MENG- AND *WH*-MOVEMENT IN MALAY/INDONESIAN: REVIEW OF COLE & HERMON 1998

1. INTRODUCTION

This paper reviews Cole & Hermon 1998, *The typology of wh-movement: wh-questions in Malay.* In this paper, Cole & Hermon advance an analysis, within the framework of Minimalist Program, of the three types of *wh*-questions attested in Malay. As empirical support for their analysis, they rely on two kinds of facts: the presence or absence of island effects and the distribution of the morpheme *meng-*.

In Section 2., following a brief summary of Cole & Hermon's proposal, I will consider in greater detail the implications of two of the chief theoretical assumptions they make: that Q is universally strong, and that all instances of *wh*-in situ are licensed according to the Principle of Unselective Binding. In Section 3., I will examine the second of their two empirical diagnostics, the distribution of *meng-*. In Section 4., Given a proposed clause structure (Postman 2002), I argue that their analysis of *meng-* is incorrect, and that this failing casts doubt on the explanatory adequacy of their proposal generally. In Section 5., I evaluate the predictions Cole & Hermon's analysis makes with respect to the distribution of the types of *wh*-questions in Malay. Section 6. contains a brief conclusion.

2. COLE & HERMON (1998)

2.1. *WH*-QUESTIONS IN MALAY: THE DATA

Cole & Hermon show that there are three types of *wh*-questions attested in Malay: *wh-* in situ, as in 1; partial overt *wh*-movement (to an embedded [Spec, CP]), as in 2; and full overt *wh*-movement (to matrix [Spec, CP]), as in 3.[1]

_wh_-in situ

(1) Bill harap $_{CP}$[guru itu akan mendeda **siapa**]]
Bill hope $_{CP}$[teacher that will *meng*-punish who
'Who does Bill hope that the teacher will punish?' (=C&H: 224, ex. 1a)

Partial overt _wh_-movement

(2) Ali memberitahu kamu tadi $_{CP}$[**apa$_i$** (yang) [Fatimah baca **t$_i$**]]
Ali *meng*-tell you just.now $_{CP}$[what$_i$ (that) [Fatimah read t$_i$]]
'Ali told you just now, what was Fatimah reading?' (=C&H: 224, ex. 2b)

[1] It is not entirely clear what the scopal differences between partial and full wh-movement,.as in exx. 3 and 4, are. Based on the glosses that Cole & Hermon provide, though, it would appear that the wh-word takes scope only from its surface position.

Full overt *wh*-movement

(3) **Siapa$_i$** (yang) $_{CP}$[Bill harap $_{CP}$[yang **t$_i$** akan membeli baju untuknya]]
who$_i$ (that) $_{CP}$[Bill hope $_{CP}$[that t$_i$ will *meng*-buy clothes for-him]]
'Who does Bill hope will buy clothes for him?' (=C&H: 225, ex. 3a)

These three examples illustrate the possible placements of *wh*-nominals, such as *siapa* 'who' and *apa* 'what'. The facts with respect to wh-adverbials are slightly different, as *wh*-adverbials cannot be realized in situ; that is, the option illustrated in 1 is unavailable for *kenapa* 'why' and *bagaimana* 'how', as shown in 4.

(4) a. **Bagaimana** Ali memandu kereta?
how Ali *meng*-drive car
'How does Ali drive the car?'
b. * Ali memandu kereta **bagaimana**? (=C&H: 226, ex. 5a,b)

Finally, multiple *wh*-questions are also attested in Malay, as shown in 5.

(5) Awak agak [**di** **mana$_j$** [Mary membeli **apa** t_j]]
2SG wonder [in where [Mary *meng*-buy what t_i]]
'What do you wonder where Mary bought?' (=Cole & Hermon 1998: 228. ex. 16a)

2.2. COLE & HERMON'S PROPOSAL

Cole & Hermon claim that these three types of *wh*-questions attested in Malay are derived very differently. *Wh*-in situ, as in 1, does not involve movement at any level – either overt or covert – and involves a principle of Unselective Binding, in the sense of Heim 1982, whereby a *wh*-operator, which is merged separately at the root [Spec, CP], is able to bind any and all *wh*-words (assumed to be variables) in its scope (Cole & Hermon 1998: 240).[2] The principle of Unselective Binding will be discussed in more detail below.

On the other hand, both 2 and 3 do clearly involve movement. Partial overt *wh*-movement, as

[2] As an illustration, adverbs like *always* have been analyzed as unselective binders, because they may bind more than one variable in their scope. For example, in ex. ii below, after *always* moves to take scope over the entire clause, it binds both indefinites, *a man* and *a donkey*, which are variables (Pesetsky 1987: 101).
i. If a man owns a donkey, he always beats it.
ii. [always$_{i,j}$ [if a man$_i$ owns a donkey$_j$, he$_i$ beats it$_j$]] (=Pesetsky 1987: 101, ex. 10a, 11a)

shown in 2, is followed by covert movement of the *wh*-operator (OP) to the matrix [Spec, CP], replacing a null *wh*-expletive in this position. Alternatively, as in 3, the *wh*-word may move overtly all the way to the matrix [Spec, CP]. Movement in 2 and 3 is driven by the need to check the strong Q feature in C, which Cole & Hermon assume is universally strong (p. 241). *Wh*-in situ is not an available option for *wh*-adverbials, as in (4), because *wh*-adverbials cannot be bound by unselective binding, and hence are forced to move (Cole & Hermon 1998: 240).

Cole & Hermon assume the Variable Binding Condition (VBC), a corollary of the principle of Full Interpretation (FI), which specifies that the representation of an expression at the interfaces must contain all and only those elements that are relevant to the interpretation of that expression (Chomsky 1995). According to Cole & Hermon, FI requires that a *wh*-question must have an operator/variable structure, in accordance with the semantics of questions; they posit that OP is a question operator which binds a variable, *x* (p. 222). This structure may be schematized as in 6.

(6) Variable Binding Condition: OP_x [….x….]

The VBC is a bare output condition, hence sufficient to motivate movement, in this case of the question operator to [Spec, CP] (Cole & Hermon 1998: 222). The VBC, therefore, drives covert movement of the *wh*-operator to matrix [Spec, CP] in instances of partial *wh*-movement, as in (2), as well as overt movement of the *wh*-word to matrix [Spec, CP] in instances of full *wh*-movement, as in (3). Recall that in the case of *wh*-in situ, OP is merged separately into the matrix [Spec, CP], so that the VBC is met without requiring movement.

To summarize, the properties of the various types of *wh*-questions attested in Malay according to Cole & Hermon's proposal are schematized in the following table (Cole & Hermon 1998: 242, 243, 249).

***Wh*- type**	**Construction Type**	**Matrix Q Features**	**OP/Variable Relationship**	**Consequences**
Wh-NP	Full movement	Strong	[OP+VAR]	Overt movement; all islands obeyed; *meng-* deletion
Wh-NP	In-situ [OP…	Strong	…VAR]	Unselective Binding; no island effects; no *meng-* deletion
Wh-	Full movement	Strong	[OP+VAR]	Overt movement;

Adverbial Both	Partial movement	Strong; null *wh*-expletive inserted	[OP+VAR]	all islands obeyed LF OP movement (expletive replacement); all islands obeyed; no *meng-* deletion above overt *wh-* landing site

TABLE 1. PROPERTIES OF *WH*-QUESTIONS IN MALAY.

In this table, [OP+VAR] indicates that both OP and the variable it binds are a single lexical item; [OP…VAR] indicates that they are separate lexical items. The nature of the fusion of [OP+VAR] into a single lexical item has been questioned, but based on Cole & Hermon, it is not entirely clear. They merely write, 'languages… differ with respect to whether or not the operator and the variable are koined in the lexicon into a single word. While in English the OP and the variable are lexicalized as a single word, in Chinese, for instance, the question word is a variable that can be bound by a phonologically null question operator' (p. 238). As a reviewer points out, there are two possibilities for combining [OP] and [VAR] into a unique lexical item: either the two items are combined in the lexicon, or they are combined as they enter the numeration. Cole & Hermon provide no way to evaluate the validity of each of these possibilities.

They later write, 'the fact that *wh*-words in Malay can undergo overt movement constitutes ipso facto evidence that OP and the *wh*-word can be combined into a single word in Malay. Empirical support for the claim that in Malay *wh*-words can also be variables separate from the question operator is provided by the fact that *wh*-words can be used as variables bound by non-*wh*-operators' (p. 239). In () below, the *wh*-word *apa* functions as a variable bound by the existential quantifier *pun* 'also'.

(7) a. Dia tidak membeli apa-pun untuk saya.
3SG NEG *meng*-buy what-also for 1SG
'He did not buy anything for me.' (=C&H: 239, ex. 46b)

However, in a footnote, they later say, 'we do not claim that the *wh-* is a pure variable in every language in which a word can be related to an indefinite' (p. 240, fn 26).

In the next two sections, I will consider the rationale behind, and the viability of, two of Cole & Hermon's theoretical assumptions: that the Q feature is universally strong, and that the Principle of

Unselective Binding handles all cases of *wh-* in situ.

2.3. UNIVERSALLY STRONG Q

As Cole & Hermon make the assumption that the Q feature is universally strong, apparent variation in *wh*-question formation must have its origin elsewhere than in variation in the strength of Q. Consequently, Cole & Hermon assume that OP is universally generated as a phonetically null operator and the *wh*-form is universally a variable; however, languages differ according to whether OP and the variable are joined in the lexicon as a single word (Cole & Hermon 1998: 238). In languages like English, OP and the variable are lexicalized as a single word; in languages like Chinese, they are not. Malay, then, is merely unusual in that both options are made available in the lexicon (Cole & Hermon 1998: 239). In examples such as (2) and (3), OP and the variable are fused into a single lexical item, forcing movement of the *wh*-word with OP. Conversely, in examples such as (1), where the *wh*-word remains in situ, the OP is generated separately, and binds the *wh*-word as a variable.

According to Cole & Hermon, the main advantage of their analysis is that it demonstrates that there is no need to posit variation in the strength of the Q feature; this feature can be assumed to be universally strong if the locus of variation in the lexicon is placed on the *wh*-elements themselves. However, it is not immediately clear why it would be undesirable to posit variation in the strength of the Q feature. In the Minimalist Program, variation in feature strength is omnipresent; the difference between strong and weak features is assumed to drive the difference in overt and covert movement, which the theory is not otherwise presently able to explain. To add to the mystery, Cole & Hermon write, 'we can thus maintain (following Chomsky 1995) that Q-features are universally strong' (p. 256). However, my copy of Chomsky 1995 has the opposite to say: 'As is well known, languages differ in strength of Q' (p. 289). Cole & Hermon do not provide any other reasons, other than following Chomsky, for why they believe it is undesirable to posit variation in the strength of Q.

However, Chomsky provides evidence to motivate that there **is** variation in the strength of Q. As both Q and *wh*-features are semantically Interpretable and need not be checked for convergence, it must be strong Q that forces overt *wh*-movement to [Spec, CP] in some cases; if Q is weak, overt *wh*-

movement does not take place (Chomsky 1995: 291). In other words, the only reason to posit that Q is ever strong is to explain the contrast between overt and covert *wh*-movement. If, as Cole & Hermon suggest, variation in Q strength is not needed to drive this particular distinction (between overt and covert *wh*-movement), it's not clear what its purpose in the grammar would be. As such, the question of whether Q strength is still needed should be considered. (Of course, the semantic features of Q would still be needed.)

Given the variety of types of *wh*-questions in Malay alone, if they did not posit that Q is universally strong, Cole & Hermon argue that they'd be forced to posit that Malay has 'optionally strong' Q features (p. 246). They see such a proposal as contradicting one of the central theoretical assumptions of the Minimalist Program, namely that 'there is no optionality in syntactic principles' (p. 222). However, the flip side of this assumption is that all apparent optionality results from differences in lexical items and morphemes. Hence, Malay's 'optionally strong Q features' could easily be accounted for in this way: Malay merely has two C heads which bear Q features, one bearing a strong Q feature and the other bearing a weak Q feature. This, too, would place the locus of Malay's variation in the lexicon; consequently, Cole & Hermon's argumentation about the undesirability of positing variation in the strength of Q fails to hold.

2.4. PESETSKY ON *WH*-IN SITU

In evaluating Cole & Hermon's proposal, it is important to consider whether it is viable to assume that **all** instances of *wh*-in situ are controlled by an operator. In his 1987 article '*Wh*-in-situ: movement and unselective binding', Pesetsky argues that there are two types of *wh*-in-situ: those which undergo movement at LF to [Spec, CP] and those which do not. The *wh*-in-situ which do not undergo movement are unselectively bound, and behave like indefinites, in that they take scope without movement. Conversely, *wh*-in-situ which must move at LF behave instead like quantifiers. The key difference between the two types of *wh*-in-situ involves a property called discourse linking, or D-linking, which generally speaking appears to involve sufficient previous mention in the discourse to set up a range of possible responses. For example, *which*-phrases in English are D-linked and do not undergo LF-

movement; conversely, *wh*-words are non-D-linked, and so must move at LF. Pesetsky explains, '*which*-phrases… are "familiar" rather than novel… [and] they act much like pronouns… there is thus a natural connection between which-phrases and one instance of unselective binding – namely, the discourse binding seen with pronouns' (p. 120).

D-linked *wh*-phrases, then, by virtue of being connected to previous discourse context, are able to take scope without LF movement; this is accomplished by being unselectively bound by a variable in Spec, CP]. On the other hand, Non-D-linked *wh*-phrases must move at LF, and this movement must obey Subjacency. Empirical evidence for this distinction comes from Superiority effects, which Chomsky 1995 attributes to the Minimal Link Condition, which may be formulated as follows.

(8) Minimal Link Condition:
At a given stage of a derivation, a longer link from α to K cannot be formed if there is a shorter legitimate link from β to K. (Chomsky 1995: 295)

Non-D-linked *wh*-phrases in English, as in 9 below, show Superiority effects, while D-linked *wh*-phrases, as in 9, do not display Superiority effects. If LF movement occurred with D-linked *wh*-phrases, Pesetsky argued, we'd expect them to obey the Minimal Link Condition and display Superiority effects as well; that they do not indicates that LF movement does not occur.

(9) a. Mary asked who read what.
b. *Mary asked what who read. (=Pesetsky 1987: 104, ex. 21a,b)

(10) a. Mary asked which man read which book.
b. Mary asked which book which man read. (=Pesetsky 1987: 106, ex. 29a,b)

In order to test his hypothesis, Pesetsky created contexts in which a normally D-linked *wh*-phrase is 'aggressively non D-linked'. As expected, such aggressively non D-linked *wh*-phrases, which were now forced to move at LF, showed Subjacency effects.

However, contra Pesetsky's proposal, it is not clear that D-linking has any effect on the behavior of *wh*-phrases in Malay; even with non-D-linked *wh*-phrases, Malay does not appear to display superiority effects. In 11a, *di mana* 'where' has moved overtly, while *apa* 'what' remains in situ; in 11b, *apa* instead overtly moves, while *di mana* remains in situ. Both options appear to be acceptable, a possible indication that multiple *wh*-questions in Malay are not subject to superiority. However, as 11c

illustrates, only one of the *wh*-phrases can move overtly, even if each moves to a distinct [Spec, CP] position.

(11) a. Awak agak [di mana$_j$ [Mary membeli apa t_j]]
2SG wonder [in where [Mary *meng*-buy what t_i]]
'What do you wonder where Mary bought?' (=Cole & Hermon 1998: 228. ex. 16a)

b. Apa$_i$ (yang) kamu fikir [Ali beli t_i di mana]
What REL 2SG think [Ali buy t_i in where]
'What do you think Ali bought where?' (=C&H: 230, ex. 22)

c. *Apa$_i$ (yang) awak agak [di mana$_j$ [Mary membeli t_i t_j]]
What REL 2SG wonder [in where [Mary *meng*-buy t_i t_j]]
'What do you wonder where Mary bought?' (=C&H: 228, ex. 16a)

Cole & Hermon do not refer to Pesetsky's analysis about the relationship between D-linked *wh*-phrases and LF movement. However, I've shown that the facts about **Malay** multiple *wh*-questions actually support their proposal that all instances of *wh*-in situ are controlled by an operator and do not undergo movement. Contra Pesetsky's proposal, even non-D-linked wh-phrases in Malay do not appear to move at LF. However, this support for their proposal is specific only to Malay, which could present a problem if Cole & Hermon wish to extend their analysis of *wh*-in situ to other languages.

More problematically for Cole & Hermon's proposal, it remains unclear why *wh*-adverbials in Malay cannot be bound by unselective binding, and instead are forced to move overtly, as 12 (repeated from above) shows. If all *wh*-nominals in Malay can be unselectively bound, it is unfortunately stipulative to say that *wh*-adverbials cannot.

(12) a. **Bagaimana** Ali memandu kereta?
how Ali *meng*-drive car
'How does Ali drive the car?'
b. * Ali memandu kereta **bagaimana**? (=C&H: 226, ex. 5a,b)

In the next section, I set Cole & Hermon's theoretical assumptions to one side and consider the viability empirical support they advance in favor of their proposal.

2.5. Empirical support for Cole & Hermon's proposal

As empirical support for their analysis, Cole & Hermon consider, as diagnostics for movement, two types of properties: the sensitivity of the three types of *wh*-questions to syntactic islands, and the

possible occurrence of the verbal prefix *meng-* with each of the question types. For the precise distribution of these properties, please refer to the 'Consequences' column in Table 1 above.

The first diagnostic appears to be relatively straightforward. Cole & Hermon provide ample empirical evidence that *wh*-questions which exhibit overt and partial *wh*-movement obey island constraints and *wh*-questions where the *wh*-word remains in situ do not. If *wh*-in situ involved covert *wh*-operator movement, they argue, as partial *wh*-movement does, these structures should also be sensitive to island effects; the fact that they are not indicates that no covert *wh*-operator movement takes place (p. 229).

The second diagnostic is, however, rather worrisome. Specifically, Cole & Hermon claim that 'the obligatory omission of *meng-* with verbs that normally take this prefix is indicative of movement' (p. 226); namely, *wh*-movement over the verb in question. In Section 3., I will consider the assumptions inherent in this diagnostic, whether these assumptions are problematic, and what possible implications these assumptions have, not only for the analysis of *wh*-questions advanced by Cole & Hermon, but more broadly for an analysis of sentence structure in Malay. In Section 4., I will look closely at Postman 2002's proposal of Indonesian clause structure and see how Cole & Hermon's view of the distribution of *meng-* comports with it.

3. THE TROUBLE WITH *MENG-*

Despite the importance of this diagnostic to their analysis, Cole & Hermon dwell little on the nature of the prefix *meng-*, and cite no other work on the topic. They merely write (p. 231-2):

> 'Most transitive verbs in Malay optionally take the prefix *meng-*… [which] is often taken simply to be a marker of transitivity. However, the possibility of the occurrence of *meng-* is not determined solely by transitivity, but it is also affected by whether *wh*-movement has applied over *meng-* plus verb. When the object of a verb that would otherwise permit the *meng-* prefix undergoes *wh*-movement, except in special circumstances that we will not discuss here, the *meng-* prefix cannot occur… the loss of *meng-*… also occurs in object preposing constructions and in relative clause formation and focus movement.'

Many questions – which Cole & Hermon regrettably fail to address – immediately arise, although I will focus on only three here, summarized in the bulleted list below.

- What do Cole & Hermon mean when they refer to 'the loss' of the prefix *meng-*?

- What is *meng-*, if not a marker of transitivity?
- Are the three types of *wh*-movement seen in Malay in strict complementary distribution?

I will further demonstrate that, in order for Cole & Hermon's proposal to achieve explanatory adequacy, the goal of the Minimalist Program, each of these questions must first be satisfactorily addressed. In the following sections, I will consider each of these questions in turn.[3]

3.1. THE 'LOSS' OF *MENG-*

The first question is not merely one of terminology, but reflective of a much deeper property of the proposed analysis. What are Cole & Hermon referring to, exactly, when they speak of 'the loss' of the prefix *meng-*? Is this to be understood as some sort of deletion or ellipsis process? If so, how is 'deletion' or 'ellipsis' of a morpheme (i.e., part of a word) to be understood, or theoretically implemented, in the Minimalist Program?

Cole & Hermon's discussion about on this topic is, at best, somewhat misleading, and at worst, completely inconsistent. They alternatively refer to this phenomenon as 'loss' (which implies deletion of *meng-*) and as 'obligatory omission' (which implies *meng-* was never in the derivation to begin with). Descriptively, they wish to say that the *meng-* form of a transitive verb is not permitted in certain environments, namely, where a *wh*-word or an object NP has moved over it, as shown in 13. Although *meng-* may not appear on the matrix verb, *buktikan* 'prove', over which *siapa* 'who' has moved, *meng-* may appear on the embedded verb *curi* 'steal', since it is below the departure site of *siapa.*

(13) Siapa$_i$ Ali **(*mem)**buktikan [yang t_i **(men)**curi kereta
Who$_i$ Ali (**meng-*)prove [that t_i (*meng-*)steal car
'Who did Ali prove stole the car?' (=C&H: 232, ex. 27b)

However, it is not clear how to account for this, given the assumptions of the Minimalist Program. If – as seems to be implied – the presence of a certain type of chain precludes the existence of *meng-*, what technological devices (or worse, stipulations) do we need in order to ensure that the *meng-*ful derivation is

[3] A fourth obvious question, which I will not speculate upon here, involves the aforementioned 'special circumstances' in which the absence of *meng-* is not mandatory.

ruled out in favor of the *meng*-less one?

There are two logical possibilities about the absence of *meng-*: either *meng-* was in the representation and later deleted, or *meng-* was never in the representation at all. Previous analyses (e.g. Postman 2002, which will be discussed in some detail below) of Indonesian clause structure have suggested that *meng-* is introduced into the derivation separate from the verb which hosts it; for Postman, for example, *meng-* is in the head of PrP. Assuming this to be *meng-*'s correct structural position, the question remains whether *meng-* is introduced into the derivation, and later rendered phonologically null or deleted, or whether a null Pr^0 is instead merged into the derivation.

3.2. THE NATURE OF *MENG-*

The next obvious question is as follows: if, as Cole & Hermon claim above, *meng-* is not 'a marker of transitivity', what **is** it? The analysis they suggest might be interpreted as implicitly assuming that the presence of *meng-* requires the checking of some sort of feature, and that this feature, somehow, is prevented from being checked if *wh-* or NP-movement occurs over it. What is this feature? Before considering this question in more detail, we will take a look at Sneddon 1996's description of *meng-* in Standard Indonesian.[4]

3.2.1. *MENG-* IN STANDARD INDONESIAN

Sneddon (1996), in his grammar of Standard Indonesian, describes the verbal affix *meng-* as having two distinct functions, one with intransitive verbs and another with transitive verbs.

MENG- WITH INTRANSITIVE VERBS: There is a small set of intransitive verbs which bear the prefix *meng-*.

[4] The precise relationship between Malay and Indonesian is not quite clear. According to Postman (2002), Standard Indonesian is a dialect of Malay. According to Steinhauer (2001), Indonesian is a 'standardized variety' of Malay (p. 452). Indeed, much of the published literature refers to analyses of Indonesian and Malay interchangeably. There are certainly dialectal differences between Malay and Standard Indonesian, just as there are differences between different social and geographic varieties of Indonesian and different social and geographic varieties of Malay. For example, Cole & Hermon's paper is based on the variety of Malay spoken by educated speakers in Singapore, and they caution that the examples they cite are not necessarily illustrative of formal or Standard Malay or Indonesian, nor will the judgments necessarily hold for other dialects. However, at this point, there does not appear to be any publications on the nature of the structural differences between Standard Indonesian and Malay, and other researchers freely compare previously published analyses on both Malay and Indonesian. (I'm not advocating this practice, just pointing out that there's a lot of precedent.)

Some have verbal roots, some nominal roots, and some adjectival roots. Of the intransitive verbs with verbal roots, Sneddon says, '*meng-* cannot be assigned a function with these verbs, other than that its presence is required to produce a well-formed verb' (p. 65). Of the intransitive verbs with nominal or adjectival roots, *meng-* is required to derive a verb; however, the verbal prefix *ber-* also fulfills this function, and according to Sneddon, there is no predictability about which affix will occur (p. 66).

(14) EXAMPLES OF INTRANSITIVE VERBS DERIVED WITH *MENG-*

a. VERBAL ROOTS
menangis 'cry' (root *tangis* '?')
mendidih 'boil' (root *didih* '?')
menginap 'spend the night' (root *kinap* '?')

b. NOMINAL ROOTS
melaut 'go to sea' (root *laut* 'sea')
meraung 'roar' (root *raung* 'roar')
membukit 'form a heap' (root *bukit* 'hill')

c. ADJECTIVAL ROOTS
menguning 'grow yellow' (root *kuning* 'yellow')
menghangat 'warm up' (root *hangat* 'warm')

Note that, other than this small set of intransitive verbs with which *meng-* is mandatory, *meng-* is never used to mark an intransitive verb.

(15) Wendy sedang tidur / * menidur.
Wendy PROG sleep / * *meng*-sleep
'Wendy is sleeping.'

MENG- WITH TRANSITIVE VERBS*:* *meng-* on a transitive verb marks active voice, *di-* marks passive voice (Sneddon 1996: 67; Voskuil 2000: 198). Others disagree with this characterization of *meng-* on transitive verbs; for example, Willett (1993) claims that *meng-* and *di-* are agreement markers. Others (e.g. Chung 1976) say that *meng-* marks transitivity or agentivity. For Postman (2002), *meng-* and *di-* are generated in the head of PredP, and *meng-* occurs 'when the argument in subject position is the most prominent argument at every stage in the derivation of a sentence' (p. 282). For Guilfoyle, Hung & Travis (1992), *meng-* is a lexical head inserted directly in V, while *di-* is a functional head (a determiner) which originates in a DP. Furthermore, *meng-* is directly associated with the licensing of a direct object, as *meng-* Case-marks the direct object. At any rate, descriptively speaking, *meng-* is seen on transitive verbs

when the external argument is the subject of the clause; *di-* is seen on transitive verbs when the internal argument is the subject of the clause.

Note that the 'transitivity' required of a verb to be marked with *meng-* is really a semantic transitivity (Fortin 2001). Although most transitive verbs require that their object be syntactically expressed, there are quite a few verbs whose object can be omitted when it is 'obvious' or 'unimportant' (Sneddon 1996: 242). In such cases, as in 16 below, the verb is nonetheless marked with *meng-*. This would not be expected if *meng-* was instead dependant on syntactic transitivity, if we follow Chomsky's 1995 assumption that 'verbs with optional objects will have distinct lexical entries, one with and one without the Case feature' (p. 308).

(16) Wendy sedang membaca.
Wendy PROG *meng*-read
'Wendy is reading.'

However, there are reasons to believe that the *meng-* seen on a small set of intransitive verbs is not the same *meng-* that is used to mark active voice on transitive verbs. With intransitive verbs, *meng-* seems to have a derivational property that is not reflected on the transitive verbs *meng-* marks. Additionally, the prefix *meng-* on transitive verbs is completely productive, while the appearance of *meng-* on intransitive verbs is quite limited and rather unpredictable. Finally, while the presence of *meng-* on transitive verbs is generally optional (it is normally omitted in less formal speech), *meng-* on this set of intransitive verbs is never optional, as 17 shows.

(17) **Siapa** yang menangis / *tangis?
Who REL *meng*-cry / *cry
'Who cried?'

3.2.2. WHAT *MENG-* ISN'T

Recall that Cole & Hermon claim that *meng-* is not 'a marker of transitivity', although the analysis they suggest might be interpreted as implicitly assuming that the presence of *meng-* requires the checking of some sort of feature, which is crucially prevented from being checked if *wh-* or NP-movement occurs over it. However, given Sneddon's description, it is arguably the case that *meng-* is not inflection, per se. It does not reflect agreement, tense, aspect, mood, person, number, or any of the

categories typically associated with 'inflection', and which are accounted for within the structure of the clause motivated in Chomsky 1995. In fact, none of these categories in Malay/Indonesian are marked on the verb; overt person and number agreement is non-existent, and tense/aspect/mood – which need not be overt unless it is contrastive – is indicated with a free-standing auxiliary or adverbial. Nonetheless, Postman (2002) makes the claim that *meng-* is an inflectional element and that the relevant feature is [+active] (p. 284). There is a further complication, however: the appearance of *meng-* is almost always optional. In active voice clauses, *meng-* can be omitted from any transitive verb without triggering a change in meaning, and in less formal registers it generally is omitted.[5] In active voice clauses that do not contain *meng-*, then, there must be some other way of checking the [+active] feature on the verb; presumably, this would have to be done by means of a phonetically null prefix, which apart from its phonology would need to have the same exact set of properties as *meng-*.

Consequently, given that *meng-* optionally appears on all transitive verbs in active voice clauses without triggering any change in meaning, it might be most logical to treat *meng-* as a derivational prefix, one that does not have any requirements with respect to feature checking. If this idea is adopted, though, it is not clear how to understand Cole & Hermon's analysis of *meng-*. What we do know is that *meng-* , together with word order, distinguishes the active voice from the passive voice construction in Malay/Indonesian. In an active construction, the NP bearing the agent/external theta role is the 'subject', while in passive constructions, an NP bearing a theme/internal theta role is the 'subject'. Crucially, *meng-* can only appear when the agent NP is the subject.

In the next brief section, I described basic sentence structure in Indonesian with respect to the passive/active voice distinction. Oddly, Cole & Hermon fail to note this distinction in their paper. However, it is relevant for evaluating their proposal.

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[5] This optionality of *meng-* is an issue that Cole & Hermon explicitly set aside for purposes of this analysis. However, see Bošković and Takahashi (1998) for comments on the difficulty of accounting for apparent optionality within the Minimalist Program, which holds as a basic tenet the principle of Economy, which states that all processes happen for a reason. Cole & Hermon (1998: 222) state this assumption as follows: 'There is no optionality in syntactic principles. Optionality in language is due to differences in lexical items/morphemes.'

3.4. VOICE CONSTRUCTIONS IN INDONESIAN

The basic paradigm is shown below in 18-20.

(18) ACTIVE VOICE CONSTRUCTION: √*meng--*
Kami (men)jemput dia.
1PL (*meng)*-meet 3SG
'We met him.'

(19) SUBJECTIVE PASSIVE CONSTRUCTION : * *meng-*
Dia kami (*men)jemput.
3SG 1PL (**meng)*-meet
'He was met by us.' (Sneddon 1996: 249)

(20) CANONICAL PASSIVE CONSTRUCTION: * *meng-*
Saya dijemput+nya.
1SG *di*-meet+3SG
'I was met by him.' (Sneddon 1996: 248)

Ex. 18 illustrates the active voice construction, where the presence of *meng-* is strictly optional.

Ex. 19 illustrates what Guilfoyle, Hung & Travis call the 'subjective passive'. In this construction, the verb is bare, and *meng-* is not permitted. However, the word order in the subjective passive differs from that of the active voice construction: in the active voice construction, word order is AGENT-VERB-THEME; in the subjective passive, word order is instead THEME-AGENT-VERB. The subjective passive is the only way to form a passive if the agent (i.e., the natural subject) is a first or second person pronoun; furthermore, the agent is restricted to being a pronoun, clitic, or proper name (Guilfoyle Hung & Travis 1992: 398).

Ex. 20 illustrates a canonical passive, where the verb is marked with *di-*; the word order of the canonical passive, THEME-VERB-(*oleh*)-AGENT, echoes that of the active voice construction and not that of the subjective passive. The agent may appear within a prepositional phrase headed by *oleh* 'by', or else immediately following the verb, as in 20. The canonical passive is the only way to form a passive if the agent is not overtly expressed or if the agent is a full NP (i.e. not a name or pronoun). Again, if the agent is first or second person, the canonical passive is ungrammatical, as 21 shows.

(21) * Ali **di**cubit (oleh) saya. [6]
Ali *di*-pinch (by) 1SG
'Ali was pinched by me.'

In sum, *meng-* and *di-* are in complementary distribution, in active and canonical passive voice constructions respectively. However, unlike *meng-*, the presence of *di-* in canonical passives is **not** optional. This indicates that *meng-* and *di-* likely have quite different sets of properties, although both are considered voice markers.

4. INDONESIAN CLAUSE STRUCTURE

In Section 4., I will take a close look at a proposed clause structure for Indonesian, in order to understand how, and when, NP movement actually occurs, and what the implications are for Cole & Hermon's view of the distribution of *meng-*.

4.1. POSTMAN 2002

Postman proposes a basic clause structure for Indonesian which follows that of Bowers (2001).

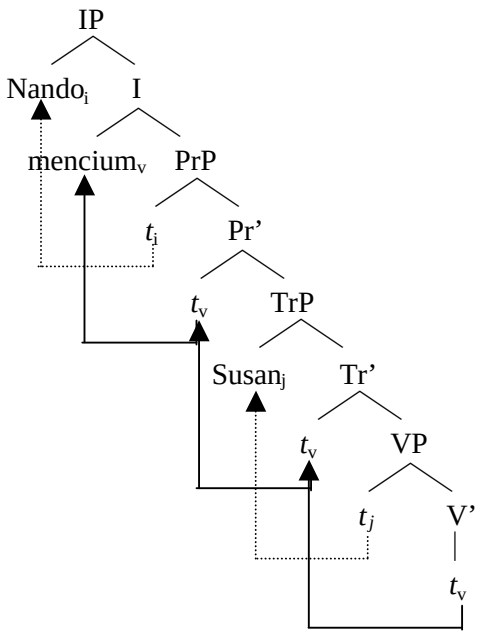
(22) IP > PrP > (TrP) > VP

PredP is a Predication Phrase, and is required for predication; therefore, it is present regardless of the number of arguments of the verb. Conversely, TrP is a Transitivity Phrase; each internal object of a verb requires its own TrP. If the verb is intransitive, then, a TrP will not be present. Ex. 24 below illustrates Postman's proposed clause structure for the sentence in 23.

(23) Nando mencium Susan.
Nando *meng*-kiss Susan
'Nando kissed Susan.' (=Postman 2002: 223, ex. 5)

[6] However, Guilfoyle, Hung and Travis say that there are some 'liberal speakers' which permit a non-third person NP to appear as the object of *oleh* (p. 398).

(24)



(=Postman 2002: 233, ex. 12)

The prefix *meng-* is generated in Pr^0 (as is the prefix *di-*); Postman suggests that both are inflectional elements. For *meng-*, there is a [+active] feature that is checked when the verb *cium* 'kiss' moves into Pr^0. The complex *meng-cium* then raises further to I^0 to check V-features such as [+finite].

If something along the lines of Postman's proposed clause structure is accurate, it might be an indication that Cole & Hermon's analysis of *meng-* is perhaps not on the right track. Note that if verb movement to I occurs **overtly**, the subject DP *Nando* must then cross over it, on its way to its Case position in [Spec, IP]. This ordering follows directly from cyclicity, which follows from the Extension Condition.

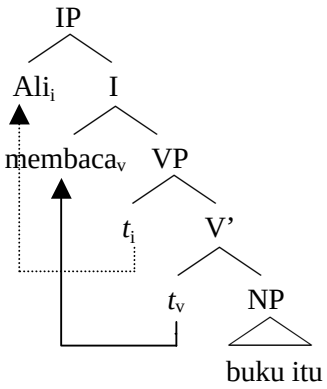
(25) The Extension Condition
Substitution operations (i.e. Merge and Move) always extend their target (Chomsky 1995: 190).

If V-to-I movement is overt, then, in every active voice clause containing *meng-* the subject DP will cross over the verb while it hosts *meng-*. However, movement of some DP over *meng-* is precisely the environment that Cole & Hermon suggest to force the obligatory deletion of *meng-*. If their claim is true, we would expect *meng-* to be deleted in every active voice clause, and this is not the case. In fact, Guilfoyle, Hung & Travis 1992 does contain arguments that V-to-I movement occurs in the overt syntax.

Under their analysis, both *meng-* and the verb root are inserted in V; the subject NP raises to [Spec, IP] for Case assignment under spec-head agreement with the *meng*-verb complex in I, as shown in 27 below.[7]

(26) Ali membaca buku itu dengan teliti.
Ali *meng*-read book DEM with care
'Ali read the book carefully.' (=Guilfoyle, Hung & Travis 1992: 397, ex. 28)

(27)



In order to save their analysis, Cole & Hermon would need to make a distinction between the kinds of movement that result in deletion of *meng-* and the kinds of movement that do not. We've already seen that movement of an adverbial over *meng-* does not force the morpheme's deletion. However, Cole & Hermon wish to maintain that both A movement and A' movement over *meng-* have the effect of deleting it; as support for their analysis of *wh*-movement, they claim that object preposing (which appears to be equivalent to what Guilfoyle, Hung & Travis call subjective passive) results in the loss of *meng-*, as shown in 28.

(28) Ali$_i$ saya **(*men-)**cubit t_i
Ali$_i$ I (*meng-*)pinch t_i
'I pinched Ali./Ali was pinched by me.' (=C&H: 232, ex. 28b)

If their analysis of object preposing constructions is accurate, and if verb movement is overt, Cole & Hermon would then need to explain why movement of the subject DP *Nando* over *meng-* in 24 above does not result in its deletion while movement of the clefted object DP *Ali* does. In the next section, tests for overt verb raising in Indonesian will be discussed.

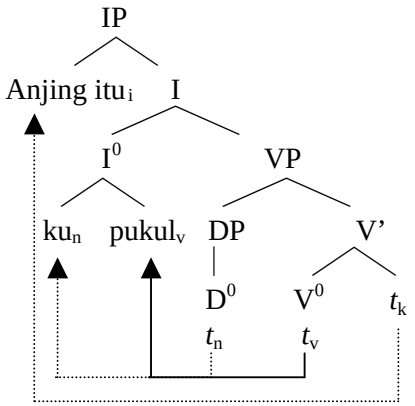
[7] However, if the verb moves to I in the covert component, this argument no longer holds. Chomsky 1995 notes that cyclicity need not hold after Spell-Out, only before.

4.2. VERB RAISING: OVERT OR COVERT

The question is, now, how to test for overt verb raising in Indonesian. Guilfoyle, Hung & Travis admit, 'while the existence of verb movement to INFL is not evident in the active construction, it will be necessary to assume that it takes place in the formation of the passive' (p. 397). This is because in the 'subjective passive' construction, verb movement to INFL is necessary to create a Case-marking relationship between the agent, which surfaces as a proclitic on the verb, and the verb. In 30 below, the agent pronoun *ku* moves into I^0 and is Case-marked there by the verb *pukul* it adjoins to.

(29) Anjing itu ku+pukul.
dog DEM 1SG+beat
'The dog was beaten by me.' (=Guilfoyle, Hung & Travis 1992: 398, ex. 30a)

(30)



(=Guilfoyle, Hung & Travis 1992: 401, ex. 34)

Based on their proposal of the structure of the subjective passive, then, Guilfoyle, Hung & Travis claim that V-to-I movement takes place overtly in the active clause construction as well. However, since their rationale here is internal to their particular proposal, it is useful to consider other diagnostics for V-to-I movement, such as considering the position of the verb with respect to negation, as in 31 and 32.[8]

(31) Saya tidak memukul anjing itu.
1SG NEG *meng*-beat dog DEM
'I didn't beat the dog.'

(32) Anjing itu tidak ku+pukul.
dog DEM NEG 1SG+beat
'The dog wasn't beaten by me.'

If we assume that NegP is located below the IP, it appears that the verb does not raise to I overtly in either

[8] Voskuil 2000 also presents arguments that verb movement is overt, claiming that overt voice morphology (either *meng-* or *di-*) implies overt verb movement.

active or subjective passive sentences, as in 31 and 32 respectively. Perhaps it is the case that NegP is located instead above the IP in Indonesian; the fact that auxiliaries also appear under the scope of negation, as in 33, suggests that this might be the case.

(33) Saya tidak bisa memukul anjing itu.
1SG NEG can *meng*-beat dog DEM
'I can't beat the dog.'

On the other hand, VP adverbs generally seem to appear pre-verbally, as in 34. If such VP adverbs are base-generated in a position above the VP, this would indicate that the verb has not raised to I overtly in such cases.

(34) Ia jarang datang kemari.
3SG rarely come here
'She rarely comes here.' (Sneddon 1996: 219)

To fully test this hypothesis, we need to consider the relative ordering of a VP adverb and negation. The two possibilities are illustrated in 35, but I do not yet know which is correct.

(35) Dia sering tidak datang kemari. OR Dia tidak sering datang kemari.
3SG often NEG come here 3SG NEG often come here
'She often doesn't/doesn't often come here.'

In sum, it is not clear at this point whether V-to-I movement occurs in the overt or covert component of the syntax, as the evidence with respect to negation and VP adverbs is somewhat inconclusive. Consequently, until more revealing diagnostics for V-to-I movement in Indonesian are uncovered, it is not clear whether Postman's proposed clause structure ultimately presents a real challenge to Cole and Hermon's view of the licensing of *meng-*. (For example, it is not possible to test the behavior of *meng-* with raising verbs, because Indonesian/Malay doesn't have them.)

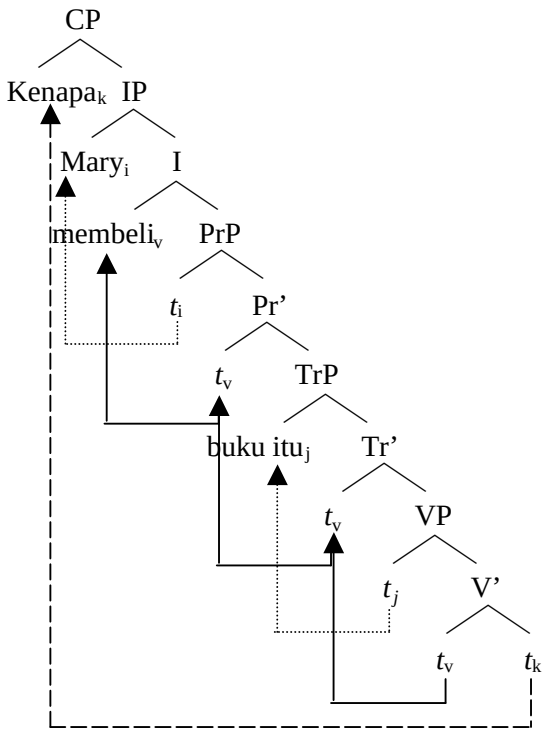
A more substantive challenge to Cole & Hermon's analysis comes from *wh*-adverbials. Cole & Hermon provide data indicating that when *wh*-adverbial moves over the verb, the omission of *meng-* is not obligatory (p. 231), as shown in 36.

(36) **Kenapa$_k$** Mary (mem)beli buku itu **t$_k$**
why$_k$ Mary (*meng-*)buy book that t$_k$
'Why did Mary buy that book?' (=C&H: 231, ex. 26)

Even if we presume that V-to-I movement is covert (and the argumentation in the previous section failed),

This observation gives rise to an obvious question: why should movement of a *wh*-adverbial not give rise to the same consequences as movement of a *wh*-NP? If we continue to adopt Postman's proposal, 36 will have the structure in 37.

(37)



If the 'loss' of *meng-* obligatorily results from movement over it, the type of object that heads the chain – either adverbial or nominal – should not be relevant. However, Cole & Hermon argue that this is, in fact, the relevant distinction: 'the loss of *meng-* is determined by whether the *wh*-form is an NP, and not by whether it is an argument or an adjunct' (p. 232). For them, the distinction between A-movement and A'-movement is not relevant, in that both NP movement and *wh*-NP movement are presumed to result in deletion of *meng-*. The landing site of the moved element cannot be a relevant distinction, either, if all *wh*-phrases move to [Spec, CP], and the landing site for A-movement (i.e. of the object NP in the canonical passive) is [Spec, IP].

In order for their analysis to be saved, we would need to propose how chains headed by NPs and *wh*-NPs differ from chains headed by *wh*-adverbials in such a way that the first trigger *meng-* deletion and the second does not. For example, all three of these types of chains meet the uniformity condition. And although Cole & Hermon point out that *wh*-adverbials, unlike *wh*-NPs, cannot be bound by unselective

binding. Therefore, *wh*-adverbials cannot remain in situ and hence must move overtly. However, it's not obvious how this fact could be capitalized on.

5. THE DISTRIBUTION OF *WH*-QUESTIONS

In this section, I will consider the predictions that Cole & Hermon's analysis, as well as their reliance on the *meng-* diagnostic, make with respect to the distribution of the different types of *wh*-questions in Malay. Are the three types of *wh*-movement in strict complementary distribution? The analysis appears to predict that full and partial *wh*-movement should be in complementary distribution with each other, while *wh*-in situ need not be. This is because a derivation involving *wh*-in situ will involve a different numeration (one where OP and the variable it binds are merged separately) than a derivation involving full or partial *wh*-movement, where OP and the variable are merged as a single lexical item. Derivations with different numerations do not compete with each other for economy purposes, so we should not observe any competition between *wh*-in situ and overt *wh*-movement.

However, Cole & Hermon indicate that full and partial *wh*-movement are, to the contrary, *not* in complementary distribution: 'we leave unanswered in this paper the more general question of why partial *wh*-movement should occur at all, given a Minimalist conception of grammar, in which *wh*-movement in the syntax is motivated by the need to satisfy the checking requirements of strong Q-features' which, crucially, reside in the matrix CP (p. 238: fn25). The existence of partial *wh*-movement is unexpected, if the numeration of a derivation resulting in partial *wh*-movement is the same as that of a derivation resulting in full *wh*-movement, and these two derivations are thus in competition with each other.

However, as Cole & Hermon point out, there exists a discrepancy between their two key diagnostics, the distribution of *meng-* and the islandhood facts. This discrepancy can be observed in questions displaying partial *wh*-movement, such as 38:

(38) Ali (mem)beritahu kamu tadi [apa$_i$ yang Fatimah (*mem)baca **t$_i$**]
Ali (*meng-*)tell you just [what$_i$ that Fatimah (*meng-*)read t$_i$]
'What did Ali tell you just now that Fatimah was reading?' (=C&H: 237, ex. 41)

The issue in 38 is that *meng-* can appear on the matrix verb, *memberitahu*, while islandhood facts indicate that the partially moved *wh*-word, *apa*, covertly moves to matrix [Spec, CP], predicting that *meng-* will be

obligatorily omitted from the matrix verb as well. They claim that this apparent discrepancy can be accounted for, however, once we consider the difference between overt null operator movement and covert operator movement: 'since post-spell-out movement cannot, be definition, be reflected in pronunciation, it is… expected that *meng-* will not be omitted between the surface position of *wh* and the scopal Q' (Cole & Hermon 1998: 250).

This discrepancy could also be accounted for if we consider an alternate possibility, that the presence of *meng-* somehow blocks NP movement over it (Voskuil 2000: 202).[9] Voskuil's proposal takes the opposite tack of Cole & Hermon's, which says that it is instead *meng-* that is blocked by NP movement over it. While it is clear that *meng-* and NP movement cannot coexist, it is not clear why; Cole & Hermon's proposal does not seem to be adequate for many reasons, as sketched above. While Voskuil's proposal cannot be lengthily evaluated here, on the surface (i.e. leaving aside questions about the nature of *meng-*) it can provide an explanation as for why, in 38 above, *meng-* appears above the *wh*-word's landing site in embedded [Spec, CP]: the *meng-* in the matrix clause prevents the *wh*-word from moving overtly to matrix [Spec, CP]. Voskuil's proposal might also be able to account for the fact that partial *wh*-movement and full *wh*-movement are not in complementary distribution. Compare 39 below, which displays full *wh*-movement, to 37 above, which displays partial *wh*-movement.

(39) apa$_i$ yang Ali (*mem)beritahu kamu tadi [***t*$_i$** Fatimah (*mem)baca ***t*$_i$**]
what$_i$ that Ali (*meng-*)tell you just [t_i Fatimah (*meng-*)read t_i]
'What did Ali tell you just now that Fatimah was reading?'

It is a possibility that 38 and 39 would have different numerations. In 38, if the matrix verb is *memberitahu*, the derivation in 38 would have a different numeration that the derivation in 39, which instead contains *beritahu*. Again, in the case of different numerations, the derivations are not in competition for purposes of economy, and we would not expect to see blocking effects. (However, this

[9] Voskuil's proposal is rather complicated, so I will not go into detail about it here. In short, he suggests that movement of an object NP under the scope of *meng-* is blocked because *meng-* 'causes the zero category in the base position of the (illicitly) moved [object NP] to acquire the status of a zero pronoun instead of a trace' (p. 202). It is not clear how exactly this occurs, but if his proposal is correct, *meng-* would have the effect of blocking such NP movement over it because this movement would result in a violation of the Chain Uniformity Condition.

argument fails if, in 38, the matrix verb is also *beritahu;* according to e.g. Postman's proposal, *meng-* is introduced into the derivation separately.)

More promisingly, however, Voskuil's proposal – which is more restricted than Cole & Hermon's with respect to the kinds of movement that are relevant to the presence or absence of *meng-* – is not challenged by the fact that movement of *wh*-adverbials does not conflict with the presence of *meng-*, as discussed above. This is illustrated in 40.

(40) **Kenapa$_k$** Mary (mem)beli buku itu **t$_k$**
why$_k$ Mary (*meng-*)buy book that t$_k$
'Why did Mary buy that book?' (=C&H: 231, ex. 26)

Again, however, no certain conclusions about Voskuil's proposal can be drawn at this point; I am just mentioning it here as a possible alternative to Cole & Hermon's.

6. CONCLUSION

Cole & Hermon 1998 has much to offer in advancing our understanding of the typology of *wh*-movement. They propose that languages vary in the way that *wh*-operators and variables are generated in the lexicon (either separately, or combined into a single lexical item), and that this lexical difference is the locus of all apparent *wh*-variation. Languages such as Chinese or Japanese, which demonstrate *wh*-in situ, possess *wh*-operators and variables which are generated separately; the variable is then subject to Unselective Binding by the *wh*-operator, and, as such, *wh*-movement (overt or covert) fails to occur. (Compare this analysis to the canonical one proposed in Huang 1981/2, wherein even in the case of *wh*-in situ, covert movement of the *wh*-operator occurs.) Conversely, in languages such as English, which display *wh*-movement, *wh*-operators and variables are lexicalized into a single item. *Wh*-movement follows from the need to check the Q feature of C, which is proposed to be universally strong. Finally, languages such of Malay make use of both possibilities.

However, I have pointed out some of the problems with the assumptions behind the analysis. Most of these problems revolve around the following question: **why** should it be the case that 'the obligatory omission of *meng-* with verbs that would otherwise permit *meng-* indicates the movement of an NP argument over the *meng-* + verb' (Cole & Hermon 1998: 233)? I have argued that, without an

understanding of what *meng-* is, and why, when, and how it is 'omitted' in the case of overt *wh-* or NP-movement over the verb that would have hosted it, this analysis lacks explanatory adequacy.

Postman (2002) claims that *meng-* is an inflectional element, because it is 'connected with the appearance' of the agent NP as the external argument; *di-* is likewise an inflectional element (p. 284). Furthermore, *meng-* only appears when 'the argument in subject position is the most prominent argument at every stage in the derivation of a sentence' (p. 282). In passives, then, in which the argument in subject position began as an internal argument – that is, not the least prominent argument – *meng-* cannot appear. However, while Postman's suggestion may be descriptively adequate, it does not explain why *meng-* cannot appear in passives.

Cole & Hermon attempt to explain the distribution of *meng-* by proposing that *meng-* is deleted by NP movement over it. However, if it can be demonstrated that Postman's proposed clause structure is correct and that V-to-I raising in Malay/Indonesian is overt, Cole & Hermon's assumption about the distribution of *meng-* will be proven incorrect. Unfortunately for their analysis of *wh*-movement, the distribution of *meng-* is one of only two types of empirical evidence that Cole & Hermon are able to advance in support of it.

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