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Semantics of finite complement clauses and scope islandhood*

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Abstract This paper investigates the correspondence between the semantics of a finite complement clause and its scope islandhood. Via comparison of the semantics of canonical attitude verbs, e.g. *believe* and *claim*, with that of clause-embedding verbs like *ensure* and *prove*, whose complement clauses are not scope islands (Farkas & Giannakidou 1996; Barker 2022; Palucci 2024, a.o.), this paper argues for two claims. First, while complement clauses of attitude verbs have been argued to denote predicates of individuals with propositional content (Kratzer 2006; Moulton 2009, 2015; Elliott 2020, a.o.), those of *ensure*-type verbs denote predicates of events (without propositional content). Second, finite complement clauses that denote predicates of events are not scope islands.

Keywords: quantificational scope, scope island, clausal complementation, modality

1 Introduction

It has been observed that a universal quantificational phrase (*QP*) emmbedded under a finite complement clause (THAT-*CP*) of verbs like *make sure* and *ensure* is able to take extrawide inverse scope into the matrix clause (Farkas & Giannakidou 1996; Hoeks, Özyıldız, Pesetsky & Roberts 2022; Barker 2022; Palucci 2024) as shown in (1), while THAT-CPs of canonical attitude verbs, e.g. *believe* and *claim*, are well-known scope islands (Chomsky 1975; May 1977), as shown in (2).

(1) **Some student** made sure/ensured [that **every speaker** had a ride].
(F&G 1996: (6))

a. 'There is some student x such that x made sure/ensured that for every speaker y, y had a ride.' ($\exists > \forall$)

b. 'For every speaker y, there is some student x such that x made sure/ensured that y had a ride.' ($\forall > \exists$)

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(2) **Some student** believed/claimed [that **every speaker** had a ride].
($\exists > \forall$/*$\forall > \exists$)

Other clause-embedding verbs whose finite complement clauses are not scope islands for embedded universal QPs include Greek verbs such as *frontizo* 'take care', *thelo* 'want', *kanonizo* 'make sure' (Farkas & Giannakidou 1996), and English verbs such as *prove*, *confirm*, and *verify* (Palucci 2024). In this paper, I investigate (i) how the semantics of *ensure*-type verbs (ENSURE-*verb*s) and their complement clauses differ from those of *believe*/*claim*-type verbs (*attitude verb*s) and their complement clauses, and (ii) how the semantic differences (if any) affect scope islandhood of complement clauses.

Various analyses have been proposed to account for the observed variation in scope islandhood across finite complement clauses. One approach is that the clause-boundedness of quantificational scope is relaxed and determined by the semantics of the finite clause that embeds the scope-taker (Farkas & Giannakidou 1996; Barker 2022). An alternative approach attributes the difficulty of scope-taking across clause-boundaries to processing costs, which can be overcome under cetain matrix predicates and/or event structure configuration (Anderson 2004; Tanaka 2015; Wurmbrand 2018; Hoeks et al. 2022). Another apprroach analyzes the apparent counterexamples of clause-boundedness as scope illusions, which are not derived by scope-taking mechanisms like QR, but rather arise as side effects of independent propoerties of the matrix predicate or aspect (Fox & Sauerland 1996; Palucci 2024).

In this paper, I propose an analysis under the first approach, building an explicit connection between the semantics of a THAT-CP and its scope islandhood. Assuming that type v for events and type e for non-event individuals are distinctive semantic types,[1] I argue for the generalization in (3) and a type-based explanation for it.

(3) **Generalization**:
Finite complement clauses that denote predicates of events (without propositional content) are not scope islands.

Section 2 presents two independent properties of ENSURE-verbs and their THAT-CPs, which distinguish them from their attitude report counterparts. Section 3 proposes a new semantics for the clausal complementation of ENSURE-verbs, under the framework where THAT-CPs receive a predicative semantics (Higginbotham 1999; Kratzer 2006, 2013; Moulton 2009, 2015; Moltmann 2013, 2020; Bogal-Allbritten 2016; Elliott 2020; Özyıldız 2021; Bondarenko 2022, a.o.). Section 4 explores an explanation for the correspondence between the semantics of THAT-CPs and scope islandhood. Section 5 concludes and discusses predictions of this analysis.

1 I assume that the domain of individuals ($D_{\text{ind.}}$) is the union of the domain of events (D_v) and the domain of non-event individuals (D_e), i.e. $D_{\text{ind.}} = D_v \cup D_e$. In the rest of this paper, I refer to non-event individuals (i.e. expressions of type e) as *individuals* for simplicity.

2 Differences across clause-embedding constructions

In addition to scope islandhood, ENSURE-verbs and their complement clauses differ from their counterparts with attitude reports in at least two aspects. First, they differ in selection (section 2.1): ENSURE-verbs can take nominals that denote events (without propositional content) as their objects, while attitude reports cannot. Second, they differ in modality (section 2.2): unlike attitude verbs, ENSURE-verbs trigger an actuality inference of their THAT-CPs and do not appear to introduce modality.

2.1 Selectional properties

It has been observed that when attitude reports take DP complements, they are compatible with DPs that denote individuals with propositional content (Moulton 2009, 2015; Elliott 2020, a.o.), including DPs headed by nouns with propositional content (CONT*DP*s), e.g. *rumor* and *idea*, as shown in (4a), and DPs headed by the noun *thing* (PROP*DP*s) with truth/falsity modification, as shown in (4b) and (5).

(4) *Believe*-type verbs (Elliott 2020: (64))
   a. Abed believes [$_{DP}$ the rumor that Shirley is upset]. (CONTDP)
   b. Abed believes [$_{DP}$ something true/false/mistaken]. (PROPDP)

(5) *Claim*-type verbs (PROPDP)
   a. Alys thinks something true about her father.
   b. Sue claimed something false. (Moulton 2015: (25))

A characteristic feature of contentful entities is that they are compatible with predicates like *true* and *false* (Kratzer 2006; Moulton 2009; Elliott 2020; Moltmann 2020; Bondarenko 2022, a.o.). The PROPDPs in (4b) and (5) thus denote individuals with propositional content as well, just like CONTDPs. Hence, both *believe*-type and *claim*-type attitude reports select for contentful individuals as their complements.[2]

Furthermore, when both *believe*-type and *claim*-type attitude verbs take CP complements, their complement clauses can be followed by an appositive relative on their truth or falsity (Pesetsky 1996; Moulton 2009), as shown in (6). Due to their compatibility with truth/falisity-modification, these complement clauses make references to entities with propositional content as well.

(6) *Believe*-type and *claim*-type verbs with CP complements
   a. John believed that Mary went to Paris, *which was false/true/mistaken.*
   (Moulton 2009: 144 (32))

2 Note that while both CONTDPs and PROPDPs with truth/falsity modification denote contentful individuals, *claim*-type verbs are compatible with the latter, but not the former. Furthermore, some attitude reports, e.g. *complain* and *boast*, are not compatible with either type of DPs. The incompatibility of *claim*-type verbs with CONTDPs and *complain*-verbs with DP complements is outside the scope of this paper (see Elliott 2020 for detailed discussion).

b. Bill claimed that Col went to Paris last summer, *which was false/true/mistaken*.

By contrast, *ensure* is incompatible with complements that make reference to contentful entities, such as CONTDPs (7a), PROPDPs modified by *true/false* (7b), and CPs with truth/falsity-modification (7c). Furthermore, *ensure* can take DPs that have been argued to denote events as its complements. Eventive DPs include nominalization forms such as *simple event nominals* (SENs) in (8a) and *complex event nominals* (CENs) in (8b) (Grimshaw 1990; Borer 2012; Moulton 2014, 2015, a.o.), and gerunds in (8c) (Duffley 2003; Gluckman 2021). Crucially, these eventive nominals cannot be complements of *believe/claim*-type verbs, as shown in (9).

(7) *Ensure* with contentful complements

a. *Alys ensured [$_{DP}$ the rumor that Bill resigned]. (CONTDP)

b. *Alys ensured [$_{DP}$ something true/false].

c. *Alys ensured that Sue took trains to Paris, *which was true/false/mistaken*.

(8) *Ensure* with eventive complements

a. Peg ensured [$_{DP}$ the frequent examination]. (SEN)

b. Peg ensured [$_{DP}$ the observation of the patient for several weeks]. (CEN)

c. Peg ensured [$_{DP}$ Sue's leaving]. (gerund)

(9) Attitude reports with eventive complements

a. *Peg {believed/claimed/thought} [$_{DP}$ the frequent examination]. (SEN)

b. *Peg {believed/claimed/thought} [$_{DP}$ the observation of the patient for several weeks]. (CEN)

c. *Peg {believed/claimed/thought} [$_{DP}$ Sue's leaving]. (gerund)

Note that these eventive nominals are incompatible with predicates like *true* and *false*, as shown in (10). Since compatibility with truth/falsity-modification is characteristic of contentful entities, as discussed above and shown in (11), the DPs selected by *ensure* denote events without propositional content. In other words, the domain of these events does not overlap with that of contentful things.[3]

(10) a. *[Sue's leaving] is true.

b. *[The frequent examination of the students] is false.

c. *[The observation of the patient for several weeks] is mistaken.

(11) a. The rumor that Bill resigned is true.

b. Their hypothesis that Bill resigned is false.

3 I assume that both the domain of events (D_v) and the domain of non-event individuals (D_e)contain members with propositional content (Hacquard 2006; Moulton 2015; Elliott 2020; Özyıldız 2021; Bondarenko 2022, a.o.). In other words, there are contentful (non-event) individuals, e.g. *the rumor*, and contentful events, e.g. a belief state. Both domains also contain members without propositional content; for example, *the apple* is an (non-event) individual without propositional content. The nominals in (10) are examples of events without propositional content.

c. His claim that Alys took trains to Paris is mistaken.

Similarly, other ENSURE-verbs, e.g. *prove*, *confirm*, and *verify*, are compatible with DP complements that denote events without propositional content (12).

(12) *Prove*-type verbs with eventive nominals

a. Peg {proved/confirmed/verified} [Sue's leaving].

b. She {proved/confirmed/verified} [the frequent sit-in of the protestors].

c. They {proved/confirmed/verified} [the observation of the patient for weeks].

However, unlike *ensure*, they can take contentful DP complements as well (13).

(13) *Prove*-type verbs with contentful nominals

a. Peg {proved/confirmed/verified} [the claim that Sue resigned].

b. She {proved/confirmed/verified} [something true].

A generalization then arises: unlike attitude verbs, clause-embedding verbs whose THAT-CPs are not scope islands, including *ensure* and *prove*-type verbs, can select for events (without propositional content) when they take DP complements.

2.2 Modality and actuality entailments

A characteristic feature of attitude reports is that they introduce modality: an utterance of (14) is not about the actual world, but rather the worlds according to Alys' belief. In other words, (14) is true as long as Sue solved the problems in Alys' belief worlds, regardless of whether Sue solved the problems in the actual world.

(14) Alys believed [that Sue solved the problems].

The presence of modality under attitude reports can be shown via a substituation test and a contradiction test.

As shown in the substitution test in (15), given the truth of (15a) and (15b), the truth of (15c) does not necessarily follow. The truth of (15a) and (15b) guarantees the truth of (15c) only when the embedded DP, *the tallest girl*, receives a *de re* reading, but not when it receives a *de dicto* reading.

(15) *Substitution test*: (adapted from Bondarenko 2022: 107 (121))
$\{(a), (b)\} \not\Rightarrow (c)$

a. Alys believed [that Sue solved the problems].

b. Sue is the tallest girl in Alys' class.

c. Alys believed [that the tallest girl in her class solved the problems].

Similarly in the contradiction test (16), given that sheep and goats are two disjoint sets in the actual world as well as many other worlds, a contradiction arises if the predicates *sheep* and *goat* are interpreted in the same world, as shown in (16a), but

not if they are interpreted in different worlds. Hence, the absence of the contradiction in (16b) suggests that under *believe*, one of the two disjoint sets receives a *de dicto* reading, while the other *de re*.

(16) *Contradiction test*: (adpated from Bondarenko 2022: 109 (123))
a. #These sheep are goats.
b. Alys believed [that these sheep are goats].

The presence of *de dicto* readings under attitude verbs suggests that they introduce modality. Now let's consider *ensure* against the two tests. It seems that *de dicto* readings are not available under *ensure*, as shown by the substitution test in (17) and the contradiction test in (18). In the substitution test (17), given the truth of (17a) and (17b), the truth of (17c) always follows. Similarly, embedding the contradictory statement (18a) under *ensure* (18b) does not eliminate the contradiction. The absence of *de dicto* readings seems to suggest an absence of modality under *ensure*.

(17) *Substituion test*: $\{(a),(b)\} \Rightarrow (c)$
a. Alys ensured [that Sue solved the problems].
b. Sue is the tallest girl in Alys' class.
c. Alys ensured [that the tallest girl in her class solved the problems].

(18) *Contradiction test*
a. #The boring tour that I went to yesterday was not boring.
b. #Alys ensured [that the boring tour that I went to yesterday was not boring].

Moreover, *ensure* additionally triggers an actuality inference that its complement clause holds in the evaluation world, as shown in (19). This inference is not cancellable: it is infelicitous to continue sentence (19) with a negation of the actuality inference, as shown in (19a). Further support of the presence of an actuality inference comes from the 'too' test (Homer 2011, 2021): as shown in (19b), the presupposition of *too* that there is an actual solving-the-problems event is satisfied.

(19) Alys ensured [that Sue solved the problems].
$\Rightarrow$ Sue solved the problems.
a. *Cancellation test*:
Alys ensured that Sue solved the problems, #but Sue didn't solve them.
b. *'Too' test*:
Alys ensured that Sue solved the problems, and Col solved them too.

Note that this actuality inference is not a presupposition either, because it does not project under downward entailing environments, e.g. negation as shown in (20).[4] I

4 Not only the actuality inference is absent under negation, an anti-actuality inference is not available either. That is, sentence (20) does not license an inference that negates the actuality of Sue having solved the problems, i.e. that Sue didn't solve the problems, either.

therefore refer to it as *Actuality Entailments* (AEs).[5]

(20) Alys didn't ensure that Sue solved the problems.
⇏ Sue solved the problems.
a. *Cancellation test*:
Alys didn't ensure that Sue solved the problems, and in fact, Sue didn't solve them in the end.
b. *'Too' test*:
Alys didn't ensure that Sue solved the problems; #Col solved them too.

In contrast to *ensure*, most attitude verbs do not license AEs.[6] They either do not license any actuality inference, as shown in (21) for verbs like *believe* and *claim*, or trigger a factive presupposition, as shown in (22) for favtive verbs like *know*.

(21) Alys believed/claimed/thought [that Sue solved the problems].
⇏ Sue solved the problems.
a. *Cancellation test*:
Alys *V*-ed that Sue solved the problems, but Sue didn't solve them.
b. *'Too' test*:
Alys *V*-ed that Sue solved the problems, #and Col solved them too.

(22) Alys knew [that Sue solved the problems].
⇒ Sue solved the problems.
a. Alys didn't know [that Sue solved the problems].
⇒ Sue solved the problems.

Crucially, these attitude verbs have also been shown to license *de dicto* readings and introduce modality under them, as shown in (15) and (16) for *believe* and *claim* and discussed in Groenendijk & Stokhof 1982, 1984 for question-taking *know*.

We therefore see a correspondence between the presence of AEs and the apparent absence of *de dicto* readings: *de dicto* readings appear to be absent under clause-embedding verbs that trigger AEs. Further support of this correspondence comes from *prove*-type verbs, as shown in (23) and (24) respectively.[7]

(23) *Absence of de dicto reading—contradiction test*
a. #These sheep are goats.

5 This term is borrowed from a similar phenomenon first observed by Bhatt (1999) (and further discussed by Hacquard (2006, 2009), Homer (2011, 2021), Kratzer (2011), Alxatib (2019, 2021) among others): an actuality inference arises when root modals combine with perfecive aspect. See Wang 2025 for further discussion on the similarities and differences between AEs under *ensure* and root modals.

6 Some clause-embedding verbs that have been always classified as attitude reports do seem to license AEs. Specifically, they are *veridical assertives*, including *prove*-type verbs and *be correct* (Anand & Hacquard 2014). These verbs will be discussed below.

7 The substitution test for modality and tests for AEs are omitted due to limited space, but readers can easily reconstruct those tests to double check the conclusion.

b. #Sue {proved/confirmed/verified} that these sheep are goats.

(24) *Actuality Entailment*

a. Alys {proved/confirmed/verified} that Sue solved the problems.
⇒ Sue solved the problems.

b. Alys didn't {prove/confrim/verify} that Sue solved the problems.
⇏ Sue solved the problems.

This correspondence is not surprising. For a clause-embedding verb that triggers AEs, e.g. *ensure*, even if it introduces modality, the truth of its complement clause in alternative worlds is not enough to guarantee the truth of the entire sentence; rather, the complement clause has to hold in the evaluation world as well.

Therefore, it is possible that clausal complementation of ENSURE-verbs do not introduce any modality, unlike that of attitude verbs; since no alternative world is present, the apparent absence of *de dicto* readings and the presence of AEs under ENSURE-verbs are expected. Or alternatively, ENSURE-verbs introduce a modality with a different flavor from that of the epistemic modality introduced under attitude verbs; such a modal is responsible for giving rise to AEs,[8] and the apparent absence of *de dicto* readings under ENSURE-verbs arises as a side-effect.[9] For simplicity and space limitation, I adopt the former option in the presentation of the to-be-proposed analysis on scope-islandhood henceforth.[10]

2.3 Interim summary

To summarize, ENSURE-verbs, whose THAT-CPs have been reported to be non-islands for quantificational scope, differ from attitude verbs in two aspects. First, ENSURE-verbs are compatible with nominal complements that denote events (without propositional content), while attitude verbs are not. Second, ENSURE-verbs trigger AEs and there is an apparent absence of *de dicto* readings under them, while attitude verbs do not trigger AEs and introduce (epistemic) modality.

To capture these differences, I propose a new semantics for ENSURE-verbs and their complement clauses. While attitude verbs select for individuals with propositional content and their complement clauses denote predicates of contentful individuals (Kratzer 2006; Moulton 2009, 2015, a.o.), I argue that ENSURE-verbs

8 For example, see discussion in Hacquard 2006, 2009; Kratzer 2011 among others on the correlation between AEs and modality with a circumstantial flavor.

9 In example (16b), under a *de re* interpretation of both *sheep* and *goats*, according to which the subject may use two different descriptions to describe sheep and goats to herself (see e.g. Cresswell & Von Stechow 1982, a contradiction need not arise. Presumably, because of the constrained modality of *ensure*, such an interpretation is not available in the case of (18).

10 The analysis to be proposed does not depend on the choice between the two options. See Wang 2025 for further discussion on modality under *ensure*-type verbs and a development of the second option.

select for events and their complement clauses denote *predicates of events* (without propositional content). Formal details of this proposal are presented in section 3, and scope islandhood of THAT-CPs under the proposal is discussed in section 4.

3 Semantics of clausal complementation

In a recent line of research, complement clauses have been argued to not simply denote propositions, but receive a predicative semantics, where the modal meaning is relocated from the clause-embedding verb to the complement C head (Higginbotham 1999; Bhatt 2006; Kratzer 2006, 2013; Moulton 2009, 2015; Moltmann 2013, 2020; Bogal-Allbritten 2016; Elliott 2020; Özyıldız 2021; Bondarenko 2022, a.o.). Specifically, THAT-CPs have been argued to denote predicates that spell out the propositional content of contentful things represented as x_c (25).[11] I refer to these CPs as CONTCPs.

(25) $[\![[_{\text{CONTCP}}\ \textit{that}\ \exists\ [_{\text{TP}}\ \textit{Alys left}]]]\!]^w$ (CONTCP)
$= \lambda x_c \in (D_e \cup D_v).\text{CONT}(x_c)(w) = \{w' : \exists e[\theta_{\text{ext}}(e)(w') = \text{Alys}_{w'} \wedge \text{left}(e)(w')]\}$

a. $\text{CONT}(x_c)(w)$
$= \{w' : w'$ is compatible with the intensional content determined by x_c in $w\}$
(after Kratzer 2013: 195 (25))

b. $[\![C_{\text{CONT}}]\!]^w = \lambda p_{st} \lambda x_c.\text{CONT}(x_c)(w) = p$ (after Kratzer 2006)

Under the predicative analysis, a CONTCP does not saturate an attitude verb, but rather modifies either the internal argument of the verb (Kratzer 2006; Moulton 2009, 2015) or the event argument introduced by the verb (Elliott 2020) (see Bondarenko 2022 for the availability of both compositional paths). Following Kratzer (2006) and Moulton (2009, 2015), I assume that CONTCPs denote predicates of non-event individuals (represented as "$x_{\text{c-ind}}$"), and attitude verbs select for non-event individuals with propositional content as their internal argument (26). CONTCPs then modify the internal argument of the attitude reports via *Restrict* (Chung & Ladusaw 2004), as shown in (27).[12]

11 See footnote 3 for the semantic type of contentful things. Furthermore, I adopt a version of event semantics where the external argument (θ_{ext}) is added by the v head (Kratzer 1996), and the closure of the event argument introduced by the verb, as defined below, is at the clausal level (Krifka 1989; Schein 2016, 2019; Bernard & Champollion 2024; cf. Champollion 2015).

(i) $[\![\exists]\!]^w = \lambda p_{vt}.\exists e[p(e)]$

12 *Restrict* is a modification-like composition mode proposed by Chung & Ladusaw 2004 for composing a $\langle\alpha,t\rangle$-type predicate and a $\langle\alpha,\langle\beta,t\rangle\rangle$-type predicate, where α and β can be of any type. Composition of CONTCPs with attitude verbs via Restrict is adopted by Kratzer (2006); Moulton (2009, 2015) explores an alternative composition routh: CONTCPs move to the edge of the matrix vP and leave behind a type e trace that saturates the internal argument of the attitude. The analysis to be proposed does not depend on the choice between composition via Restrict and composition via movement, and the Restrict-based approach is adopted for simplicity of presentation.

(26) $[\![\textit{believe}]\!]^w = \lambda x_{\text{c-ind}} \lambda e.\text{Dox}(\iota y[\text{Holder}(y)(e)(w)])(w) \subseteq \text{CONT}(x_{\text{c-ind}})(w)$
where $\text{Dox}(\iota y[\text{Holder}(y)(e)(w)])(w) = \{w' : w' \text{ is compatible with what } y \text{ believes in } w\}$
$=_{\text{abbr.}} \lambda x_{\text{c-ind}} \lambda e.\text{believe}(x_{\text{c-ind}})(e)(w)$ (Moulton 2015: 314)

(27) $[\![\textit{believe}\ [_{\text{CONTCP}}\ \textit{that}\ \exists\ [_{\text{TP}}\ \textit{Alys left}]]]\!]^w$ (via Restrict)
$= \lambda x_{\text{c-ind}} \lambda e.\text{believe}(x_{\text{c-ind}})(e)(w) \wedge \text{CONT}(x_{\text{c-ind}})(w) = \{w' : \exists e'[\text{Alys-left}(e')(w')]\}$

The internal argument of *believe* ($\lambda x_{\text{c-ind}}$) is closed off by existential closure (28) at the edge of verbal phrases (à la Diesing (1992), different from the clause-level event closure as defined in footnote 11; see also Moulton 2015). After the external argument is added by the v head (Chomsky 1995; Kratzer 1996) and the event argument introduced by *believe* is closed off by a clausal $\exists$, we obtain the truth-conditions in (29) for the sentence *Peg believes that squirrels fly*.

(28) $[\![\exists_{\text{IA}}]\!]^w = \lambda p_{\langle \tau, vt \rangle} \lambda e.\exists x_\tau[p(x)(e)]$, where τ can be e or v
(adapted from Moulton 2015: (87))

(29) $[\![[_{\text{CP}}\ \exists\ [_{\text{TP}} ... [_{\text{vP}}\ \textit{Peg}\ \text{v}\ [_{\text{VP}}\ \exists_{\text{IA}}\ \textit{believe}\ [_{\text{CONTCP}}\ \textit{that}\ \exists\ [_{\text{TP}}\ \textit{Alys left}]]]]]]]\!]^w$
$= 1$ iff $\exists e[\theta_{\text{ext}}(e)(w) = \text{Peg} \wedge \exists x_{\text{c-ind}}[\text{believe}(x_{\text{c-ind}})(e)(w) \wedge$
$\text{CONT}(x_{\text{c-ind}})(w) = \{w' : \exists e'[\text{Alys-left}(e')(w')]\}]]$

Adopting the semantics above only for attitude verbs and their THAT-CPs, I propose in the rest of this section that (i) ENSURE-verbs select for events as their internal argument, based on the selectional differences discussed in section 2.1, and (ii) correspondingly, THAT-CPs of *ensure* denote predicates of events, from which the AEs and absence of *de dicto* readings discussed in section 2.2 follow.

3.1 Semantics of ENSURE-verbs

Recall from section 2.1 that *ensure* cannot take contentful DPs as complements, but rather takes eventive nominals, e.g. eventive nominalization forms and gerunds. If *ensure* receives the same denotation as *believe* in (26), we expect it to be compatible with contentful DPs as well, contrary to fact. I propose that instead of selecting for a contentful individual like *believe*, *ensure* selects an event (e_1) as its internal argument (30), which is the event brought about by the agent of the *ensure*-event.

(30) $[\![\textit{ensure}]\!]^w = \lambda e_1 \lambda e.\text{ensure}(e_1)(e)(w)$

The selectional pattern discussed in section 2.1 is captured as follows. First, assume the denotation in (31) for a content noun, e.g. *rumor* (Kratzer 2006; Moulton 2015; Elliott 2020; Bondarenko 2022, a.o.).

(31) $[\![\textit{rumor}]\!]^w = \lambda x_{\text{c-ind}}.\text{rumor}(x_{\text{c-ind}})(w)$

Then given the denotations of *ensure* (30) and attitude verbs like *believe* (26), a contentful DP can combine with *believe*, as shown in (32), but not with *ensure* (33). Since *ensure* requires an event without propositional content as its internal argument,

and a contentful DP, e.g. *the rumor*, denotes an individual with propositional content, a VP like *ensure the rumor* is uninterpretable due to type mismatch.

(32) $[\![[_{\text{VP}}\ \textit{believe the rumor}]]\!]^w = [\lambda x \lambda e.\text{believe}(x_{\text{c-ind}})(e)(w)](\iota x_{\text{c-ind}}[\text{rumor}(x_{\text{c-ind}})(w)])$
$= \lambda e.\text{believe}(\iota x[\text{rumor}(x_{\text{c-ind}})(w)])(e)(w)$

(33) Given that (i) $[\![\textit{ensure}]\!]^w = \lambda e_1 \lambda e.\text{ensure}(e_1)(e)(w)$, and (ii) $[\![\textit{the rumor}]\!]^w = \iota x_{\text{c-ind}}[\text{rumor}(x_{\text{c-ind}})(w)]$, it follows that $[\![\textit{the rumor}]\!]^w \notin \text{Dom}([\![\textit{ensure}]\!]^w)$

Therefore, part of the pattern observed in section 2.1 is expected: attitude verbs can take contentful DPs as their complements, but *ensure* cannot.

On the other hand, *ensure* takes eventive nominals as complements, e.g. SENs, CENs, and gerunds, while attitude verbs cannot. Assume that eventive nominals denote events (type v), instead of individuals (type e), as shown in (34) (Grimshaw 1990; Moulton 2014; Gluckman 2021, a.o.).

(34) a. $[\![\textit{the frequent examination}]\!]^w = \iota e[\exists x[\text{exam}(x)(e)(w)] \wedge \text{frequent}(e)(w)]$
(adapted from Moulton 2014: (31))

b. $[\![\textit{the observation of the patient for weeks}]\!]^w$
$= \iota e[\text{observe}(\iota x[\text{patient}(x)(w)])(e)(w) \wedge e \text{ lasted for weeks in } w]$
(adapted from Moulton 2014: (33))

c. $[\![\textit{Sue's leaving}]\!]^w = \iota e[\theta_{\text{ext}}(e)(w) = \text{Sue} \wedge \text{leave}(e)(w)]$

Combining an eventive nominal, e.g. an SEN, with an attitude verb like *believe*, results in an uninterpretable string, as shown in (35), because the function denoted by *believe*, which requires a contentful individual, does not have in its domain the thing denoted by an eventive nominal, which is an entity without propositional content. By contrast, an eventive nominal saturates the internal argument of *ensure* without causing uninterpretability, as shown in (36).

(35) Given that (i) $[\![\textit{believe}]\!]^w = \lambda x_{\text{c-ind}} \lambda e.\text{believe}(x_{\text{c-ind}})(e)(w)$ and (ii) $[\![\textit{the frequent examination}]\!]^w = \iota e[\exists x[\text{exam}(x)(e)(w)] \wedge \text{frequent}(e)(w)]$, it follows that $[\![\textit{the frequent examination}]\!]^w \notin \text{Dom}([\![\textit{believe}]\!]^w)$

(36) $[\![[_{\text{VP}}\ \textit{ensure the frequent examination}]]\!]^w$
$= [\lambda e_1 \lambda e.\text{ensure}(e_1)(e)(w)](\iota e[\exists x[\text{exam}(x)(e)(w)] \wedge \text{frequent}(e)(w)])$
$= \lambda e.\text{ensure}(\iota e_1[\exists x[\text{exam}(x)(e_1)(w)] \wedge \text{frequent}(e_1)(w)])(e)(w)$

Lastly, recall that *prove*-type verbs are compatible with both contentful DP complements and eventive DP complements. I tentatively propose that *prove*-type verbs are ambiguous between selecting a contentful individual and an event, as shown in (37). As a result, *prove* can be saturated by either a contentful individual, e.g. *the rumor* in (37a), or an event, e.g. *the frequent examination* in (37b).

(37) $[\![\textit{prove}]\!]^w = \lambda x \in D_e \cup D_v \lambda e.\text{prove}(x)(e)(w)$

a. $[\![[_{\text{VP}}\ \textit{prove the rumor}]]\!]^w = \lambda e.\text{prove}(\iota x_{\text{c-ind}}[\text{rumor}(x_{\text{c-ind}})(w)])(e)(w)$

b. $[\![[_{\text{VP}}\ \textit{prove the frequent examination}]]\!]^w$
$= \lambda e.\text{prove}(\iota e_1[\exists x[\text{exam}(x)(e_1)(w)] \wedge \text{frequent}(e_1)(w)])(e)(w)$

3.2 Semantics of eventive CPs

I propose that the complement clauses of ENSURE-verbs are not CONTCPs, but rather denote predicates of events (without propositional content). Given the denotations of atttidue reports (26) and ENSURE-verbs (30)/(37), eventive THAT-CPs are compatible with ENSURE-verbs, but not with attitude verbs. Furthermore, the apparent absence of *de dicto* readings and the presence of AEs under ENSURE-verbs follow from the semantics of eventive THAT-CPs.

The existence of eventive THAT-CPs has been argued for in previous literature (Moltmann 2021; Bondarenko 2022). One of the main arguments comes from the observation that in addition to being complements of content nouns like *rumor* and *idea*, THAT-CPs can also be complements of **situation nouns** like *situation*, *event*, *case*, and *circumstances*, as shown in the naturally occuring examples in (38).

(38) a. It is [a curious **situation** [$_{CP}$ that the sea, from which life first arose, should now be threatened by the activities of one form of that life]].

b. In [the **event** [$_{CP}$ that the orders are carried out]], the action taken could be the last official act of the United Kingdom.

c. In [the **case** [$_{CP}$ that the President should be unable to perform his duties]], the Vice-President becomes the President (Bondarenko 2022: 68 (5))

Situation nouns do not denote things with propositional content, as shown by their incompatibility with *true/false*-modifiers (39), in contrast with the compatibility of content nouns with the same modifiers (40) (Moltmann 1989; Kratzer 2006; Moulton 2009; Elliott 2020; Moltmann 2020; Bondarenko 2022).

(39) *The {situation/case/state of affairs} that reforms are coming is true/false.

(40) The {claim/rumor/story/belief} that reforms are coming is {true/false}

Hence, while content nouns denote predicates of contentful individuals, situation nouns denote predicates of events without propositional content, as shown in (41).

(41) $[\![\textit{situation}]\!]^w = \lambda e.\text{situation}(e)(w)$

It has been shown that THAT-CPs of situations nouns behave like modifiers (instead of arguments), just like those of content nouns (see Bondarenko 2022 for detailed discussion); therefore, THAT-CPs modifying situation nouns denote predicates that specify the events denoted by the situation nouns. I refer to them as EVENTCPs.

EVENTCPs do not encode a content modality, unlike CONTCPs, because the situation nouns that they modify are not predicates of contentful things. Note further that similar to what we have observed with complement clauses of ENSURE-verbs in section 2.2, there is an apparent absence of modality and presence of AEs under situation nouns with CP complements, as shown in (42) and (43) respectively.[13]

13 The absence of *de dicto* readings and presence of AEs shown in (42) and (43) do not come from

(42) *Absence of modality—contradiction test*
#Alys remembered a curious {case/situation} that those sheep were goats.

(43) *Acutality Entailment*
a. Alys remembered a curious {case/situation} that the squirrels ate all the berries in the garden.
⇒ the squirrels ate all the berries in the garden.
b. Alys didn't remember a curious {case/situation} that the squirrels ate all the berries in the garden.
⇏ the squirrels ate all the berries in the garden.

Therefore, I adopt denotation in (44) for EVENTCPs, where EVENTCPs do not introduce any modality, following Bondarenko 2022.[14] The C_{EVENT} head is an identity function, taking the intension of a TP (which is an unclosed event predicate) and returning an event predicate.

(44) $[\![[_{\text{EVENTCP}}\ \textit{that}\ [_{\text{TP}}\ \textit{Alys left}]]]\!]^w$ (EVENTCP)
$= \lambda e.\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \text{left}(e)(w)$
a. $[\![C_{\text{EVENT}}]\!]^w = \lambda p_{\langle s,vt\rangle}.p(w)$

Recall that *ensure* selects for an event as its internal argument (30). An EVENTCP then modifies the internal argument of *ensure* via Restrict (45), in the same manner as the composition of CONTCPs with attitude verbs. After the internal argument is closed off by $\exists_{\text{IA}}$ and the external argument is added by the v head, we obtain the denotation in (46) for a vP that contains *ensure* and its EVENTCP complement.

(45) $[\![[_{\text{VP}}\ \textit{ensure}\ [_{\text{EVENTCP}}\ \textit{that}\ [_{\text{TP}}\ \textit{Alys left}]]]]\!]^w$ (via Restrict)
$= \lambda e_1 \lambda e.\text{ensure}(e_1)(e)(w) \wedge \theta_{\text{ext}}(e_1)(w) = \text{Alys} \wedge \text{left}(e_1)(w)$

(46) $[\![[_{\text{vP}}\ \textit{Peg}\ v\ \exists_{\text{IA}}\ \textit{ensure that}_{\text{EVENT}}\ \textit{Alys left}]]\!]^w$
$= \lambda e.\theta_{\text{ext}}(e)(w) = \text{Peg} \wedge \text{ensure}(e_1)(e)(w) \wedge \theta_{\text{ext}}(e_1)(w) = \text{Alys} \wedge \text{left}(e_1)(w)$

The apparent absence of modality and presence of AEs under *ensure* discussed in section 2.2 follow from the proposed semantics. Take (47) as an example. The event corresponding to the complement CP, i.e. the event of Sue solving the problems, is an event (e_1) that holds in the evaluation world (w). We therefore obtain the actuality inference that the complement clause of *ensure* is true in the evaluation world. Since no alternative world is introduced, we expect the absence of *de dicto* readings under *ensure* as well.

remember; we see the opposite pattern if the object of *remember* contains a content noun instead of a situation noun, with everything else unchanged, as shown in (1) and (2) respectively.

(i) *Presence of modality—contradiction test*
Alys remembered a curious {claim/hypothesis} that those sheep were goats.

(ii) *Absence of Acutality Entailment*
Alys remembered a curious {claim/hypothesis} that the squirrels ate all the berries in the garden. ⇏ the squirrels ate all the berries in the garden.

14 See Wang 2025 for a semantics of EVENTCPs that introduces modality with a circumstantial flavor.

(47) $[\![[_{\text{CP}} \exists\ [_{\text{TP}} \ldots [_{\text{vP}}$ *Alys* $v\ \exists_{\text{IA}}$ *ensured* $[_{\text{EVENTCP}}$ *that* $[_{\text{TP}}$ *Sue solved the problems*$]]]]]]\!]^w = 1$ iff $\exists e[\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \exists e_1[\text{ensure}(e_1)(e)(w) \wedge \theta_{\text{ext}}(\underline{e_1)(w)} = \text{Sue} \wedge \text{solve}(\iota x[\text{problems}(x)(w)])(\underline{e_1)(w)}]]$

By contrast, an attitude verb like *believe* selects for a CONTCP, as shown in (48), which encodes a content modality that introduces possible worlds compatible with the content of Alys' belief. Modality is expected due to the presence of such worlds (w'), and no AE arises, because an event that holds in worlds (w') compatible with the content of Alys' belief does not have to hold in the evaluation world (w).

(48) $[\![[_{\text{CP}} \exists\ [_{\text{TP}} \ldots [_{\text{vP}}$ *Alys* $v\ \exists_{\text{IA}}$ *believed* $[_{\text{CONTCP}}$ *that* $\exists\ [_{\text{TP}}$ *Sue solved the problems*$]]]]]]\!]^w = 1$ iff $\exists e[\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \exists x_{\text{c-ind}}[\text{believe}(x_c)(e)(w) \wedge \text{CONT}(x_{\text{c-ind}})(w) = \{w' : \exists e'[\theta_{\text{ext}}(e')(w') = \text{Sue} \wedge \text{solve}(\iota y[\text{prob.}(y)(w')])(e')(w')]\}]$

Crucially, attitude verbs are not compatible with EVENTCPs, as shown in (49). Under the assumption that attitude verbs select contentful individuals as their internal arguments (Kratzer 2006; Moulton 2009, 2015), an EVENTCP cannot modify the internal argument of an attitude verb, due to type mismatch (49a). Alternatively, if attitude verbs do not select internal arguments and THAT-CPs modify the event argument of the verbs directly (Elliott 2020), composing an EVENTCP with an attitude via Predicate Modification results in an event predicate that leads to a contradiction, given that a single event in the evaluation world cannot be a believe-event and a leave-event at the same time, as shown in (49b).

(49) *$[_{\text{VP}}$ believe $[_{\text{EVENTCP}}$ that Alys left$]]$

a. *If attitude verbs select internal arguments:*
Given that (i) $[\![\textit{believe}]\!]^w = \lambda x_{\text{c-ind}} \lambda e.\text{believe}(x_{\text{c-ind}})(e)(w)$, and
(ii) $[\![[_{\text{EVENTCP}}$ that Alys left$]]\!]^w = \lambda e.\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \text{left}(e)(w)$,
it follows that neither Restrict or PM works due to type-mismatch (cf. (45))

b. *If attitude verbs do not select internal arguments:*
$[\![[_{\text{VP}}$ *believe* $[_{\text{EVENTCP}}$ *that Alys left*$]]]\!]^w$
$= [\lambda e.\text{believe}(e)(w)](\lambda e.\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \text{left}(e)(w))$ (via PM)
$= \lambda e.\underline{\text{believe}(e)(w)} \wedge \theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \underline{\text{left}(e)(w)}$
$\Rightarrow$ contradition

Before ending this section, I briefly discuss the CP complements of *prove*-type verbs. Recall from section 3.1 that *prove*-type verbs are ambiguous between selecting a contentful individual and an event without propositional content, (50).

(50) $[\![\textit{prove}]\!]^w = \lambda x \in D_e \cup D_v \lambda e.\text{prove}(x)(e)(w)$

If only type compatibility matters, we expect these verbs to be able to take either CONTCPs or EVENTCPs as their CP complements, and therefore show ambiguity wrt. *de dicto* readings and AEs: *de dicto* readings are not always absent and AEs are not always triggered. In fact, as pointed out by Anand & Hacquard (2014), these verbs do not always give rise to verdicality entailments; I leave a detailed discussion of whether this prediction is borne out to another occasion (see Wang 2025 for further discussion)

4 Revisiting scope islandhood

I propose an analysis that derives the observed variation in the scope islandhood of THAT-CPs from the distinction between CONTCPs (51) and EVENTCPs (52) discussed in section 3. In a nutshell, I argue that the semantic type of a CP ($\langle e,t\rangle$ vs. $\langle v,t\rangle$) determines the possibility of scope-taking out of the CP.[15]

(51) $[\![\textit{that Alys left}]\!]^w$ (CONTCP::$\langle e,t\rangle$)
$= \lambda x_{\text{c-ind}}.\text{CONT}(x_{\text{c-ind}})(w) = \{w' : \exists e[\theta_{\text{ext}}(e)(w') = \text{Alys}_{w'} \wedge \text{left}(e)(w')]\}$

(52) $[\![\textit{that Alys left}]\!]^w = \lambda e.\theta_{\text{ext}}(e)(w) = \text{Alys} \wedge \text{left}(e)(w)$ (EVENTCP::$\langle v,t\rangle$)

Before presenting the analysis, I lay out two key assumptions about quantificational phrases (QPs) and the scope-taking mechanism. First, I assume that quantifiers, including *every*, makes reference to events, as shown in (53), following the literature in event semantics (Schein 1993; Kratzer 2003; Ferreira 2005, a.o.).

(53) *Eventive denotation of 'every'* (Ferreira 2005)
$[\![\textit{every}]\!]^w = \lambda p_{\langle e,t\rangle}\lambda q_{\langle e,vt\rangle}\lambda e.\forall x[p(x) \rightarrow \exists e' \sqsubseteq e[q(x)(e')]] \wedge$
$\forall e'[e' \sqsubset_{\mathscr{P}} e \rightarrow \exists x[p(x) \wedge q(x)(e')]]$
$=_{\text{abbr.}} \lambda p_{\langle e,t\rangle}\lambda q_{\langle e,vt\rangle}\lambda e.\forall x[p(x) \rightarrow \exists e' \sqsubseteq e[q(x)(e')]]$

Crucially, an *every*-QP requires a predicate of type $\langle e,vt\rangle$. For example, the QP *every student* in (54) takes a predicate q of type $\langle e,vt\rangle$, yielding an event predicate e of type $\langle v,t\rangle$, such that for every student x, there exists a sub-event e' of e that is a q-event with x as a participant.

(54) $[\![\textit{every student}]\!]^w = \lambda q_{\langle e,vt\rangle}\lambda e.\forall x[\text{student}(x)(w) \rightarrow \exists e' \sqsubseteq e[q(x)(e')]]$

Second, I assume that scope-taking is derived via QR, which is a type of movement with null phonological effect, and as (covert) movement, QR obeys the same locality constraints as overt movement does (Fox 1999; Nissenbaum 2000; Cecchetto 2004, a.o.). Given that CPs are phases and movement obeys the Phase Impenetrability Condition (PIC) (Chomsky 2000, 2001), a QP embedded under a CP has to QR to the edge of the CP ([Spec, CP]) before taking scope into the next higher clause.

(55) **The (strong) Phase Impenetrability Condition** (Chomsky 2000:108)
In phase α with head H, the domain of H is not accessible to operations outside α; only H and its edge are accessible to such operations.

In other words, QR across a CP boundary needs to proceed successive cyclically via [Spec, CP]. I call this the successive-cyclicity of QR.

15 The analysis to be proposed is a possible way to explain the variation in scope islandhood, but certainly not the only way. For example, a syntactic approach that appeals to the size difference between CONTCPs and EVENTCPs is a potential alternative (thanks to a SALT reviewer for pointing out this option). A thorough comparison between the two appraoches, including their potentially different predictions, will not be taken up in this paper due to limited space (see Wang 2025 for further discussion).

I propose that QR further obeys a semantic condition in the spirit of Scope Economy (Fox 1995, 1999), which requires each step of QR to land at a position in which a QP is interpretable, e.g. not causing type-mismatch (section 4.1). I then show in section 4.2 that given this condition and the eventive denotation of *every* (53), QR can only proceed successive cyclically via the edge of an EVENTCP ($\langle v,t\rangle$), where an *every*-QP is interpretable, but not via the edge of a CONTCP ($\langle e,t\rangle$).

4.1 A semantic conition on QR

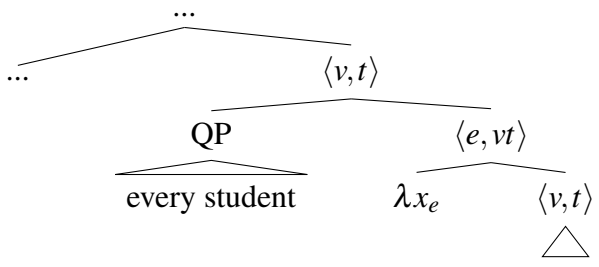
I propose that in addition to the locality constraints on movement, QR obeys a semantic condition, as shown in (56), which I refer to as the Interpretability Condition.

(56) **Interpretability Condition**
A QP that undergoes QR has to be *interpretable* at each of its landing sites, including the intermediate ones.

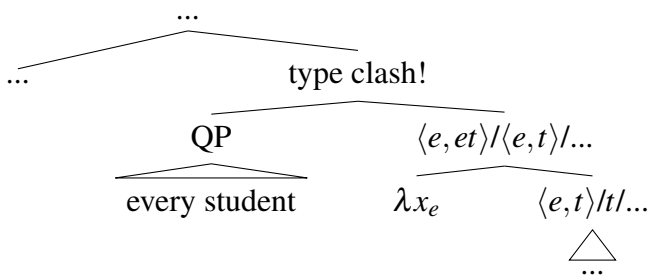
Specifically, a QP is interpretable at a position if it is composable with its siser node, without causing type mismatches. For example, given that *every student* combines with an expression of type $\langle e,vt\rangle$ (57), by the Interpretability Condition (56), each step of QR of the QP can target an event predicate of type $\langle v,t\rangle$, as shown in (57a), but not a non-$\langle v,t\rangle$-type node, e.g. a node of type $\langle e,t\rangle$ or type t (57b).

(57) $[\![\textit{every student}]\!]^w = \lambda q_{\langle e,vt\rangle}\lambda e.\forall x[\text{student}(x)(w) \rightarrow \exists e' \sqsubseteq e[q(x)(e')]]$

a. ✓ *adjoining QP to a $\langle v,t\rangle$-type predicate*



b. ✗ *adjoining QP to a non-$\langle v,t\rangle$-type node*



This semantic condtion can be seen as a prerequisite of local Scope Economy, where each step of QR has to create new scope relation, if local Scope Economy is assumed to be a semantic economy condition on QR (Fox 1999; Cecchetto 2004,

a.o.). To check whether a step of QR creates a new scope relation, we need to compute whether the meaning of the string after application of this step of QR is equivalent to the meaning the string has prior to its application, with everything else being equal. If the moved QP lands at a position in which it is not interpretable, then we would fail to evaluate whether this step of QR satisfies Scope Economy or not.

Alternatively, the Interpretability Condition can be seen as a replacement of local Scope Economy. The Interpretability Condition requires less looking-into the semantics by syntactic operations compared to Scope Economy, and can potentially be generalized to all movement types, instead of being a condition stipulated for QR. I leave this possibility to be explored in future research.

4.2 Semantic types and scope islandhood

Given the eventive denotation of *every student* (54), it can be interpreted within a CONTCP, as shown in (58a), but not at the edge of the CONTCP, as shown in (58b).

(58) [$_{\text{CONTCP}}$ *that every student left*]

a. $[\![[_{\text{CONTCP}}\ \textit{that}\ \exists\ [_{\text{TP}}\ \textit{every student left}]]]\!]^w$
$= \lambda x_{\text{c-ind}}.\text{CONT}(x_{\text{c-ind}})(w) = \{w' :$
$\exists e'[\forall y[\text{student}(y)(w') \rightarrow \exists e'' \sqsubseteq e'[\theta_{\text{ext}}(e'')(w') = x \wedge \text{left}(e'')(w')]]\}$

b. $[\![[_{\text{CONTCP}}\ \langle \textit{every student}\rangle\ \lambda 1\ [_{\text{CONTC}'}\ \textit{that}\ \exists\ [_{\text{TP}}\ t_1\ \textit{left}]]]]\!]^w$
$= [\lambda q_{\langle s,vt\rangle}\lambda e.\forall x[\text{student}(x)(w) \rightarrow \exists e' \subseteq e[q(x)(e')]]]$
$(\lambda x\lambda y_{\text{c-ind}}.\text{CONT}(y_{\text{c-ind}})(w) = \{w' : \exists e''[\text{left}(x)(e'')(w')]\})$
$\Rightarrow$ type clash!

By the Interpretability Condition, the embedded *every*-QP cannot undergo QR to the edge of a CONTCP. Since QR has to proceed successive cyclically via each [Spec, CP], the unavailability of an intermediate landing site at the edge of a CONTCP blocks QR out of the CONTCP. As a result, CONTCPs are scope islands.

By contrast, an *every*-QP embedded under an EVENTCP can be interpreted either within the EVENTCP, as shown in the LF in (59a), or at the edge of the EVENTCP, as shown in (59b). Since EVENTCPs denote predicates of events ($\langle v,t\rangle$), interpreting an *every*-QP at the edge of an EVENTCP does not cause any type mismatch.

(59) [$_{\text{EVENTCP}}$ *that every student left*]

a. $[\![[_{\text{EVENTCP}}\ \textit{that}\ [_{\text{TP}}\textit{every student left}]]]\!]^w$
$= \lambda e.\forall x[\text{student}(x)(w) \rightarrow \exists e' \sqsubseteq e[\theta_{\text{ext}}(e')(w) = x \wedge \text{left}(e')(w)]]\}$

b. $[\![[_{\text{EVENTCP}}\ \langle \textit{every student}\rangle\ \lambda 1\ [_{\text{EVENTC}'}\ \textit{that}\ [_{\text{TP}}\ t_1\ \textit{left}]]]]\!]^w$
$= \lambda e.\forall x[\text{student}(x)(w) \rightarrow \exists e' \sqsubseteq e[\theta_{\text{ext}}(e')(w) = x \wedge \text{left}(e')(w)]]\}$

Hence, by the Interpretability Condition, an *every*-QP embedded under an EVENTCP can undergo successive cyclic QR into the matrix clause, via the edge of the EVENTCP; in other words, EVENTCPs are not scope islands.

Since ENSURE-verbs select for EVENTCPs as their clausal complements, while attitude verbs cannot, as discussed in section 3.2, we derive the observed variation in scope islandhood: complement clauses of attitude verbs, which are CONTCPs. are scope islands, while those of ENSURE-verbs, which are EVENTCPs, are not scope islands. Therefore, after an *every*-QP embedded under *ensure* undergoes QR to the matrix clause, we obtain the desired extrawide inverse scope reading shown in (60).

(60) ∀-extrawide scope reading under *ensure*

$[\![[_{\text{CP}} \exists\ [_{\text{TP}}$ *Some student* $v\ \exists_{\text{IA}}$ *ensured* $[_{\text{EVENTCP}}$ *that every guest left*$]]]]\!]^w = 1$

iff $\exists e[\forall x[\text{guest}(x)(w) \rightarrow \exists e' \sqsubseteq e, \exists y[\text{student}(y)(w) \wedge \theta_{\text{ext}}(e')(w) = y \wedge$
$\exists e_1[\text{ensure}(e_1)(e')(w) \wedge \theta_{\text{ext}}(e_1)(w) = x \wedge \text{left}(e_1)(w)]]]]$

5 Conclusion

Via investigation of the clausal complementation of ENSURE-verbs and attitude verbs, I have argued for two main claims regarding the variation in scope islandhood across finite complement clauses. First, ENSURE-verbs take EVENTCPs, which denote predicates of events without propositional content, while attitude verbs take CONTCPs, which are predicates of contentful individuals. Second, CPs that denote predicates of events, i.e. EVENTCPs selected by ENSURE-verbs, are not scope islands. I have then explored a type-based explanation for the correspondence between the semantics of a THATCP and its scope islandhood.

One of the predictions of the type-based account proposed above is that QR out of a CP that denotes a predicate of contentful events is possible. It has been argued in recent cross-linguistic works that some CONTCPs modify the internal argument of the attitude verbs, as assumed above following Moulton 2009, 2015, while others directly modify the event argument of clause-embedding verbs, as proposed in Elliott 2020 (Bochnak & Hanink 2022; Bondarenko 2022). Crucially, CONTCPs composed with verbs via the former path denote predicates of contentful individuals, whereas their counterparts via the latter path denote predicates of contenful events. Under the type-based account, we expect that only CONTCPs composed with corresponding attitude verbs via the former path (type $\langle e,t\rangle$) are scope islands. CONTCPs that are composed with verbs via the latter path should admit extrawide inverse scope across them, as easily as EVENTCPs, because they are both of type $\langle v,t\rangle$. I leave it open for future research to investigate whether English CONTCPs exhibit such ambiguity in their composition with attitude verbs and whether this prediction is borne out both in English and cross-linguistically.

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