The Distribution of the Active Voice Morphology in Javanese and *v*P Phases*

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1. Introduction

This paper proposes an analysis of the distribution of the active voice (AV) morphology in two Javanic languages within the Phase Theory (Chomsky 2004). Cole and Hermon (1998) propose that the movement of an NP cannot cross the verb marked with the AV in Indonesian. I show that this generalization also holds for Javanese. Following Kayne's (1989) analysis of French participial agreement, I propose that the deletion of the AV morphology in the two languages is a PF reflex of the Spec-Head D-feature checking relation between the moved NP and its local *v*. The phenomenon investigated here provides syntax-external support for the phase-based implementation of successive cyclicity in terms of *v*P phases. I further situate the proposed analysis within the broader context of Austronesian by bringing in the data from Chamorro and develop a micro-parametric account of the common Austronesian grammatical design concerning the syntax-morphology interface.

2. The Distribution of the Active Voice Morphology

Cole and Hermon (1998) establish a generalization (see also Chung 1976 and Saddy 1991) that, in Malay/Indonesian, the obligatory omission of the AV prefix *meN-* with verbs that would otherwise permit it indicates the movement of an NP argument over the *meN* + verb. Examples in (1-3) illustrate this generalization.

(1) a. Siapa$_i$ Bill ***mem**-beritahu ibu-nya [yang t_i **men**-cintai Fatimah]?
who Bill AV-tell mother-his that AV-love Fatimah
'Who does Bill tell his mother that loves Fatimah?'

b. Ali **mem**-beritahu kamu tadi [apa$_i$ yang Fatimah ***mem**-baca t_i]?
Ali AV-tell you just now what that Fatimah AV-read
'What did Ali tell you just now that Fatimah was reading?'

c. Ali **mem**-beri Fatimah apa?
Ali AV-give Fatimah what
'What did Ali give Fatimah?'

(slightly modified from Cole and Hermon 1998: 232, 233, 237)

(2) Buku itu$_i$ adik saya ***mem**-beli t_i.
book that brother my AV-buy
'My brother bought that book./That book was bought by my brother.'

(Cole and Hermon 1998: 232)

(3) a. Kenapa$_i$ Mary **mem**-beli buku itu t_i?
why Mary AV-buy book that
'Why did Mary buy that book?'

b. Kepada siapa$_i$ Mary **mem**-beli buku t_i?
to who Mary AV-buy book
'To whom did Mary give a book?' (Cole and Hermon 1998: 231, 232)

(1a-c) show that Indonesian has three ways to form *wh*-questions: overt movement into the matrix scopal [Spec, CP] (1a), partial movement into the embedded non-scopal [Spec, CP] (1b), and in-situ (1c). In (1a), only the higher verb must have its AV affix deleted because the movement of *siapa* 'who' crosses this verb, not the lower verb, on its way to the final landing site. In (1b), AV omission happens only with the lower verb because the movement of *apa* 'what' crosses only this verb. No AV deletion is observed in (1c) because there is no movement of an NP that crosses the verb. (2) shows that *meN*-deletion is also caused by A-movement such as object preposing; see Chung (1976) for evidence based on the interaction of object preposing and Equi NP deletion that object preposing in Indonesian is an instance of A-movement. Finally, (3a, b) show that movement of non-nominal phrases such as *kenapa* 'why' and *kepada siapa* 'to whom' does not cause AV deletion.

Cole and Hermon's (1998) generalization also holds for Javanese, a closely related Malayo-Polynesian language spoken in Indonesia. Consider (4-6).

(4) a. [Sapa$_i$ sing Iwan ***ng**-ira [Esti ***nge**-sun t_i]]?
who that Iwan AV-think Esti AV-kiss
'Who does Iwan think that Esti kissed?'

b. [Iwan **ng**-ira [sapa$_i$ sing Esti ***nge**-sun t_i]]?
Iwan AV-think who that Esti AV-kiss
'Who does Iwan think that Esti kissed?'

c. [Iwan **ng**-ira [Esti **nge**-sun sapa]]?
Iwan AV-think Esti AV-kiss who
'Who does Iwan think Esti kissed?'

(5) Wong kuwi$_i$ Esti ***nge**-sun t_i.
person this Esti AV-kiss
'Esti kissed this person./This person was kissed by Esti.'

(6) a. Nangapa$_i$ Esti **nge**-sun Fernando t_i?
why Esti AV-kiss Fernando
'Why did Esti kiss Fernando?'

b. Ning sapa$_i$ Esti **ng**-irim paket t_i?
to whom Esti AV-send package
'To whom did Esti send a package?'

In (4a), the nasal AV prefix must be deleted from both the matrix and embedded verbs since the movement of *sapa* 'who' crosses these verbs on its way to the final landing site. Only the lower verb undergoes AV deletion in (4b) because the partial movement does not cross the matrix verb. There is no AV deletion in (4c) due to the lack of movement across any verb. (5) shows that AV deletion obtains when A-movement such as object preposing occurs across a verb. Finally, movement of non-nominal phrases does not cause this deletion, as in (6a, b).

Thus, Cole and Hermon's generalization holds for Indonesian and Javanese. Davies (2003) shows that this generalization also characterizes the distribution of the AV morphology in Madurese, another Javanic language spoken on the Madura Island of Indonesia. One question left unresolved in Cole and Hermon (1998) is why this generalization holds in these languages. This is the topic of the next section.

3. Successive Cyclicity and Phase Theory

I propose that the obligatory AV deletion is a morphophonological reflex of the Spec-Head D-feature checking relation between the moved NP and its local *v* at the *v*P phase. The core idea behind this proposal, namely, that overt syntactic movement affects the form of verbs within its path is not a new idea but has been around in the

syntactic literature. In this light, Kayne's (1989) analysis of participle agreement in French is informative. Consider (7a-c) from Kayne (1989: 85, 86, 91).

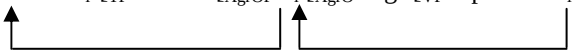
(7) a. Paul a **repeint/*repeintes** les chaises.
Paul has repainted the chairs
'Paul has repainted the chairs.'

b. Je me demande [$_{DP}$ combine de tables]$_i$ Paul a **repeintes** t_i.
I wonder how-many of tables Paul has repainted
'I wonder how-many of tables Paul has repainted.'

c. Je me demande [$_{DP}$ combine de chaises]$_i$ il sera ***repeint/*repeintes*** cette année.
I wonder how-many of chairs Imp are repainted this year
'I wonder how-many of tables will be repainted this year.'

French does not show agreement between the participle and the post-verbal DP, as in (7a). However, when the DP undergoes movement as in (7b), agreement obtains between the two elements. Kayne argues (see also Chomsky 1995: chapter 2) that the agreement is contingent on the Spec-Head relation between the moved NP and the AgrO, in the manner seen in (8) for the sentence in (7b).

(8) [$_{CP}$ combine de tables$_i$ [$_{TP}$ Paul ... [$_{AgrOP}$ t_i [$_{AgrO'}$ Agr [$_{VP}$ repeint***es*** t_i]]]]]]



In this structure, the Spec-Head agreement between the moved *wh*-phrase and AgrO results in the visible agreement on the participle. This analysis also correctly predicts that there is no such agreement under impersonal constructions as in (7c). The agreement is impossible here because expletive replacement, a case of A-movement, would involve improper movement (namely, A′-A movement) if the *wh*-phrase undergoes prior A′-movement into [Spec, AgrOP]. The grammaticality of the

example in (7c) without participal agreement is expected if the *wh*-phrase does not stop in [Spec, AgrOP] when the participle does not show agreement.

I propose that the distribution of the AV morphology in Indonesian/Javanese discussed in the previous section can be analyzed in the same way. Specifically, the deletion is a PF reflex of the Spec-Head D-feature checking relation between the moved NP and its local *v*. For illustration, consider the Javanese example in (4b). The derivation for the embedded part of this sentence is given in (9).

(9) $[_{CP}$ sapa$_i$ sing $[_{TP}$ Esti... $[_{vP}$ t_{Esti} $[_{v'}$ t_{sapa} $[_{v'}$ ~~nge~~-*v* $[_{VP}$ sun t_i]]]]]]

sapa 'who' enters into the D-feature checking relation with the *v* head. This syntactic relation is read at the phonological component as the deletion/dephoneticization of the AV prefix. Movement of non-nominal phrases does not cause this deletion because they lack D-features. Note that this derivation is the only possible derivation within the phase-based system outlined in Chomsky (2004). Chomsky proposes that syntactic computation sends mid-derivational material headed by *v*P and CP to the interpretive components in a piecemeal fashion. This derivation yields the so-called *Phase Impenetrability Condition* to the effect that VP-internal elements that are to move to CPs must first move to the edge/specifier of [Spec, *v*P] to be accessible to operations at the CP phase. Therefore, to the extent that the proposed analysis is correct, the distribution of the AV morphology provides syntax-external support for *v*P phases.

One question to be addressed at this point is what is the nature of the formal feature checked against *v*. The proposed analysis claims that the relevant feature is (categorial) D-feature. An alternative possibility, which has been proposed in the literature on the related phenomena in other Austronesian languages (see section 4), is that Case is the relevant feature. Two considerations suggest that this alternative

cannot be upheld for Indonesian and Javanese. First, in multi-clausal environments, the Case-based analysis predicts that a single NP should receive multiple Cases on its way to the final landing site. However, this is an undesirable outcome as no languages have been reported in the literature where a single NP receives more than two structural cases in a particular construction. Second, the alleged Case-driven movement would violate the Last Resort Condition (Chomsky 1995: chapter 4), which effectively blocks movement from a Case position to another Case position: compare *John$_i$ seems t_i to be ill* vs. **John$_i$ seems that t_i is ill*. Thus, I maintain that the relevant feature checked between the moved NP and its local *v* is D-feature. I return to this question again in the next section.

4. In Search of the Pan-Austronesian Grammatical Design

Other Austronesian languages such as Chamorro, Palauan, and Tagalog have been reported in the literature to exhibit a phenomenon similar to that observed in Indonesian and Javanese in which the morphology of a verb is affected by syntactic movement over it. The purpose of this section is to identify similarities and differences between those phenomena and to propose a micro-parametric account for them. For reasons of space, I limit my discussion to the comparison between WH-agreement in Chamorro and AV deletion in Indonesian and Javanese. See Sato (forthcoming: chapter 2) for discussion on the realis/irrealis alternation in Palauan (Georgopoulos 1985) and the voice-agreement in Tagalog (Rackowski and Richards 2005) as well as their structural similarities to the AV deletion discussed in this work.

In a series of work on WH-agreement in Chamorro, Chung (1982, 1994, 1998) proposes the generalization in (10); see Chung (1998: 236, 237) for the morphological effects of this agreement.

(10) WH-Agreement (holds at S-structure)

I^0 and an A-bar-bound trace that is free within I^0's minimal m-command domain must have compatible values for [Case]. (Chung 1998: 257)

(10) states that a) the [+V] predicate on the lowest clause agrees with the Case of the initial *wh*-trace and that b) higher [+V] predicates agree with the Case of the intermediate CP out of which extraction has most recently occurred. Consider (11a, b).

(11) a. Hayi$_i$ ch***um***ätgi-n mämaisa gui' t_i?
who? WH[nom].laugh.at-L self.Prog him
'Who was laughing at himself?'

b. Hayi$_i$ si Manuel h***in***assóso- nña [t'_i ch***um***uli' t_i i salappi']?
who? Manuel WH[obj].think.Prog-Agr WH[nom].take the money
'Who does Manuel think has taken the money?'

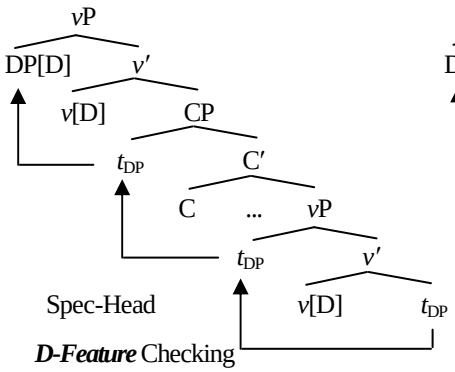
(Chung 1998: 237, 250)

In (11a), the verb is inflected for nominative because the extracted *wh*-phrase *hayi* 'who' carries nominative Case. In (11b), however, the higher verb is inflected for accusative because it agrees in Case with its complement CP out of which extraction has taken place, not with the initial *wh*-trace. Georgopoulos (1985) and Rackowski and Richards (2005) extend essentially the same account to Palauan and Tagalog, arguing that the same condition as in Chamorro WH-agreement governs the realis/irrealis alternation in Palauan and the voice-agreement in Tagalog, respectively.

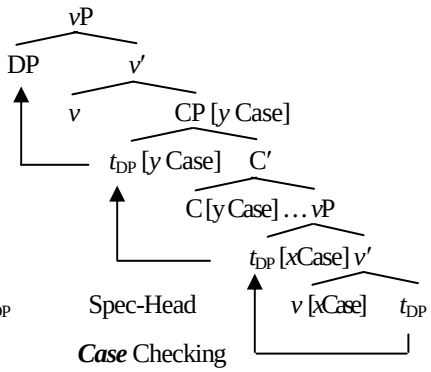
It is clear from the above discussion that WH-agreement in Chamorro and the AV deletion in Indonesian and Javanese share a fundamental structural similarity: both phenomena exhibit the change in the morphology of verbs caused by syntactic movement across them. This indicates that the phase-based analysis of the AV morphology is naturally extended to Chamorro WH-agreement. At the same time,

however, Chung's Case-based analysis is uniquely designed for Chamorro, hence does not seem to be directly transportable to Indonesian/Javanese (recall our discussion at the end of section 3). For example, there is no visible agreement in Indonesian/Javanese between the moved NP and the CP out of which movement has most immediately occurred as in Chamorro (and Palauan and Tagalog, for that matter; see Georgopoulos 1985 and Rackowski and Richards 2005 for data to illustrate this point). Furthermore, Chung (1994) shows that intermediate agreement on CP arguments in Chamorro is sensitive to the referentiality of the moved DP in the sense of Cinque (1990) and argues that referential DPs can undergo non-successive cyclic movement. However, no such correlate is found in long distance extraction in Indonesian or Javanese, and all types of nominal elements, referential or not, cause AV deletion from the verbs that their movement crosses. Therefore, though WH-agreement in Chamorro and AV deletion in Indonesian/Javanese can both be captured as the PF reflex of the Spec-Head Agreement between the moved element and its local *v*, there remains an ineliminable micro-parametric difference between the two languages in terms of the feature checked under this configuration. This micro-parameter yields two distinct derivations in (12) and (13).

(12) Indonesian/Javanese



(13) Chamorro (cf. Chung 1998: 252)



Why do Javanic languages behave differently from other Austronesian languages in this respect? I provide one possible analysis here; see Sato (forthcoming: chapter 2) for details. Travis (in press) recently proposed the idea of "domain-specific parameters" with a case study in Indonesian, whereby a single language can choose different values of a parameter within different structural domains. Adopting this idea, one might be able to show that Indonesian and Javanese select the Austronesian-type parameter within the *v*P phase domain but select the English-type parameter within the CP phase domain, as shown in (14).

(14) Domain-Specific Parameters in Javanic Languages

*v*P-phase domain: Austronesian	CP-phase domain: English
⇨ agreement between the *v* and the moved NP	⇨ Case Resistance of CP
⇨ residue of the Philippine-type voice system	⇨ SVO word order

Similarities and differences between Indonesian/Javanese and Chamorro/Palauan/Tagalog directly fall out from the present analysis. First, we have seen earlier that, in Indonesian or Javanese, there is no agreement between the *v* head and its CP argument out of which movement of an NP has taken place as in Chamorro. This property follows if these languages behave like English in that their CPs resist structural Case in Stowell's (1981) sense; see the above-mentioned work for evidence that CP needs Case in Chamorro/Palauan/Tagalog. Second, Indonesian and Javanese are different from Chamorro/Palauan/Tagalog in that their basic word order is SVO. This rather unusual property among Austronesian languages is also naturally expected if T in these languages attracts the closest external argument without VP fronting, as in English: see Chung (in press) for arguments for this English-type derivation for the Indonesian SVO order. The present analysis also correctly accounts for similarities between the two types of Austronesian languages. Most importantly, I have demonstrated above that Indonesian and Javanese exhibit

the syntax-morphology interaction at the *v*P phase as does WH-agreement in Chamorro. This is exactly what the present analysis predicts because Indonesian/Javanese select the "Austronesian" value for the *v*P-phase domain. This analysis is also in keeping with Cole and Hermon's (in press) recent claim that Indonesian in fact exhibits the Philippine-type voice system, albeit in an impoverished form, by the alternation of *meN-* and its null counterpart $Ø_{meN-}$.

5. Conclusions

This paper has proposed an analysis of the distribution of the AV morphology in Indonesian and Javanese within the phase-based theory of syntax. I have argued that the obligatory deletion of the AV marker is a PF reflex of the Spec-Head D-feature checking relation between the moved NP and its local *v*. To the extent that this analysis is correct, the current investigation lends support to the notion of *v*P phase. I have also situated this analysis within the larger context of Austronesian and have shown that similarities and differences between the AV-deletion in these languages and WH-agreement in Chamorro can be derived by a micro-parametric difference in terms of the feature that is checked under the relevant configuration.

Notes

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