ADJACENCY AND LOWERING IN MORPHOLOGY: THE CASE OF ENGLISH SENTENTIAL NEGATION*

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1. Introduction

Two English clause types with no obvious a priori connection exhibit surprisingly symmetrical behaviour in their pattern of grammaticality vis à vis the realization of sentential negation. As the examples in (1) and (2) show, in both overt subject imperative clauses and pseudogapping clauses with argument remnants, *n't* is a licit realization of sentential negation, whereas *not* is ruled out.

(1) a. Don't you trust Junior!
    b. *Do not you trust Junior!
(2) a. Although Tony does eat steak, he doesn't pizza.
    b. *Although Tony does eat steak, he does not pizza.

The realization of negation is not similarly restricted in (3) and (4).

(3) a. Don't completely trust Junior!
    b. Do not completely trust Junior!
(4) a. Although Tony does drink wine after weddings, he doesn't after funerals.
    b. Although Tony does drink wine after weddings, he does not after funerals.

The status of the material immediately following *not* differs in (1)-(2)b and (3)-(4)b; in the latter cases, negation precedes adjunct rather than argument material.

The conditions on the realization of sentential negation in (1)-(4) are treated here as consequences of a structural dependency requirement that holds of the head of NegP in the morphological component. [Neg] must be Adjacent (in a technical sense to be defined below) to a local syntactic head; Adjacency assessment is sensitive to the argument/adjunct status of potential interveners.

The proposed analysis distinguishes Adjacency as a locality condition on structurally dependent elements like [Neg] from adjacency as a precondition for post-syntactic merger of morphophonologically dependent elements like Tense.

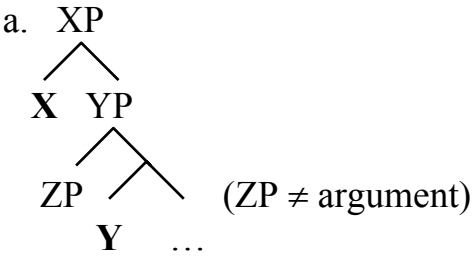
* I gratefully acknowledge the helpful feedback and suggestions of Alec Marantz, Norvin Richards, Noam Chomsky, and the audience at CLA 2002 on previous versions of this material.

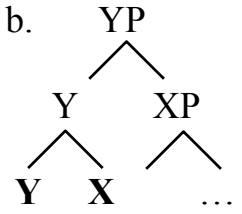
An exploration of the role Adjacency plays in the realization of English sentential negation paves the way for a novel treatment of Tense Lowering and *do*-support that capitalizes on the insights gained into the nature of structural dependencies at PF and dovetails with current treatments of head movement as PF raising.

2. Adjacency under structural locality

The hypothesis under consideration is that certain morphemes, or syntactic terminals composed of (bundles of) formal features, are dependent elements at PF (*cf*. Embick and Noyer 2001). Such morphemes must be in a specific relationship with another terminal node in the hierarchical representation that is handed off to PF as the output of the syntactic computation; call this dependency a requirement for Adjacency under structural locality, which obtains in the configurations in (5).

(5)

a. 

b. 

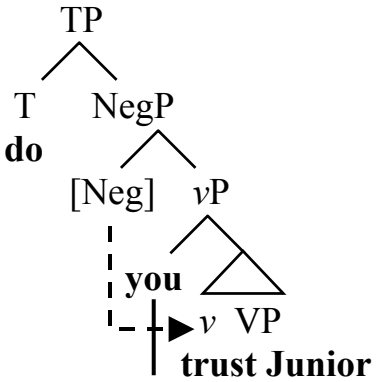
In (5)a, X is Adjacent to Y the head of its complement iff ZP is not an argument. In (5)b, X is Adjacent to Y by virtue of occupying the same complex head.

Consider XP to be NegP in (5)a-b; X is the dependent element [Neg]. When [Neg] is to be spelled out in situ within NegP, as in (5)a, it is realized by the Vocabulary Item *not*; when [Neg] is to be spelled out in its alternative raised position, as in (5)b (where YP=TP), it is realized by *n't* (*cf*. Flagg 2002, Frampton 2001). In the raised position, Adjacency invariably obtains between [Neg] and the head T. Adjacency between in situ [Neg] and the head of its complement can be disrupted, however, depending on the nature of the intervening ZP (if present).

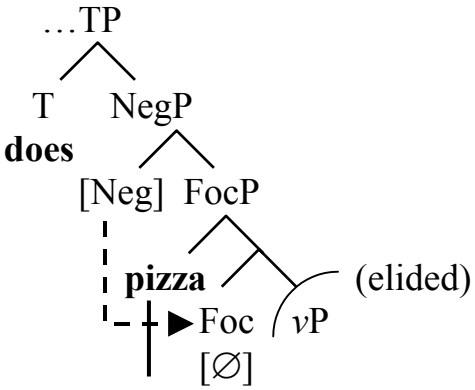
The ungrammatical (1)b and (2)b are cases in which ZP is an argument. In the imperative in (1)b, the subject *you* intervenes between in situ [Neg] and the head of its complement, as in (6)a.[1] In the pseudogapping case in (2)b, the raised object *pizza* intervenes between [Neg] and the (phonologically null) head of its complement (taken here to be FocP), as in (6)b.

[1] See arguments in Flagg (2002), Rupp (2003) for a low imperative structural subject position.

(6) a. *Do not you trust Junior!

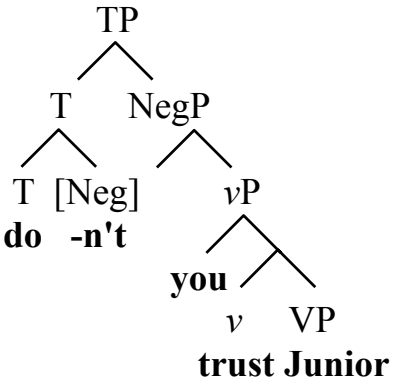


b. *(Although Tony eats steak, he) does not pizza.

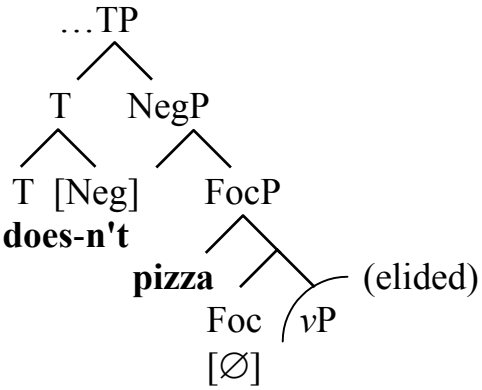


In the grammatical (1)a and (2)a, the argument specifier is irrelevant in terms of Adjacency for raised [Neg], which is structurally local to T.

(7)a. Don't you trust Junior!



b. (Although Tony eats steak, he) doesn't pizza.



A morpheme's requirement for Adjacency with another terminal node must be distinguished from any morphophonological dependency that holds of the Vocabulary Items that realize it, i.e. the requirement that finite T be lowered to the verb or realized on an auxiliary, modal, or form of *do*. I argue that, like [Neg], finite T exhibits a structural locality requirement, but that T undergoes subsequent morphological merger with the Adjacent head. Only when the head to which T ultimately lowers is *v* does the resulting PF object have an available phonological realization; T could satisfy Adjacency alone with a head other than *v*, in principle, but the result after lowering to such a head would be an ineffable PF object, one with no associated phonological exponent. What appears initially to be category-

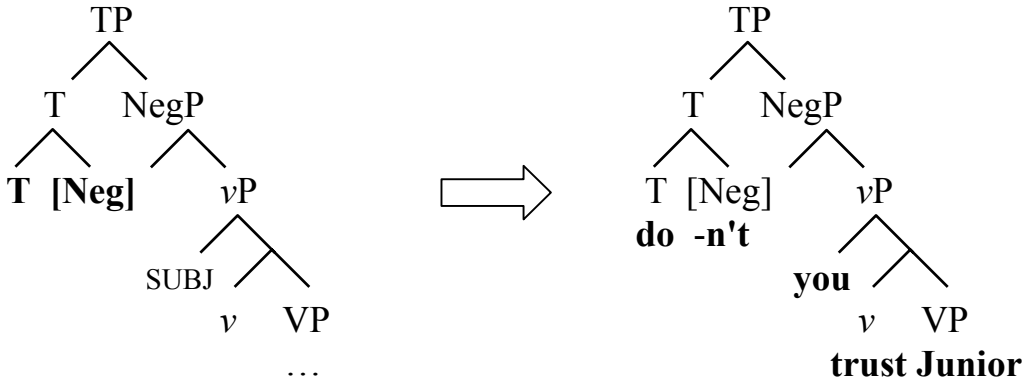
specificity in T's Adjacency requirement is actually a consequence of post-merger conditions on Vocabulary Insertion that are orthogonal to Adjacency per se.

3. Argument-sensitive Adjacency: [Neg]

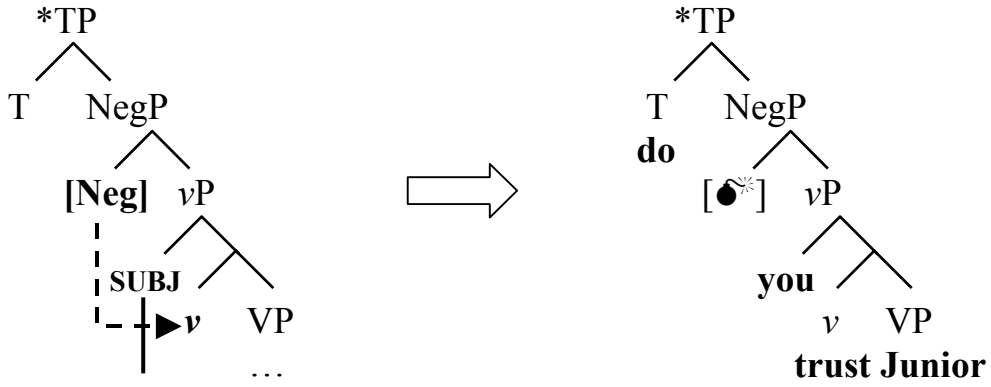
3.1. [Neg] Adjacency in the imperative

Compare the imperative in (8) with its ungrammatical counterpart in (9); the two differ only in the position in which [Neg] is realized phonologically.

(8) Don't you trust Junior!



(9) *Do not you trust Junior!

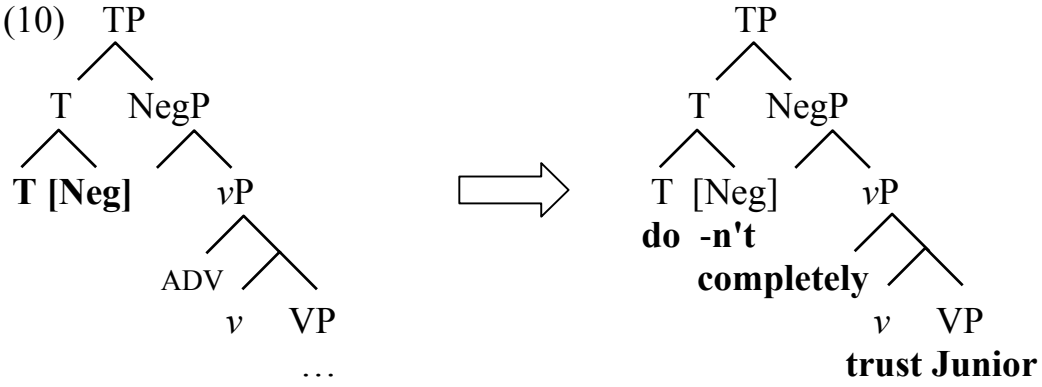


With the head of NegP in situ, the overt subject disrupts Adjacency. The effect of this intervention can be characterized as PF ineffability; as a result of the failure to establish Adjacency, the dependent element is not structurally licensed and will not be provided with a phonological exponent. Only when [Neg] raises in an overt subject imperative is it licensed (by Adjacency with T), allowing for insertion of the Vocabulary Item *n't*, as in (8).

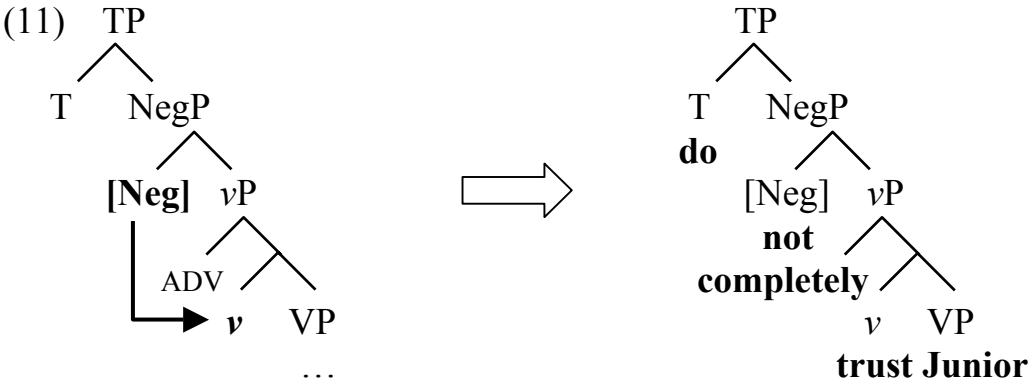
The absence of a contrast between (10) and (11) indicates that the relevant notion of intervention for Adjacency is structural rather than linear. Although the

adverb occupies a position between NegP and *v* in (11), in situ [Neg] is licensed; *v*P-adjoined adjunct material is distinct from argument material in [spec, *v*P].[2]

(10)



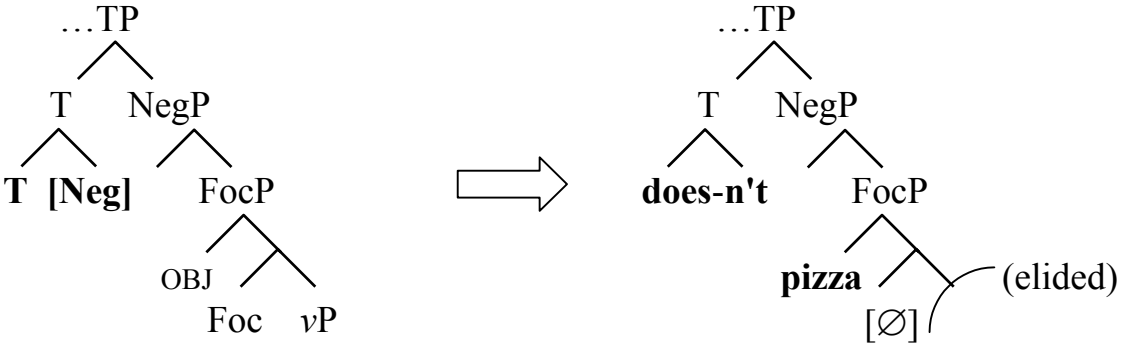
(11)



3.2. [Neg] Adjacency in pseudogapping

The contrast in the pseudogapping examples in (12) and (13) mirrors the pattern in the overt subject imperative.

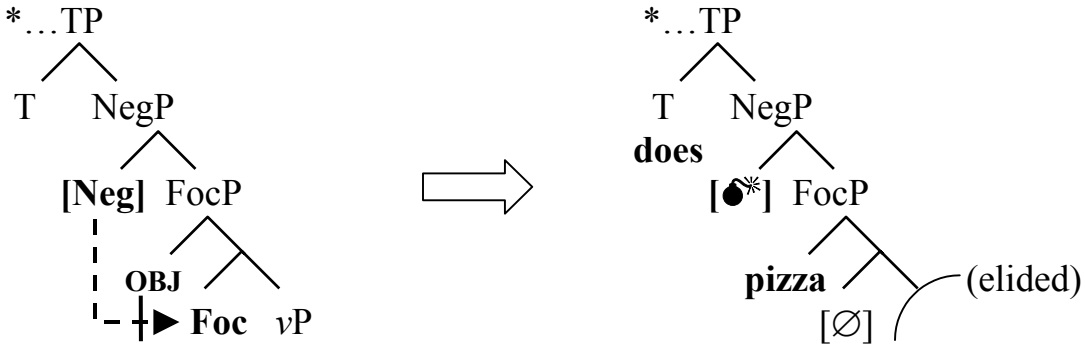
(12) (Although Tony does eat steak, he) doesn't pizza.



[2] The difference may reflect a distinct featural relationship between the head and specifier. See also Bobaljik (2002) on adjunct "invisibility."

The terminal with which in situ [Neg] must establish Adjacency is the head of a focus phrase. The intervening argument is an object rather than a subject here.

(13) *(Although Tony does eat steak, he) does not pizza.



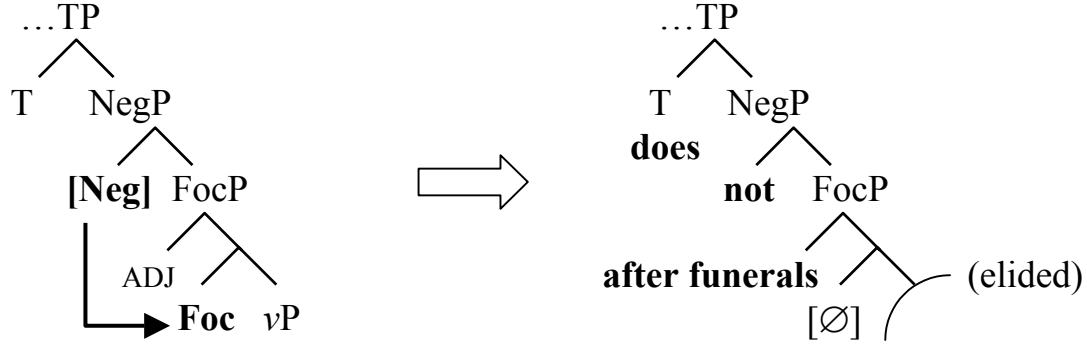
Assume for present purposes that in pseudogapping the object remnant raises to the specifier of FocP prior to VP ellipsis. Given that pseudogapping remnants are not limited to objects ((14)a), cross-clausal remnant movement is possible ((14)c), and the remnant typically receives contrastive intonation and interpretation, a treatment of the remnant position in terms of focus-driven movement, as opposed to object shift to [spec, *v*P] (contra Lasnik 1999), is reasonable.

(14) a. Tony cried after the party, and Junior did after the funeral.
b. Tony drove the truck and Junior did the car.
c. Tony tried to drive the truck, and Junior did the car.

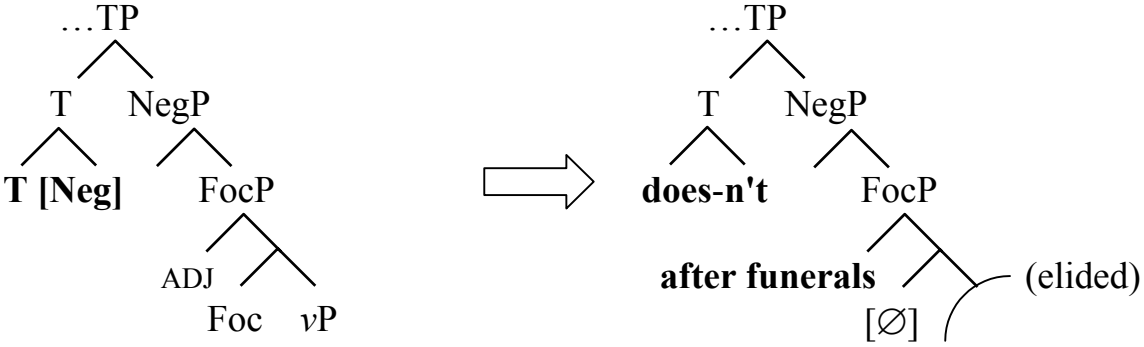
Considerations of the nature of VP ellipsis discussed below also militate against an object shift to [spec, *v*P] analysis for the position of the remnant; briefly, an argument that VP ellipsis instantiates structural deletion of *v*P in the PF component is not easily reconciled with the fact that the object remnant alone is pronounced to the exclusion of the rest of *v*P if the remnant position is taken to be within *v*P.

When the focused constituent is adjunct rather than argument material, no intervention effect arises. In (15), [Neg] is licensed with a PP in [spec, FocP]; licensing of raised [Neg] in (16) is unexceptional.

(15) (Although Tony does drink wine after weddings, he) does not after funerals.



(16) (Although Tony does drink wine after weddings, he) doesn't after funerals.



A comparison of overt subject imperative and pseudogapping clauses with respect to the distribution of negation yields insights into the behaviour of [Neg] in the morphological component.

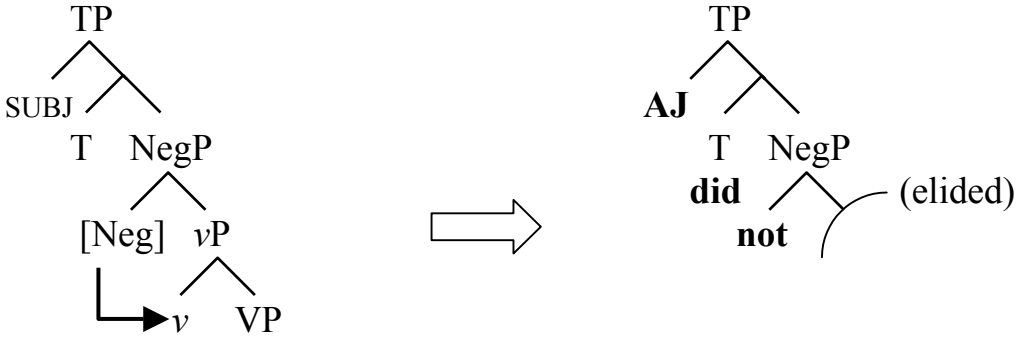
3.3. Adjacency Assessment and PF head movement

The argument/adjunct asymmetry reveals the crucially structural nature of Adjacency; linear intervention alone does not disrupt Adjacency. Given a model in which morphemes lack phonological expression until the PF operation of Vocabulary Insertion (i.e. Late Insertion in Distributed Morphology; Halle and Marantz 1993), linear intervention is not even determinable when [Neg]'s licensing requirement must be met – the syntactic terminals have yet to be spelled out. Since phonological realization is in this sense irrelevant, it also follows that *not* may appear without a *pronounced* local licensing head to its right, as long as one is structurally represented when Adjacency is assessed, as (17)a-c illustrate.

(17) a. Carmela read the newspaper, but AJ didn't/did not.
b. AJ isn't/is not an excellent student.
c. Carmela hasn't/ has not seen AJ's report card yet.

Although the elided verb in (17)a is not phonologically overt, it is present in the output of the syntax as a licenser for in situ [Neg], as in (18):

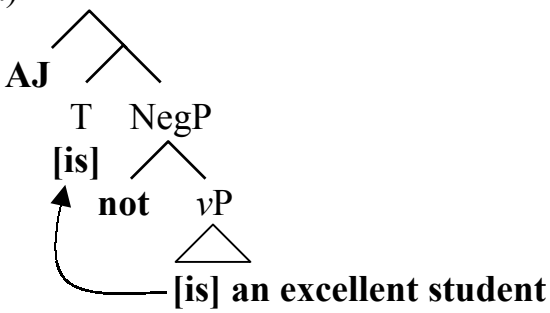
(18) (Carmela read the newspaper, but) AJ did not.



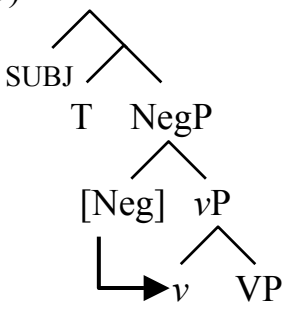
While the copula is ultimately pronounced in its raised position in (17)b, it licenses [Neg] in its base position, as in (19)b:

(19) AJ is not an excellent student.

(a)



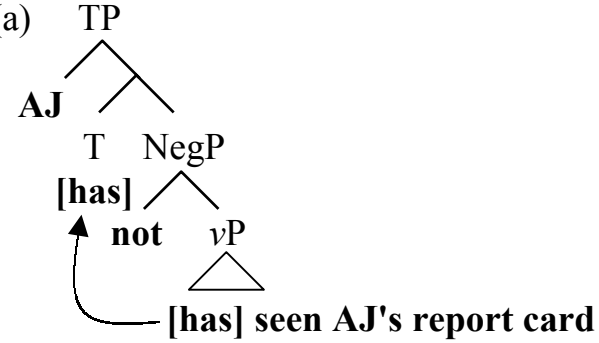
(b)



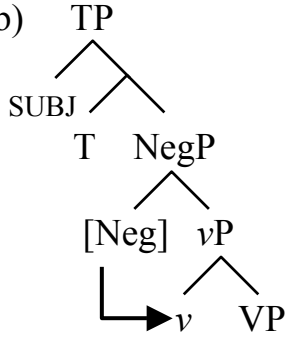
Likewise in (17)c, the base position of the auxiliary licenses [Neg], as in (20)b:

(20) Carmela has not seen AJ's report card.

(a)



(b)



It appears that the copy of the raised auxiliary/copula licenses [Neg]. If, however, movement copies remain at PF, a subject copy would occupy [spec, *v*P], disrupting

Adjacency between [Neg] and *v* and rendering (18)-(20) ineffable, contrary to fact. Copies of true syntactic movement (i.e. A-movement that obeys the Extension Condition, has interpretive consequences, etc.) seem to be absent at PF. On this reasoning, it cannot be a copy of the auxiliary/copula that licenses [Neg] above.

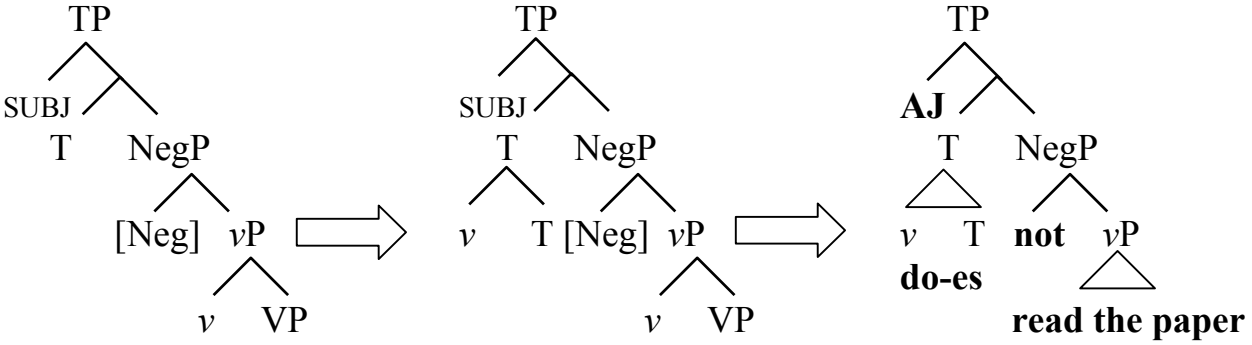
Consider instead the proposal that head movement occurs on the PF branch (*cf*. Chomsky 2001), after Adjacency assessment. A conservative approach to the nature of PF head movement ascribes to it the same general character as syntactic movement – a head adjoins to a higher head with which it enters into a syntactic relationship. PF head movement is treated here as a late adjunction operation that displaces the position in which a morpheme is realized phonologically to the position of the head with which an Agree relation was established in the Syntax. As such, a raised auxiliary/copula may be pronounced higher than sentential negation, yet license [Neg] from the head of *v*P; this is neither paradoxical nor dependent on a copy theory of movement if head movement takes place in the PF component, and is indeed the model required by the [Neg]-licensing facts.

4. Tense realization and do-support

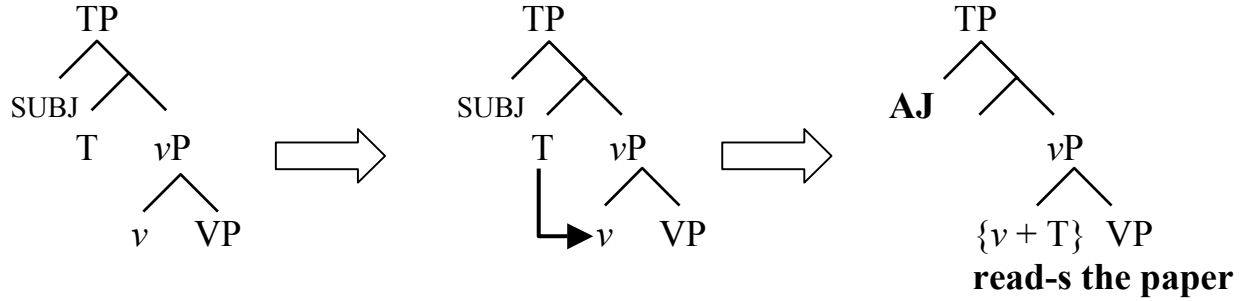
If head movement is best treated as a PF operation, an issue arises for any analysis of *do*-support that assumes auxiliary/copula raising occurs in the narrow syntax. The approach to *do*-support proposed in Embick and Noyer (2001) is illustrative; combined with a commitment to PF head movement, it derives the incorrect prediction that support *do* co-occurs with the finite auxiliary/copula.

Embick and Noyer propose that support *do* is the realization of a default *v* inserted, in the Syntax, when T's (selectional) requirement for merger with *v*P is not met. The paradigm case involves sentential negation; in (21), NegP intervenes between T and *v*P, resulting in default *v* insertion directly into T. When T is merged with *v*P, it Lowers to the head of its complement (Tense Lowering), as in (22), and is thus realized together with the verb at Vocabulary Insertion.

(21) AJ does not read the paper.



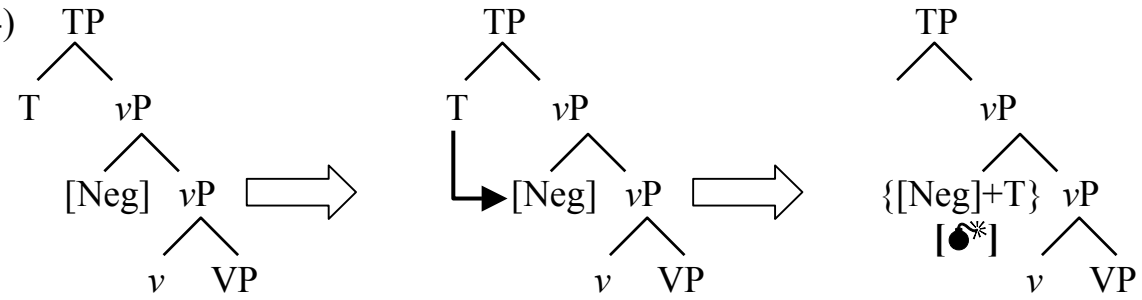
(22) AJ reads the paper.



Embick and Noyer argue that default *v* insertion crucially takes place in the Syntax based on a case of ineffability in which neither *do*-support nor Lowering yields a grammatical output when constituent negation is present (and no modal is in T), as in (23)b-c; the source of the ungrammaticality can be seen in (24).

(23) a. AJ can always not read the newspaper.
b. *AJ always not reads the newspaper.
c. *AJ does always not read the newspaper.

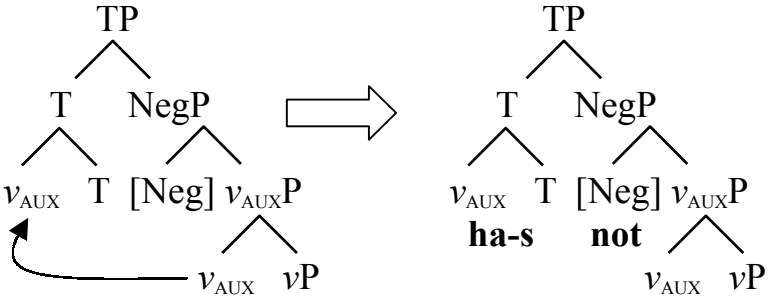
(24)



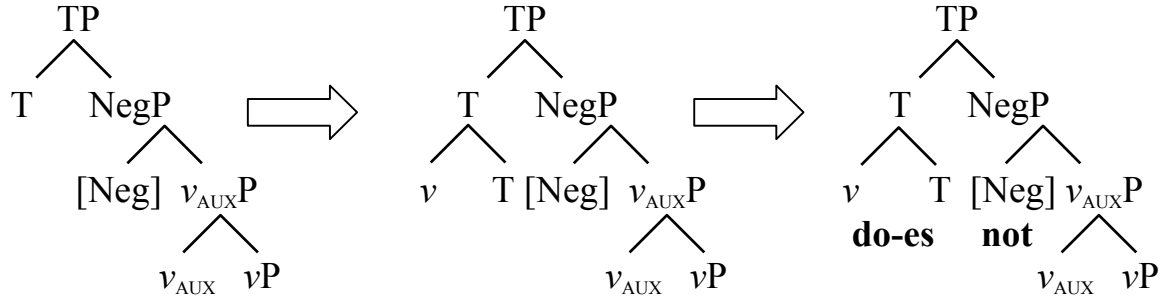
T is merged with *v*P in the Syntax – constituent negation is *v*P-adjoined. A problem arises in the morphological component with respect to the realization of tense. Lowering to the head of T's complement targets [Neg], yielding an illicit PF object; the tense morpheme cannot be realized on the verb as in (23)b. However, default *v* insertion is not available at this stage; the structural description for the operation was not met in the Syntax, and (23)c shows it cannot apply at PF. Only (23)a, in which the tense morpheme is realized on the modal, is grammatical.

The tense morpheme is also realized in T when an auxiliary/copula raises. The raised *v* satisfies T's merger requirement in (25) precluding *v* insertion. If head movement occurs at PF, *v* insertion ought to apply in the Syntax, as in (26).

(25) AJ has not read the paper.



(26) *AJ does not have read the paper.



PF head movement seems to conflict irresolvably with strict adherence to the Embick and Noyer approach to *do*-support. Nonetheless, the key insights of their approach should be preserved, including the notions that *do* realizes a *v*-head and that ineffability arises when Tense Lowering targets a head other than *v*.

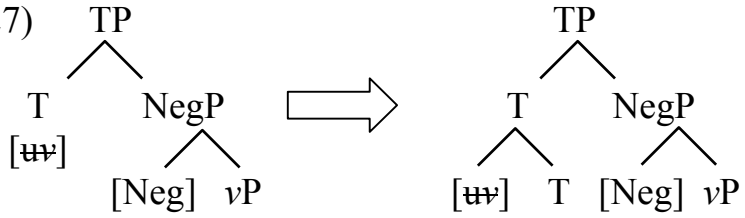
4.1. Do-support as structural repair

It is possible to recast the purported selectional requirement of T in terms of a combination of an Adjacency requirement akin to that proposed for [Neg] and a constraint imposed by Vocabulary Insertion. The proposal is that a last resort structural repair operation is available in the morphology to ensure T establishes Adjacency with a *v* head on which it may be realized. The category of the local licensing head is not specified for the purposes of Adjacency per se; the fact that Vocabulary Insertion proceeds only when T occupies the same head as *v* (since T in combination with any other head yields an illicit PF object) triggers application of the repair when T's complement is not *v*P.

The repair operation is illustrated in (27); *do*-support amounts to fission of T's [*uv*] feature because the complement of T is NegP. [3] The dissociated *v*-feature serves as the local licensing head of T (i.e. the configuration in (5)b).

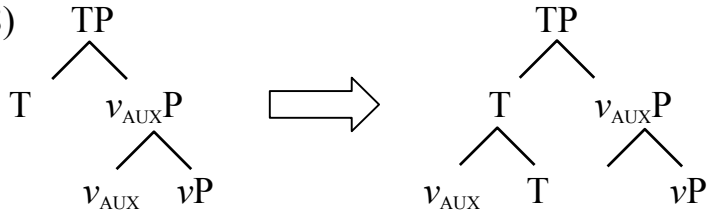
[3] The feature may be considered marked for deletion but not erased (*cf*. Pesetsky and Torrego 2001); its presence is independently warranted to mark the target of PF auxiliary/copula raising.

(27)

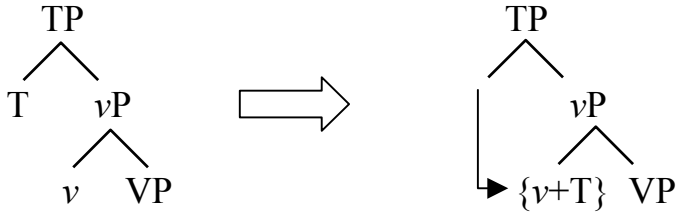


This is essentially the same T-licensing configuration that arises when an auxiliary PF-raises, as in (28). Lowering proceeds only with a *v*P complement, as in (29); the target of Lowering is restricted to the head of the complement since this is the head with which the dependent element establishes Adjacency.

(28)



(29)

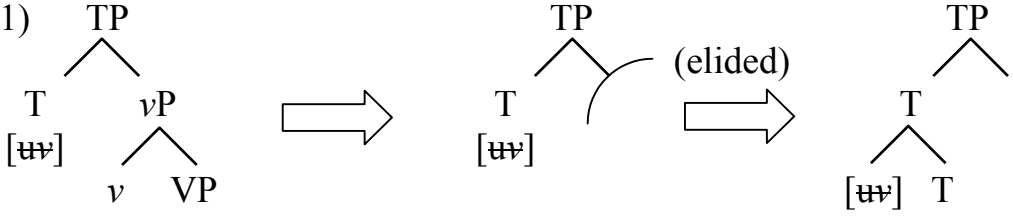


Note that the fission operation in (27) is sensitive to the category of T's complement but does not have access to the head that Lowering will target. The constituent negation configuration in (24) is ineffable because fission does not apply when T's complement is *v*P; as Embick and Noyer explain, when T Lowers to [Neg], the apparent head of its complement, the resulting PF object is illicit.

The structural repair operation approach to *do*-support yields insight into the mechanism that underlies VP ellipsis. In order for *do*-support to arise in (30), for example, ellipsis must somehow trigger fission of [u*v*] as in (27); deletion of *v*P in the morphological component removes T's complement entirely, the extreme case of a complement other than *v*P.

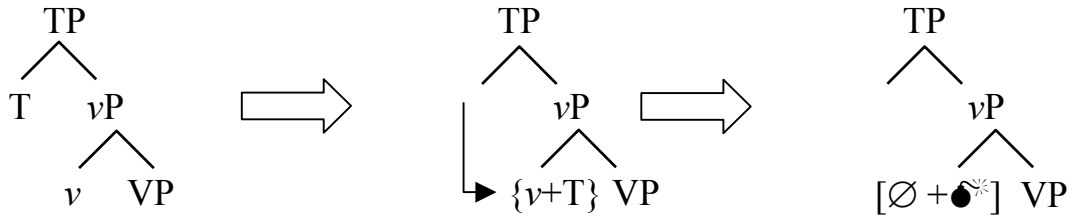
(30) Carmela read the paper, and AJ did too.

(31)



If, on the other hand, ellipsis represents null spellout of the *v*P terminals, then Lowering ought to proceed but yield ineffability due to a conflict between realizing T on *v* and not realizing *v* overtly, as in (32).

(32)



Additional motivation to treat VP ellipsis as structural deletion was hinted at in Section 3.2; ellipsis in pseudogapping spares the remnant to the exclusion of the rest of the verb phrase since the raised constituent is higher than the deleted *v*P.

Note that *v*P deletion in ellipsis must follow Adjacency assessment; (33) would be ungrammatical if in situ [Neg] were not licensed by an Adjacent head.

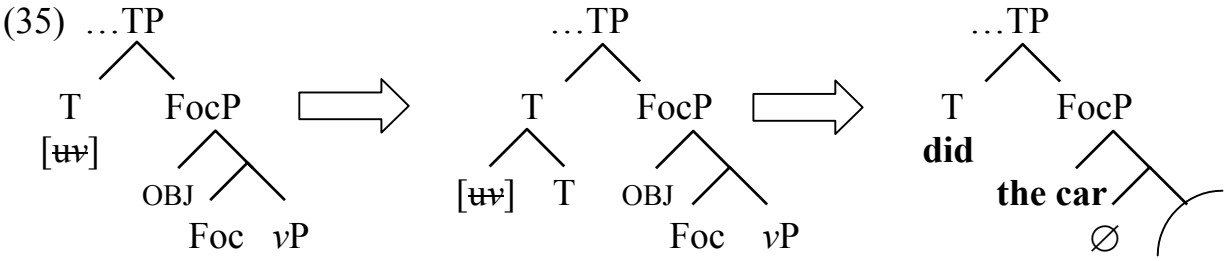
(33) Carmela read the paper, but AJ did not.

Structural deletion of *v*P thus clearly triggers *do*-support due to a failure associated with Lowering in (31), not a failure to meet Adjacency. Because [Neg] does not Lower to the head of its complement, *v*P deletion subsequent to Adjacency assessment in (33) requires no repair. Therefore, the fission operation in (27) should be seen as a repair operation on structures ill-formed for the purposes of Lowering, i.e. structures in which the complement of T is not *v*P.

Pseudogapping examples like (34) further illustrate that fission is triggered when the complement of T is not *v*P. The raised object ought to disrupt Adjacency in (35). Nonetheless, because the complement of T is FocP, *do*-support applies.

(34) Tony drove the truck and Junior did the car.

(35)



While the fission operation serendipitously repairs the Adjacency violation, it is the FocP complement of T that triggers its application, preventing ineffability.[4]

5. Conclusions

The case of sentential negation shows that a head may exhibit a structural dependency requirement in the morphology without any additional conditions on phonological realization such as those that hold for Tense. Adjacency and Lowering are separable licensing conditions on dependent elements at PF.

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[4] Alternatively, the selection relation between T and FocP that licenses pseudogapping may cause fission across the board in this construction, regardless of Adjacency. This raises the question of whether evidence exists for T's Adjacency requirement from argument intervention; the answer hinges in part on an investigation of *do*-support in subject-aux inversion within a PF head movement approach (Flagg, in preparation) that is beyond the scope of this paper.