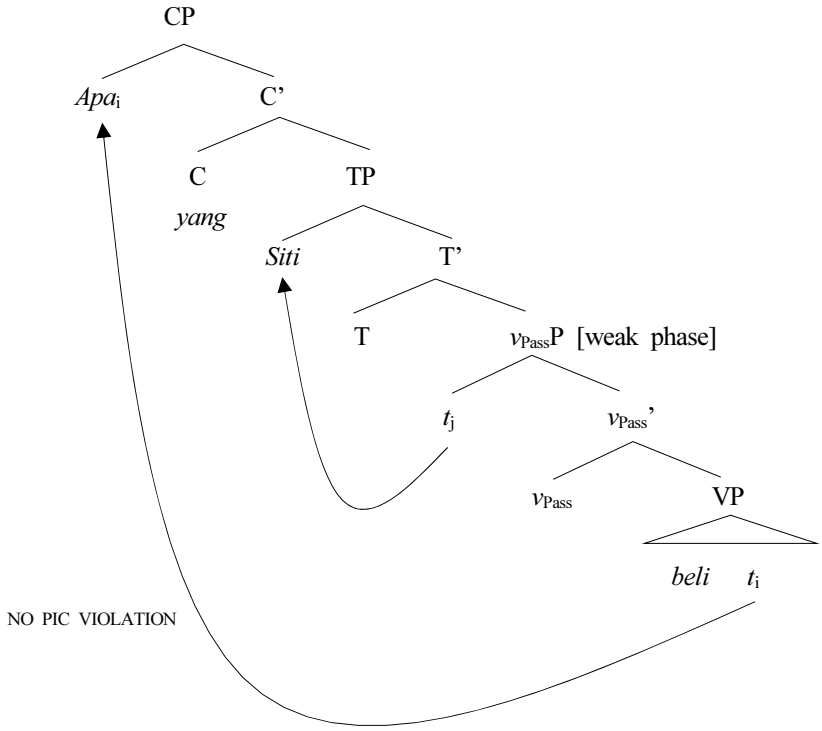


However, as shown above, the object extraction is allowed when the verb is passive form, as shown in (5d), repeated here as (18).

(18) Apa yang Siti beli? (object *wh*-question with the passive verb)
what YANG Siti buy
'What did Siti buy?'

To account for the grammaticality of (18), Aldridge proposes that passive *v*, namely v_{Pass}, is a weak phase which does not have an EPP feature. This means that the probe in the interrogative C is accessible to the object *wh*-element. The object *wh*-phrase moves to Spec,CP in one fell swoop. This is represented in (19).

(19) the derivation of (18)



Even though the *wh*-movement approach can successfully capture the extraction facts in Bahasa Indonesian, this approach fails to account for the multiple *wh*-question in (2b), repeated here as (20), where the object *wh*-phrase is extracted for the following reason:

(20) Apa yang siapa suka?
what YANG who like
'Who likes what?/What is liked by whom?'

Due to the EPP feature in T, the subject is moved to Spec,TP. At the derivational point where the interrogative C *yang* merges with TP, the subject *wh*-phrase is located higher than the object *wh*-phrase. When the probe on C searches for its target, it Agrees with the closest *wh*-phrase, namely the subject *wh*-phrase, and draws it to Spec,CP. Consequently, the object *wh*-phrase can never be moved to Spec,CP. Then, Aldridge's

movement approach cannot generate the sentence in (20).

To summarize, the existing analyses of Bahasa Indonesian *wh*-questions are not sufficient to account for how multiple *wh*-questions can be generated. The VP fronting approaches encounters the information structural contradiction. Meanwhile, the *wh*-movement approach faces a locality problem.

4. A new analysis of Bahasa Indonesian *wh*-questions

In this section, I present a new analysis of Bahasa Indonesian *wh*-questions based on the movement approach by proposing that *yang* in (multiple) *wh*-questions is a bundled CT head, which is drawn from the lexicon as a single head. The existence of bundled CT heads in Bahasa Indonesian is also supported by an intriguing property found in copular constructions and the lack of the complementizer-trace effect.

4.1 *yang* as a bundled CT head

The sentences in (21) show that the subject *wh*-phrase must undergo movement when the interrogative head *yang* is present in the sentence.

(21) a. *Yang siapa suka apa?
YANG who like what
b. Siapa yang suka apa?
who YANG like what
'Who likes what?'

With regard to the nature of *yang*, I propose that *yang* is a bundled CT head that takes *v*P as its complement. This bundled head bears the featural requirements of C and T at the same time from when drawn from the lexicon, and the surface position of the moved subject *wh*-phrase is Spec,CTP. This proposal is based on the spec-to-spec anti-locality (Erlewine 2016; see also Bošković 2016; Douglas 2016, 2017; Amaechi and Georgi 2019; Deal 2019; Erlewine 2020), as illustrated in (22).

(22) Spec-to-spec anti-locality (Erlewine 2016)
Ā-movement of a phrase from the specifier of XP must cross a maximal projection other than XP.

Suppose that C and T were separate heads and the subject *wh*-phrase were moved to Spec,TP en route to Spec,CP. Since movement from Spec,TP to Spec,CP is too short, this violates the condition in (22). However, movement from Spec,*v*P to Spec,CTP does not violate the spec-to-spec anti-locality, since this movement has properties of A-movement and A-bar movement simultaneously.

A question that needs to be answered at this point is what kind of featural requirements the overt interrogative CT head *yang* contains. As mentioned in section 2, Bahasa Indonesian has two types of *wh*-questions – *wh*-phrases can either be moved to its scope position or remain in their in-situ positions. When *yang* is present, then in-situ *wh*-question is not allowed. On the other hand, when interrogative head is phonologically null, either *wh*-movement or *wh*-in-situ is possible. Additionally, recall that the interrogative head *yang* must be present when the extracted *wh*-phrases are DPs, while it must not when non-DP *wh*-phrases are extracted. This indicates that the overt interrogative head *yang* and the phonologically null interrogative head do not have the same featural requirements with respect to what categorial elements it can draw to its specifier position. Otherwise, this asymmetry could not be captured.

Given this, we can say that the overt bundled head *yang* and the phonologically null interrogative bundled head bear the following featural requirements:

(23) a. overt CT head *yang*: [EPP, *u*D, *u*wh*]
b. null interrogative CT head: [EPP, *u*non-D(, *u*wh*)]

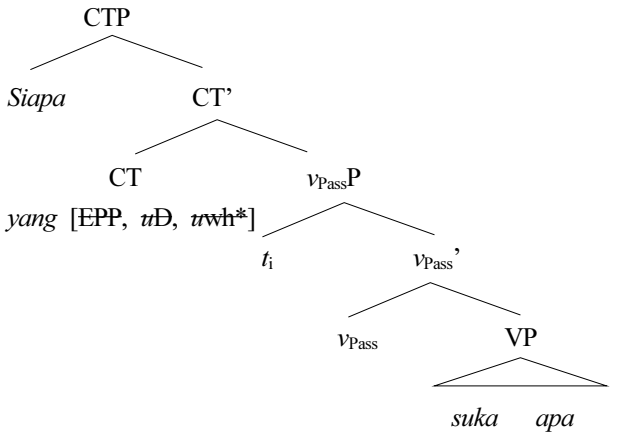
In (23a), the EPP requiring that the specifier position must be filled by something is from T. On the other hand, the uninterpretable *wh*-feature with the EPP requirement (i.e., the *u*wh*-feature) comes from C. Additionally, the CT head *yang* bears the *u*D feature, which is deleted through Agee with an element with a matching interpretable feature. This can capture the fact that the extracted *wh*-element must be DP when *yang* is present. On the other hand, in the case of null interrogative CT head, the *u*wh*-feature is optional. This can capture the optional *wh*-movement in Bahasa Indonesian. The uninterpretable non-D feature (i.e., the *u*non-D feature) is deleted after establishing an Agree relation with an

element that does not have an interpretable D feature. Since the null interrogative head can contain both *u*non-D and *u*wh*, the extracted *wh*-phrase must be non-DP elements.

Based on this, the extraction facts in multiple *w*h-questions can be explained as follows: First, consider the sentence in (2a), repeated here as (24a). In this sentence, the subject *wh*-phrase is extracted. The derivation can be represented in (24b).

(24) a. Siapa yang suka apa?
who YANG like what
'Who likes what?'

b. the derivation of (24a)



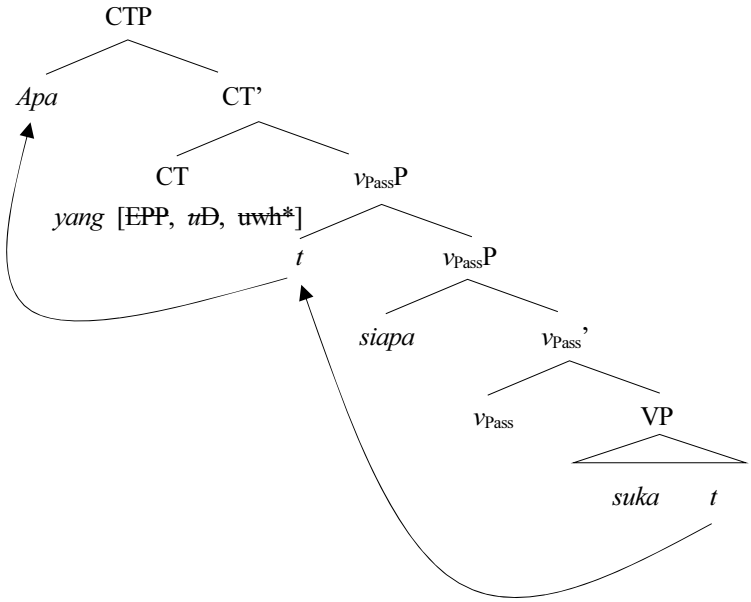
In this derivation, the featural requirements on *yang* are satisfied by the subject *wh*-phrase at once. One might claim that the uninterpretable D feature might be deleted through an Agree relation with another element besides the *wh*-element. However, I reject this possibility since it gives rise to split Agree, which is undesirable.[3]

Then, how can the object *wh*-phrase move over the subject *wh*-phrase in (2b)? The sentence is repeated here as (25a). Adopting Legate (2003), I assume here that v_{Pass} is a strong head, which has an EPP feature, rather than a weak phase, contrary to Aldridge (2008). The derivation is presented in (25b).

3 Movement from Spec,*v*P to Spec,TP without landing in Spec,TP does not induce the spec-to-spec anti-locality violation. It has been reported that this type of movement is allowed in null subject languages like Italian (Rizzi 1982). However, Son and Cole (2004) and Cole and Hermon (2005) show that T has the EPP feature in Bahasa Indonesian. Thus, A-bar movement without landing in Spec,TP will not be considered in this paper.

(25) a. Apa yang siapa suka?
what YANG who like
'What is liked by whom?/Who likes what?'

b. the derivation of (25a)

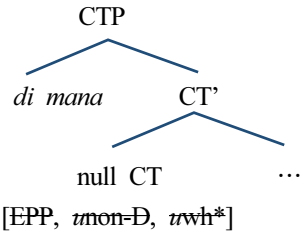


Since the v_{Pass} is a phase head containing an EPP feature, the object *wh*-phrase can be located in the left edge of the verbal domain. Due to this, it is accessible to the interrogative head.

The feature specification on (23b) can account for why only non-DP *wh*-phrases can be located in the scope position when *yang* is not present in the clausal spine.

(26) Non-DP *wh*-element movement
a. Di mana Ali membeli buku itu?
at where Ali MEN-buy book that
'Where did Ali buy that book?'

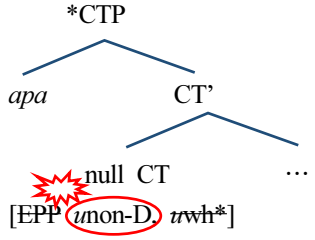
b.



(27) DP *wh*-movement

a. *Apa Ali beli?
what Ali buy
'What did Ali buy?'

b.



In (26a), the interrogative CT is null. Since the head CT contains the uninterpretable non-D feature and the uninterpretable *wh*-feature with the EPP requirement, the non-DP element must be located in its specifier position. Otherwise, the *u*non-D feature cannot be deleted. This is the reason why the sentence in (27a) is ungrammatical. The specifier position of the head CT containing the same features is occupied by the DP *wh*-element. Then, the requirement of CT that it needs a non-DP *wh*-element as its specifier is not satisfied.

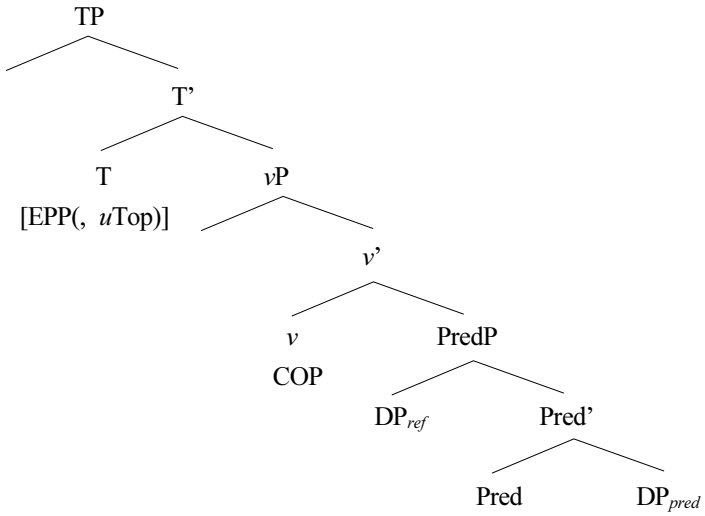
4.2 The bundled CT head and copular constructions

So far, it has been proposed that Bahasa Indonesian allows a bundled CT head, and this can account for the formation of multiple *wh*-questions. In this section, I argue that an intriguing property found in Bahasa Indonesian copular constructions lend a further support to the idea that the bundled CT head does exists in this language.

In order to discuss copular constructions in Bahasa Indonesian, I adopt Mikkelsen (2006)'s proposal on the copular construction structure, illustrated in (28) (see also Park

2021).

(28)



In the copular construction where the predicate as well as the subject is a DP, the DP predicate (DP_{pred}) is generated as the complement of the head Pred, and the referential subject DP (DP_{ref}) is generated in Spec,PredP. The copula is the unaccusative *v* head, and this takes PredP as its complement (see also Bowers 1993; Moro 1995 inter alia). In this structure, T can optionally contain the [*u*Top] feature. When T does not bear [*u*Top], neither the DP_{ref} nor the DP_{pred} bears [*i*Top], and the DP_{ref} undergoes movement to Spec,TP in order to satisfy the EPP requirement. Hence, the predicational copular construction such as (29a) is generated. On the other hand, when T bears [*u*Top] and DP_{pred} bears [*i*Top], the DP_{pred} undergoes movement to Spec,TP. Then, the specificational copular construction like (29b) is created.

(29) a. predicational copular construction
Buku itu adalah yang Ali beli.
book that COP YANG Ali buy
'That book is what Ali bought.'

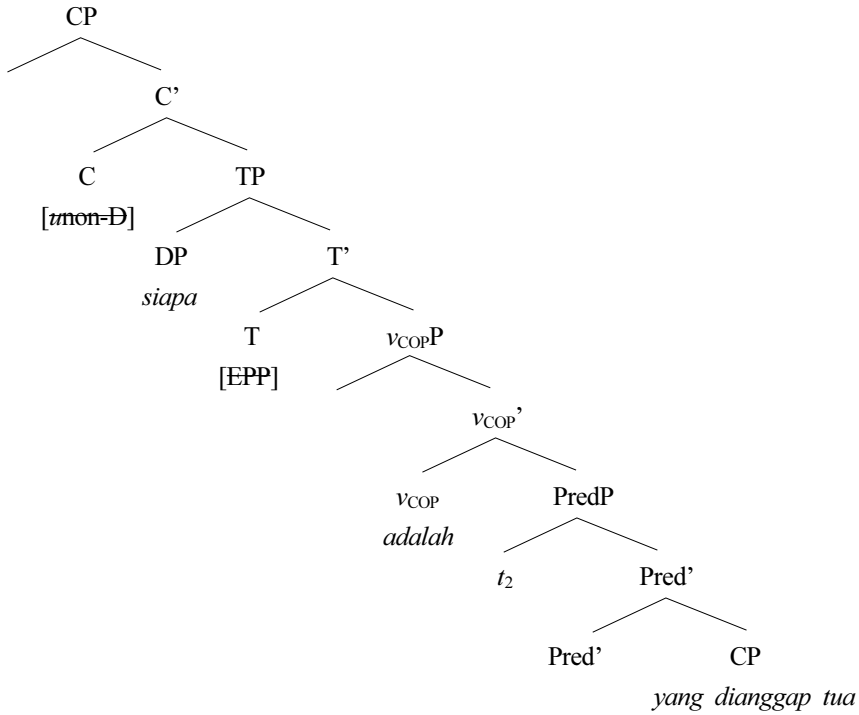
b. specificational copular construction
Yang Ali beli adalah buku itu.
YANG Ali buy COP book that
'What Ali bought is that book.'

An intriguing property found in Bahasa Indonesian copular construction is that when the *wh*-element is preceded by the copula *adalah*, the sentence is grammatical. However, when the *wh*-element is followed by *adalah*, the sentence is significantly degraded. This is shown in (30). (cf. Kaufman 2018)

(30) a. Yang dianggap tua adalah siapa?
YANG treated old COP who
'The one treated as an elder is who?'
b. *Siapa adalah yang dianggap tua?
who COP YANG treated old
'Who is the one treated as an elder?'

In the copular sentence in (30a), the pre-copular element *yang dianggap tua* is a free relative CP. Note that the morpheme *yang* in this case is not an interrogative head – if it were, then it would be predicted that the sentence would be ungrammatical, since a *wh*-element must be located in the scope position when *yang* functions as an interrogative head (see (8) and (9) and their surrounding discussion). Suppose that C and T are separate heads and that C does not have the *u*wh* feature. When the relative clause is moved to Spec,TP, satisfying the EPP and the *u*Top feature on T, and the *wh*-phrase remains its base position due to the lack of *u*wh* in C, the sentence in (30a) can be generated. Now, let us consider the case where the *wh*-phrase undergoes movement. In this case, T does not have an *u*Top feature. The EPP on T can be satisfied by movement of the *wh*-phrase. The *u*non-D feature in C can be deleted through Agree with TP or another non-DP element. When C does not have the *u*wh* feature, the *wh*-phrase stays in Spec,TP. No constraint seems to rule out this derivation, then this erroneously predicts that the sentence in (30b) would be grammatical. This is illustrated in (31).

(31) When C contains [*u*non-D] and T contains the EPP



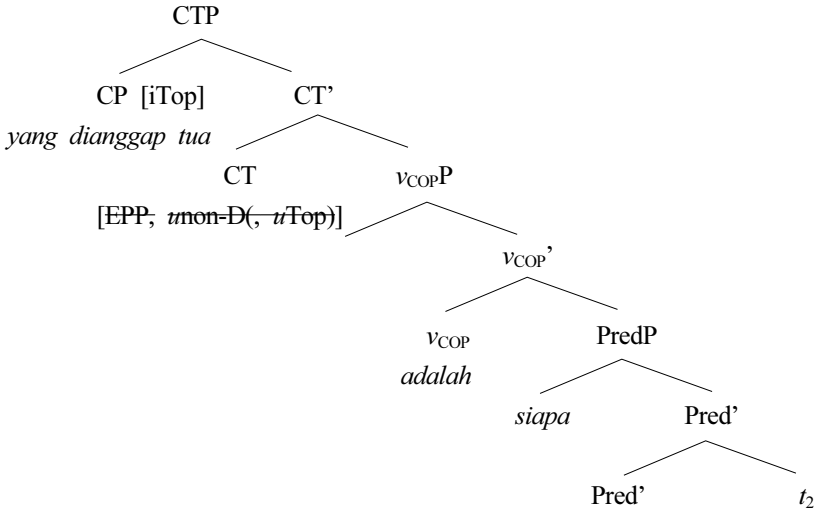
However, the bundled CT head can account for the asymmetry shown in (30a) and (30b) as follows: Since the bundled CT head selecting *v*P headed by the copula is phonologically null, the head at hand can have [EPP, *u*non-D(, *u*wh*)]. Additionally, the CT head in this copular construction can optionally contain the *u*Top feature, as mentioned in (28). Given this, four possible phonologically null interrogative CT heads can be represented as in (32).

(32) a. [EPP, *u*non-D]
b. [EPP, *u*non-D, *u*Top]
c. [EPP, *u*non-D, *u*wh*]
d. [EPP, *u*non-D, *u*wh*, *u*Top]

Out of these four possibilities, the sentence in (30a) is generated when CT contains either [EPP, *u*non-D] in (32a) or [EPP, *u*Top, *u*non-D] in (32b). First, let us see how the head

in (32a) can generate the grammatical sentence. In order to satisfy the EPP requirement and delete the *u*non-D feature at once, some constituent which does not contain the D-feature must be moved to Spec,CTP. First, even though the complement of the CT head, namely v_{COP}P, can delete the *u*non-D-feature on the CT head, it cannot be an appropriate candidate, owing to the anti-locality condition – the ban on movement from the complement position of XP to the specifier of XP (Abels 2003, inter alia). Second, PredP cannot be moved either, due to the anti-locality condition and the PIC. That is, in order for the PredP to move, it must precede through the Spec,v_{COP}P, given that v_{COP}P is a phase head (see also Legate 2003; Sauerland 2003). However, this movement also induces the anti-locality violation. Thus, only the predicate CP *yang dianggap tua* can move to Spec,CTP. The sentence in (30a) is also generated when the head contains the *u*Top head as shown in (32b), since the CTP conveys discourse-old information, and thus, contains the *i*Top. The derivation is represented in (33). Here, all the featural requirements of the null CT are satisfied at once when the CT head establishes an Agree relation with the predicate CP *yang dianggpa dua*.

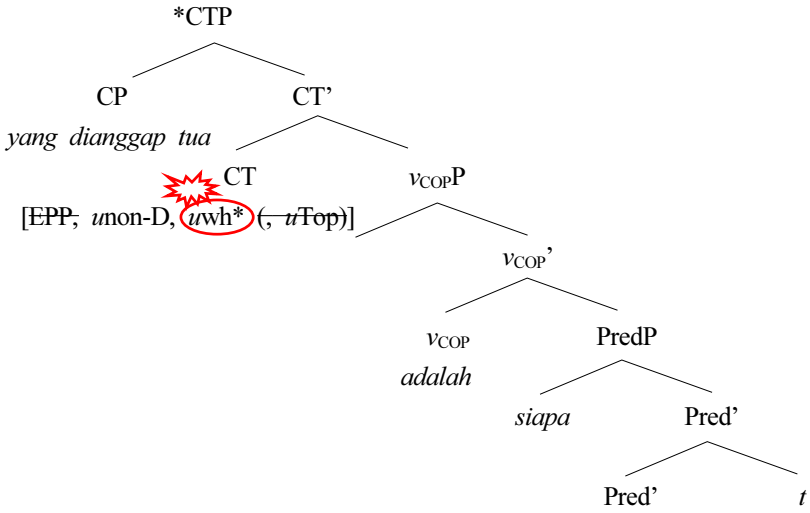
(33) When CT contains either [EPP, *u*non-D] or [EPP, *u*non-D, *u*Top]



Meanwhile, when the null interrogative CT contains either [EPP, *u*non-D, *u*wh*] in (32c) or [EPP, *u*non-D, *u*wh*, *u*Top] in (32d), the derivation crashes, and thus, grammatical sentences can never be generated. This is because there is no way to satisfy

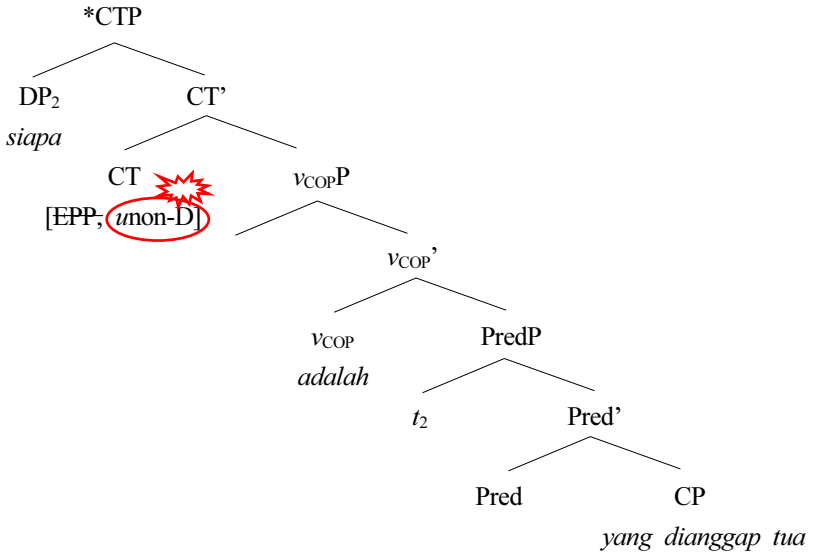
all the featural requirements of the head at once, hence split Agree. Suppose first that the null interrogative CT contains [EPP, *u*non-D, *u*wh*(,*u*Top)], and the predicate CP is extracted. In this case, the *u*wh*-feature induces split Agree, as shown in (34).

(34) when CT contains [EPP, *u*non-D, *u*wh*(,*u*Top)] and the predicate CP moves



Now, let us discuss how the sentence in (30b) is ruled out in this system. (35) represents the derivation when the CT head contains [EPP, *u*non-D] in (32a) and the *wh*-phrase moves.

(35) when CT contains [EPP, *u*non-D] and the *wh*-phrase moves



In (35), when the *wh*-element is moved to Spec,CTP, the EPP feature is deleted. However, since the moved one is a DP, the *u*non-D feature must be deleted via Agree with another element, which induces split Agree. Since the other possible heads in (32) all contain the *u*non-D feature, movement of the *wh*-phrase to Spec,CTP in the copular construction where the interrogative CT head is phonologically null is blocked.

To summarize, it has been shown that the split C-T head approach would wrongly predict that the sentence in (30b) would be grammatical, which induces an overgeneration problem. However, when the phonologically null interrogative head is the bundled CT head, the (un)grammaticality of the sentences in (30) can be successfully explained.

4.3 No complementizer-trace effect

In this section, I show first that Bahasa Indonesian does not exhibit the complementizer-trace effect, and argue that this is because the complementizer *yang* in declarative sentence is an overt realization of a bundled head.

In Bahasa Indonesian, the complementizer *bahwa* is used in the embedded declarative sentences where no element is extracted out of it. On the other hand, the declarative

complementizer *yang* is used when an element is extracted out of it through its specifier position. This is illustrated in (36).

(36) a. Aku pikir (bahwa) Susan mem-beli se-buah tas kemarin.
I think that Susan MEN-buy one-CL bag yesterday
'I think that Susa bought one bag yesterday.' (Jeoung 2020: 118)
b. Siapa yang Bill pikir (yang/*bahwa) Ali suka?
who YANG Bill think YANG/BAHWA Ali like
'Who does Bill think that Ali likes?'

The presence of *yang* in (36b) indicates that, unlike *bahwa*, it can contain the EPP feature which triggers A-bar movement.

The sentence in (37) shows that Bahasa Indonesian does not exhibit the complementizer-trace effect.

(37) Siapa yang Bill pikir yang suka Ali?
who YANG Bill think YANG like Ali
'Who does Bill think that likes Ali?'

This phenomenon cannot be accounted for when C and T are separate heads and *yang* is the overt realization of C. This is because, given that A-bar elements proceed via phase edges, movement from Spec,TP to Spec,CP in the embedded clause violates the spec-to-spec anti-locality condition, as illustrated in (38).

(38) $[_{vP}$ $[_{CP}$ *yang* $[_{TP}$ *siapa* …]]]
* SPEC-TO-SPEC ANTI-LOCALITY VIOLATION

However, the current proposal advanced in this paper that there exists a bundled CT head in Bahasa Indonesian can capture this. Since *yang* in the embedded declarative sentence in (37) is also a single CT head, movement to the matrix clause through Spec,CTP is allowed. This is shown in (39).

(39) $[_{vP}$ $[_{CTP}$ *yang* $[_{vP}$ *siapa* …]]]

The derivation in (39) indicates that the bundled CT head contains the featural requirement of T, namely the EPP that allows movement of the subject *wh*-phrase to Spec,CTP to have the A-movement property for the following reason: if it did not bear the EPP feature, then movement from spec,*v*P to Spec,CTP would have only A-bar properties. Consequently, it would violate the spec-to-spec anti-locality condition.

5. Extension to Tagalog

As shown before, in Bahasa Indonesian the presence/absence of *yang* is closely related to what kind of *wh*-elements can be located in the scope position – When *yang* is present, only DP *wh*-phrases can be in the scope position, while only non-DP *wh*-phrases can be in the scope position when the interrogative head is phonologically null. Additionally, the object *wh*-phrase can move over the subject *wh*-phrase in multiple *wh*-questions. In order to capture these properties, I proposed the followings:

(40) a. [*u*D, *u*wh*] in the interrogative CT head *yang* and [*u*non-D, *u*wh*] in the phonologically null CT head come from C.
b. v_{pass}P is a strong head, which contains the EPP feature.

In this section, I show that those two characteristics mentioned above are not idiosyncratic to Bahasa Indonesian, and that Tagalog, another Austronesian language, exhibits similar syntactic behaviors. This implies that the proposals in (40) are necessary to capture the properties of Tagalog as well as Bahasa Indonesian.

Similar to Bahasa Indonesian, Tagalog subject *wh*-phrase extraction is distinguished from adjunct *wh*-phrase extraction, in that the former is accompanied by a particular interrogative particle *ang*, while this particle is not present in the latter, as shown in (41). (see also Hsieh 2020)

(41) Tagalog
a. Sino ang binigy-an ng lalaki ng bulaklak
who ANG give-AV NG man NG flower
'Who did the man give the flower to?'

b. Kailan binigy-an ng lalaki ng bulaklak ang kalabaw
when give-AN NG man NG flower ANG water-buffalo
'When did the man give a flower to the water buffalo?'
(Travis 118: 1588)

In this language, the overt interrogative head *ang* allows DP *wh*-phrases to be located in the scope position. When non-DP *wh*-phrases are in the scope position, the interrogative head is phonologically null. This can be captured by the proposal in (40a)

Tagalog also allows multiple *wh*-questions, as shown in (42). In this language, when the subject and the object are *wh*-element, either one can be extracted to the sentence initial position over the interrogative head *ang*.

(42) a. Sino ang b<um ng ano?
who ANG <intr.pfv>buy NG what
b. Ano ang b<in>ili nino?
what ANG <tr.pfv>buy who
'Who bought what?' (Aldridge 2021: 280)

The proposal that v_{Pass}P is a strong phase head containing the EPP feature can account for the grammaticality of the sentences in (42). When the subject *wh*-phrase moves to the scope position and the object *wh*-phrase stays in the in-situ position, the sentence in (42a) is generated. On the other hand, when the object *wh*-phrase moves to the scope position via Spec,v_{Pass}P, the sentence in (42b) is formed.

6. Conclusion

In order to account for Bahasa Indonesian *wh*-questions, two main approaches have been proposed. The first one is the VP-fronting approach, and the other one is the *wh*-movement approach. I pointed out that these two existing approaches have a problem explaining the peculiar property of Bahasa Indonesian multiple *wh*-questions – either the subject *wh*-phrase or the object *wh*-phrase can be extracted and located in the scope position. In order to capture this, I proposed that this language has a bundled CT head, which contains the featural requirements of C and T at the same time, and that an

example of it is interrogative heads. The existence of a bundled CT head is also supported by the intriguing syntactic behavior found in copular constructions that a *wh*-element replacing the referential DP can be located in the post-copular position, but not in the pre-copular position. Additionally, it is argued that the lack of the complementizer-trace effect in this language also indicates that this language does have a bundled CT head.

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