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SUMMARY

This paper looks at Adverb Climbing (AC), a syntactic configuration in which an adverb preceding a verb with an infinitival complement modifies the non-finite complement verb rather than the matrix verb.

(1) Alastair intentionally seems to have insulted Flora.
'Alastair seems to have intentionally insulted Flora.'

I will argue that the availability of AC with Raising verbs in English (e.g. *seem*) indicates that they take non-finite complements which lack a CP projection. In contrast, the non-finite complements of Control verbs (e.g. *try*) are full CPs. I will also argue that AC for a limited set of T-modifying adverbs is possible with English Control verbs that select for 'temporally independent' infinitives (e.g. *want*) because these verbs have T-to-C movement within their non-finite complement clauses.

RÉSUMÉ

1 INTRODUCTION

Adverb Climbing (AC) refers to a syntactic configuration in which an adverb preceding a verb with an infinitival complement modifies the non-finite complement rather than the matrix verb. The literature contains occasional consideration of AC in French (Bok-Bennema and Kampers-Manhe 1994; Bok-Bennema 2001; Cinque 2006); English also exhibits this phenomenon.

(1) Alastair intentionally seems to have insulted Flora.
'Alastair seems to have intentionally insulted Flora.'

This squib will present some data on AC in English, and argue that its availability with only a subset of verbs that take infinitival complements indicates a difference in non-finite complement size. In §2 I will outline the literature on AC in French, followed by a presentation of some of the AC data for

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English in §3. Section 4 will develop a proposal to account for AC with Raising verbs, and §5 will look at a set of instances where AC occurs with Control verbs. In §6 I will conclude with further questions that arise from this analysis.

2 PREVIOUS APPROACHES TO ADVERB CLIMBING

AC in French first appears to have been discussed in a footnote by Kayne (1975, 27n29), who characterises it as a leftward movement of the adverb *mal* across the verb *dû*.

(2) Vous avez mal dû raccrocher
you have badly must hang-up
'You must have hung up badly.'

Bok-Bennema and Kampers-Manhe (1994, 200) give a number of further examples of AC in French, all featuring manner adverbs (e.g. 'perfectly', 'well'), which describe the way in which an event occurs.

(3) Elle a parfaitement su lui répondre
She has perfectly known him to-answer
'She has known how to answer him perfectly.'

They coin 'Adverb Climbing' as analogous to 'Clitic Climbing' and 'Quantifier Climbing'. These 'transparency effects' are operations that seem to apply across clause boundaries, thereby indicating Restructuring, in which an apparently otherwise multiclausal structure exhibits monoclausal behaviour. In Clitic Climbing, for instance, the object clitic of an embedded infinitive may precede a matrix verb, outside the clause in which it is interpreted (and seemingly originates). Only certain predicates allow these 'Clitic Climbing' configurations. For example, Italian 'want' is a Restructuring verb, while 'hate' is not (Cinque, 2002, 1).

(4) a. **Lo** volevo vedere subito
him wanted.1SG to-see immediately
'I wanted to see him immediately.'
b. ***Lo** detesto vedere in quello stato
him hate.1SG to-see in that state

French is unusual among Romance languages in not permitting Clitic Climbing and similar transparency effects. Adverb Climbing, however, presents the possibility that French, like Italian and Spanish, does have Restructuring.

Bok-Bennema and Kampers-Manhe argue that Restructuring results from T-incorporation, in which movement of the embedded T to C, and subsequently to the matrix verb, renders an otherwise impermeable CP transparent, making it possible for other elements to move out of the complement clause. Under this analysis the adverb in an AC construction is generated as a downstairs VP-adjunct, and then moves to its position preceding the matrix verb.

Bok-Bennema (2001) revisits AC, now calling it 'the MAC effect' (the additional *M* stands for

'manner'). This shift in name reflects an amended theory in which the manner adverb does not climb per se. Instead, manner adverbs are generated in a specific functional position, from which they do not move. Modal and aspectual verbs that allow AC can be either lexical or functional. In their 'full verb' form they do not permit AC, as the adverb is fixed in its position within the infinitival complement. When these verbs act as auxiliaries, though, a truncated structure means that the only position available to manner adverbs precedes the auxiliary position. Under this analysis, then, the apparent 'climbing' results not from leftward movement of a manner adverb, but from non-movement of a verb that has already been generated to its right.

AC also receives brief mention in Cinque's (1999) influential work on the syntax of adverbs. He notes examples such as (2) as representing instances of A′-movement, but does not elaborate on why it occurs. In later work Cinque (2006) examines whether AC indicates Restructuring in French, citing additional examples, again with manner adverbs.

(5) Il aurait mieux voulu se comporter
he would-have better liked himself behave
'He would have liked to behave better.'

Unlike Bok-Bennema and Kampers-Manhe, Cinque takes the availability of AC in the absence of other indicators of Restructuring as evidence that it is not a true transparency effect. Moreover, he attests that subjunctive finite complements also allow AC interpretations, as in (6), taking these data to show that the availability of AC in French depends not on Restructuring, but rather 'irrealis context'.

(6) Il faut très bien que tu te comportes
It is-necessary very well that you yourself behave
'It is necessary that you behave very well.'

3 ADVERB CLIMBING IN ENGLISH

The clearest instances of English AC are those in which the main verb and the preceding adverb are thematically incompatible, as in (7): *seem* assigns no external theta-role to its subject, while the agent-oriented adverb *intentionally* requires an agent. *Intentionally* is therefore unambiguously interpreted as modifying the embedded verb *insulted*.

(7) Alastair intentionally seems to have insulted Flora.
'Alastair seems to have intentionally insulted Flora.'

Many speakers find sentences of this type awkward, but they are not ungrammatical. The Internet offers a number of examples of AC apparently produced by native English speakers [1].

(8) a. He intentionally seems to have left the minister in the dark.
b. The legislature quite intentionally appears to have elevated "labor" ...
c. ...his Lordship...intentionally appears to have obfuscated the facts...

[1] As a native speaker myself, I also find these sentences grammatical.

d. . . . unless they. . . intentionally proceeded to publish the story. . .
e. A 'Facebook Troll'. . . intentionally tends to make inflammatory remarks. . .

The verbs that permit AC with *intentionally* (*seem*, *appear*, *proceed*, *tend*, etc.) can in fact all be categorised as 'Raising' predicates. These are distinguished from 'Control' predicates, which also take infinitival complements (Rosenbaum, 1967).

(9) a. Alastair seemed to insult Flora. (RAISING)
b. Alastair tried to insult Flora. (CONTROL)

The essential difference between these verbs is thematic: Control predicates assign an external theta-role, whereas Raising predicates do not. As a result, passivisation of the infinitive changes the meaning of Control but not Raising constructions (Rosenbaum, 1967).

(10) a. The doctor tried to examine John.
$\neq$ John tried to be examined by the doctor.
b. The doctor seemed to have examined John.
= John seemed to have been examined by the doctor.

Additionally, Raising constructions allow idiomatic and expletive subjects, which are never assigned a theta-role. Control constructions are ungrammatical with nonthematic subjects (Postal, 1974).

(11) a. The jig seems to be up.
b. *The jig wants to be up.

AC with agent-oriented adverbs appears to be sensitive to the Raising/Control distinction: Control verbs preceded by *intentionally* do not allow an AC reading.

(12) a. Alastair intentionally {appeared / proceeded / tended} to insult Flora.
'A. {appeared / proceeded / tended} to intentionally insult F.'
b. A. intentionally {wanted / tried / promised / forgot} to insult F.
$\neq$'A. {wanted / tried / promised / forgot} to intentionally insult F.'

This evidence contradicts Cinque's (2006) conclusion that the availability of AC depends on irrealis context; as seen in (12b), Control verbs that induce irrealis interpretation of their complements (e.g. *want* and *try*) do not permit AC readings with adverbs such as *intentionally*. AC readings are also not possible with subjunctive finite complements in English, as has been claimed for French (Cinque, 2006).

(13) I asked willingly that he help with the washing up.
≠ 'I asked that he willingly help with the washing up.'

Indeed, AC interpretations never occur with finite clauses in English, even with otherwise acceptable Raising predicates.

(14) *It intentionally {seemed / appeared} that Alastair had insulted Flora.

It is also notable that, in contrast to French, English AC never occurs with manner adverbs.

(15) a. ?*You must badly have hung up.
≠ 'You must have hung up badly.'
b. Mary has carefully started to tidy her room.
≠ 'Mary has started to carefully tidy her room.'

The differences between which constructions and adverbs permit AC in French and English suggests that this phenomenon may in fact be distinct in these two languages.

Given that the divide between AC and non-AC verbs aligns with the distinction between Raising and Control (but see §5 for instances of AC with Control verbs), initial examination points to the possibility that the availability of AC in English depends on theta-role assignment. However, although an agentivity mismatch between Raising verbs and agent-oriented adverbs sometimes blocks a matrix interpretation of the adverb, it cannot be the sole determining factor for the occurrence of AC.

Although not available for manner adverbs, AC interpretations do occur with subject-oriented adverbs that are not agentive (e.g. *stupidly*, *quickly*) [2] . They are also available with frequency adverbs (e.g. *rarely*, *always*), although constructions of this type may be ambiguous between an AC reading and one in which the adverb modifies the matrix verb.

(16) a. Alastair stupidly seems to have answered the wrong questions.
'Alastair seems to have been stupid in answering the wrong questions.'
b. Alastair quickly seemed to grasp difficult concepts.
'It quickly seemed that Alastair grasped difficult concepts.'
'Alastair seemed to quickly grasp difficult concepts.' (AC)
c. Alastair rarely seemed to have answered the right questions.
'It rarely seemed that Alastair had answered the right questions.'
'Alastair seemed to have rarely answered the right questions.' (AC)

[2] Subject-oriented adverbs describe the behaviour of the subject, but not in terms of agency, and thus can be used with non-volitional actions.

i. Flora stupidly tripped and fell over.
ii. Alastair quickly had become confused.

I will return to AC with other types of adverbs in §5. For the moment, it is sufficient to note that this evidence indicates AC does not simply result from differences in theta-role assignment, but must be subject to additional syntactic constraints. The following sections will show that the availability of AC interpretations depends on the size of the infinitival complement selected by the matrix predicate, which crucially differs for Raising and Control verbs.

4 AC AND RESTRUCTURING

The earliest accounts of Restructuring had it that structure in the complement clause of a Restructuring verb was deleted. This idea has more recently given way to theories in which Restructuring constructions are never fully multiclausal. Wurmbrand (2001) argues that certain non-finite complements lack one or more functional projections. Each transparency effect is pertinent to the structure of the complement clause: the more layers of structure are missing, the more transparency effects obtain.

Transparency effects do not always occur or fail to en masse. For example, Cinque (2006) observes that in the absence of Clitic Climbing Italian sometimes exhibits Auxiliary Change, a transparency effect in which the matrix verb in a Restructuring configuration has a 'be' auxiliary instead of the usual 'have', apparently assigned by the verb in the infinitival complement.

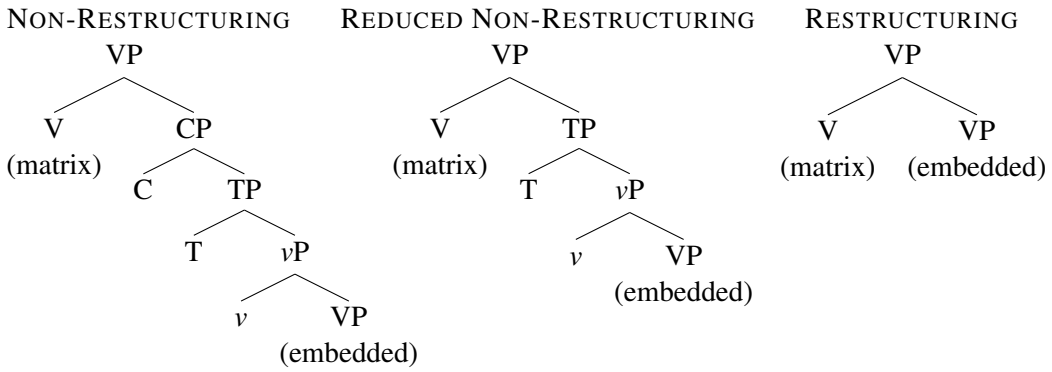
(17) a. Maria **c'** **è** dovuta venire molte volte
M. there is had to come many times
'M. must have come there many times.'
(Auxiliary Change and Clitic Climbing)

b. Maria **è** dovuta venir**ci** molte volte
M. is had to come-there many times
'M. must have come there many times.'
(Auxiliary Change without Clitic Climbing)

Wurmbrand therefore rejects a binary Restructuring/Non-Restructuring distinction as insufficiently nuanced. She concludes that verbs taking infinitival clausal complements can be identified as belonging to four classes.

Lexical Restructuring predicates assign external theta roles, and appear lower down in the clause, as they are not part of its functional structure. Functional Restructuring predicates are non-thematic, appearing higher in the clause as part of its functional structure. Both types of Restructuring verb take a reduced clausal complement, consisting of a bare VP, which lacks TP and *v*P projections. Reduced Non-Restructuring predicates have complements which lack CP, but may have a *v*P and TP. Restructuring, rather than resulting from deletion or movement within a full CP complement, is thus a matter of selection: different classes of verb select for specific types of infinitival complement.

(18)



Clitic Climbing falls out easily under this reduced complement approach. The infinitival complements of verbs such as Italian *volere* 'want' lack the *v*P and TP projections present in the non-finite complements of verbs such as *detestare* 'hate'. The embedded object must cliticise to one of these projections. When the relevant projection is unavailable in the complement clause the object clitic adjoins to the equivalent projection preceding *volere*. Clitic Climbing does not occur with *detestare* because the relevant projection for cliticisation of the object (TP and/or *v*P) is present in the non-finite complement clause.

This phenomenon does not exist in English, but the failure of this and other transparency effects to occur does not rule out the possibility that English non-finite complements vary in size. Absence of Clitic Climbing is not informative, given that English lacks object clitics entirely. Other diagnostics for Restructuring are unavailable for similar reasons: the Auxiliary Change from 'have' to 'be' found in Spanish and Italian in certain Restructuring contexts is impossible in English because it has no perfect auxiliary alternation.

The most compelling evidence for differences in infinitival complement size comes from instances in which a non-finite clause has an overt complementiser. The occurrence of overt complementisers with non-finite Control complements in a variety of languages (e.g. Swedish, Icelandic, Hebrew, Welsh) has led to proposals that Control predicates take CP complements while the complements of Raising predicates lack a CP layer. Based on this observation Landau (2003, 488) makes the 'presumably universal' generalisation that 'Control complements may be introduced by complementizers; raising complements are never introduced by complementizers'.

Though some varieties allow overt *for* with infinitival complements (e.g. *I want for to leave* in Belfast English), Standard English does not (Landau, 2000, 33). The impossibility of an overt complementiser with a Control complement means that one important argument for a difference in the size of Control and Raising infinitives does not apply: with no overt instantiation of C in English, both types of complement could lack a CP layer.

In the following section I will posit that, although English does not show the differences between these verb classes that are apparent crosslinguistically, it nevertheless has some non-finite complements that are not full CPs.

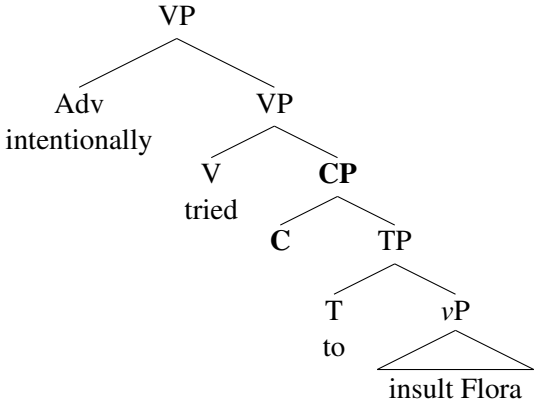
4.1 AC FOR RAISING VERBS

If infinitival Control complements are full clauses and Raising complements lack a CP, it is possible to explain why Raising verbs allow AC interpretations and Control verbs do not.

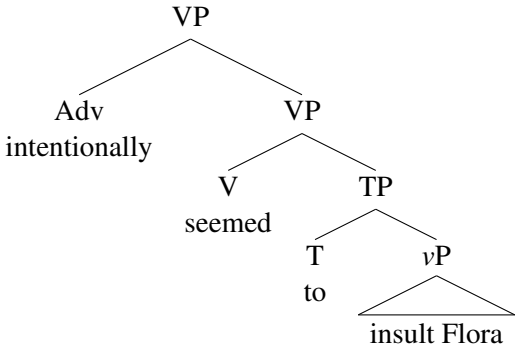
Following much prominent work on the topic (e.g. Cinque 1999; Ernst 2002 and many others), I assume that adverbs modify specific projections. The specifics of the relationship between particular adverbs and functional structure are beyond the scope of the current work. Given, however, that *v*P is the locus of external theta-role assignment, I take this projection as the most likely candidate for modification by agent- and subject-oriented adverbs.

Under the assumption that the non-finite complements of Raising verbs do not have a CP projection, there is a clause boundary between the adverb and the lower *v*P when it precedes a Control verb, while no such boundary intervenes when it precedes a Raising verb. This CP blocks AC, which may otherwise occur in the absence of a CP between the adverb and the projection it modifies.

(19) a. Alastair intentionally tried [**CP** [*v*P to insult Flora]]



b. Alastair intentionally seemed [*v*P to insult Flora]



According to this analysis English verbs can be classified under Wurmbrand's (2001) Restructuring categories. English Control verbs are non-Restructuring predicates, as they take full CP complements. English Raising verbs are Reduced non-Restructuring verbs, as they select for non-finite complements that lack a CP projection, but nevertheless have *v*P and TP projections. English thus does not show transparency effects other than AC because the *v*P and TP layers are present in all

non-finite complements.

In the next section I will consider further data which show AC with Control verbs. I will argue that these apparent exceptions do not show that Control verbs can also select for Reduced non-finite complements. Rather, other characteristics that are limited to those Control verbs which allow AC will lead me to posit T-to-C movement within the complement CP.

5 AC WITH CONTROL VERBS

AC interpretations with Control predicates are unavailable with agent-oriented adverbs, but this limitation does not extend to all adverbs. The sentence in (20a) is a counterexample to the generalisation that Control verbs do not allow AC, as it may be synonymous with (20b).

(20) a. I always want to be with you.
b. I want to always be with you.

It is possible to show that (20a) permits a matrix interpretation by including an additional instance of *always* in the infinitival complement, forcing the matrix reading of the higher adverb.

(21) I always want to always be with you.
'I always have the desire to always be with you.'

Other contexts favour the lower reading.

(22) I'm giving you this ring because *I always want to be with you*, for ever and ever.

Never also permits AC interpretations with *want*.

(23) I never want to see you again.
'I want to never see you again.'

As shown by Horn (1978, 151), who quotes the poetry of Gelett Burgess, *never* also permits an AC interpretation with *hope*.

(24) I never saw a Purple Cow
I **never hope** to see one

Hope also allows an AC interpretation with *always*.

(25) I always hope to be with you.
'I hope to be with you always.'

Hope and *want* also permit AC interpretations with *soon*.

(26) a. I soon hope to finish my book.
b. I soon want to finish my book.

Expect shows a similar pattern.

(27) a. I always expect to be with you (for ever and ever).
b. I never expect to see you again (so we should say our final goodbyes).
c. I soon expect to see her.

The AC interpretation is much less readily available with frequentative adverbs and these Control verbs, but still permitted in some instances.

(28) I {usually / frequently / rarely} {hope / want / expect} to be with you.
??= 'I have a desire to usually be with you', etc.

The AC interpretation also does not occur with all Control verbs, even with the same adverb and complement.

(29) I {always / never / soon} {try / manage / forget} to be with you.
$\neq$ 'I try to always be with you.'

Additionally, when the matrix verb is not in the present tense it becomes more difficult to have an AC reading, though not impossible.

(30) a. ?He had long lived in Aberdeen, and always wanted to stay there.
b. ?He had never seen a Purple Cow, and never hoped to see one.
c. ?He had never eaten haggis, but soon expected to try some.

5.1 TEMPORALLY INDEPENDENT INFINITIVES

While the Raising/Control distinction is the broadest one that can be made among verbs that take non-finite complements, Control verbs can be divided into several subcategories. Among these are the class of verbs which allow Partial Control (PC), in which the matrix subject 'controller' is singular, with an embedded predicate that requires a plural subject.

(31) a. *John met at 6.
b. John wanted to meet at 6.

Landau (2003, 493) observes that 'partial readings are not found in raising contexts'. Moreover, he notes that not all Control verbs permit PC.

(32) a. *John managed to meet at the cinema.
b. John wanted to meet at the cinema. (PC)

Landau (2000, 2003, 2006, 2007) considers these Control verbs in terms of the tense of their complements. He argues that particular Control verbs select for 'tensed' infinitives (cf. Stowell 1982). Exhaustive Control (EC) predicates, which require PRO to be identical to the controller, lack independent tense specification, whereas PC infinitives do not. Thus *manage*, an EC verb, disallows use of contradictory time adverbs, as the temporal interpretation of the infinitive is dependent on that of the matrix clause. In contrast, contradictory temporal adverbs are acceptable with *want*, a PC verb, which selects for a temporally independent non-finite complement.

(33) (Landau, 2000, 6)

a. *Yesterday, John managed to solve the problem tomorrow.

b. Yesterday, John wanted to solve the problem tomorrow.

Landau assumes that tense features are specified on C, such that it shares the features of the tense head. This concurrence of tense features is accomplished via T-to-C movement which, in untensed infinitives, fails to occur. Landau thus reduces the correlation between tense and Partial Control to an agreement operation: in EC the matrix subject agrees with PRO, while in PC it agrees with the tense head, which has raised to C.

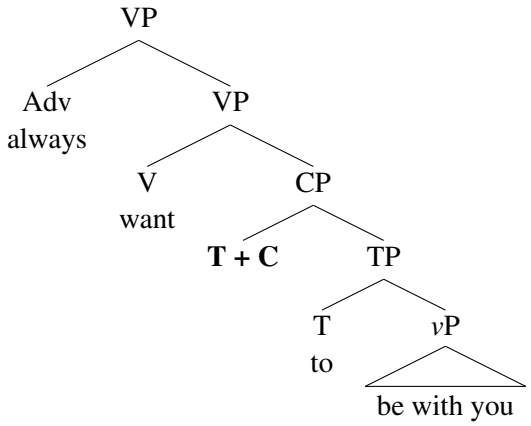
As it turns out, this correlation is relevant to AC. *Want*, *hope*, and *expect* are PC predicates; *try*, *manage*, and *forget* are not. PC predicates are therefore the same as those that permit AC readings with temporal adverbs, and select for complements that have independent tense specification.

(34) a. John {wanted / hoped / expected} to meet at 6.

b. *John {managed / tried / forgot} to meet at 6.

This correlation suggests that T-to-C movement in the temporally independent complements of verbs such as *want* can also offer an explanation for AC. If the tense features of the non-finite complement are present in C, it will render the embedded clause equivalent to the Reduced Non-Restructuring complements of English Raising verbs, making AC possible with a temporal adverb preceding the matrix verb.

(35)



6 FURTHER QUESTIONS AND CONCLUSION

In this squib I have argued that Adverb Climbing in English provides evidence for three types of English infinitival complement.

This analysis follows Wurmbrand's (2001) approach to Restructuring, according to which transparency effects are situated on an implicational hierarchy which reflects different sizes of infinitival complement. English generally lacks transparency effects because it selects for complements with at least *v*P and TP projections. English Raising verbs, though, occur in Reduced non-Restructuring configurations.

Matrix Verb	Non-Finite Complement	AC
Raising	TP	Yes
Control: Tenseless Infinitive	CP	No
Control: Tensed Infinitives	CP with T-to-C movement	T-modifying adverbs

The account of AC proposed here thus offers a more nuanced view of English complement structure than has previously been given. It has sometimes been assumed either that English Raising and Control complements differ in size because this is the case crosslinguistically or, alternatively, that these complements do not differ in size because English does not typically have overt complementisers in Control constructions and does not exhibit transparency effects. AC offers some evidence in favour of the former conclusion.

One remaining question for the proposal developed here is the exact mechanism by which adverbs modify relevant projections at a distance. Although they differ on whether adverb distribution is determined syntactically or semantically, Cinque's (1999) and Ernst's (2002) influential proposals assume that adverbs Merge initially in the positions where they are interpreted. Accepting this principle, the CP boundary is significant for AC because of its effect on movement: with Control verbs (and, indeed, finite ones) the presence of a CP layer blocks movement of the adverb out of the non-finite complement to a position preceding the matrix verb, presumably because an adverb within a lower CP phase is unavailable once it has been sent to Spell-Out; with Raising verbs the adverb is free to undergo this movement because it remains available within the TP complement after the matrix verb is Merged. As argued by Bok-Bennema and Kampers-Manhe (1994) for French, T-to-C movement makes the otherwise blocking CP 'transparent' for movement.

The difficulty with this explanation is that it places no constraints on which adverbs may move out of the non-finite complement in the absence of CP or presence of T-to-C movement. As discussed above, not all adverbs can 'climb' in all contexts. An alternative would be that adverbs can in fact be generated as operators not immediately local to the projections that they modify. If so, the observation that only T-modifying temporal adverbs can have AC interpretations in instances of T-to-C movement follows straightforwardly from the unavailability of other projections (vP, VP, etc.) in C. The full implications of such an approach to adverb distribution require further consideration.

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