

Factive Complements as Defective Phases

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1. Introduction

This paper presents a minimalist analysis of the semantic and syntactic behavior of factive complements. As originally noted by Kiparsky and Kiparsky ('K&K', 1970), factive predicates ('factives,' e.g. *regret*, *hate*, *remember*) are distinguished from non-factives (e.g. *think*, *say*, *reckon*) in that the former presuppose the truth of their complement clause while the latter do not. Consider the examples in (1).

- (1) a. John regrets [_{CP} that he was late] *Factive*
b. John thinks [_{CP} that he was late] *Non-factive*

In (1a), the CP *that he was late* is required to be true in order for the entire sentence to be felicitous. There is no such requirement for the non-factive verb in (1b); the truth of the entire sentence is independent from that of the embedded clause (Melvold, 1991). This property is visible in the case of contradictions, which are shown in (2a) to be infelicitous with factives.

- (2) a. #Mary regrets that she skipped class, but she didn't. *Factive*
b. Mary says that she skipped class, but she didn't. *Non-factive*

Contradiction of the complement clause in (2a) is unsuccessful because the speaker contradicts a proposition which is presupposed to be true, namely that Mary skipped class. The non-factive verb in (2b), however, does not require its complement clause to be true, so the speaker can felicitously state that the embedded proposition is false.

In addition to the semantic phenomenon mentioned above, factives are further distinguished from non-factives by various syntactic behavior. First, as shown in (3), factive sentential complements disallow long-distance adjunct and subject extraction while allowing slightly degraded object extraction; there are no such restrictions in the non-factive examples in (4). An important aspect to note in (3) is that factive complements do not exhibit an *argument* vs. *adjunct* asymmetry in [wh] movement, but a *subject/adjunct* vs. *object*, or *object* vs. *non-object* distinction.

- (3) a. ?What do you regret that John stole ___? *Factive*
b. *Who do you regret (that) ___ stole the cookies?¹
c. *Why do you regret that John stole the cookies ___?

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¹ As shown in (i) – (ii), subject extraction from factive complements remains ungrammatical even when the null C is used.

- (i) I remember Mary broke the table.
(ii) *Who do you remember ___ broke the table?

- (4) a. What do you think that John stole ___ ? *Non-factive*
 b. Who do you think (*that) ___ stole the cookies?
 c. Why do you think that John stole the cookies ___ ?

(adapted from Varlakosta, 1994)

Additionally, as shown in (4), factive verbs allow a DP complement, which non-factives do not.

- (4) I regret/*think [_{DP} the incident]. *Factive/*Non-factive*

Based on the observations above, I will put forward three main claims in this paper, which together provide a unified analysis of various syntactic phenomena associated with factives. First, I will propose that the presupposition of factive constructions stems from the lack of an [assertion] feature in ForceP of the subordinate clause.² This [assertion] feature, which is present in non-factive complement CPs, anchors the subordinate clause to the matrix subject; its absence in factive complements causes the embedded clause to be interpreted as presupposed by the speaker.

Secondly, I will argue that the lack of an [assertion] specification, a 'necessary force indicator,' renders factive complements defective phases, akin to a passive or unaccusative v° (see Chomsky 2001:13). As defective phases, the left periphery (LP) of factive complements does not contain an edge feature ('EF' – essentially an EPP feature), and is not subject to the Phase Impenetrability Condition (PIC)³. I will show that movement to the left edge of factive complements is generally disallowed, and that long-distance [wh] extraction of objects must be driven by a different mechanism.

Finally, I will present evidence to suggest that long-distance [wh] extraction from factive complements is driven directly by the matrix $v^\circ - V^\circ$, rather than the embedded CP-layer. Specifically, I will illustrate that the factive matrix v° , which carries an accusative case (ACC) feature, is able to agree with the ACC feature on embedded objects and draw those objects directly to the matrix clause in an A-movement fashion. This movement is disallowed for embedded subjects, which are marked for nominative case (NOM), as well as for adjuncts, which are caseless.

The paper will be organized as follows: section 2 discusses the role of [assertion] in the LP of an embedded clause and how its absence results in a presuppositional reading for factive complements. Section 3 lays out the syntactic aspects of the proposal, illustrating the lack of movement to the LP of factive complements and describing the movement of [wh] objects directly to the matrix vP . Section 4 deals with predictions that fall out from the proposal, and section 5 summarizes the arguments.

2. Presupposition, assertion and the left periphery

2.1. Presupposition vs. assertion

Returning to the discussion of presupposition, I will follow Hegarty (1990; citing Cattell, 1978) in assuming that factive complements are distinguished from non-factives in that the former are *presupposed*, while the latter are *asserted*. The definitions of these terms are given in (5).

- (5) *Presupposition*: Whether the complement expresses part of the undisputed background beliefs of the matrix subject and any interlocutors of the matrix subject.

Assertion: Whether the complement expresses a belief that is being offered or entertained by the matrix subject for acceptance as part of the body of undisputed background beliefs (of himself and any interlocutors), and the subject volunteers (to himself or others) a positive stance endorsing that belief

(Hegarty, 1990:102)

² Previously suggested by de Cuba and Ürögdi (2001).

³ See Chomsky (2005) for a discussion of the EF/EPP and the PIC.

What is important to note about Hegarty's definitions is that they only make reference to the matrix subject, whereas previous authors (K&K, 1970; de Cuba, 2006; Norrick, 1976) have posited that it is the *speaker* who presupposes the factive complement.⁴ This is particularly salient in the case of negation. Consider the examples in (6).

- (6) a. John knows [_{CP} that Mary was late.
 b. John does not know [_{CP} that Mary was late.

In (6a) both the speaker and the matrix subject *John* presuppose the truth of Mary's being late. In (6b), however, it cannot be the case that *John* presupposes the truth of the complement clause as he is not cognizant of the event. The *speaker* of (6b), on the other hand, does presuppose that Mary was late and states that John is not aware of this fact.

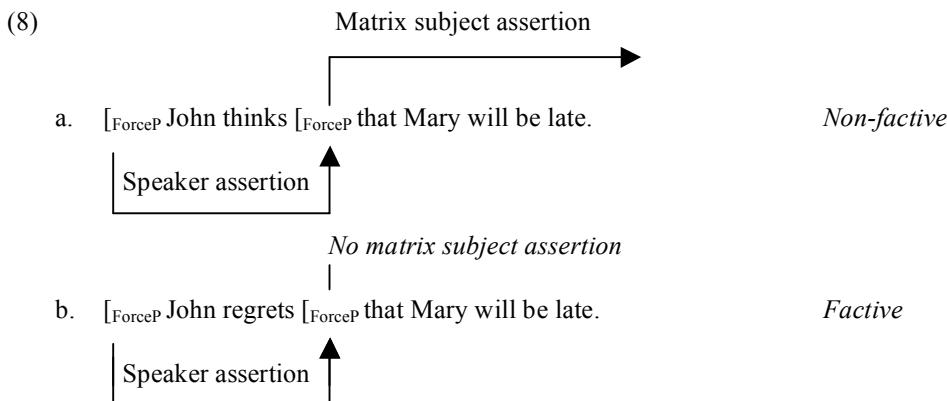
Therefore, if factive complements are presupposed as true by the speaker while non-factive complements are asserted as true by the matrix subject, we are left with the pattern of presupposition vs. assertion and speaker vs. matrix subject shown in (7).

(7)	FACTIVE	NON-FACTIVE
Speaker asserts:	main clause event only	main clause event only
Speaker presupposes:	complement clause event	-----
Matrix subject asserts:	-----	complement clause event
Matrix subject presupposes:	-----	-----

In (7) we can see that the speaker only presupposes the complement clause when the matrix subject does not assert it, and vice versa; in other words, speaker 'presupposition' and matrix subject 'assertion' are in complementary distribution. On these grounds, I propose that [presupposition] is not a discrete feature in the syntax, but rather a reflex of the lack of an [assertion] feature *relative to the matrix subject* in the embedded CP-layer.⁵

2.2. Assertion and the left periphery

As argued by Ojea (2005) and Basse (2007), I will assume that [assertion] is specified in ForceP; the matrix ForceP encoding speaker assertion, and the embedded ForceP encoding matrix subject assertion. This is schematized in (8).



⁴ Norrick (1976) argues that the matrix subject presupposes the complement only with a subset of factive verbs.

⁵ See Cattell (1978), Abbot (2000), Nichols (2001), Ojea (2005), Haegeman (2006) for similar arguments.

Because the event expressed in a factive complement clause cannot anchor to the matrix subject's assertion, it is interpreted as a presupposition of the speaker. This idea was also touched on by Haegeman (2006, and references therein), who argues that the lack of an [assertion] feature and its corresponding functional head in the LP of factive complements prohibits the embedded clause from anchoring to any speaker, including the matrix subject.⁶ Haegeman therefore predicts 'speaker-oriented' adverbials and epistemic modals to be ungrammatical under factive verbs. However, (9) – (10) exhibit grammatical speaker-oriented adverbials and epistemic modals in factive complements, suggesting that the clauses do in fact anchor to a speaker.

- (9) a. John hates that Mary *obviously* doesn't like him.
 b. John knows that Mary *probably/unfortunately* can't come to the party.
- (10) a. John regrets that Mary *may* not attend the meeting.
 b. The boss knows that Mary *must* be in her office by now.

((10a) from Haegeman (2006, p. 1664))

Evidence that factive complements anchor specifically to the speaker but not to the matrix subject comes from Modern Greek, which exhibits a factive complementizer *pu*. Predicates introduced by *pu* are permitted to take speaker-oriented adverbials only if they contain the modal particle *tha*, marking a future interpretation, as in (11).

- (11) O Yanis lipate **pu** mallon dhen ***(tha)** parevrethi sti sinandisi
 The John is sorry that probably not will attend-3sg in the meeting
 "John is sorry/regrets that probably he won't attend the meeting"

(Haegeman, 2006:1665)

The particle *tha* in (11) was argued by Giannakidou (2007) to anchor the complement clause to utterance time. It therefore stands to reason that anchoring the tense of the complement clause in (11) to speech time, which is intrinsically linked to the speaker but not necessarily the matrix subject, allows the speaker-oriented adverbial to do the same, thereby rescuing the sentence (Basse, 2007:17).

As a summary of the arguments presented in section 2, let us assume that 'presupposition' actually stems from the lack of an [assertion] feature (relative to the matrix subject) in ForceP of the lower clause. The absence of matrix subject assertion causes the embedded proposition to anchor to the speaker and is therefore interpreted as a speaker presupposition. The next section will discuss the ramifications of this proposal, and will demonstrate how various syntactic phenomena can be captured under the view outlined above.

3. Factives and Phases⁷

3.1. The left edge of factive complements

Adopting the framework proposed in Chomsky (2001, 2005), I propose that the lack of an [assertion] feature (a 'necessary force indicator') renders factive complement clauses defective phases. This is schematized in (12) – (13), where the non-defective phase edges are shown.

- (12) $[_{\text{ForceP}} [C^{\circ}] \dots [_{\text{vP}} [v^{\circ}] \dots [_{\text{ForceP}} \dots [_{\text{vP}} [v^{\circ}] \dots]]]]]$ *Factive*
-
- Phases: $[Force^{\circ} - v^{\circ}]$ $[v^{\circ} - v^{\circ}]$ $[vP]$

⁶ Haegeman utilizes the term "speaker deixis." I will stick to "assertion" for consistency.

⁷ Due to space considerations, I will forgo a formal description of phases and their properties; see Chomsky (2001, 2005) and Basse (2007) for detailed discussion.

- (13) $[\text{ForceP} [\text{C}^\circ] \dots [\text{vP} [\text{v}^\circ] \dots [\text{ForceP} \dots [\text{C}^\circ] \dots [\text{vP} [\text{v}^\circ] \dots]]]]$ *Non-factive*
- Phases: $[\text{Force}^\circ - \text{v}^\circ] \quad [\text{v}^\circ - \text{Force}^\circ] \quad [\text{Force}^\circ - \text{v}^\circ] \quad [\text{vP}]$
-

The difference between the factive construction in (12) and the non-factive in (13) lies in the large $v^\circ - v^\circ$ phase in (12), which is separated into two phases in (13). As discussed in Chomsky (2005), one of the properties associated with phase edges is the presence of an EF, which draws elements to the left edge of the phase. If factive complements represent defective ForceP phases with the structure depicted in (12), we would predict that they would lack an EF and, hence, would resist movement to the LP of the clause. This is borne out in examples (14) – (19) for a variety of elements. First, as shown in (14) – (15), embedded topicalization is prohibited under factives in English and Japanese.

- (14) John *regrets/believes that *this book* Mary read. **Factive/Non-factive*
- (15) a. John-wa [kono hon-***wa**/o Mary-ga yonda no]-o **kookaisiteiru** *Factive*
 John-TOP this book ***TOP/ACC** Mary-NOM read COMP-ACC **regret**
 "John regrets that Mary read THIS BOOK"
- b. John-wa [kono hon-**wa**/o Mary-ga yonda to] **sinziteiru** *Non-factive*
 John-top this book **TOP/ACC** Mary-nom read COMP **believe**
 "John believes that this book, Mary read."
- (Maki, et al, 1999)

Secondly, McCloskey (2005) notes that Irish English disallows T – C movement under factive verbs, as in (16).

- (16) a. *I found out how **did they** get into the building.⁸ *Factive*
 b. I wondered what **is he** like at all. *Non-factive*

De Cuba (2006) points out that embedded V2 (essentially T – C movement) is also prohibited in factive complements in mainland Scandinavian. This is shown in (17) for Swedish.

- (17) a. Rickard ***ångrade/sa** att van **var inte** hemma **Factive/Non-factive*
 'Rickard regretted/said that he **was not** home.

Additional evidence comes from Latvian. Latvian allows long-distance [wh]-movement of objects from both factive and non-factive complements.⁹ This shown in (18).

- (18) a. **Ko** tu nožēlo/domā, ka Jānis nozaga __? *Factive/Non-factive*
what.ACC you regret/think that John stole
 "What do you regret/think that John stole"

For non-factive verbs, Latvian also allows partial [wh]-movement to the left edge of the complement clause in conjunction with a [wh] scope-marker *kā* in the matrix clause. Under the analysis developed here, we would predict this to be prohibited under factive complements, which should resist movement to the embedded LP. This is borne out in (19).

⁸ Many factive verbs do allow their CP complements to be introduced by a [wh] element. Following Lahiri (1990) and Rooryck (1992), I will assume these to be headless relatives.

⁹ Mirroring the English pattern in (3), Latvian disallows subject and adjunct extraction from factive complements.

- (19) **Kā** tu *nožēlo/domā **ko** Jānis nozaga __ ? *Factive/Non-factive¹⁰
Q you regret/think **what.ACC** John stole
 "What do you *regret/think that John stole?"

The examples above have demonstrated that a variety of movements to the LP (topicalization, T – C, V2 and [wh]-movement) are prohibited under factives. However, the examples in (18) – (19) leave us with an important question, which will be the subject of the next section. If movement to the left edge of a factive complement is generally prohibited, how is it that (slightly marginalized) long-distance object extraction occurs in languages such as English, Latvian and Greek (Varlakosta, 1994)?

3.2. Long-distance [wh] extraction from factive complements

I propose that object extraction from factive complements is driven directly by the next-highest phase head, the matrix v° , without moving through the embedded CP-layer. This movement is driven specifically by an ACC feature on the factive (matrix) v° . As demonstrated in (20), factive verbs permit an ACC-marked DP complement.

- (20) Es zinu/nožēloju visu. Latvian
 I know/regret everything.ACC
 "I know/regret everything"

Because factive complements are defective phases and therefore permeable to search from higher probes, the ACC feature on the factive v° is able to search the lower clause and Agree with ACC on the embedded [wh] object.¹¹ ACC-marked [wh] objects are then drawn directly to the superordinate vP via a sort of case-driven movement (i.e. A-movement). This is shown in (21) for the factive construction *What do you regret that you bought?*¹²

- (21) ...[vP *what_i* [... [v° *regret*] [$ForceP$ *that* ... [TP *you_j* ... [vP *t_i* [v' *t_j* *bought*]]...]
-
- ACC-based Agree and Move: subordinate vP to matrix Spec, vP

After the step in (21), the [wh] object then moves to the left edge of the matrix clause via classic [wh] movement. It is, however, precisely the operation described in (21) that distinguishes long-distance [wh] movement from factive vs. non-factive complements. In the case of factives, subjects are unable to undergo the operation in (21) because they are marked for NOM, not ACC, and are therefore unable to Agree with the matrix v° . Adjuncts, which are caseless, are also unable to form this Agree relationship and are prohibited from moving to the matrix Spec, vP . Because *non-factive* ForcePs are non-defective phases, and non-factive v° does not contain an ACC feature, extracted [wh] elements stop at the left edge of the embedded clause via traditional successive-cyclic (A-bar) movement and are not subject to the restrictions imposed by (21). This is shown in (22) for the non-factive construction *What do you think that you bought?*

- (22) ...[vP *what_i* [v' [v° *think*] [$ForceP$ *t_i* [*that* ... [TP *you_j* ... [vP *t_i* [v' *t_j* *bought*]]...]
-
- ForceP to matrix vP *what* moves to embedded ForceP

¹⁰ I have encountered inter-speaker variation regarding the non-factive construction in (19); some speakers consider it grammatical, others marginal, others judge it as "literary" or formal. However, speakers roundly reject the factive version. The same phenomenon described in (18) – (19) is also attested for Burgeland Roman and German by Kaminsky (2005) and references therein.

¹¹ See Rackowski and Richards (2005:596 – 97) for a similar argument.

¹² See Basse, (2007:58 – 60) for a more detailed derivation.

A consequence of this theory is that [wh] objects extracted from factive complements enter into *two* Agree relationships via their ACC feature: first with the subordinate v° and again with the matrix v° . This results in the marginalized grammaticality of object extraction from factive CPs in English and Greek and a full prohibition on [wh] extraction from factives in other languages such as German and Dutch (Barbiers, 2002).

Barbiers (2002) observes that for many Dutch speakers, factive complements disallow any [wh] extraction, including that of objects, suggesting that the double-agreement described above is less permissible in Dutch. Interestingly, Barbiers also notes that focus movement to matrix vP is permitted with non-factive verbs, as in (23a) but not with factives as in (23b).

- (23) a. Ik had [_{VP} [_{PP} in de TUIN] gedacht [_{CP} dat he feest [_{PP} ~~in de tuin~~] zou zijn]]
 I had in the garden thought that the party ~~in the garden~~ would be.
 'I had thought that the party would be in the GARDEN'
- b. *Ik had [_{VP} [_{DP} een BOEK] betreurd [_{ForceP} dat Jan [_{DP} ~~een boek~~] zou kopen]]
 I had a book regretted that John ~~a book~~ would buy.
 'I had regretted that John would buy a BOOK'

The status of (23b) is predicted if we assume that movement to a factive vP is driven by case agreement with v° , which Dutch appears not to allow; the non-factive case in (23a) would involve only A-bar movement and would therefore not be subject to such a restriction. However, I have no satisfactory explanation as to why languages such as English and Greek tolerate multiple agreement (i.e. with two v° s) with less severity than Dutch and German. I leave the issue open here.

The section above has argued that factive complements are defective ForceP phases, which correctly predicts a lack of movement the LP of those clauses. Furthermore, I have argued that the next-highest phase head, the matrix v° , utilizes its ACC feature to attract [wh] objects (but not NOM-marked subjects or caseless adjuncts) directly to the matrix vP . The next section will discuss certain predictions that are expected to follow from this analysis, namely that [wh] object extraction from factive complements should exhibit properties associated with A-movement but not A-bar movement.

4. A-movement properties in factive extraction

As discussed in the preceding section, there is reason to believe that one step of [wh] extraction from factive complements (shown in (21)) proceeds via a case feature rather than strict [wh] features. If so, we would expect that extraction from factive complements would exhibit behavior associated with A-movement, rather than A-bar movement. This is borne out below.

4.1. Reconstruction

As shown in (24), [wh] binding reconstruction, typically associated with A-bar movement, does not take place under factives.

- (24) a. *Factive: A-pattern*
 Which of his_{i/j} aunts does John_j regret/resent that every boy_i loves _ most?
- b. *Non-factive: A-bar pattern*
 Which of his_{i/j} aunts does John_j think/reckon that every boy_i loves _ most?

In (25), we see that [wh]-moved quantifiers can reconstruct under a non-factive verb, but not a factive.

- (25) a. *Factive: A-pattern*
Which student do you hate/regret that every professor met ___?
student >> professor, *professor >> student
- b. *Non-factive: A-bar pattern*
Which student do you think/reckon that every professor met ___?
student >> professor, professor >> student

4.2. Finiteness sensitivity

Another diagnostic comes from Obata (2006). Obata claims that wh-island effects are ameliorated when the clause containing the island is non-finite, as shown in (26).

- (26) a. ??Which book did Tom ask Kate [when he should buy t_{which} t_{when}]?
b. Which book did Tom ask Kate [when to buy t_{which} t_{when}]?

However, this is only the case when the [wh] element crossing the island moves *from* an A- position, as exemplified by the sentences in (27).

- (27) a. *Which book did Tom ask Kate [_{CP2} when to decide t_{when} [_{CP1} to buy t_{which}]]?
b. ?Which book did Tom decide [_{CP2} to ask Kate [_{CP2} when to buy t_{which} t_{when}]]?

In (27a), *which book* crosses a wh-island at the edge of CP2, after it has already moved to an A-bar position at the edge of CP1. In (27b), on the other hand, *which book* moves directly from its base position (a A-position) and crosses the wh-island at the edge of CP1. Obata therefore proposes that "...finiteness sensitivity in wh-movement is observed only in A-to-A'-movement, not in A'-to-A'-movement" (p. 1). If Obata is on the right track, the theory presented here would predict that a [wh] element landing at a factive (but not a non-factive) vP landing site would exhibit finiteness-sensitivity. This is borne out in (28) – (29). The landing sites in question are bolded; FIN = finite clause, NON = non-finite clause.

- (28) *Factive*
- a. *Which dog_j did Tom ask Kate [_{FIN} how_i he should [_{vP} **t_j** report t_i [_{CP} t_j that they lost t_j]]?
b. ?Which dog_j did Tom ask Kate [_{NON} how_i to [_{vP} **t_j** report t_i [_{CP} t_j that they lost t_j]]?
- (29) *Non-factive*
- a. *Which dog_j did Tom ask Kate [_{FIN} how_i he should [_{vP} **t_j** say t_i [_{CP} t_j that they lost t_j]]?
b. ??*Which dog_j did Tom ask Kate [_{NON} how_i to [_{vP} **t_j** say t_i [_{CP} t_j that they lost t_j]]?

In the factive constructions in (28), we see that the intermediate clause, which contains the [wh] island, exhibits finiteness sensitivity. This suggests that the bolded vP landing site below *how* is an A-position rather than an A-bar position. The non-factive data in (29) do not exhibit finiteness sensitivity in the intermediate clause, suggesting the presence of only A-bar landing sites. Obata's test therefore supports the assumption that long-distance extraction from factive complements utilizes case (i.e. ACC) rather than pure [wh] features, as it displays A- rather than A-bar behavior.

5. Conclusion

In this paper I have argued for a new, minimalist analysis of factive complements. I have argued that the 'presupposition' associated with factives is not a discrete feature itself, but that it is a reflex of the absence of a matrix subject [assertion] feature in ForceP of the embedded clause. The missing

feature causes the subordinate clause to become a defective phase, which is shown to resist movement to its left edge. I also argued that [wh] extraction from under a factive verb is in part case-based, targeting only ACC-marked objects and exhibiting A-movement properties.

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