

POSSESSOR EXTRACTION IN ENGLISH

Colin Davis (MIT)

INTRODUCTION: For most English speakers, A'-movement of possessors requires pied-piping of the containing possessum DP, as in (1a). However, a significant minority of speakers also permit *possessor extraction* (PE) in the spoken register. This is shown in (1b), where we see stranding of the Saxon genitive [*'s*] and possessum DP under movement of the possessor. In this work I describe and analyze the properties of such PE configurations, which were rated grammatical by 17/30 speakers queried in this study so far.

- (1) a. Mary is the author [_{CP} **whose new book**]_k they said [_{-k} is good]] (*Possessum pied-piping*)
b. % Mary is the author [_{CP} **who**]_k they said[[_{-k}'s new book] is good]] (*Possessor extraction*)

I show that examples like (1b) are true possessor movement, and argue that some intricate details of this construction are predicted given two claims — #1: The Cyclic Linearization (CL) theory of spellout (Fox & Pesetsky 2005, Ko 2014). #2: An adjacency requirement on [*'s*] and the possessor it selects (Gavruseva 2000, Gavruseva & Thornton 2001) which PE speakers have the option of satisfying at the local phase level.

BACKGROUND: In (1b) [*'s*] is stranded by PE, and cliticizes onto the matrix V. The past tense and plural subject of the relative clause in (1b) eliminate the possibility of this /s/ being subject agreement. The fact that the possessor is female (*Mary*) also removes any possibility of this being a reduced resumptive *his*. Thus this is really a stranded [*'s*]. This PE construction is rated as markedly informal, which may contribute to its rarity in written form. PE is possible with any possessor, but my examples here use *who* for simplicity.

Such PE configurations are observed by Gavruseva & Thornton (2001), who examined PE in *whose*-questions in child speech. In a control study on adults, they also found PE in adult speech: 11% of their adult data comprises PE of the form in (1b). Gavruseva & Thornton suggest that these are speech errors. However, the majority of their examples of adult English PE were produced by two speakers, who did PE half the time or more. These speakers evidently have PE as a productive option. I argue that PE is indeed a reality for some English speakers, available in any *wh*-movement context, but interestingly restricted.

PUZZLES: I focus on two puzzles, the solution to which will accurately predict a number of other detailed restrictions about this construction. First, this PE appears to be impossible in monoclausal derivations:

- (2) a. ***Who**_k did you meet [_{-k}'s friend] (*No monoclausal PE: Object*)
b. ***Who**_k will [_{-k}'s friend] arrive tomorrow? (*No monoclausal PE: Subject*)

Second, notice that (1b) shows PE from a subject. PE from non-subject DPs is impossible unless the DP is pied-piped to the edge of the local CP. This applies for all internal arguments, shown for objects in (3).

- (3) a. ***Who**_k do they think [_{CP} Mary read [_{-k}'s book]]? (*No PE from in situ direct object*)
b. ✓ **Who**_k do they think [_{CP} [_{-k}'s book]_j Mary read *t_j*]? (*Pied-piping direct object permits PE*)

Similar restrictions were noted but left unresolved in Gavruseva & Thornton's study.

SOLUTION: I argue that the complexities of this corner of English provide evidence for Cyclic Linearization, which I claim restricts PE in English via its interaction with a PF condition on genitive morphology (Gavruseva 2000) that possessor-extracting speakers can satisfy at the local phase level.

Cyclic Linearization: CL posits that the information-preserving nature of spellout, which applies to entire phasal phrases at once, motivates elements to exit a phase by successive-cyclically passing through its most linearly peripheral position. If a phase-exiting movement can't stop in the linear periphery, the material crossed over by that movement must move into the next phase as well. Doing so keeps linearization coherent.

Genitive-possessum adjacency: Various works attribute the typical illicitness of PE in English to PF conditions that reject movement which separates a possessor from genitive morphology (Chomsky 1995, Radford 1997, Gavruseva & Thornton 2001). Indeed, Gavruseva (2000) argues that such adjacency conditions play an important role in constraining PE cross-linguistically. I argue that the nature of PE in English is not explained by positing that speakers who permit PE lack such a constraint, but actually indicates that such speakers can satisfy this requirement in a weaker, local way, stated in (4):

- (4) **Local Genitive-Possessum Adjacency:** The Saxon genitive [*'s*] must be adjacent to the possessor it selects at the spellout of the minimal phase (vP, CP) containing [*'s*].

While global evaluation of this constraint over the final output of the derivation bans PE altogether, as is the case for some speakers, phase-level evaluation accurately permits PE, but only in particular circumstances.

WHY PE CANNOT LEAVE INTERNAL ARGUMENTS IN SITU: First consider a bad derivation with PE from an in situ object (3a). At vP, such a derivation looks like (5a), where the possessor (PossP) has extracted to the edge of vP, stranding the possessum below in VP. Spellout of the vP in (5a) will find PossP and [*'s*] non-adjacent due to the intervening EA (external argument) and V, thus violating (4). However, this violation is avoided if movement of the possessor pied-pipes the possessum to the edge of vP, as in (5b).

- (5) a. * [_{vP} PossP_k EA v-V [_{DP} t_k's NP]] b. ✓ [_{vP} [_{DP} PossP's NP]_k EA v-V t_k]

What has been said so far accurately predicts that an internal argument possessum exited by PE cannot be stranded in VP. If nothing more is said, we incorrectly predict that this possessum should be able to remain in spec-vP, where the adjacency requirements of [*'s*] were locally satisfied. In reality, remaining in spec-vP is impossible. To see why, let's consider movement of the subject, here EA.

After (5b), EA A-moves to spec-TP from its θ -position in spec-vP. This movement carries EA across the higher spec-vP formed by A'-movement of the possessor and pied-piped possessum. If the possessor and possessum move along to spec-CP, no issue arises. However, if the possessum is stranded in that spec-vP, movement of EA out of vP thus crosses that stranded material, which Cyclic Linearization bans. However, if the possessum is pied-piped out of spec-vP by the possessor's movement, this problem is avoided:

- (6) ... V [_{CP} PossP(✓[*'s* NP]) [_{TP} EA T [_{vP} t_{PossP}(*[*'s* NP]) t_{EA} v-V t_{PossP}]]]

Thus we correctly predict that PE from a non-subject DP must pied-pipe that DP to the embedded spec-CP, as in (3b). The elements in the vP edge can't be rearranged to avoid the linearization violation of stranding in spec-vP, if heads can't move anything in their specifiers due to not c-commanding them (Ko 2014).

WHY MONOCLAUSAL PE IS BANNED: Consider that if PE must pied-pipe non-subject possessums as far as the local spec-CP as I've shown, there is simply no chance for the possessor to extract if the derivation contains only one clause. As for PE from subject possessums, nothing bans string-vacuous PE to spec-CP out of the subject in spec-TP, as in (7). However, this PE really has to be string-vacuous. Placing an intervener between the possessum and the moved possessor which would allow this PE to be detectable will create a scenario where the possessor and [*'s*] are phase-mates of CP, but not adjacent, violating (4).

- (7) [_{CP} Who_k C [_{TP} (*has) [_{DP} --_k's cat] won the contest]]? (*String-vacuous PE from subject*)

FURTHER RESTRICTIONS AT THE CP EDGE: This account accurately predicts that nothing can intervene between the edge of the embedded CP and the trace of PE in DP, shown for complementizers and high adverbs in (8). Such interveners cause either a linearization issue, or a violation of (4) at the CP level.

- (8) Who_k did you say [_{CP} (*usually/*that)[--_k's friend] (usually) has money]?

This account predicts that right-adjoined matrix adverbs should not interrupt PE, as they are outside of the embedded CP phase. For many speakers this prediction is inaccurate, as (9) shows:

- (9) Who_k did you say (??/***yesterday**)[_{CP} [--_k's cat] is cute]?

However, I show that this fact parallels restrictions on *exactly*-stranding (Urban 1999) observed by McCloskey (2000), for which I'll argue that Richards' (2016) Contiguity Theory gives a prosodic explanation.

ENGLISH PE IS TRUE MOVEMENT: As English otherwise obeys the Left Branch Condition (Ross 1967), perhaps English PE is in fact not movement, but rather an illusion caused by a parenthetical clause between PossP and [*'s*]. I argue against such a view. First, parentheticals in this position are independently no good:

- (10) a. I like [John (***I think/*in fact**)'s idea] b. [Mary (***I suppose/*of course**)'s cat] is cute

Second, given the optionality of parentheticals, removal of the supposed parenthetical material should yield a licit string. In many cases of English PE such as (11) below, such removal yields an illicit sentence:

- (11) Who **did she say**'s cat he stole? → *Whose cat he stole? (*Failed parenthetical subtraction*)

Third, I show that English PE is blocked by non-'bridge' verbs (*whisper*, etc.) just like typical A'-movement.

IMPLICATIONS: I show that this analysis leads to correct cross-linguistic predictions about stranding in spec-vP, but overgenerates English PE unless the English DP is not a phase (at least for PF). Other stranding diagnostics corroborate this result (Zyman 2016), but DP phasehood remains a complex issue.