1

Eva Engels
University of Aarhus, Denmark

# ADVERB PLACEMENT IN ENGLISH VP ELLIPSIS CONSTRUCTIONS

Adverb placement in English VP ellipsis constructions depends basically on two factors: the syntactic construction (more precisely, presence/absence of subject-auxiliary inversion) and the scope of the adverb. The present paper accounts for the influence of these factors by the interaction of violable constraints in an Optimality Theoretic framework.

## 1 Data

Although the order *finite auxiliary < adverb* ("<" = precedes) is usually preferred over the order *adverb < finite auxiliary* in English, (1), the former is unacceptable if it coincides with adverb placement immediately in front of a VP ellipsis site in sentences such as (2) and (3). As shown in (4), the order *finite auxiliary < adverb* is possible in VP ellipsis constructions as long as some element intervenes between the adverb and the ellipsis site.

(1)    a.  *?George and Martha* **probably never** *have* ...
        b.  *George and Martha* *have* **probably never** ...
        *... seen a real politician.* (Baker 1981: 309)

(2)       *Fred has never been rude to Grandfather, but ...*
        a.  *... John* **always** *has* __.
        b.  *\*... John* *has* **always** __. (Baker 1981: 309)

(3)       *John has read this book, and ...*
        a.  *... Otto* **probably** *has* __, *too.*
        b.  *\*... Otto* *has* **probably** __, *too.* (Sag 1978: 149)

(4)    a.  *John's often been arrested, although Mary's* **never** *been* __.
        b.  *Bill is living in France, but John is* **probably** *not* __. (Wilder 1997: 348)

Note that post-auxiliary adverb placement is also ruled out if the adverb's sister constituent does not include any phonetic material due to topicalization or *wh-*movement out of a copula construction; cf. (5) and (6).

(5)        *They used to be Socialists, but ...*
    a.    *... Communists they    **never** were            __.*
    b.  *\*... Communists they                were  **never** __.*          (Sag 1978: 148)

(6)        *I don't know ...*
    a.    *... how happy they  **ever**   were            __.*
    b.  *\*... how happy they                were  **ever**  __.*          (Sag 1978: 148)

However, adverb placement in front of a VP ellipsis site is possible in subject-auxiliary inversion constructions (SAI).

(7)    A:  *Terry knows how to build an H-bomb.*
       B:  *No–does he **really** __?*                    (Ernst 1983: 548)

(8)    A:  *John hasn't gotten along well with Grandpa lately.*
       B:  *Has he **ever** __?*                    (Baker 1981: 313)

Moreover, an adverb that takes narrow scope with respect to a modal verb or negation may immediately precede an ellipsis site.[1]

(9)    a.  *He's gotten along well with Fred in the past few weeks, but*
           *he hasn't **always** __.*                    (Baker 1981: 313)
       b.  *?A diabetic must monitor his insulin level, and he should **regularly** __.*
       c.  *?Mary might have drunk a whole bottle of gin, but Sue can't **possibly** __.*
           *(She is still walking straight.)*

In summary, placement of an adverb to the immediate left of a VP ellipsis site is unacceptable, (2)/(3), unless SAI takes place, (7)/(8), or the adverb takes narrow scope, (9). This is illustrated in Table 1.

|                      |         | syntactic construction | |
|                      |         | no SAI | SAI |
|----------------------|---------|--------|-----|
| **adverbial scope**  | wide    | *      | ✓   |
|                      | narrow  | ✓      | ✓   |

Table 1: Acceptability of adverb placement
to the immediate left of a VP ellipsis site

## 2    Analysis

### 2.1    Basic Assumptions

This section presents an Optimality Theoretic approach to adverb placement in VP ellipsis constructions. In Optimality Theory (Prince & Smolensky 1993), grammaticality is defined as optimal satisfaction of a hierarchy of violable constraints. For a given input $i_k$, the function GEN(erator) produces a set of output candidates, $\{o_1, o_2,..., o_n\}$, out of which the one that optimally satisfies the language-specific hierarchy of violable constraints is chosen as the grammatical output by the function EVAL(uator): candidate $o_k$ is optimal in case there is no competing candidate $o_l$ such that $o_l$ violates the highest ranking constraint $o_k$ and $o_l$ disagree on less often.

Following Ernst (2002), the lexical requirements of adverbs are taken to restrict the adverbs' scope options in a clause, which in turn are decisive for their positions. For instance, a frequency adverb such as *often* in (10) may take wide or narrow scope with respect to the modal verb *can*. Under the wide scope reading the adverb may precede or follow the finite auxiliary in English; cf. (10)a and (10)b (see also (1) above). In contrast, under the narrow scope reading the adverb is restricted to post-auxiliary position; an adverb in pre-auxiliary position cannot receive a narrow scope reading (compare (10)a with (10)b).

(10)   a.   *Students          can    **often**   run up to the mountaintop.*
             i)   'Students often can run up to the mountaintop.'
             ii)  'Students can run often up to the mountaintop.'

       b.   *Students **often**  can            run up to the mountaintop.*
             i)   'Students often can run up to the mountaintop.'
             ii) #'Students can run often up to the mountaintop.'     (Ernst 2002: 383)

Assume that adverbial scope is specified in the input. An adverb may be merged in any position in which it c-commands (the base position of) all and only those elements it takes scope over; cf. Engels (2005). Hence, under a wide scope reading an adverb has to be merged somewhere above the base position of the finite auxiliary; under a narrow scope reading, it has to be merged below the auxiliary.[2] It follows that a variety of adverb positions are allowed for in the competing candidates. The violable constraints and their hierarchic ranking decide on which of these positions is the optimal one in a given context.

The fact that a finite auxiliary may precede an adverb with a wide scope reading as in (10)a indicates that the auxiliary undergoes Aux°-to-I° movement. In Grimshaw (1997), this movement is accounted for by the constraints OBLIGATORY HEADS and STAY.

(11)  a.  OBLIGATORY HEADS (OBHD):
          A projection has a [lexicalized, E.E.] head.

      b.  STAY:
          Trace is not allowed.                            (Grimshaw 1997: 374)

Given that movement of the finite auxiliary is obligatory, as captured by dominance of OBHD over STAY, OBHD >> STAY (cf. section 2.3), pre-auxiliary and post-auxiliary positions of an adverb with wide scope reading must contrast in the attachment site of the adverb, adjoined to I' and AuxP, respectively (see candidates T1-b and T1-c in Tableau 1). [3,4]
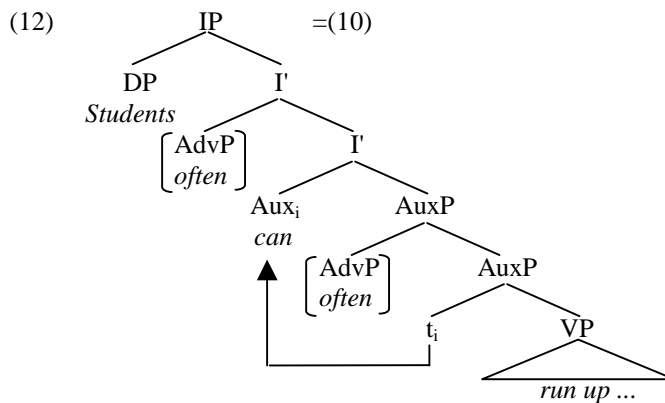
(12)



Tableau 1 Optionality of the order of wide scope adverb and finite auxiliary

| =(10) | | *Students (often) can (often) run up ...* | OBHD | STAY |
|---|---|---|---|---|
| | a. | [$_{IP}$ *Students* e [$_{AuxP}$ ***often*** [$_{AuxP}$ *can* [$_{VP}$ *run up ...*]]]] | *! | |
| ☞ | b. | [$_{IP}$ *Students **often*** [$_{I'}$ *can$_i$* [$_{AuxP}$ t$_i$ [$_{VP}$ *run up ...*]]]] | | * |
| ☞ | c. | [$_{IP}$ *Students can$_i$* [$_{AuxP}$ ***often*** [$_{AuxP}$ t$_i$ [$_{VP}$ *run up ...*]]]] | | * |

The hypothesis that pre-auxiliary and post-auxiliary adverb positions correspond to structurally different positions, adjoined to I' vs. adjoined to AuxP, and do not reflect optional movement of the finite auxiliary to a singular higher

head (see e.g. Emonds 1976 and Baker 1971, 1981) is supported by the fact that adverbs may co-occur in these two positions.

(13)      *George and Martha **probably** have **never** seen a real politician.*

Adjunction to X'-level projections has often been taken to be strictly prohibited for reasons of restrictiveness, limiting adverb adjunction to XPs. However, the renunciation of X'-adjunction necessitates the postulation of a cluster of functional projections and optional movement to their heads (see Cinque 1999). Approaches allowing for X'-adjunction permit a more restrictive theory of empty functional heads and movement triggers, as captured by OBHD and STAY in the present analysis.

## 2.2   Placement of wide scope adverbs in non-inverted VP ellipsis constructions

As discussed in section 1, an adverb with a wide scope reading cannot immediately precede an ellipsis site in clauses without SAI; some phonetic element has to intervene between the adverb and the ellipsis site (compare examples (2) and (3) with (4) above). In avoiding placement immediately in front of an ellipsis or extraction site, adverbs pattern like contracted auxiliaries. The acceptability of auxiliary contraction apparently depends on the phonological context: a contracted form requires the presence of a stressed syllable to its right preceding the gap; cf. examples (14) and (15). As illustrated in (16), a weak pronoun does not suffice (Baker 1971, 1981, Wilder 1997, among others).

(14)      *I wonder ...*
    a.   *... where the party* **is**   __ *tonight.*
    b.  *\*... where the party* **'s**   __ *tonight.*       (Zagona 1988: 106)

(15)      a.   *I don't know where John's been __.*       (Wilder 1997: 348)
    b.   *They said that Paul would be polite, but polite, he**'s** actually not __.*

(16)      a.  *\*What**'s** it __?*
    b.  *\*What**'s** it __ now?*      (in the sense of 'what is the matter now?')
    c.   *What**'s** it for __?*
    d.   *What**'s** that __?*       (Wilder 1997: 351)

Remember that extraction of the complement of the copula has the same effect on adverb placement as VP ellipsis, see (5) and (6) above. However, the mere

existence of an extraction site apparently does not block occurrence of an adverb or a contracted auxiliary immediately in front of it. Given that the subject originates in a VP-internal position (cf. Koopman & Sportiche 1985, 1991, Kitagawa 1986, among others), the adverb in (17)a and the contracted auxiliary in (17)b immediately precede the trace of the subject.

(17)    a.  *John_j* **probably** [_VP_ *t_j kissed Mary*]
        b.  *Mary_j's*    [_VP_ *t_j left*]

These facts point to the conclusion that adverbials do not avoid placement to the immediate left of an ellipsis/extraction site as such but attachment to a constituent that does not contain any phonetic material at all. This is prohibited by the constraint in (18).

(18)        ADJUNCT CONTENT (ADJCON):
            Adjuncts are sisters to constituents which include phonetic material.

As argued in section 2.1, the finite auxiliary moves to I° (OBHD >> STAY). ADJCON rules out adverb attachment to AuxP if AuxP is phonetically empty, e.g. due to VP ellipsis: the adverb has to adjoin to I' where it precedes the finite auxiliary satisfying ADJCON (compare Tableau 2).
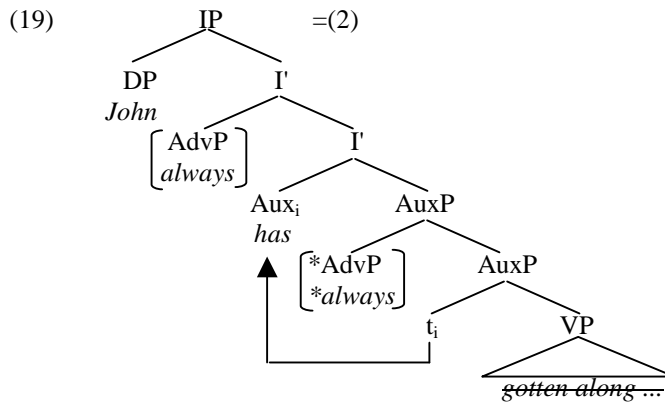
(19)            IP          =(2)

Tableau 2 No adverb placement in front of an ellipsis site

| =(2) | | *... John (always) has (\*always) __.* | OBHD | ADJCON | STAY |
|---|---|---|---|---|---|
| | a. | [IP *John* e [AuxP ***always*** [AuxP *has* [VP ~~gotten along well ...~~]]]] | *! | | |
| ☞ | b. | [IP *John* ***always*** [I' *has$_i$* [AuxP t$_i$ [VP ~~gotten along well ...~~]]]] | | | * |
| | c. | [IP *John has$_i$* [AuxP ***always*** [AuxP t$_i$ [VP ~~gotten along well ...~~]]]] | | *! | * |

However, the sequence *finite auxiliary < wide scope adverb* is not unacceptable in VP ellipsis constructions as such: post-auxiliary adverb placement is possible as long as some phonetic material intervenes between the adverb and the ellipsis site, cf. (4). In this case ADJCON is not violated.[5]

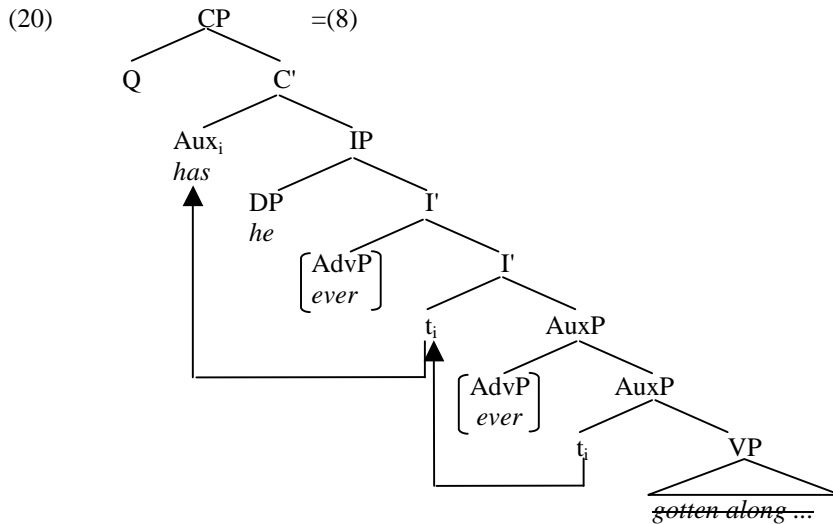Tableau 3 Optional order of adverb and finite auxiliary in VP ellipsis constructions

| =(4) | | *... Mary (?never) has (never) been __.* | OBHD | ADJCON | STAY |
|---|---|---|---|---|---|
| ☞ | a. | [IP *Mary* ***never*** [I' *has$_i$* [AuxP1 t$_i$ [AuxP2 *been* [VP ~~arrested~~]]]]] | | | * |
| ☞ | b. | [IP *Mary has$_i$* [AuxP1 ***never*** [AuxP1 t$_i$ [AuxP2 *been* [VP ~~arrested~~]]]]] | | | * |

## 2.3    Placement of adverbs in inverted VP ellipsis constructions

In questions, CP is projected and, consequently, the ranking OBHD >> STAY requires that the finite auxiliary move to C°. Dominance of OBHD over ADJCON predicts that SAI takes place even if it results in placement of an adverb in front of the ellipsis site.[6]

Tableau 4 Adverb placement in front of an ellipsis site in SAI constructions

| =(8) | | *... \*(Has) he ever (\*has) __?* | OBHD | ADJCON | STAY |
|---|---|---|---|---|---|
| | a. | [CP Q e [IP *he* ***ever*** [I' *has$_i$* [AuxP t$_i$ [VP ~~gotten ...~~]]]]] | *! | | * |
| ☞ | b. | [CP Q *has$_i$* [IP *he* ***ever*** [I' t$_i$ [AuxP t$_i$ [VP ~~gotten ...~~]]]]] | | * | ** |
| ☞ | c. | [CP Q *has$_i$* [IP *he* t$_i$ [AuxP ***ever*** [AuxP t$_i$ [VP ~~gotten ...~~]]]]] | | * | ** |

(20)              CP          =(8)

```
              CP              =(8)
          /        \
         Q          C'
                  /    \
               Aux_i    IP
               has    /    \
                    DP      I'
                    he    /    \
                      [AdvP]    I'
                      [ever]  /    \
                      t_i    AuxP
                          /        \
                       [AdvP]      AuxP
                       [ever]    /      \
                              t_i        VP
                                    ⟨gotten along ...⟩
```

## 2.4    Placement of narrow scope adverbs in VP ellipsis constructions

Remember that adverbs have to be merged according to their scope (cf. section 2.1). Hence, under a narrow scope reading, an adverb may only be merged below the wide scope element. The fact that an adverb with a narrow scope reading is restricted to post-auxiliary position points to the conclusion that adverb movement to a position in front of the wide scope element is prohibited. This is captured by the constraint SCOPEMATCHING; compare Ernst (2002: 420).

(21)        SCOPE MATCHING (SCMA):
            The scope of the head of a chain of an adverbial matches
            the scope of its foot.[7]

The acceptability of placement of a narrow scope adverb to the immediate left of an ellipsis site follows from the ranking SCMA >> ADJCON: the adverb cannot escape this position by moving to some position in front of the element that takes wider scope (e.g. auxiliary or negation); cf. Tableau 5.
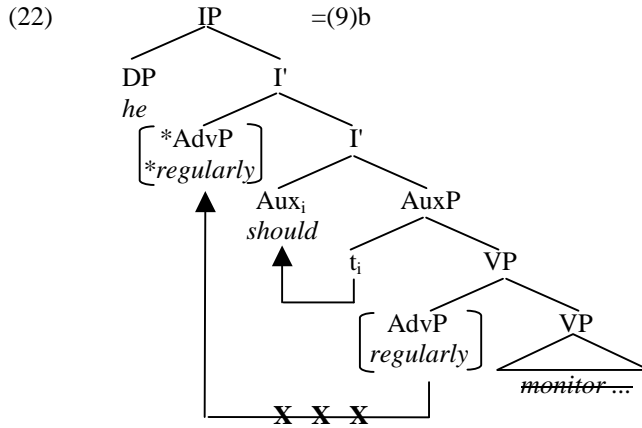
(22)     IP     =(9)b

```
            IP
          /    \
        DP      I'
        he     /  \
         ⎡*AdvP   ⎤   I'
         ⎣*regularly⎦  /  \
              Aux_i    AuxP
              should   /   \
                  t_i   VP
                       /  \
                 ⎡AdvP    ⎤  VP
                 ⎣regularly⎦  /\
                          monitor ...
              X  X  X
```

Tableau 5 Placement of a narrow-scope adverb in front of an ellipsis site

| =(9)b  ... he (*regularly) should (regularly) __. | OB HD | SC MA | ADJ CON | STAY |
|---|---|---|---|---|
| ☞  a.  [IP he should_i [AuxP t_i [VP **regularly** [VP monitor ...]]]] | | | * | * |
| b.  [IP he **regularly_j** [I' should_i [AuxP t_i [VP t_j [VP monitor ...]]]]] | | *! | | ** |

## 3  Conclusion

It has been shown that the unacceptability of adverb occurrence to the immediate left of a VP ellipsis site as in (2) and (3) cannot be due to a strict prohibition against this placement: an adverb may precede the ellipsis site if it takes narrow scope or SAI takes place. The OT framework proves to be adequate and suitable to account for the influence of these factors in determining adverb positions: their interrelation is captured by the interaction of the violable constraints.

## Notes

---

[1] Since the adverb in (7), (8), and (9) is the final overt element in the clause, its position relative to the ellipsis site cannot be deduced from surface order. However, there is evidence that the adverb does precede the gap in these sentences.

First, as Abels (2003) mentions, some of these adverbs cannot occur post-verbally.

(i)      A:    *John hasn't gotten along with Grandpa lately.*
         B:    *\*Has he gotten along with Grandpa **ever**?*                    (Abels 2003: 7)

(ii)          *??Fred has sometimes been rude to Grandfather, but he hasn't been rude*
              *to Grandfather **always**.*

Second, contracted auxiliaries are acceptable in the presence of an adverb. Auxiliary contraction requires a stressed syllable to the left of the gap (cf. section 2.2), pointing to the conclusion that the medial adverb precedes the gap.

(iii)    a.    *Where's he \*(**usually**) __ (when Mary is in London)?*
         b.    *(A: The weather was bad yesterday.)*      B: *How's it \*(**normally**) __ in May?*
         c.    *(A: John hasn't been to the gym lately.)*   B: *Why's he \*(**ever**) __?*

However, note that even if SAI applies or the adverb takes narrow scope, not all types of adverbs may attach to a phonetically empty constituent. The various types of adverbs differ in which types of gaps they may precede (*wh*-movement vs. topicalization / VP ellipsis) under these conditions; cf. Engels (2005).

[2] As a result, the interpretative ambiguity of the sequence *finite auxiliary < adverb* in (10)a correlates with a structural contrast.

[3] Moreover, the two constraints predict that adverbials occur in adjoined positions (unless their placement in a specifier position is explicitly required by some higher ranking constraint): adverb placement in the specifier position of some functional projection necessitates the integration of a further head and, consequently, results in an additional violation of OBHD or STAY, depending on whether or not the finite auxiliary moves to or through this functional head.

[4] The unacceptability of adverb intervention between the clause-initial constituent and the finite verb in e.g. German (or between the subject and the finite verb in e.g. French) can be accounted for by a constraint that prohibits adverb adjunction to intermediate bar-level projections (\*X'-ADJUNCTION) and its dominance over any constraint that might favor adjunction to X'. The fact that adverbs may intervene between the subject and the finite auxiliary in English points out that there are higher ranking constraints that motivate adverb attachment to I', as e.g. ADJCON introduced in (18) below. On other constraints that might prefer pre-auxiliary adverb positions, see Engels (2005).

[5] Occurrence of overt phonetic material after a gap does not allow a medial adverb to precede the gap.

(i)          *I wonder ...*
     a.     *... where Gerard* **usually**    *is*                 __ *at this time of day.*
     b.     *\*... where Gerard*             *is*   **usually**    __ *at this time of day.*
                                                                      (Baker 1971: 170)

(ii)         *Mary is taking her final exam this term, and ...*
     a.     *... Sue*   **probably**   *will*                  __ *next term.*
     b.     *\*... Sue*                *will*   **probably**   __ *next term.*

Under the assumption that ADJCON also applies to clause-final adverbials, the contrast in (i) and (ii) is accounted for: to satisfy ADJCON, the clause-final adverbial has to right-adjoin above the finite auxiliary; consequently, the sister constituent of the medial adverb does not include any phonetic material in (i)b and (ii)b whereas it contains the finite auxiliary in (i)a and (ii)a.

[6] Note that an adverb that is within the scope of a question cannot occur in a position c-commanding C° (i.e. adjoined to C' or CP). Clause-initial placement of an adverb in questions is only possible if the adverb takes scope over the question, as e.g. the discourse-oriented adverb in (ii) does. (Note that (ii)c is ungrammatical under a discourse-oriented reading of the adverb.)

(i)    a.    *\****Apparently****, where had the dog gone?*
       b.    *\*Where* **apparently** *had the dog gone?*
       c.    *Where had the dog* **apparently** *gone?*          (Ernst 2002: 429)

(ii)   a.    **Briefly***, why did Sebastian hold the pistol?*
       b.    *\*Why* **briefly** *did Sebastian hold the pistol?*
       c.    *\*Why did Sebastian* **briefly** *hold the pistol?*     (Ernst 2002: 427/429)

This contrast follows from the restriction to merge adverbs according to their scopal properties (see section 2.1) and the requirement of ScMA (see (21) below).

Moreover, adverb placement in front of the subject is unacceptable in questions and other clauses with SAI. The fact that topics cannot be placed in this position either suggests that there is a general prohibition against IP-adjunction in these contexts in English which might be accounted for by a corresponding violable constraint, see Engels (2005).

(iii)  a.    **At the party***, Mary said nothing.*
       b.    *\*Did* **at the party** *Mary say anything?*          (Rochemont 1989: 148)

(iv)   a.    *If*   **yesterday**   *John had*   *done that, ...*
       b.    *\*Had*   **yesterday**   *John*        *done that, ...*     (Rizzi 1997: 303)

(v)    a.    **John***, Mary likes.*
       b.    *\*Does,* **John***, Mary like?*          (Rochemont 1989: 148)

---

[7] "Scope matching holds if the lexical material is identical except for 'presupposed tense' and the base position copy of the adjunct" (Ernst 2002: 420).

The constraint SCMA is based on Ernst's (2002) *Scope Matching Constraint on Adjunct Topicalization*, which is restricted to topicalized adverbials. Although adverbs may be topicalized in English, (i)a, adverb topicalization must not cross a scopal element such as another adverb, a modal verb, or negation, (i)b, nor may it cross a clause-boundary, (i)c. In contrast, *wh*-movement of an adverbial may apply across other scopal elements and clause boundaries, (ii). In the present analysis in which the condition on scope matching is not restrained to a particular type of movement, this discrepancy can be accounted for by the ranking WH >> SCMA >> TOPIC.

(i)      a.      ***Icily**$_i$, he spoke to the lieutenant $t_i$.*
         b.      *\***Icily**$_i$, he didn't speak to the lieutenant $t_i$.*
         c.      *\***Carefully**$_i$, they said that he eased the violin out of its case $t_i$.*

                                                                    (Ernst 2002: 420-23)

(ii)     a.      ***How fast**$_i$ can you run $t_i$?*
         b.      ***How quietly**$_i$ did you say that he had come in $t_i$?*           (Ernst 2002: 423)
         c.      ***When**$_i$ do you think that he will be there $t_i$?*           (Nakajima 1991: 343)

## References

Abels, Klaus. 2003. Auxiliary adverb word order revisited. In *Proceedings of UPenn Colloquium on Linguistics* 26: 1-15.
Baker, Carl L. 1971. Stress level and auxiliary behavior in English. *Linguistic Inquiry* 2: 167-181.
--- 1981. Auxiliary-adverb word order. *Linguistic Inquiry* 12: 309-315.
Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective.* New York: Oxford University Press.
Emonds, Joseph. 1976. *A transformational approach to English syntax*. New York: Academic Press.
Engels, Eva. 2005. *Adverb Placement. An Optimality Theoretic Approach*. Ph.D., University of Potsdam.
(http://opus.kobv.de/ubp/volltexte/2005/245/pdf/engels.pdf)
Ernst, Thomas B. 1983. More on adverbs and stressed auxiliaries. *Linguistic Inquiry* 14: 542-549.
--- 2002. *The syntax of adjuncts*. Cambridge: Cambridge University Press.
Grimshaw, Jane. 1997. Projection, heads, and optimality. *Linguistic Inquiry* 28: 373-422.
Kitagawa, Yoshihisa. 1986. *Subjects in English and Japanese.* Ph.D. dissertation, University of Massachusetts.
Koopman, Hilda, and Dominique Sportiche. 1985. Theta Theory and extraction. *GLOW Newsletter* 14: 57-58.
Koopman, Hilda, and Dominique Sportiche. 1991. The position of subjects. *Lingua* 85: 211-258.
Nakajima, Heizo. 1991. Transportability, scope ambiguity of adverbials, and the Generalized Binding Theory. *Journal of Linguistics* 27: 337-74.
Prince, Alan, and Paul Smolensky. 1993. *Optimality Theory: Constraint interaction in Generative Grammar.* RuCCS-TR-2. ROA-537, http://ruccs.rutgers.edu/roa.html.
Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar: Handbook in generative syntax*, ed. L. Haegeman, 281-337. Dordrecht: Kluwer.
Rochemont, Michael. 1989. Topic islands and the subjacency parameter. *Canadian Journal of Linguistics/Revue canadienne de linguistique* 34: 145-170.
Sag, Ivan. 1978. Floated quantifiers, adverbs, and extraction sites. *Linguistic Inquiry* 9: 146-150.
Wilder, Chris. 1997. English finite auxiliaries in syntax and phonology. In *Clitics, pronouns, and movement*, ed. J. Black and V. Motapanyane, 321-362. Amsterdam: Benjamins.

Zagona, Karen T. 1988. *Verb phrase syntax: A parametric study of English and Spanish*. Dordrecht: Kluwer.