

Do/be-support as defective movements. (KWS: *do*-supports, distributed morphology, feature movements)

Introduction. Unlike the traditional view that the *do*-support is an inserted meaningless item that is mysteriously given by the universal grammar (Chomsky 1957; Lasnik 1981; Halle & Mallantz 1993; Bobaljik 1995; Embick & Noyer 2001), this paper examines a data from Japanese and argues that what looks like a dummy ‘supporting’ element is, indeed, a defective of copy of a lower head.

In Japanese, which is an agglutinative language, functional suffixes are attached to a verb in a fixed order. For example, the verb *hane* ‘jump’ and the past tense morpheme *-ta* are combined together to form a single word *haneta* ‘jump-PST’. Based on the pitch-contour creation, it has been argued that the very process of this concatenation is a postsyntactic Lowering (Yamada 2018) in the sense of the Distributed Morphology (Embick and Noyer 2001). The derivation from (1) to (2) illustrates this assumption.

- (1) $[_{TP}[_{VP} \textit{hane}] [_T \textit{-ta}]]$. (2) $[_{TP}[_{VP} \textit{hane-ta}_i] [_T t_i]]$.
run -PST
- ‘He jumped.’

Do-support in Japanese. In Japanese, when an additional particle is attached to the VP-projection and, therefore, the verb is no longer adjacent to the tense marker, a *do*-support takes place at T. If we want to create a sentence that means ‘as for running, he did,’ we need to focalize the VP with a focus particle *-wa*. The first line of the example (3) includes the morphemes we need to express this meaning and represents the initial positions where they originate. Because of the stranded suffix *-ta*, without further operations, this results in an ill-formed PF object (= (3)a). However, neither the head movement (= (3)b) nor the Lowering (= (3)c) yields a well-formed PF object. The only solution in this language is given in (3)d, where a semantically-vacuous material appears at T, *sur-* (*si-*; allomorph) ‘do,’ aka., the *do*-support.

- (3) $[_{TP}[_{VP} \textit{hane} \textit{-wa}] [_T \textit{-ta} \textit{ }]]$.
jump -FOC -PST
‘As for running, he did.’
- a. * $[_{TP}[_{VP} \textit{hane} \textit{-wa}] [_T \textit{-ta}]]$. b. * $[_{TP}[_{VP} t_i \textit{-t}_j] [_T [[\textit{hane}_i]\textit{-wa}]_j \textit{-ta}]]$.
jump -FOC -PST jump-FOC -PST
- c. * $[_{TP}[_{VP} \textit{hane-ta}_i \textit{-wa}] [_T t_i]]$. d. $[_{TP}[_{VP} \textit{hane} \textit{-wa}] [_T \textit{si} \textit{-ta}]]$.
jump-PST -FOC jump -FOC do -PST

Be-support in Japanese I. However, *do* is not the only element that appears at T. When the negation marker is attached to the VP, another semantically meaningless item *ar-* (*at-* ‘be’; allomorph) appears at T. Observe the example in (4). The only possible translation for the sentence *he did not jump* is (4)d. None of the forms in (4)a-c is grammatical. Crucially, *sur-* (*si-*) ‘do’ is no longer the right solution (= (4)c).

- (4) $[_{TP}[_{VP} \textit{hane} \textit{-nak}] [_T \textit{-ta}]]$.
jump -NEG -PST
‘He did not jump.’
- a. * $[_{TP}[_{VP} \textit{hane-ta}_i \textit{-nak}] [_T t_i]]$. b. * $[_{TP}[_{VP} t_i \textit{-t}_j] [_T [[\textit{hane}_i]\textit{-nak}]_j \textit{-ta}]]$.
jump-PST -NEG jump-NEG -PST
- c. * $[_{TP}[_{VP} \textit{hane} \textit{-nak}] [_T \textit{si} \textit{-ta}]]$. d. $[_{TP}[_{VP} \textit{hane} \textit{-nak}] [_T \textit{at} \textit{-ta}]]$.
jump -NEG do PST jump -NEG be -PST

Be-support in Japanese II (interaction with honorifics). This *be*-support phenomenon also has an interaction with the addressee-honorific marker *-mas* ‘HON_A’, a discourse (hearer)-oriented expression. This morpheme is also a verbal suffix (Miyagawa 2012, 2017); in the plain speech style, the verb is pronounced as *hane* ‘jump’ but, in the polite speech, *-mas* ‘HON_A’ is attached to a verb to encode the speaker’s respect to the hearer. With such an addressee-honorific marking at the verb, the *be*-support should change the form to *des* (= (5)d); the forms in (5)a-c are all illicit (*n.b.*, the negation marker *-nak* should also change to *-en*).

- (5) $[_{TP}[_{VP} \textit{hane-mas} \textit{-en}] [_T \textit{-ta}]]$.
jump-HON_A -NEG -PST
‘He did not jump-HON_A.’
- a. * $[_{TP}[_{VP} \textit{hane-mas} \textit{-en}] [_T \textit{-ta}]]$. b. * $[_{TP}[_{VP} \textit{hane-mas} \textit{-en}] [_T \textit{si} \textit{-ta}]]$.
jump-HON_A -NEG -PST jump-HON_A -NEG be.HON_A -PST
- c. * $[_{TP}[_{VP} \textit{hane-mas} \textit{-en}] [_T \textit{at} \textit{-ta}]]$. d. $[_{TP}[_{VP} \textit{hane-mas} \textit{-en}] [_T \textit{desi} \textit{-ta}]]$.
jump-HON_A -NEG be PST jump-HON_A -NEG be.HON_A -PST

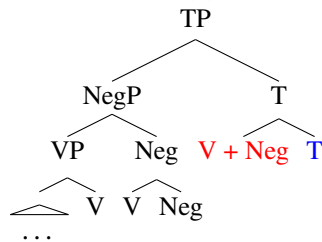
Analysis. The data above convincingly suggest that the ‘inserted’ material at T is sensitive to what we have in the complement of the Head, TP. Table 1 summarizes this dependence.

‘supporting’ material	the complement of the Head, TP includes ...
<i>desi-</i> ↔	V + NEG + HON _A
<i>ar-</i> (<i>at-</i>) ↔	V + NEG
<i>sur-</i> (<i>si-</i>) ↔	V

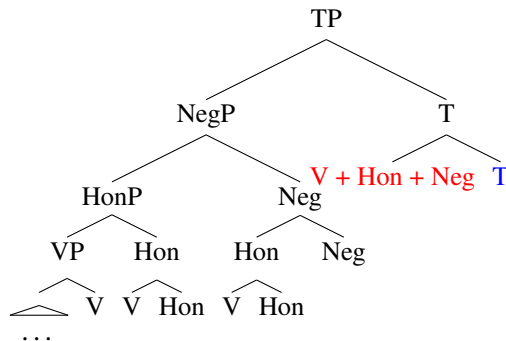
Table 1: Realization of ‘supporting elements’ at T

If we argue — as has been traditionally assumed — that the *do*-support is a last-resort element inserted just for the purpose of ameliorating the stranded T suffix (let us call this HYP(OTHESES) 1), it is not clear why (4)c, (5)b and (5)c are ungrammatical. After all, *-ta* is not a stranded affix in all these cases. As an alternative, we propose that what looks like an ‘inserted’ element is indeed a defective copy of the lower element (HYP 2), assuming the following post-syntactic operations. First, we consider whether V is adjacent to T; if so, we Lower T to V. The example in (2) is an instance of this default situation, where *-ta* is attached to the verb. Second, if there is an intervening element that cuts the relation between T and V (*cf.*, Arregi and Pietraszko 2018), neither the Lowering operation (= (4)a) nor the full-fledged head-movement (= (4)b) takes place; in this talk, we are agnostic about the exact mechanism as to how V and T fail to create accessible relation (perhaps, NegP is a phase in this language as assumed in Yamada 2018). The central claim of this talk is that, when the V-T adjacency requirement is not satisfied, a subset of the features at the Head, NegP (*i.e.*, only the features that represent the part-of-speech of each head) move to T and get realized as an appropriate lexical item following the rules in Table 1. The whole derivation process is represented as in (6). In other words, rather than having a full-fledged head-movement, a defective head-movement, or a feature-movement, takes place to T (Chomsky 1995: ch 4).

(6) a. The tree for (4)d



b. The Tree for (5)d



Conclusion and future directions. This HYP 2 is superior to HYP 1 not only because we can capture the sensitivity problem but also in that it circumvents the problems of HYP 1, *i.e.*, the inclusiveness condition and the extension condition (Chomsky 2000, 2001), with an important implication that feature movements do exist as a possible tool-kit along with the line already hinted by a few previous studies (Chomsky 1995: ch 4; Bernstein 1997; Pesetsky 2000; Takano 2000; Lasnik 2002; Guerzoni 2006; Yuan 2015; Hsiao 2017).

Some theoretically important questions are left open, *e.g.*, why only category features move to T. Though we do not have a definite answer, what deserves our attention is that, looking at *des*, we can recover the information that the complement of T must (at least) include three layers, *i.e.*, VP, HonP and NegP. Japanese allows the NegP-ellipsis. Even though the NegP is elided, if we hear *desi* in [*hane-mas-en*] *desi-ta-ne*, we know that that this is a polite speech style; the information in the elided part is recovered. Similarly, in English, from the phrase *I don't* (the VP-ellipsis), we know that what is elided is a verbal phrase, not an adjective or a noun phrase (as opposed to *I am not*). This feature movement is characterized as an operation that yields a ‘summary item’ at T concerning what kind of complement this T is merged with.

Arregi, K. and Pietraszko, A. 2018. *Do*-support as spellout of split head chains. NELS 49. Bernstein, J. B. 1997. *Demonstratives and reinforcers in Romance and Germanic languages.* Guerzoni, E. 2006. *Intervention effects on NPIs and feature movement: towards a unified account of intervention.* Hsiao, P. Y. K. 2017. *Rhetorical wh-questions in Chinese and feature movement.* Lasnik, H. 2002. *Feature movement or agreement at a distance.* Miyagawa, S. 2012. *Agreements that occur mainly in main clauses.* Miyagawa, S. 2017. *Agreement beyond phi.* Pesetsky, D. 2000. *Phrasal movement and its kin.* Takano, Y. 2000. *Illicit remnant movement: an argument for feature-driven movement.* Yamada, A. 2018. *Phase-based prosody: evidence from pitch-accent distribution in the Japanese verbal domain.* NELS 49. Yuan, M. 2015. *Person restrictions in South Baffin Inuktitut: An argument for feature movement.*