# VP-SHELL STRUCTURE AND ADVERB SCOPE AMBIGUITY[*]

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1.   Introduction

It has become a standard view that so-called lexical causative verbs in English like the one in (1a) have a double VP structure illustrated in (1b). The agent is generated as an argument of the upper verb v, and the theme as an argument of the lower verb V. The surface form of the verb is derived by combining V with v. This structure is assumed to converge with a compositional semantic analysis of causative verbs shown in (1c): these verbs are composed of a kind of CAUSE operator and a predicate expressing the event or state that is caused. Thus, it seems possible to identify v in (1b) with the CAUSE operator and V with the predicate describing the result:

(1)   a.   John melted the ice.

   b.

        (cf. Hale and Keyser 1993, Chomsky 1995)
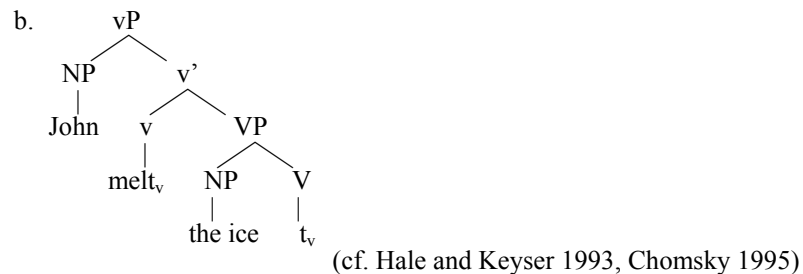
   c.   melt: [x cause [y be/become MELTED]]
                    (cf. Dowty 1979, Jackendoff 1983)

   However, this line of decomposition analysis of lexical causative verbs has been challenged by observations concerning the interpretation of adverbs. It is pointed out by Fodor (1970) and Pylkkänen (2002) that these verbs in English do not exhibit modifier scope ambiguities that are predicted under this analysis. For example, Pylkkänen (2002) indicates that if the verb in (2a) has the VP structure in (2b), the adverb in (2a) should be able to attach either at the lower or the higher VP, and be interpreted ambiguously, modifying either the causing

event or the caused event. However, the adverb in (2a) yields only one interpretation in which it modifies the causing event (John's action), and not the caused event (Bill's awakening).[1]

(2)   a.   John awoke Bill grumpily.   (John/*Bill)
      b.   [$_{vP}$ John caused [$_{VP}$ Bill awake]]

                                        (see Pylkkänen 2002: 92-93)

In this paper, I investigate the interpretation of what are called mental-attitude adverbs like *grumpily* in (2a) in lexical causative sentences in English. It is observed that there are lexical causatives in which adverbs show the modifier scope ambiguity predicted under the decomposition analysis. These causatives involve a PP complement like a location or a resultative AP that functions as a predicate for the object NP. I will argue that the presence of a predicative phrase plays an important role in licensing the adverbs, and it also provides us with an account of why ambiguity is not found in (2) and similar other lexical causatives. It is also noted that the syntactic environments in which ambiguous adverbs are found are comparable to the environments in which floating quantifiers are found in English. This suggests that the adverbs and the quantifiers are subject to the same licensing condition. Throughout the discussion, I will argue for the following two points: (i) the decomposition analysis is supported on the basis of adverb scope ambiguity with respect to lexical causatives involving a PP or AP complement and (ii) the decomposition analysis of lexical causatives without such a complement is not challenged just because of the lack of adverb scope ambiguity.

The organization of this paper is as follows. In section 2, I provide examples of the lexical causatives in which adverbs yield ambiguous interpretations, contrasting them with the causatives where adverbs do not exhibit ambiguities. The distribution of ambiguous adverbs is also compared with that of floating quantifiers. In section 3, I propose a licensing condition of the adverbs, which accounts for why they exhibit scope ambiguity in some lexical causatives and not in others. In section 4, I provide independent support for a part of the analysis presented in section 3. Finally, concluding remarks are given in section 5.

2.   Observations on the Interpretation of Mental-Attitude Adverbs

In this section, I consider the interpretation of what are called mental-attitude adverbs such as *reluctantly*, *calmly*, *willingly*, *anxiously*, *eagerly*, *gladly*, *sadly* (henceforth, following Ernst (2002), we call these M-A adverbs) in lexical causative sentences. These adverbs have been treated as predicational in that they are interpreted as taking an argument of the verb as one of their arguments (Jackendoff 1972, Lakoff 1972, Ernst 2002). In particular, it has been noted that they take the agent argument of the verb when they appear in post-verbal position (Jackendoff 1972, McConnel-Ginet 1982, Travis 1988). Departing from this tradition, I point out here that M-A adverbs in such position can be

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[1] Parentheses given after example sentences indicate the arguments with which the adverb in question is or is not associated.

associated with the theme argument of the verb in certain syntactic environments. It is also noted that the relevant environments are similar to those in which floating quantifiers modifying the object NP are found.

2.1 M-A adverbs

In the following examples of lexical causatives, the M-A adverbs in post- verbal position are predicated of the agent argument (the subject) and not of the theme argument (the object):

(3)   a.   Mary dried her baby **reluctantly**.   (Mary/*her baby)
        b.   Mary awoke John **unwillingly**.   (Mary/*John)
        c.   Mary warmed her child **happily**.   (Mary/*her child)

This is the pattern observed in previous studies with respect to these adverbs modifying lexical causative verbs (see section 1).
      However, these adverbs can be associated ambiguously with either the agent or the theme argument in lexical causatives involving a locative, a goal, or a source PP, as shown in (4):[2]

(4)   a.   Tom put his children **happily** on the bed.   (Tom/his children)
        b.   John brought his children **unhappily** to the party.
                                 (John/his children)
        c.   Mary dragged her child **unwillingly** out of the bed.
                                   (Mary/her child)

It seems that the PP complement plays a certain role in licensing the adverbs predicated of the theme in (4); without the PP, the adverbs can only be construed with the agent argument, as shown by the examples in (5), minimally contrasted with some in (4):

(5)   a.   John brought his children **unhappily**.   (John/*his children)
        b.   Mary dragged her child **unwillingly**.   (Mary/*her child)

      Furthermore, the ambiguity of M-A adverbs is also found in lexical causatives involving resultative AP predicates. The adverbs in (6) can be construed with either the agent or the theme:

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[2] One of our informants observed that concerning the adverbs in (4), the reading associated with the agent is more salient and easier to obtain than the reading construed with the theme. The informant gave the same judgments on the adverbs in (6) with resultative predicates.
  Furthermore, our informants noted that the ambiguity of the adverbs in (4) is also found when they appear in sentence-final position, as shown in (i):
(i)   Tom put his children on the bed **happily**.   (Tom/his children)

(6) a.   Mary dried the boys **willingly** calm.   (Mary/the boys)
     b.   John warmed the boys **happily** dry.   (John/the boys)
     c.   Nancy washed the boys **reluctantly** clean.   (Nancy/the boys)

The reading associated with the theme in (6) seems to depend on the presence of the resultative AP; the adverb can only be construed with the agent without the AP, as shown by the examples in (7), minimally contrasted with those in (6):

(7) a.   Mary dried the boys **willingly**.   (Mary/*the boys)
     b.   John warmed the boys **happily**.   (John/*the boys)
     c.   Nancy washed the boys **reluctantly**.   (Nancy/*the boys)

Looking at the above examples from (3) through (7), a certain pattern is observed. The M-A adverbs can be construed with the theme object when a certain constituent other than the adverb appears after the object, as we see in (4) and (6); otherwise they are unambiguously associated with the agent subject, as shown in (3), (5), and (7).

Note, however, that there seems to be a restriction on the constituent which allows an M-A adverb to be associated with the theme object. It needs to be a predicative phrase with respect to the theme. It cannot be an adverbial constituent without having such a relation to the theme, as shown in (8), where the M-A adverbs can only be associated with the agent subject:

(8) a.   John brought his children **unhappily** yesterday.
                                        (John/*his children)
     b.   Mary dragged her child **unwillingly** this morning.
                                        (Mary/*her child)
     c.   Mary dried the boys **willingly** for joy.   (Mary/*the boys)
     d.   Mary warmed her child **happily** with a heater.
                                        (Mary/*her child)

These examples are contrasted with those in (4) and (6), where the PP or the AP at the end of the sentence is interpreted as being predicated of the theme object.

2.2   A Comparison between M-A Adverbs and Floating Quantifiers

In the last subsection, we saw that M-A adverbs can be associated with the theme object if the theme is followed by a PP or a AP having a predicative relation with the theme. I indicate here that a similar pattern has been observed with the distribution of floating quantifiers (FQs) in English.

FQs that modify the subject NP can occur after the subject relatively freely, as shown in (9). It does not matter whether any element occurs after the verb or not:

(9) a.   The men **all** left.
     b.   The guides **each** took a separate path.
     c.   The children **both** got dirty.   (Postal 1974: 109)

In contrast, FQs that modify an object NP cannot appear after the object if no element other than the FQ follows the object:[3]

(10)   a.   *Mary hates the marines **both**.   (Postal 1974: 110)
       b.   *I called the men **each**.   (Maling 1976: 714)
       c.   *He read the books **all**.   (Baltin 1995: 210)

These FQs, however, can be associated with an object if a certain constituent occurs after the object, as shown with the examples in (11) given by Maling (1976):

(11)   a.   Mary put the books **each** (back) on the proper shelf.
       b.   We consider the Joneses **both** unbearably pompous.
       c.   She called the men **both** bastards.   (Maling 1976: 712, 715)

Given these facts, Maling (1976) notes that when quantifiers float out of the NP they modify, there must be some constituent to the right of the NP. The examples in (9) and (11) are well-formed because the FQs are followed by a VP (in (9)), PP, AP, or NP (in (11)). By contrast, the examples in (10) are ungrammatical with no constituent after the FQs.

Moreover, Maling (1976) observes that the constituent that is required for an FQ cannot be adverbial. In (12), the FQs modifying the object NPs are followed only by adverbs and the sentences are ungrammatical:

(12)   a.   * I saw the men **all** yesterday.
       b.   * She found the missing books **both** quickly.
                                    (Mailing 1976: 716)

Given these examples, Baltin (1995) proposes that FQs require a predicative category to follow them. The VPs in (9), the PP in (11a), the AP in (11b), and the NP following the FQ in (11c) all count as predicative phrases, while the adverbs following the FQs in (12) do not.

Note that this restriction on FQs is similar to that on M-A adverbs discussed in section 2.1. The adverbs can be associated with the agent subject in all the examples, in which the agent is always followed by a VP: this is also found with the FQs modifying the subject. However, the adverbs can be construed with the theme object only when the theme is followed by a predicative constituent: this is comparable to the FQs binding the object.[4]

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[3] FQs can modify an object in sentence-final position if the object is a pronoun rather than a full NP, as shown in (i):

(i)   I called them **all**.   (Postal 1974: 110)

Mailing (1976) argues that this kind of examples is derived by a rule that applies only to a pronominal NP. The present study focuses on those FQs that modify full NPs.

[4] In fact the distribution of FQs seems to be more restricted than that of M-A adverbs. For example, as shown in (i), an FQ modifying the subject NP appears less frequently in VP-final or sentence-final position (Akiyama 1994, referring to Poutsma 1904-29):

(i)   *? The students came to the party **all**.   (Akiyama 1994: 111)

The observation made here is not unexpected given that FQs have been analyzed as adverbs in some works (see Dowty and Brodie 1984, Jaeggli 1982, Akiyama 1994). Although I do not provide any analysis of these properties of FQs in this paper, it seems clear that there are elements other than M-A adverbs whose distribution is accounted for on the basis of the notion of predicative phrase.

3.   Explaining the Interpretation of M-A adverbs

In this section, I present an analysis of the distribution and the interpretation of the M-A adverbs discussed in section 2.1. First, we consider some previous studies of these adverbs in section 3.1. Then, I propose a licensing condition of the adverbs in section 3.2.

3.1   Previous Studies

Jackendoff (1972) observes that M-A adverbs receive different interpretations depending on their positions in sentences (see also McConnell-Ginet 1982). When they appear before auxiliary verbs, as shown in (13), they refer to the surface subject of the sentence. That is, the intention is attributed to *Joe* in (13a), while it is to *Mary* in (13b), which is a passive counterpart of (13a):

(13)   a.   Joe **intentionally** has seduced Mary.   (Joe/*Mary)
          b.   Mary **intentionally** has been seduced by Joe.   (Mary/*Joe)
                                                          (Jackendoff 1972: 82)

In contrast, when the adverbs appear in post-verbal position, as shown in (14), they refer to the agent argument of the verb. Thus, in both (14a) and (14b), *Joe* is interpreted as being intentional whether or not the argument is also the subject of the sentence:[5]

(14)   a.   Joe seduced Mary **intentionally**.   (Joe/*Mary)
          b.   Mary was seduced **intentionally** by Joe.   (Joe/*Mary)
                                                          (Jackendoff 1972: 83)

Travis (1988) argues that this kind of difference in interpretation of adverbs comes from the difference in what head licenses them, or more exactly, what feature of a head licenses them. She assumes that those adverbs appearing before auxiliary verbs like that in (13a, b) are licensed by the AGR feature of INFL, and assign an adjunct theta-role (see Zubizarreta 1982) to the subject

On the other hand, as we saw in 2.1, M-A adverbs associated with the subject can occur in such position. It is beyond the scope of this paper to account for this difference between FQs and M-A adverbs.

[5] Jackendoff (1972) calls the M-A adverbs in (13) subject-oriented adverbs and those in (14) manner adverbs. However, he seems to find subject-oriented nature with both types of adverbs, noting that the interpretation of the adverbs in (13) is based on the derived subject and that in (14) is on the deep subject (Jackendoff 1972: 83).

coindexed with AGR. This yields their subject sensitive reading. On the other hand, those adverbs in post-verbal position like that in (14a, b) are licensed by the Manner feature of V, and assign an adjunct theta-role to the external argument of the verb. This leads to their agent sensitive reading. Thus, the licensers of M-A adverbs and the recipients of the adjunct theta-roles of the adverbs are summarized as shown in (15):

(15) <u>Position of Adv</u>   <u>Licenser (Head, Feature)</u>   <u>Recipient of θ-role</u>

Position of Adv	Licenser (Head, Feature)	Recipient of θ-role
Pre-Aux	INFL, AGR	Subject
Post-V	Verb, Manner	External argument

(see Travis 1988: 299)

      This dichotomy of M-A adverbs is supported further by the following observation made by Ernst (2002: 66-67). When the adverbs appear before auxiliary verbs, the adverbs mean that the referent of the argument predicated of them actually has the mental state in question, though the state need not be manifested overtly (called state reading). On the other hand, when the adverbs are in post-verbal position, they mean that the referent of their argument shows the mental state overtly, though it does not have to be the actual state (called manner reading). Ernst illustrates this difference by giving the following examples:

(16)   a. ??Though her emotions were in turmoil, she **calmly** had left the room.
       b.   Though her emotions were in turmoil, she managed to leave the
           room **calmly**.   (Ernst 2002: 67)

In (16a), the adverb before the auxiliary yields a state reading, indicating that her mental state was actually calm when she left the room. However, this conflicts with the meaning of the concessive clause, resulting in a degraded sentence. In contrast, the adverb in post-verbal position in (16b) has a manner reading, meaning that she manifested calmness overtly. This is compatible with the concessive clause. It is possible that this difference in interpretation between the adverbs in two positions also comes from the difference in their licensing feature shown in (15).

3.2   Proposal

As regards the system of licensing adverbs given in (15), I would like to raise two issues here. One is an empirical matter. As we saw in (4) and (6) in 2.1, M-A adverbs appearing in post-verbal position can be associated not only with the agent but also with the theme argument when they occur with a PP complement or a resultative AP. This is not predicted under the system in (15), according to which the adverbs in such position are always predicated of the agent. The other issue is a conceptual one. There seems to be asymmetry between the adverbs in two positions in the way an adjunct theta-role is assigned. On the one hand, the recipient of the theta-role of pre-auxiliary adverbs is determined structurally: the argument that is coindexed with AGR, typically, the specifier of the head having AGR. On the other hand, the recipient of the theta-role of post-verbal adverbs is chosen without referring to phrase structure: it is based on the argument

structure of the verb. In what follows, I propose an analysis of the interpretations of the adverbs in (4) and (6), appealing to symmetrical licensing conditions for the adverbs in two positions. In particular, I argue that post-verbal adverbs as well as pre-auxiliary adverbs assign their theta-role to an argument in a specifier position.

In the examples in (4), the adverbs appear between the object NP and the PP complement. It is difficult to know from this linear order alone where the adverb is in the phrase structure. However, there is a piece of evidence that the adverb and the PP are (or at least can be) in a lower position than the object. This is shown by the examples in (17), where negative polarity items (NPIs) contained in the PPs are licensed by the object NPs:

(17) a. John brought no child **unhappily** to any party. (John/no child)
      b. Mary sent no patient **reluctantly** to any doctor. (Mary/no patient)
      c. Tom put no child **happily** on any bed.   (Tom/no child)

In (17), the adverbs can still be associated with either the agent or the theme. Given that NPIs in general cannot be licensed in reconstruction configurations (Laka 1990, Phillips 1996, Johnson 1997), the PPs in (17) must remain in a lower position than the object NPs: they cannot be extraposed to any right periphery position higher than the object.[6] The adverbs are also considered to be lower than the objects because they appear between the objects and the PPs.

If we assume that main verbs do not move to I in English (Pollock 1989), the adverbs in (17) must be somewhere lower than I. This analysis is supported by the following examples:

(18) a. Though her emotions were in turmoil, Mary put her children
          calmly on the bed.
      b. Though his emotions were in turmoil, Mary sent John **calmly** to
          the doctor.
      c. ?? Though her emotions were in turmoil, Mary **calmly** had put her
   children on the bed.

The acceptability of the sentences in (18a,b) indicates that the adverb *calmly*, appearing between the object and the PP like the adverbs in (17), has a manner reading discussed above (see (16)): it is interpreted as describing the agent's (Mary's) manner in (18a) and the theme's (John's) manner in (18b). If it received a state reading, a conflict would arise with the meaning of the concessive clause, as in the sentence in (18c). This is accounted for if we assume that the adverb in (18a,b) is in the domain of VP and licensed by the Manner feature of V in line with the system illustrated in (15).

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[6] Giving the following examples, Johnson (1997) observes that NPIs cannot be licensed under reconstruction configurations whether they involve A- or A'-movement:

(i)   a. *Each other's pictures* seem to the boys$_i$ [*t* to be outrageous].

       b. **Anyone's picture* seemed to no one [*t* to be outrageous].

(ii)   a. It's *each other$_i$'s pictures* that the boys$_i$ like *t*.

       b. **It's *anyone's pictures* that no one likes *t*.   (Johnson 1997: 24-25)

Given these facts, I propose that the M-A adverbs in (4), (17), and (18a,b) are in VP and licensed by the Manner feature of V. Moreover, I argue that the ambiguous interpretations of the adverbs in these examples are explained on the basis of the structure of VP. First, let us consider the relevant part of the structure in which the adverb is predicated of the theme argument, as illustrated in (19):

(19)   Tom put his children **happily** on the bed.   (= (4a))
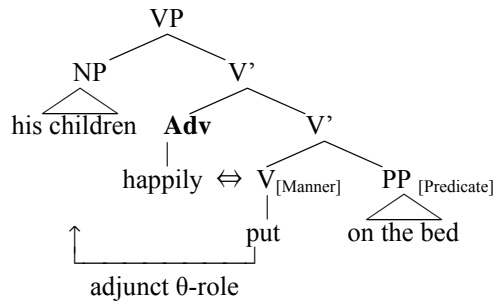
This shows the lower VP of a VP-shell structure, where the locative PP is generated as the complement of the head V and the theme NP as the specifier of V (Larson 1990, Hale and Keyser 1993). The adverb appears between the theme and the PP, adjoined to a projection of V. In this configuration, the adverb is licensed by the Manner feature of V. Now the adverb's adjunct theta-role must be assigned to some argument. As we saw in section 2.1, if there is a predicative phrase after the theme object, an M-A adverb can be predicated of the theme. I claim here that because the theme NP c-commands the PP as a predicative phrase, the theme is established as a structural subject independently of the adverb, which in turn allows the theme to become the subject argument of the adverb (cf. Larson 1988).[7] Furthermore, I assume that adverbs' adjunct theta-roles in general are assigned to an argument through their licensing head, transferred from an adverb to the head. The theta-role of the adverb in (19) is then assigned from V to the theme in head-specifier configuration.

Next, let us consider the situation in which the M-A adverbs in (4), (17), and (18a,b) are predicated of the agent argument. (20) illustrates the VP-shell structure of these examples:

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[7] Larson (1988) argues that dative complement constructions like *John sent a letter to Mary* involve an underlying clauselike VP, where V and the goal PP form a predicate and take the theme NP as its "subject".

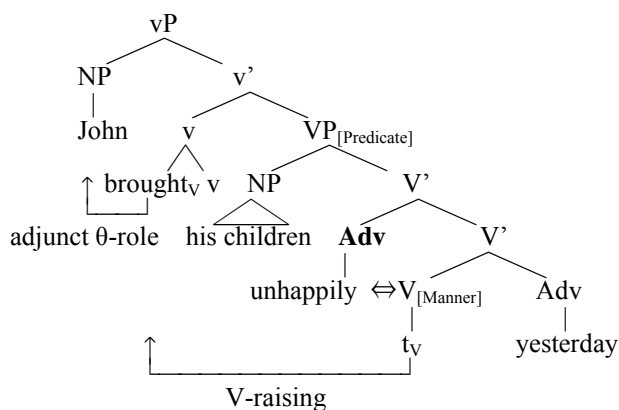(20) Tom put his children **happily** on the bed.   (= (4a))
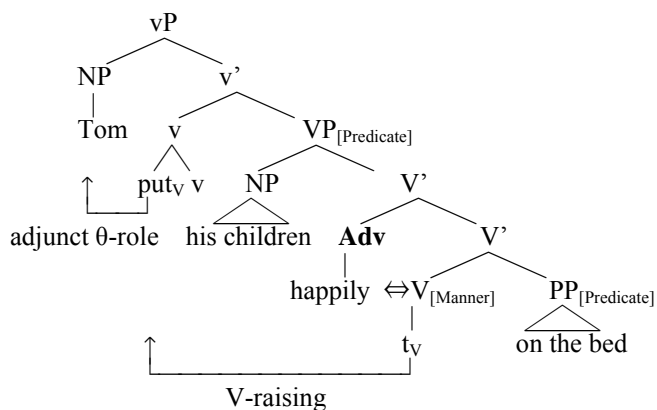
The lower VP we saw in (19) is merged with the upper verb v, and the agent argument is generated as the specifier of v. I propose that the agent is associated with the adverb through verb-raising. As noted above, when the adverb is licensed by the Manner feature of V in the lower VP, the adverb's adjunct theta-role is assumed to be transferred to V. If V raises to the upper v, as shown in (20), it has the agent NP in the local specifier position. I claim that the adverb's theta-role is assigned to the agent in this configuration. Note that the agent NP in (20) is also established as a structural subject independently of the adverb since it c-commands the lower VP, a predicative phrase.

I assume that the ambiguous interpretation of the M-A adverbs in (6) is explained in the same way. That is, given that a resultative AP predicate is generated as the complement of V like the locative PP in (19) (see Larson 1990, Hale and Keyser 1993), the theme object c-commands the AP and is established as a structural subject. This allows the theme to receive the theta-role of the adverb.

Now compare these structures in (19) and (20) with those for the examples in which the theme object is not followed by any predicative phrase and the M-A adverb can only be associated with the agent, that is, (2), (3), (5), (7), (8), (14). For example, consider the structure for (8a), whose relevant part is shown in (21). Let us assume that the verb projects a VP-shell structure and the M-A adverb is licensed in the lower VP by the Manner feature of V. I claim that the theme object in (21), unlike that in (19), cannot receive the theta-role of the M-A adverb because it does not count as a structural subject independently of the adverb: it does not c-command any predicative phrase other than the M-A adverb. However, the theta-role of the M-A adverb can be assigned to the agent NP after V raises to v, as we saw in (20), because the agent c-commands VP.[8]

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[8] As shown in (14b), M-A adverbs in post-verbal position can be construed with the agentl argument in passives as well as in their active counterparts. This kind of example would be accounted for under the present analysis if a null counterpart of the argument or the *by*-phrase is assumed to be in the specifier of vP. See Watanabe (1996) for this line of analysis of the *by*-phrase.

(21)   John brought his children **unhappily** yesterday.   (= (8a))

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                        vP
                  ┌──────┴──────┐
                 NP            v'
                  │       ┌─────┴──────┐
                John      v         VP[Predicate]
                       ┌──┴──┐    ┌────┴────┐
            ↑ broughtᵥ v    NP          V'
            │                       ┌────┴────┐
     adjunct θ-role   his children Adv        V'
                                    │      ┌───┴───┐
                               unhappily ⇔V[Manner]  Adv
                                             │        │
                              ↑             tᵥ     yesterday
                              └──────────────┘
                                 V-raising
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        In this way, we can account for the interpretation of the M-A adverbs in post-verbal position discussed in 2.1. As can be seen above, the present analysis is crucially based on the assumption stated in (22):

(22)   The adjunct theta-role of M-A adverbs can only be assigned to an argument that c-commands a predicative phrase independent of the adverbs.

This condition also seems to account for the recipient of the theta-role of M-A adverbs appearing before auxiliary verbs like those in (13). As discussed in section 3.1, the adverbs in this position are always predicated of the subject argument of the clause (regardless of its thematic role). Consider this in a schematized structure for the example in (13a), shown in (23):

(23) [IP Joeᵢ   **intentionally**   has-I[AGR] [vP tᵢ seducedᵥ-v [vP Mary tᵥ]]]
                   ↑ Adv licensing
            ↑
            └──────────────────────┘

          adjunct θ-role assignment

Since the subject NP as the specifier of IP c-commands vP, a predicative phrase, it qualifies as the recipient of the theta-role of the M-A adverb adjoined to a projection of I, according to the condition in (22).

        If we take this line of analysis, the difference between M-A adverbs in pre-auxiliary position and those in post-verbal position we saw in (15) is reduced to the difference in the licensing feature: AGR or Manner. The adverbs themselves are likely to be the same: they are all subject-oriented adverbs, taking a structural subject as their argument.

4. On the Interaction between V-raising and the Scope of M-A adverbs

In the last section, I claimed that the adjunct theta-role of an M-A adverb transferred to a verb can be assigned to an argument after the verb raises to another verbal head (see (20), (21)). In this section, I provide independent support for this analysis, showing that a similar phenomenon is found in a causative construction in Japanese.

What I consider here is a non-lexical causative construction formed by attaching the morphologically dependent causative morpheme *(s)ase* to a verb stem.[9] The example in (24) illustrates this construction involving a transitive verb stem, where the causer argument is marked by nominative Case, the causee by dative Case, and the object of the stem by accusative Case:

(24) Mary-ga   John-ni   hon-o   yom-ase-ta.
     Mary-Nom John-Dat   book-Acc read-Cause-Past
     'Mary made John read a book.'.

Although the causative morpheme and the verb stem are morphologically and phonologically united, it has been observed that this causative construction involves a biclausal structure. A piece of evidence for this analysis comes from the fact that either the causer argument or the causee can be the antecedent of a subject-oriented anaphor *zibun*, as shown in (25a) (see Kuroda 1965). This example is comparable to that in (25b), which shows that the anaphor *zibun* appearing in a finite complement clause can take as its antecedent either the subject of the matrix clause or that of the complement clause:

(25) a. $Mary_i$-ga $John_j$-ni   **$zibun_{i/j}$-no**   hon-o   yom-ase-ta.
            Mary-Nom   John-Dat   self-Gen   book-Acc   read-Cause-Past
            'Mary made John read self's book.'.

      b. $Mary_i$-ga $John_j$-ga   **$zibun_{i/j}$-no**   hon-o   yom-da-to
            Mary-Nom   John-Nom   self-Gen   book-Acc   read-Past-Comp
            itta
            said
            'Mary said that John read self's book.'

The causative construction, however, contrasts strikingly with biclausal constructions involving a finite complement like (25b) when we put an M-A adverb after the subject of the embedded clause, as shown in (26):[10]

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[9] The causative morpheme appears as *sase* when it attaches to a stem ending with a vowel, while it takes the form *ase* when the verb stem ends with a consonant. Non-lexical causatives involving this morpheme have been classified semantically into two types: one implies that the causation was forced ("make" causative), whereas the other implies that it was done with the consent of the causee ("let" causative). It has often been argued that these two have different structures (Kuroda 1965, Kuno 1973, Miyagawa 1999 among others). We are concerned with the "make" causative here.

[10] There has often been disagreement among researchers about where the dative causee argument is in the structure of the causative construction in question. I assume that the

(26) a.   Mary-ga   [John-ni   **iyaiya**   hon-o   yom]-ase-ta.
            Mary-Nom   John-Dat   reluctantly   book-Acc   read-Cause-Past
            'Mary made John reluctantly read a book.   (iyaiya: John/Mary)

       b.   Mary-ga   [John-ga   **iyaiya**   hon-o   yom-da-to]
            Mary-Nom   John-Nom   reluctantly book-Acc   read-Past-Comp
            itta
            said
            'Mary said that John reluctantly read a book.'
                                        (iyaiya: John/*Mary)

In (26b), which involves a finite complement, the adverb is associated with the subject of the embedded clause, and not with the subject of the matrix clause. This is predictable given that the adverb is licensed by the Manner feature of the verb or the AGR feature of INFL in the embedded clause: the subject of the complement, and not the matrix subject, can have a local structural relation (head-specifier) with the licensing head. However, in the causative construction in (26a), the adverb can be associated with either the subject of the complement clause (the causee) or that of the matrix clause (the causer). It seems as if the adjunct theta-role of the adverb is assigned to the matrix subject in a non-local configuration in this example.

      One might wonder if (26a) can have a structure in which the adverb is in the matrix clause and the causee argument is scrambled from the lower clause into the matrix clause across the adverb. However, there is evidence against such an analysis. As shown in (27a), the dative causee argument can be associated with a floating quantifier (FQ) (Harley 1995: 160, Miyagawa 1999: 251).[11] If the argument were moved across the adverb, we would predict that the FQ could be stranded at its original position after the adverb. This prediction is not borne out, however, as shown in (27b):[12]

(27) a.   Mary-ga   <u>gakusei-ni</u>   <u>san-nin</u>   **iyaiya**   hon-o
            Mary-Nom   students-Dat   3-Cl   reluctantly   book-Acc
            yom-ase-ta.
            read-Cause-Past   (iyaiya: students/Mary)
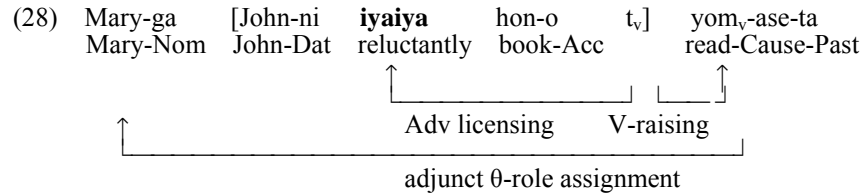   'Mary made three students reluctantly read books.

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causee is in the subject position of the embedded clause in overt syntax, given the arguments for this analysis in Terada (1990), Harley (1995), and Miyagawa (1999).

[11] Harley (1995) observe that the dative causee argument can be modified by an FQ in "make" causative, and not in "let" causative (see fn. 9).

[12] The ungrammaticality of (27b) can also provide evidence against the view that the dative causee in (26a) is generated as an argument of the matrix causative verb and controls PRO or a comparable null argument in the embedded clause. If (26a) had such a structure, (27b) would be well-formed with the stranded quantifier associated with the null argument.

b.   * Mary-ga   <u>gakusei-ni</u>   **iyaiya**   <u>san-nin</u>   hon-o
Mary-Nom students-Dat   reluctantly   3-Cl   book-Acc
yom-ase-ta.
read-Cause-Past
'Mary made three students reluctantly read books.

Assuming that the verb stem moves out the complement clause and raises to the matrix verb in the causative construction (see Kuno 1973, Baker 1988, Terada 1990, Harley 1995 among others), I claim that the adverb is associated with the matrix subject in (26a) through verb raising. The adverb is assumed to be licensed by V or v in the embedded clause and its adjunct theta-role is transferred to the verbal head. The theta-role can be assigned to the subject argument in the complement, or it can be assigned to the matrix subject after the verbal head moves to the matrix verb position. A schematic structure in (28) illustrates how the theta-role is assigned to the matrix subject:

(28)   Mary-ga   [John-ni   **iyaiya**   hon-o t_v]   yom$_v$-ase-ta
         Mary-Nom   John-Dat   reluctantly   book-Acc   read-Cause-Past

                                   Adv licensing   V-raising

                              adjunct θ-role assignment

Thus, this example lends support to our claim that the scope of M-A adverbs can extend through movement of their licensing head.

5.   Conclusion

The present paper has focused on post-verbal M-A adverbs appearing in English lexical causatives. I have observed that the adverbs can be predicated of either the agent subject or the theme object if the verb takes a PP or AP complement. Noting that these adverbs have subject-oriented nature like their counterparts found in pre-auxiliary position, I have argued that their ambiguous interpretation is explained on the basis of a VP-shell structure, which involves two structural subject positions in VP. If this analysis is on the right track, it supports the claim that lexical causative verbs project a VP-shell structure. Furthermore, concerning those lexical causatives without having a PP or AP complement, it has been shown that the lack of ambiguous interpretation of the adverbs can be given a principled account even if these causatives are also assumed to involve a VP-shell structure.

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