

Embedded Verb-Second in Swedish, *cP* and Intensionality*

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1. Introduction

It has been widely noted that many languages show an asymmetry in word order in root vs. embedded contexts. Certain constructions that occur in main clauses are not possible in embedded clauses. One such asymmetry is the verb-second (V2) effect in many Germanic languages. Den Besten (1983) provides the classic analysis of the V2 effect: the finite verb moves to C and a topic fronts to Spec-CP. V2 is then blocked in subordinate contexts because of the presence of a complementizer in the embedded C. The classic analysis accounts for much of the Germanic data, but the pattern of limited embedded V2 in Swedish presents a problem.¹

- (1) a. Rickard ångrade att han inte var hemma
Rickard regretted that he not was home
b. *Rickard ångrade att han var inte hemma
Rickard regretted that he was not home
'Rickard regretted that he was not home.'
- (2) a. Rickard sa att han inte var hemma
Rickard said that he not was home
b. Rickard sa att han var inte hemma
Rickard said that he was not home
'Rickard said that he was not home.'

The (a) examples above show the standard word order for Swedish embedded complement clauses, where the verb *var* 'was' is below sentential negation,

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¹ For more examples and discussion of EV2 in Germanic, see Heycock (2000), Holmberg & Platzack (1995), Vikner (1995), Iatradou & Kroch (1992), Platzack (1986), Holmberg (1983) and Andersson (1975), among others.

indicating that V2 movement of the verb from V-to-T-to-C has not taken place. The complementizer *att* ‘that’ is in the head of C, as in (3).²

- (3) [CP [C att] [IP han inte var hemma]]
that he not was home

Example (1b) shows that embedded verb-second (EV2) is not generally permitted, while (2b) is an example of limited embedded V2, the restriction being that it is only possible under matrix ‘bridge verbs’. The grammaticality of (2b) presents a problem for the classic analysis, because it predicts that the V2 effect should only be possible in the absence of a complementizer in C. In fact, an EV2 sentence without the complementizer is ungrammatical in Swedish.

The focus of this paper is to account for the cluster of facts surrounding EV2 in Swedish, using a derivational style analysis in the spirit of Chomsky (2000, 2001). I propose that there is extra syntactic structure (*cP*) selected in the sentential complements of bridge verbs, which allows for EV2 movement in the presence of an overt complementizer in (2b). This extra structure is not available under non-bridge verbs, so (1b) is ruled out in the standard manner. What bridge verbs have in common is that they are all non-factive, and this semantic notion will be crucial in motivating the presence of the extra structure. Factive verbs, which are not bridge verbs, are not associated with the extra structure. My hope is to improve upon the CP-recursion analysis, which has been widely argued for (Vikner 1995, Holmberg & Platzack 1995, Watanabe 1992, Iatridou & Kroch 1992, Heycock 2000).

In addition to accounting for Swedish EV2 syntactic facts, I also argue that a semantic operator [OP] heads the proposed *cP* structure. This operator is responsible for removing the speaker of an utterance from responsibility for the truth content of CP embedded below it. I also put forward the idea that the operator is responsible for intensionality effects in embedded clauses.

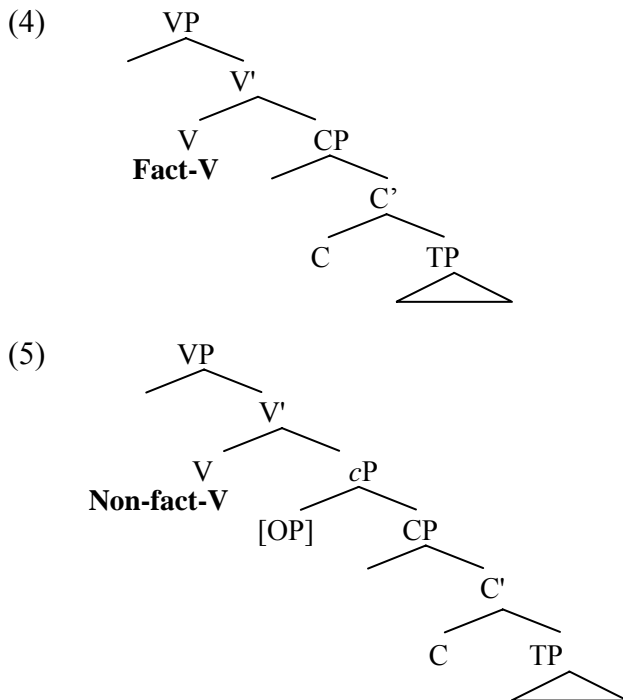
The paper is organized as follows. In section 2, I present my proposal that there is an extra syntactic projection (*cP*) selected by non-factive verbs that is not selected by factives, which directly select CP. This projection is headed by a semantic operator [OP] that affects the evaluation of truth in the embedded CP. In section 3, I implement the proposal to account for limited EV2 in Swedish. I also present an account for complementizer optionality. In section 4, morphological and semantic evidence for the proposed projection is presented from Hungarian. The data points to the conclusion that extra structure is associated with non-factive readings, as opposed to factive (contra Kiparsky & Kiparsky (1970)). In section 5, factive island effects are examined. The *cP* projection opens an escape hatch for adjuncts that is unavailable under factives. In section 6, I provide more details on the semantic contribution of the operator. The [OP] serves to change the context for the evaluation of the embedded clause. In section 7, the [OP] analysis is extended, and a solution for the problem of the source of intensionality in bi-clausal structures is proposed. Section 8 is the conclusion.

² For arguments against V-to-T movement in Swedish without V-to-T-to-C, see Holmberg & Platzack (1995).

2. The Proposal

To account for the syntactic difference between factive verb and non-factive verb sentential complement clause constructions, I propose that there is extra structure between V and CP in non-factive sentential complement constructions. This projection, call it *cP*, is headed by a semantic operator [OP].

A non-factive verb selects for *cP* as opposed to a standard CP. *c* then selects for CP. Factive verbs do not select for *cP*, and therefore can never license the recursive-type CP construction.³ The *cP*/CP construction is strictly limited by selectional properties, as C cannot select for CP or *cP*, and *c* cannot select for *cP*. Thus the recursive-type construction is limited to non-factive verb complement clauses. The structures are given below, (4) for factive verbs and (5) for non-factive verbs.



Swedish EV2 facts provide syntactic evidence that an extra position exists in the CP field. In (2b) we saw the presence of the overt complementizer *att* ‘that’ in conjunction with EV2. The classic analysis of V2 is of verb movement to C and topic movement to Spec-CP. Since complementizers presumably occur in C, it is natural to assume another layer of CP structure for (2b). Under the present proposal, the complementizer *att* in (4) is in the head of CP, blocking V2 movement. In (5), *att* is in the head of *cP*, and classic V2 movement takes place below *att* in CP. Various versions of the CP-recursion analysis of EV2 have been proposed, including Vikner (1995), Holmberg & Platzack (1995), Iatridou &

³ Of course this is not really a recursive structure, as *cP* and CP are different categories. I mention recursion as it has been widely used in analyzing EV2 (see references below). All of the previous analyses had difficulty in limiting the recursion, which is not a problem for the present analysis.

Kroch (1992), Watanabe (1992) and Hegarty (1992). Differing from previous accounts, I claim that the extra structure is not actually a second CP, but the functional projection *cP*, selected by non-factive verbs, which in turn selects a CP. This extra level in the CP-field is selected by the verb, not licensed by the semantic content of the lower CP as in other accounts. The semantic interpretation of the CP is the same in (4) and (5), but the speaker is removed from responsibility for the truth content of a CP embedded under *cP*. Looking at data from English applied to (4) and (5), the CPs in both sentences in (6) are interpreted semantically in the same way, but the *cP* affects the truth-conditions of the non-factive verb complement.⁴

- (6) a. John forgot [_{CP} that he went to the store]. (*he went to the store* = true)
 b. John thinks [_{cP} [OP] [_{CP} that he went to the store]]. (*he went to the store* may or may not be true)

The presence of *cP* is what changes the interpretation of the CP from factive to non-factive. In (6a), the evaluation of the truth of the entire sentence depends on the truth of the embedded clause. In (6b), the sentence can be true whether or not the embedded sentence clause is true. I take this semantic difference to be caused by a semantic operator [OP] located in the head of *cP*. The operator functions to remove the speaker from responsibility for the truth content of the embedded clause. Many semantic theories share the need to add extra structure in order to get the correct truth conditions for sentences with non-factive sentential complements.⁵ My proposal fits this need easily by providing an extra syntactic position that houses the [OP] that provides the semantic interpretation of non-factivity to a complement clause.

The [OP] contained in *cP* can affect movement possibilities. Matrix inherently negative verbs, irrealis verbs and matrix negation with non-factive verbs all block EV2 in Swedish. In my proposal, what stops movement in these cases is the negative and/or irrealis licensing of the [OP] in *c*, making the [OP] into a negative [N-OP] or an irrealis [I-OP]. The negative or irrealis status of the operator blocks a merge that would have otherwise allowed for EV2. My analysis has similarities to earlier proposals (negative complementizers, Laka (1990); operators, Watanabe (1992), Hegarty (1992); transparent vs. contentful CPs, Iatridou & Kroch (1992)), but differs from them all in significant respects.

3. Limited Embedded V2 in Swedish

In this section I apply the proposal in section 2 to data from Swedish. The distribution of V2 in Swedish is roughly as follows:

⁴ EV2 is not available in restricted or non-restricted relative clauses in Swedish, in spite of the fact that it has been argued that RRCs are presupposed while NRRCs aren't. However, the present analysis gives the correct prediction (no EV2 in relative clauses), as I argue that EV2 is a result of verb selection. I have nothing further to say about the semantic differences between RRCs and NRRCs.

⁵ Lambda operators, quotational theories, world theories etc. For a summary, see Larson & Segal (1995: ch. 11).

- A. EV2 is prohibited under factive verbs.
- B. EV2 is optional under non-factive verbs.⁶
- C. EV2 is prohibited under negated factives verbs, inherently negative verbs, and irrealis verbs.

The *cP* analysis is implemented to cover the facts in A-C. Additionally, I examine the optionality of the complementizer *att*, and propose an explanation for its distribution. Complementizers are only optional under non-factive verbs.

I make the following assumptions about movement and selection. Feature checking drives syntactic movement. There is a [+EPP] feature and a finite feature [+Fin] in CP in Swedish. The [+EPP] feature is checked by XP movement to the specifier, and the [+Fin] is checked by head movement of a finite verb to C. In embedded clauses, the complementizer checks both the [+Fin] and [+EPP] features, so no XP movement to Spec-CP is needed. Factive verbs select CP, while non-factive verbs select *cP*.

3.1. The Standard Cases: Matrix V2 and Factive Verbs (No EV2)

In (7) we see cases in Swedish where no *cP* is generated. (7a) is a standard matrix V2 construction with the finite verb *var* ‘was’ moving from V-to-T-to-C, and the subject *han* ‘he’ moving locally from Spec-VP to Spec-TP to Spec-CP. The movement of the verb is needed to check the Finite feature [+Fin] in C.⁷ *Han* ‘he’ moves to Spec-TP, checking Nominative case [+Nom] features, then up to Spec-CP to check the [+EPP] feature.⁸ The phrase that moves to Spec-CP does not need to be the subject, as other XPs (objects, adverbials, negation, non-finite verbs) can also move and check [+EPP]. However, subject Spec-*vP* to Spec-TP movement is obligatory for case.

- (7) a. [_{CP} Han_i [_C var_k [_{TP} t_i t_k [_{NegP} inte] [_{vP} t_i t_k hemma]]]]
 He was not home
- b. Rickard ångrade [_{CP} [_C att] [_{TP} han_i [_{NegP} inte] [_{vP} t_i var hemma]]]
 Rickard regretted that he not was home

The same clause is shown embedded under a factive verb in (7b). *Han* moves up to Spec-TP for case, but the verb *var* remains in VP. This is evidenced by the position of sentential negation *inte* above the verb.⁹ The [+Fin] and [+EPP]

⁶ Actually, bridge verbs are a subset of the non-factives. I will not discuss manner of speaking verbs, which require a different analysis from the one proposed here.

⁷ This analysis is based on Holmberg & Platzack (1995), but differs in significant respects.

⁸ For me, the [+EPP] is checked by a lexical item that bears syntactic features and is able to participate in a checking relationship. Note that while the verb checks [+Fin] in CP, it does not check [+EPP]. The fact that verbs don’t check [+EPP] is evidenced by obligatory subjects in TP in Swedish embedded clauses.

⁹ The placement of sentential negation is constant in Swedish, directly above VP. I will not address the question of negation being above or adjoined to VP as it is not the focus of this paper.

features in C are checked by the overt complementizer *att*. This explains the ungrammaticality of topicalization over the complementizer, as illustrated in (8).

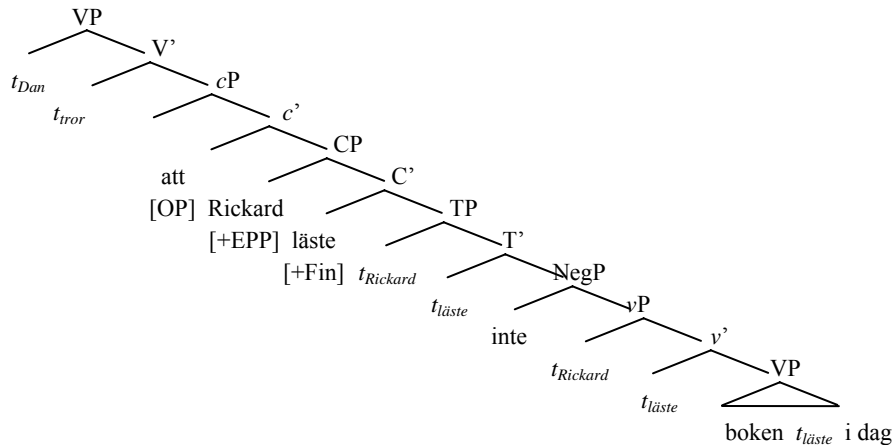
- (8) *Rickard ångrade [_{CP} han_i [_C att] [_{TP} t_i [_{NegP} inte] [_{vP} t_i var hemma]]]
 Rickard regretted he that not was home

Semantically, the truth-values are straightforward. In order for (7a) to be true, *he was not home* also has to be true. For (7b) to be true; (i) Rickard has to regret that he was not home, and (ii) He must not have been home. It is impossible to regret an event that did not occur (as opposed, of course, to regretting the fact that an event did not occur, which is entirely plausible). Since there is no [OP] intervening between the matrix clause and the CP at the point when truth conditions are evaluated in (7b), the semantic module has no trigger to cast the truth of the CP in doubt. In other words, there is nothing in the syntax to tell the semantics that the complement should not be interpreted as true. Hence, the CP gets a factive reading. This can be taken as the default interpretation of CPs.

3.2. Non-factive Verbs with EV2

I now turn to cases in which we find EV2 in Swedish. In (9) there is a CP embedded under the non-factive verb *tror* ‘think’. EV2 is evidenced by the position of the finite verb *läste* ‘read’ above the negation *inte* ‘not’ in the embedded clause.¹⁰

- (9) Dan tror att Rickard läste inte boken i dag.
Dan thinks that Rickard read not book-the today



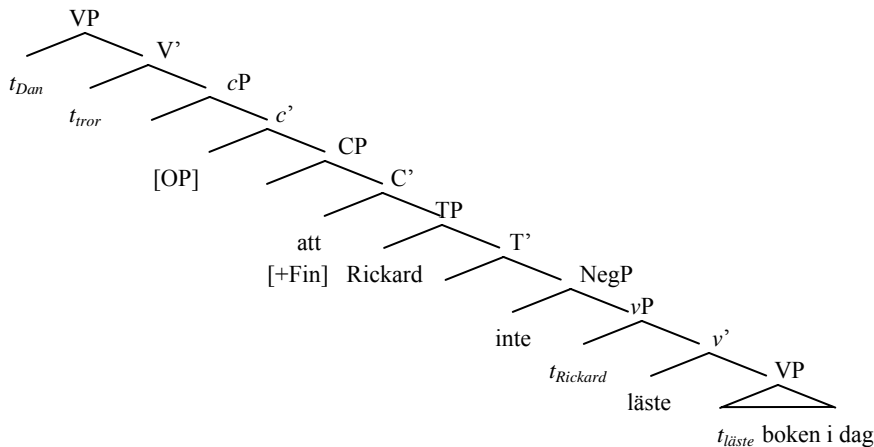
The crucial difference between (9) and (7b) is the presence of *cP*. The verb in (9) selects *cP*, and *c* selects CP (a V2 CP), with the verb *läste* moving to the head of

¹⁰ For reasons of space, the matrix clause above VP has been omitted. The matrix subject *Dan* actually merges in Spec-*vP*, as is currently standardly assumed. This convention is used for the remainder of the paper.

C to check [+Fin] and *Rickard* moving to Spec-CP to check [+EPP].¹¹ If we think of *cP* as an extension of the CP-phase, then the complementizer *att* can merge in *c* instead of C, allowing for V2 movement into CP.

In (10), we have a non-factive structure without EV2. This must also be possible, given the optionality of EV2 in Swedish.

- (10) Dan tror att Rickard inte läste boken i dag.
 Dan thinks that Rickard not read book-the today



In this case, *att* merges in C (unlike in (9), where it merges in *c*), blocking EV2 movement. The merge of *att* satisfies the finite feature, leaving the EPP to be checked. Two possible explanations for EPP checking in (10) are available; the first being that the complementizer checks the EPP feature as well, and the second being that there is no EPP feature in C in these cases. Either case will insure that there is no motivation for XP movement to SpecCP, and that no violation of the ‘Doubly Filled Comp Filter’ is predicted.

The presence of *cP* containing [OP] above CP in (9) and (10) insures that the semantic component will evaluate the CP not as true in this world, but as something along the lines of ‘true in some possible world’. The [OP] serves to separate evaluation of truth of the embedded CP from the evaluation of truth for the matrix clause. The *cP* provided by the syntax is then used by semantics to get the correct interpretation. Without the intervention of *cP*, all CPs would be evaluated as true in the actual world.

Another fact about EV2 in Swedish is that EV2 clauses are islands for *wh*-extraction. This fact is accounted for in the structure in (9). The topicalized V2 constituent *Rickard* moves to Spec-CP, blocking this position for A-bar *wh*-movement. Movement to Spec-*cP* would disobey locality, skipping the A-bar position Spec-CP.

¹¹ In (9), *i dag* or *boken* could move to Spec-CP and check [+EPP] instead of *Rickard*. I have nothing to say about the local movement of non-subjects to the topicalized position as the focus of this paper is the CP-phase level. I assume (not uncontroversially) that a Chomsky (2000, 2001) style derivation can account for movement out of the *vP*-phase.

Extraction is possible out of non-EV2 embedded clauses such as (10). Examining the structure in (10), we see that Spec-CP is an available A-bar position for movement. A *wh*-phrase can escape through this position obeying locality conditions and phase construction rules. Once in Spec-CP, a *wh*-phrase reaches the edge of the phase and is available for further movement up the tree. Crucially, I propose that *c*P extends the phase; meaning that CP is still available for syntactic operations after *c*P is merged with the selecting non-factive verb.

3.3. Optionality of the Complementizer

As shown in (11), the complementizer *att* is optional under non-factive verbs when there is no EV2. (11) is the same as (10), except that the complementizer is not overt in (11). As we have seen, the complementizer is obligatorily present when there is EV2, as in (9), and also under factives, as in (7b).

- (11) Dan tror Rickard inte läste boken i dag.
Dan believes Rickard not read book-the today

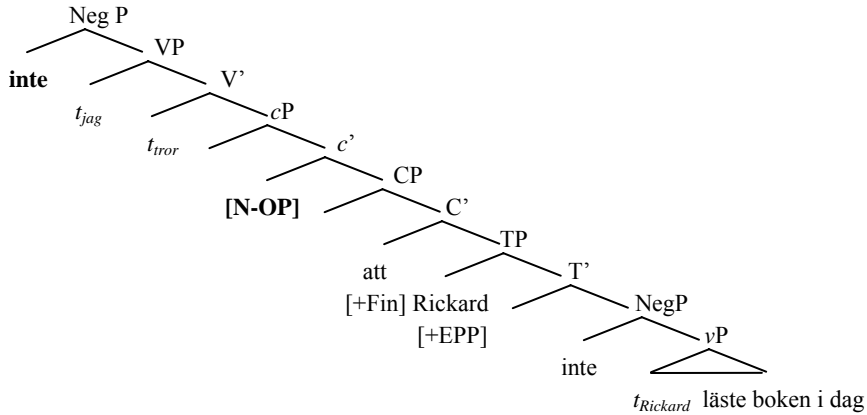
Note that in both (9) and (7b), the complementizer is directly governed by the verb, while in the (10), the optional complementizer is directly governed not by the verb, but by *c*. In a sense, I analyze the ability to drop a complementizer at PF in the opposite way from the classic L-marking story; for me, the complementizer can only be dropped at PF when NOT directly governed by a lexical verb.

3.4. Negative Verbs, Negated Non-factive Verbs and Irrealis Verbs (No EV2)

In this section I examine contexts in which EV2 is prohibited under non-factive verbs. I argue that *c*P is still present in these cases, as it is necessary for semantic interpretation. However, movement possibilities are restricted because of a change in the nature of the [OP] under certain syntactic conditions. In her dissertation, Laka (1990) presents arguments for the existence of negative complementizers that are licensed by negative verbs and matrix negation, and shows how they in turn license Negative Polarity Items (NPIs) in complement clauses. I propose that in Swedish, the complementizer is not negative, but that instead the [OP] is. When licensed by matrix negation or inherently negative verbs, the [OP] matches the features of the licenser, much like the Laka (1990) negative complementizer. This change in status of the [OP] to a negativized operator [N-OP] is responsible a pair of syntactic effects.

First, as with non-negated non-factive verbs, negated non-factive verbs can appear with or without a complementizer. This is shown in (12).

- (12) Jag tror inte (att) Rickard inte läste boken i dag.
I believe not (that) Rickard not read book-the today



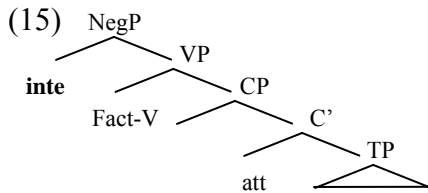
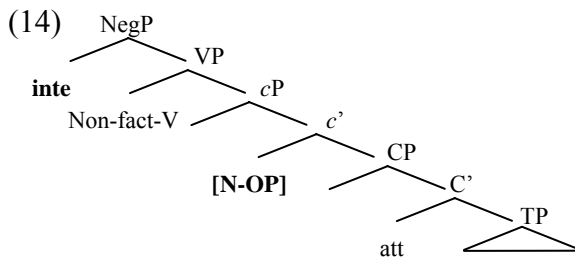
Unlike Basque, Swedish and English lack separate lexical negative and non-negative complementizers; *att/that* appears in both contexts. I therefore take the [OP] and the complementizer to be separate entities, and also see them as being non-compatible in the same head. If *att/that* were to merge with the [N-OP] in *c*, there would be a feature mismatch, crashing the sentence. Therefore, the only possibility for *att* to merge in (12) is in C, blocking EV2. The analysis is essentially the same for irrealis complements. An irrealis verb like *önska* ‘wish’ or *hoppas* ‘hope’ licenses an irrealis [I-OP], which also results in a feature mismatch if merged with an indicative complementizer like *att*.¹² Modalized non-factive verbs (*skulle* ‘would’ + V, *borde* ‘should’ + V, etc.) behave like *önska* ‘wish’ and *hoppas* ‘hope’. EV2 is not allowed in their complements, and *att* is optional. The derivations for these constructions work in the same way as (12).

Second, more evidence for the [N-OP] comes from de Cuba (to appear), who argues that non-local NPI licensing is mediated by a negative operator. This helps to explain the data in (13), where the NPI *ett ruttet öre* (equivalent to English *one red cent*) is licensed under negated non-factive *not claim* in (13c), but not under negated factive *not like* in (13d).

¹² There are some irrealis predicates such as *föredra* ‘prefer’ and *insistera på* ‘insist (on)’ that require *att* to be present. My proposal predicts that these verbs, which seem to be non-factive, should have the option to omit the complementizer. I leave aside this class of irrealis predicates (insist, prefer, demand etc.) for future research. A similar problem arises for inherently negative verbs like *betvivla/tvivla på* ‘doubt’ and *förneka* ‘deny’. These predicates work in the same way as negated non-factive verbs, but they also take obligatory *att*. The English translations of these verbs behave as expected, with *that* being optional. I will also leave these verbs aside now, with the hope that future research will bring a better understanding of what special properties they have in Swedish.

- (13) a. *Jag påstod att tavlan var värd **ett ruttet öre**.
 I claimed that painting-the was worth one rotten öre
 b. *Jag tycker om att tavlan var värd **ett ruttet öre**.
 I like (particle) that painting-the was worth one rotten öre
 c. Jag påstod **inte** att tavlan var värd **ett ruttet öre**.
 I claimed not that painting-the was worth one rotten öre
 d. *Jag tycker **inte** om att tavlan var värd **ett ruttet öre**.
 I like not (particle) that painting-the was worth one rotten öre

Only in (14), corresponding to (13c), is there a licenser in the local domain of the NPI *ett ruttet öre*. In (15), corresponding to (13d), there is no [N-OP], so the NPI *ett ruttet öre* goes unlicensed in its local domain, causing the sentence to crash.



In addition to the syntactic effects of the [N-OP], there are semantic effects. The presence of the operator in (14) affects the semantic interpretation of the lower clause. The CP in (14) does not need to be evaluated as true for the whole sentence to be evaluated as true. However, the [N-OP] makes an additional semantic contribution to that given by the standard [OP]; namely, that not only is the CP not evaluated as true, but also that the CP is NOT true in the actual world of the author of the attitude. Consider the following English sentences.

- (16) a. John thinks [_{CP} OP [_{CP} that he went to the store]]
 b. John doesn't think [_{CP} N-OP [_{CP} that he went to the store]]
 c. John regrets [_{CP} that he went to the store]
 d. John doesn't regret [_{CP} that he went to the store]

In (16a), it is John's belief that *he went to the store* is true. However, in (16b) it is John's belief that *he went to the store* is NOT true. In both cases the CP need not be evaluated as true by the speaker. The [N-OP] in (16b) makes the additional contribution of eliminating John's belief world from the evaluation set of the CP. In factive cases like (16d), on the other hand, there is no [OP] or [N-OP], so there

is no effect on the interpretation of the CP. Therefore, the truth-value of *he went to the store* is interpreted in exactly the same way in (16c) and (16d), regardless of the presence of matrix negation. In both sentences the CP is evaluated as true (factive).

In this section I implemented the extra structure proposed in section 2 to account for EV2 facts in Swedish. I showed that extra structure (*cP*) is selected by non-factive verbs, and the *cP* and [OP] can be exploited to explain a number of phenomena, including limited EV2, the optionality of the complementizer *att*, and non-local NPI licensing. Also presented was a principled way to strictly limit CP-recursion, and syntactic and semantic motivation for the extra structure and operators. In the next section I give more evidence for *cP* from Hungarian.

4. Hungarian

In this section I give evidence for the proposed extra structure from a non-Germanic language. Hungarian exhibits extra morphology in non-factive verb contexts, which I take as additional evidence for the existence of *cP*. This extra morphology, which appears to be generated in the CP field, is associated with a non-factive interpretation of CP. This morphology, if analyzed as being generated in a separate syntactic position from the complementizer, seems to go against the Kiparsky and Kiparsky (1970) prediction that extra structure (*THE FACT*) should be associated with a factive interpretation.

As in Swedish, Hungarian embedded clauses exhibit two different patterns, one for non-factives and one for factives (de Cuba & Ürögdi, 2001).

- (17) a. *Azt hiszem hogy Mari okos.*
 it-ACC I-think Comp Mary smart-is
 'I think that Mary is smart.'
 b. (**Azt*) *sajnálom hogy Mari okos.*
 it-ACC I-regret Comp Mary smart-is
 'I'm sorry that Mary is smart.'

In (17a), the pronominal element *azt* can be argued to come from the lower clause, since it represents the object of the matrix verb, which is the lower CP itself.¹³ This pronoun is only present in cases where the matrix predicate is non-factive, as shown in (17b).¹⁴ The fact that *azt* bears accusative case provides evidence that it originates below the verb. I propose that *azt* is the overt realization of [OP], present in the non-factive case but missing with factives. When *azt* is not present in a non-factive context, a factive reading results, as shown in (18).

¹³ For an analysis along these lines, see Lipták (1998), as discussed in Kiss (2002: p. 234-5).

¹⁴ If the sentences have neutral intonation, then factive predicates don't allow *azt*, while non-factives do. However, if *azt* is in focus position and heavily stressed, it then becomes grammatical, as in (i) (Enikő Tóth, Barbara Ürögdi, p.c.).

(i) *AZT* *sajnálom, hogy Mari megbukott a vizsgán.*
 'It's that Mari failed the exam that I'm sorry for.'

At present I have no account for this. I leave the case of focused *azt* to future research.

- (18) a. Azt mondta Péter, hogy későn kezdődik a meccs.
 that-ACC said Peter Comp late begins the match
 'Péter said that the match will begin late' (but we don't know if this is true)
- b. Mondta Péter, hogy későn kezdődik a meccs.
 said Peter Comp late begins the match
 'Péter told (me) that the match will begin late' (and in fact it will)

The semantic effects of pronominal elements in Hungarian can also be seen with some factive verbs. The pronominal *úgy* 'so' shows similar semantic effects to *azt* in Hungarian (Enikő Tóth, Barbara Ürögdi, p.c.).¹⁵ When *úgy* appears with a semi-factive verb like *know*, as in (19b), a non-factive reading results.

- (19) a. Tudja János, hogy Mari okos.
 knows John that Mary smart-is
 'John knows that Mary is smart'
 (fully factive reading)
- b. Úgy tudja János, hogy Mari okos.
 so knows John that Mary smart-is
 'John knows that Mary is smart'
 (to the best of John's knowledge, Mary is smart)

The presence of *úgy* in (19b) removes the factive interpretation of the embedded clause, while in the absence of *úgy*, the default factive reading results (19a). I take the facts from Hungarian in this section to provide evidence that the [OP] is optional under some verbs. The observed semantic differences in factivity are due to the presence or absence of the operator, not simply the lexical semantics of the verb.

In this section I have presented morphological and semantic evidence from Hungarian that a non-factive reading is associated with more structure in the CP field, not less (contra Kiparsky & Kiparsky, 1970). The absence of this structure leads to a factive interpretation, and its inclusion leads to a non-factive interpretation. While a detailed analysis of the syntactic workings of the extra structure in Hungarian is beyond the scope of this paper, the present proposal is a promising direction for future research. In the next section I discuss another area where the *cP* analysis looks promising, factive islands.

5. Extraction: Factive Islands

It is widely recognized that there is an extraction asymmetry from the clausal complements of factive vs. non-factive predicates. Factive CPs are weak islands for adjunct extraction in both English and Mainland Scandinavian (MSC). This is evidenced in (20) (non-factive) and (21) (factive).

¹⁵ Kiss describes *úgy* as an alternative to the demonstrative pronoun *azt*, serving the semantic function of expressing a reservation concerning the truth of the subordinate proposition (Kiss, 2002: p. 233).

- (20) a. How do you think that you behaved? (Eng.)
 b. Hur tycker du att du uppträdde? (Swe.)
 c. Hvordan tror du at du oppførte deg? (Nor.)
 d. Hvordan synes du at du opførte dig? (Dan.)
- (21) a. *How do you regret that you behaved? (Eng.)
 b. *Hur ångrar du att du uppträdde? (Swe.)
 c. *Hvordan angret du at du oppførte deg? (Nor.)
 d. *Hvordan fortryder du at du opførte dig? (Dan.)

Further factive island data is given in (22) and (23). *Why*-extraction gives two possible interpretations of the sentences with *think* in (22), while the factive verb *forget* allows only one interpretation, questioning the matrix verb.

- (22) a. Why do you think that John went to the store? (Eng.)
 b. Varför tror du att John gick till affären? (Swe.)
 c. Hvorfor tror du at John dro til butikken? (Nor.)
 d. Hvorfor tror du at John gik i butikken? (Dan.)

Answers:

- e. Because he told me he was going.
 f. Because he needed milk.

- (23) a. Why did you forget that John went to the store? (Eng.)
 b. Varför glömde du att John gick till affären? (Swe.)
 c. Hvorfor glemte du at John dro til butikken? (Nor.)
 d. Hvorfor glemte du at John gik i butikken? (Dan.)

Answers:

- e. Because I was drunk.
 f. *Because he needed milk.

There also seem to be differences in movement possibilities out of Japanese complements under factive vs. non-factive verbs, as data from Yanagida (1996:292) illustrates.¹⁶

- (24) a. Taroo-wa wine-wa katta to omotta.
 Taroo-TOP wine-TOP/FOC bought comp thought
 'Taroo thought that as for wine, he bought it.'
 'Taroo thought that he bought wine (but not beer).'
- b. Taroo-wa wine-wa katta koto-o kookai-sita.
 Taroo-TOP wine-TOP/*FOC bought comp-ACC regretted
 'Taroo regretted that as for wine, he bought it.'
 *'Taroo regretted that he bought wine (but not beer).'

¹⁶ Thanks to Miyuki Sawada for Japanese references.

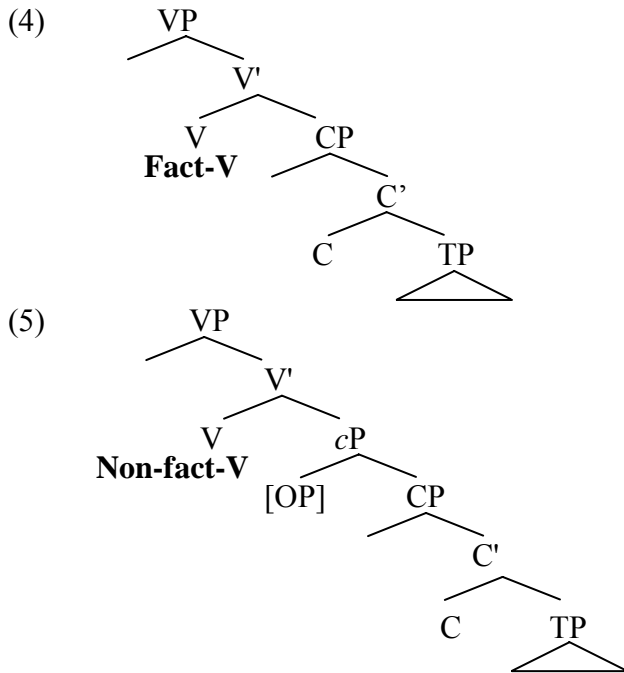
Yanagida analyzes focus as being achieved by syntactic movement, and this movement is unavailable under factives, ruling out contrastive reading of *wa* in (24b).¹⁷ Another asymmetry in Japanese is in LF extraction of *naze* ‘why’. LF adjunct extraction is available under non-factive verbs like *say*, but not under factive verbs like *regret*.¹⁸

- (25) a. Bill-wa John-ga naze kubi-ni natta tte itta no?
 Bill-TOP John-SUB why was fired comp said Q
 ‘Why did Bill say that John was fired t?’
 b. ?? Bill-wa John-ga naze kubi-ni natta koto-o oshinda no?
 Bill-TOP John-SUB why was fired comp regretted Q
 ‘Why did Bill regret that John was fired t?’

The facts in (25) mirror the English and MSC facts in (22) and (23).

As in English and MSC, extraction of arguments in Japanese is allowed (at LF) under both factives and non-factives. De Cuba (2006) provides an account for factive islands, combining the proposed structures in (4) and (5) (repeated here), with the ‘Adjunction Prohibition’ from McCloskey (2005), in (26).

- (26) The Adjunction Prohibition - Adjunction to a phrase which is s-selected by a lexical (open class) head is ungrammatical.



¹⁷ Yanagida’s analysis of what causes a factive island (factive operator) differs from the analysis that I am exploring.

¹⁸ The examples in (25) are from Fukui (1988:508), but in (25b) I have replaced the manner of speaking verb ‘whisper’ with the factive verb ‘regret’ and changed the complementizer accordingly. Fukui observes that manner of speaking verbs in Japanese, as in English, block adjunct extraction. While manner of speaking verbs pattern with factives in extraction, they pattern with non-factives in interpretation. I leave the status of manner of speaking verbs to future research.

Given the pattern in (20) through (25), adjunct extraction is prohibited out of the CP in the factive structure in (4), while it is allowed out of the CP in the non-factive structure in (5).¹⁹ In de Cuba (2006), I argue that arguments and adjuncts proceed up the tree in different ways, spelled out in (27).

- (27) a. *Arguments*: proceed up the tree through Spec-CP
b. *Adjuncts*: proceed up the tree by adjunction to CP

The assumptions in (27) and the proposed structures in (4) and (5), combined with the Adjunction Prohibition in (26), give us a solution to the factive island problem. Since arguments move through Spec-CP, there is nothing blocking argument movement in either (4) or (5). However, given the Adjunction Prohibition, adjunct movement is blocked in (4) and allowed in (5). In (4), CP is directly selected by a lexical verb, so adjunction is banned by (26). Thus, there is no position for adjuncts to reach at the edge of the phase (CP) in order to escape the lower clause. In contrast, the CP in (5) is selected by the functional head *c*, so the Adjunction Prohibition does not apply, leaving CP as a licit adjunction position at the edge of the phase for *wh*-adjuncts to move through.²⁰

In this section, I have presented an analysis of factive islands, arguing that extra structure (*c*P) associated with non-factives opens up an escape hatch for adjunct extraction that is unavailable under factives. Once again, this proposal is opposite from the classic Kiparsky & Kiparsky (1970) analysis, which says that movement is blocked by extra structure associated with factives. In the next section I present more details on the semantic contribution of the [OP].

6. Semantics of the Operator

Assuming vampires are fictional characters, (28a) is a false statement, and (28c) is therefore also strange. However, (28b) is fine, regardless of whether or not the speaker believes in vampires.

- (28) a. #Vampires walk the earth
b. Anne believes that vampires walk the earth.
c. #Anne resents that vampires walk the earth.

I argue that the operator I proposed in the head of *c*P in (5) is responsible for the felicity of (28b). The [OP] serves to remove the speaker from responsibility for the truth of the lower clause. The idea of an operator associated with non-fixed truth-values is not new. Progovac (1994) argues for an operator in the head of CP. This operator is licensed in a clause whose truth-value is not set positively. In her analysis, the operator is needed to license a Negative Polarity Items (NPIs) in a non-negative contexts, as in (29) (Progovac, 1994:67).

¹⁹ Provided of course that there is no EV2, which blocks all extraction, including extraction of arguments.

²⁰ As stated earlier, I take *c*P to be a phase extender, keeping CP open for further syntactic processes.

- (29) a. I doubt [_{CP} [_C that OP [_{IP} anyone has come.]]] (negative verb)
 b. [_{CP} [_C Has OP [_{IP} anyone come?]]] (Yes/no question)
 c. [_{CP} [_C If OP [_{IP} anyone comes]]], let me know. (Conditional)
 d. [_{NP} Every man [_{CP} who [_C has OP [_{IP} read anything by Chomsky]]]]
 will attend the lecture. (Universal Quantifier)
 e. [_{CP} Had OP [_{IP} anyone misbehaved], we would have left.]
 (Counterfactual Conditional)

Nichols (2001) also proposes the existence of an operator associated with non-factive verbs. She argues for the special status of non-factive predicates as opposed to factive predicates in that there is an ‘assertive operator’ associated with non-factives that is not present with factives. The contribution of Nichols’ assertive operator is summarized briefly in (30).

- (30) a. CPs have associated context variable sets C <speaker, (hearer), time, world> needed for interpretation (Schlenker 1999).
 b. With the value <+current speaker>, the actual world is necessarily included in the evaluation set (as in main clauses).
 c. Factives do not supply a <speaker> value to the context variable set, so the default value is specified <+current speaker>.
 d. Non-factives are associated with an ‘assertive’ operator, which may supply a different value for <speaker>.

I follow Schlenker’s (1999) analysis that attitude operators like the one I am proposing are quantifiers over contexts. For me, the operator is needed when there is a change of the <speaker> value away from the default <+current speaker> value. Whoever replaces the <+current speaker> becomes ‘responsible’ for the truth-value of the sentence. Thought of in a ‘possible worlds’ framework, this means that the sentence no longer is necessarily true in the speaker’s (actual) world, but is true in some possible world (someone else’s, or a hypothetical world).

In this section, I have argued that the proposed operator [OP] in the head of *cP* serves to separate the speaker of the sentence from responsibility for the truth content of the embedded CP. Progovac (1994) and Nichols (2001) have proposed similar operators associated with unfixed truth-values, but I part ways with them in proposing that the operator projects a syntactic position. Following Schlenker (1999), the operator is a quantifier over contexts, changing the <speaker> value from <+ current speaker>, removing the need for the speaker’s actual world to be part of the evaluation set.

7. An Intensional Operator?

Larson (2002) discusses the grammar of intensionality and argues for the ‘sententialist view’, where intensionality arises in bi-clausal syntactic contexts. However, Larson offers no solution as to why bi-clausality should trigger intensionality, as, according to him, no articulated theory presents itself. In this section, I speculate about a possible solution to this problem.

Larson specifically argues against theories that propose intensional operators in the CP domain, given that ECM infinitives (31a) and small clause complements (31b) are also intensional environments. These embedded phrases are standardly analyzed as something smaller than full CPs (examples from Larson (2002:27)).²¹

- (31) a. Max believes [_{TP} Boris Karloff to be on his veranda].
 b. Max considers [_{SC} unicorns dangerous].

The lack of CP in these cases would appear to rule out the presence of a CP operator providing intensionality. However, a solution presents itself given the analysis argued for in this paper. I have argued that a non-factive reading is due to the presence of the [OP] in *cP*, selected by the verb. Crucially, the operator does not reside in CP. If we assume that *cP* is able to select for phrases other than CP, then the possibility of [OP] occurring in non-CP environments opens up. Specifically, *cP* is able to directly select TP in (31a) and the small clause in (31b). I remind the reader that I have not claimed that *cP* is a phase, but have argued that it extends the phase of CP. In the case of *cP* selecting a non-phasal category, there is no phase to extend, simply the category of the selected phrase.^{22,23}

While this analysis of ECM infinitives and small clauses seems plausible, another problem arises if we are to keep the intensional [OP] analysis. I have argued that there is no [OP] present under factive verbs, but as Larson (2002:15) notes, factives like *regret*, *know* and *understand* are classified as intensional. However, Larson also notes that this class of verbs is only ‘partially intensional’. While both *believe* and *regret* block substitution of *Bill Pratt* for the co-extensive term *Boris Karloff* in (32)²⁴, and both support a non-specific reading for the indefinite *a Norwegian* in (33), only *believe* allows its complement to contain a non-denoting predicate in (34).

- (32) a. Max believes/regrets that **Boris Karloff** is unavailable.
 b. Max believes/regrets that **Bill Pratt** is unavailable.
- (33) Max believes/regrets that **a Norwegian** was involved

²¹ Larson labels the embedded clause in (31b) AP. I have changed AP to SC, taking no stand as to what label small clauses should receive.

²² I will continue to call the operator phrase *cP* for ease of exposition. However, it may be easier to think of it as *tP* and *scP* in (31a) and (31b) respectively, as it seems to inherit phasal properties from the clause it selects.

²³ Larson (2002:27) also discusses intensional adverbs and adjectives when pointing out problems with an intensional operator in CP analysis.

(i) Boris *allegedly* [_{VP} stole the money].

(ii) Alice met an *alleged* [_{NP} pro thief]

Given my analysis here, I will assume that intensional adverbs and adjectives also select *cP*, which in turn selects the category below it.

²⁴ ‘Boris Karloff’ was the stage name taken by Mr. William Henry Pratt.

- (34) a. Max believes that **a unicorn** is approaching.
 b. #Max regrets that **a unicorn** is approaching.

The intensional [OP] analysis proposed in this section captures the facts in (34), but (32) and (33) remain to be explained. In (33) we can simply say that the bi-clausality allows for the two readings in both factive and non-factive cases, regardless of the presence/absence of the intensional [OP]. A *Norwegian* can QR to either the lower clause or the higher, giving two different scope positions, thus the two different readings. Whether or not there is an [OP] present plays no role, so there is no difference expected between *believe* and *regret*.

As for (32), with both *believe* and *regret* the speaker is making a statement about the belief system of Max. If Max does not know that *Boris Karloff* and *Bill Pratt* refer to the same person (let us assume that Max knows *Boris Karloff* but does not know that his given name is *Bill Pratt*), then (32b) is a false report on the state of Max's belief system, regardless of which attitude verb is used. In other words, (32b) is ruled out in both cases simply because it is not true. The presence or absence of the intensional [OP] in (32b) has no effect in this case, just as it would have no effect in saving (34a) if Max in fact did not believe in unicorns. In this case (34a) would also be ruled out as a false statement.

In this section I have proposed a solution to the question of why bi-clausal environments are associated with intensionality. In short, non-factive verbs select *cP*, and the [OP] therein causes the intensional behavior in its complement. I argue that there is indeed a straightforward mapping of syntax to semantics in these cases, but that it is *cP*, not *CP*, that houses the intensional [OP]. By assuming that *cP* can select ECM infinitives and small clauses, I have eliminated a potential argument against an intensional operator analysis.

8. Conclusion

In this paper I have presented an analysis of EV2 in Swedish that has wide implications for the analysis of sentential complementation. I have proposed that non-factive verbs are associated with extra syntactic structure, in the form of *cP*, selected by this class of verbs. This extra structure facilitates EV2 in the presence of an overt complementizer, and allows for free extraction of *wh*-adjuncts from sentential complements of non-factive verbs. Factives, which do not select *cP*, do not allow EV2 or *wh*-adjunct extraction. In addition, I have argued that *cP* is headed by a semantic operator [OP], which is responsible for non-factive interpretations of embedded *CP*s, and that the [OP] is at least partly independent from the lexical semantics of the selecting verb. I presented morphological and semantic evidence for the extra projection from Hungarian in the form of the pronominals *azt* and *úgy*, which I argue are overt realizations of [OP]. Finally, I presented speculation that the [OP] is responsible for intensionality effects. Since in my analysis the intensional [OP] is divorced from *CP*, a solution for the intensionality of ECM infinitives and small clauses presents itself, with *cP* able to select these smaller than *CP* projections. The hope is that this solution can strengthen the sententialist view of the grammar of intensionality.

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