

CROSSING AND STRANDING AT vP IN ALTAIC AND BEYOND

INTRODUCTION: Moving phrases can sometimes leave material behind in phase edges they pass through, a phenomenon I term *intermediate stranding* (IS). IS is subject to severe restrictions (Postal 1974, McCloskey 2000), which I explore by examining stranding at vP in two groups of languages: Japanese and Korean, versus English and West Ulster English. Puzzlingly, IS in spec-vP is possible in the first group, but not the second. I argue that this contrast provides evidence for the Cyclic Linearization phase theory (Fox & Pesetsky 2005, Ko 2014), which unlike that of Chomsky (2000, 2001, inter alia), predicts these facts from the independent properties of the languages in question.

DATA - IS AT SPEC-vP IN JAPANESE/KOREAN: Ko (2011) shows that in Korean, a scrambled object can strand a numeral quantifier in spec-vP, above the subject in-situ. We see this in (1), where the high adverb *amato* serves as a landmark to make IS of the numeral quantifier discernible:

- (1) **Kong-ul**_k amato [_{vP} [_{t_k} **sey-kay**]_j haksayng-tul-i t_j patassulkesita]
Ball-ACC probably 3-thing student-PL-NOM received

I show that the same configurations are possible in Japanese, as (2) shows:

- (2) **Neko-o**_k osoraku [_{vP} [_{t_k} **san-biki**]_j gakusei-ga umaku t_j mitsuketa]
cat-ACC probably 3-CL student-NOM skillfully found

How do we know that (2) is really IS, as opposed to fronting VP after verb movement, followed by scrambling of the object? Miyagawa (2017) shows that the adverb *umaku* adjoins at about the VP level, and in (2) we see that *umaku* sits in its base position. The fact that *umaku* was not carried along by any of the movement operations in (2) suggests that the VP was not fronted.

MORE DATA - *IS AT SPEC-vP IN (WEST ULSTER) ENGLISH: McCloskey (2000) shows that in West Ulster English, *wh*-movement can strand the postnominal quantifier *all* either in its base position, or in an intermediate spec-CP. However, he also shows that *all*-stranding in spec-vP isn't possible. McCloskey argues that V moves to a head above v in this language, thus the lack of spec-vP *all*-stranding is shown by the following:

- (3) What_k did he tell_j [_{vP} t_k (***all**) t_j him/his friends/Mickey [_{CP} t_k (all) that he wanted t_k?]]

While *all* can't be stranded in standard English, Urban (1999) shows similar facts for DP-modifying *exactly/precisely*, which can be stranded in their base position or in spec-CP. Testing spec-vP IS for these modifiers is confounded by the fact that they are ambiguous with v/VP adjuncts in this position. I show that the same stranding paradigm is evident with DP modifiers like *to the nearest pound* in (4), which avoid that semantic confound. In (4) we see that *wh*-movement can strand this modifier in its base position or in an intermediate spec-CP, but not spec-vP:

- (4) How much flour [_{vP} did you (***to the nearest pound**) tell me [_{CP} (to the nearest pound) that the bakery [_{vP} (***to the nearest pound**) asked you for (to the nearest pound)]]?

Puzzle: Why is spec-vP IS possible in Korean/Japanese, but not (West Ulster) English? If the phasehood of vP is a part of Universal Grammar, movement out of vP will pass through its edge in every language. Thus if a language has relevant strandable elements, spec-vP IS should be possible.

Solution: I argue that the Cyclic Linearization (CL) theory predicts that movement of the subject or the verb across the spec-vP containing stranded material will incur a linearization problem. While the syntax of (West Ulster) English cannot avoid this problem, that of Japanese and Korean can.

TWO PHASE THEORIES AND THEIR PREDICTIONS: Chomsky (2001, inter alia) argues that phrases move out of phases via the specifier ('edge') of the phase because this position is an escape hatch, from which further movement is permitted. This theory doesn't predict that certain kinds of stranding movement from the edge should be bad, as anything in the edge can in principle move on. In this theory, the lack of spec-vP IS in (West Ulster) English is mysterious.

In contrast, CL doesn't posit a dedicated position that guarantees phase escape. Instead, the information-preserving nature of spellout, which applies to entire phasal phrases at once, motivates elements to exit a phase by passing through its most linearly peripheral position. Doing so keeps linearization coherent. But if a phase-exiting movement doesn't stop in the linear periphery, the material crossed over by that movement must also move out, to a position above what crossed it.

These predictions of CL are shown in (5-6). In (5), movement of the element β out of the phase XP incurs a violation because β crosses over α on the way out. CL predicts this crossing over of α by β to cause a linearization contradiction. However, CL predicts that this violation is avoided if α also moves out of XP, to a position that precedes the moved β , as in (6):

- (5) $*[_{YP} \beta \dots [_{XP[Phase]} \boxed{\alpha} t_{\beta} X]]]$ (6) $\checkmark [_{YP} \boxed{\alpha} \beta \dots [_{XP[Phase]} t_{\alpha} t_{\beta} X]]]$

CL CONSTRAINS SPEC-VP IS: First let's see how CL rules out spec-vP IS in (West Ulster) English. CL requires a moving *wh*-phrase to stop in the most peripheral position of a vP phase being exited, via a higher specifier above the external argument (EA) in-situ. There is no problem with EA later A-moving to spec-TP across that outer spec-vP formed by successive-cyclic *wh*-movement, as long as the content of the outer specifier moves along to spec-CP. This is what happens in non-stranding contexts. However, if *wh*-movement were to strand something in that outer spec-vP, movement of EA across the stranded *all* will yield a crossing problem, as in (7), where γ is stranded.

- (7) $[_{TP} T \dots [_{vP} [t_{wh} (*\gamma)]_k EA v V t_k]]$

The same holds for unaccusatives, whose theme subject must pass through the same lower spec-vP that would have been occupied by EA, in order to maintain a coherent linearization.

Verb movement out of vP has the same problem. Given the head movement constraint (Travis 1984), there is no head which V can move to that precedes the specifiers of vP within this phase, thus V moving out of vP can't avoid crossing material stranded in spec-vP:

- (8) $[_{XP} X \dots [_{vP} [t_{wh} (*\gamma)]_k Y V t_k]]$

Thus A-movement of the subject in (West Ulster) English, and the V movement that McCloskey argues for in West Ulster English, are predicted by CL to ban IS in spec-vP.

We predict spec-vP IS to be possible when no movement out of vP crosses the stranded material. This prediction is verified by the facts from Korean and Japanese. As we saw in (1-2), in these languages a subject can remain in-situ, below material stranded in spec-vP. The verb also does not move across spec-vP in these languages, because they are head-final. Any movement of V ends up linearly to the right, and doesn't interact with IS under leftward movement.

CONSTRAINED MOVEMENT IN SPECIFIERS: The problem in (7) would be avoided if the subject could move to a higher spec-vP, above the material that will be stranded. For linearization reasons, CL would require the phrase that pied-piped that material to move as well, to precede the subject:

- (9) $[_{vP} wh_3 EA_2 [t_3 \gamma]_1 t_2 v V t_1]$ (Movement of subject and *wh*-phrase within spec-vP)

This derivation requires movements from one spec-vP to another. If movement to a head's specifier requires that head to probe and thus c-command the moving phrase (Chomsky 1995, 2001, Ko 2014) then this derivation is not available to save (7), since heads don't c-command their specifiers.

CONSEQUENCES/EXTENSIONS: This work uses IS patterns to distinguish between phase theories, in favor of CL, and allows vP to uniformly be a phase in all languages under discussion. As IS patterns aren't common, in further work I seek to widen the empirical base and feed further testing, as well as consider IS in other languages/circumstances. If phasehood (of vP) can be variable/dynamic (Den Dikken 2007, Bobaljik & Wurmbrand 2013, Harwood 2015) then the present account predicts that the possibility of IS may accordingly vary. I leave this topic to future study.