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Clearing up the `Facts' on Complementation

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Abstract

In this paper, we aim to challenge what we see as two misconceptions in the literature on sentential embedding. The first, due to Kiparsky & Kiparsky (1971), posits that the complements of factive verbs are structurally more complex than the complements of non-factive verbs, an idea that has been challenged in much recent work. The second, related misconception, is the idea that factivity itself is a concept that is active in syntax, determining the structural properties of embedded clauses. This idea has also been challenged through the years, but there has been no clear consensus on the way forward. We present arguments that the referentiality of complement clauses is what matters for syntax, as opposed to factivity (part of the semantic component) or givenness (part of the pragmatic component). We compare our proposal to a competing analysis (Kallulli, 2006, 2009), which argues for the Kiparskian view that factivity is represented by extra syntactic structure, and which blurs the line between factivity and givenness. We conclude that our account, building on the referentiality of the embedded clause itself as opposed to the lexical class of the selecting predicate, can potentially go a long way towards clearing up the conceptual, empirical and terminological confusion in the realm of clausal complementation.

Clearing up the ‘Facts’ on Complementation

Carlos de Cuba & Barbara Ürögdi*

1 Introduction

In this paper, we present arguments for treating the effects of factivity, contextual givenness, and syntactic structure (complexity) as separate, and argue that these three factors operate independently, in different parts of the grammar. Factivity is a lexico-semantic property of verbs that yields (truth-conditional) presupposition of the complement. We take contextual givenness to be a purely pragmatic concept that has to do with the structure of the discourse. These two factors are independent of each other, and neither directly corresponds to syntactic structure. Hence, the determining factor behind syntactic contrasts observed in the realm of sentential embedding constructions must be found elsewhere and we take this syntactic factor to be referentiality.

The paper is organized as follows. Section 2 summarizes the arguments of de Cuba & Ürögdi (to appear), where we claim that factivity is not active in syntax, and that instead the referential status of complement clauses is responsible for observed syntactic differences in these clauses. Section 2.1 presents our basic claims, which we argue for in the remainder of Section 2. In Section 2.2, we present evidence that, by and large, factive complement clauses tend to be structurally less complex than non-factive complement clauses (contra Kiparsky & Kiparsky, 1971). In section 2.3, we show that “factivity/presupposition” and “givenness” are not useful in predicting the syntactic behavior of complement clauses. Instead we propose that the “referentiality” of the complement clause itself is responsible for syntactic differences. Section 3 presents arguments against a recent competing analysis from Kallulli (2006, 2009), who argues for the Kiparskian view that factivity is represented by extra syntactic structure, and whose analysis blurs the lines between factivity/presupposition and givenness. Section 4 briefly reviews prosodic evidence as support for the account advanced here and Section 5 presents our conclusions.

2 The Referentiality of Clauses

2.1 Basic Claims

In de Cuba & Ürögdi (to appear), we argue against what we see as two misconceptions in much of the literature about sentential embedding. The first misconception is that complements of factive predicates are structurally more complex than complements of non-factive predicates, as argued in influential work by Kiparsky & Kiparsky (1971). This idea, the more or less canonized view for decades, has been challenged in the recent literature and we continue in this vein (see de Cuba, 2007; Haegeman, 2006, 2007, 2008a, 2008b; McCloskey, 2005, a.o.). The second misconception is that factivity is a concept that is active in syntax, determining structural properties of the embedded clause. The problems with this idea (also originating with Kiparsky & Kiparsky, 1971) were recognized early on (see Hooper & Thompson, 1973; Cattell, 1978; Hegarty, 1992, a.o.) but not so much as a fundamental conceptual problem but as an empirical issue that requires fine-tuning or re-classification. In contrast, our account of the syntactic/semantic properties of object clauses builds on the following claims:

- (i) There are in fact two types of finite clauses (“more complex” and “less complex”) but the choice between these does not correspond one-to-one to the semantic class (i.e. factivity) of the selecting verb.
- (ii) The distinction between more complex and less complex embedded clauses comes down to the *referentiality* of the clause itself (i.e. a property whose syntactic relevance is well-established in other domains).
- (iii) The correspondence between factivity/presupposition, givenness, prosodic deaccenting, and

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- (5) a. *Rickard sa att han inte var hemma*
 Rickard said C he not was home
 b. *Rickard sa att han var inte hemma*
 Rickard said C he was not home
 “Rickard said that he was not home”

With negation indicating the left edge of the VP, we witness the availability of V-movement into the CP-domain (yielding V2 order) in (5b), which is not possible in (4b) under *regret*. The CP-recursion analysis explains this contrast by allowing for verb-movement to (the lower) C even in the presence of an overt complementizer (in the higher C) in (5b). Since factives do not license CP-recursion, (4b) is ruled out. As with McCloskey’s account, the CP-recursion analysis postulates a more complex syntactic structure associated with non-factives as opposed to factives.

Looking at a different set of facts, Haegeman (2006) also argues for a more articulated CP structure under non-factives. In a discussion focusing primarily on adverbial clauses, she adopts (and adapts) a Rizzi (1997) style CP-field, with “peripheral adverbial clauses” and non-factive complement clauses having a full left periphery (like root clauses), and “central adverbial clauses” and factive complements having an impoverished left periphery.³

- (6) a. Peripheral adverbial clause:
 [Sub Top Focus Force Fin]
 b. Central adverbial clause:
 [Sub Fin]

This structural difference is exploited to account for the fact that peripheral adverbial clauses allow Main Clause Phenomena (MCP) such as topicalization and speaker oriented adverb placement, while central adverbial clauses do not; the positions designated for these phenomena are present in (6a) and missing in (6b). Haegeman then speculates that factive complements, like central adverbial clauses, are structurally impoverished. She cites data from Hooper & Thompson (1973) and Maki et al. (1999), showing that factives are also resistant to MCP like topicalization.⁴

- (7) a. *John regrets that this book Mary read
 (Maki et al., 1999:3, their (2c))
 b. *I resent the fact that each part he had to examine carefully
 (Hooper and Thompson, 1973:479, their (109))

Bentzen et al. (2007) adopt Haegeman’s (2006) proposal and apply it to EV2 in Mainland Scandinavian languages. Bentzen et al. propose that Topic and Force are the loci of EV2 movement, ruling out EV2 in factive complements like (4b).⁵

Based on the data and works cited in this section, we conclude that (in general) so-called “non-factive” complements (cP) tend to be structurally more complex than so-called “factive” complements (CP), taking care of misconception #1 from the introduction. In the next section we discuss the second misconception, namely that “factivity” is a concept active in syntax.

³Note that Haegeman (2006) replaces “Force” with “Speaker Deixis”.

⁴It is important to note that while Haegeman (2006) shares with the above authors the intuition that non-factivity (rather than factivity) is more marked semantically and syntactically, she places the distinction inside the embedded CP. In later work (see Haegeman, 2007, 2008a, 2008b) this picture is significantly revised, albeit maintaining the idea that the relevant contrasts derive from a structural difference between factive and non-factive complements. For lack of space, we cannot discuss these proposals here, noting simply that we think that Haegeman’s recent proposals are much closer to our own in spirit. In particular, the abandonment of “CP-reduction” in favor of an analysis reflecting the ‘nominal’ property of factive complements makes Haegeman’s account more compatible with ours.

⁵Note that Bentzen et al. (2007) do not characterize the semantic differences in predicate types as factive vs. non-factive. Instead, they appeal to a Hooper & Thompson (1973) division between clauses selected by assertive and semifactive predicates (Class A, B and E for H&T), which have the structure in (6a), and clauses selected by non-assertive and factive predicates (Class C and D for H&T), which have the structure in (6b).

Some effects that have traditionally been tied to factivity can be shown to actually correspond to givenness. Hegarty (1992) notes, for example, that both (11a) and (11b) are factive, yet, there is a clear difference in pragmatics between the two.

- (11) I was talking to our agents in Russia yesterday...
- a. ...and they noticed that Max went to Moscow last week.
 - b. ...and they noticed **it** that Max went to Moscow last week. (Hegarty, 1992:6)

While (11a) could be uttered out of the blue (without the speaker assuming that the listener has knowledge of Max’s travel plans last week), (11b) assumes the listener knows that Max went to Moscow. In other words, (11b) is deviant if the complement clause is not given to the listener, while (11a) is fine in this scenario. This example shows two distinct points. One, factive complement clauses can easily be contextually new (see (11a)), which does not undermine their presupposed interpretation (and causes no semantic clash). Two, a difference in givenness does not result in a difference in factivity (as both (11a) and (11b) are factive). While we cannot go into an analysis of the contrast in (11) in this paper, we note that givenness and presupposition are independent.

2.3.3 Syntactic Differences Are Due to Referentiality

Based on the discussion above, it is safe to say that (a) syntactic differences between sentential embedding constructions are not correctly predicted by factivity (as shown by both (10) and (11)), and (b) contextual givenness is also not a reliable indicator since it appears to play a part in some contrasts (as in (11)) but not in others (as in (10)). Hence, we propose that the syntactic type of the complement clause is not tied to the semantic class of the selecting predicate or the structure of the discourse but to the referentiality of the complement clause itself. We propose the following definitions for *cP* and CP.

- (12) a. **[CP]**: a referential entity that denotes a proposition without illocutionary force. Since referentiality does not implicate truth-conditional presupposition, both factive and non-factive predicates are compatible with this clause type. On this definition, a CP is simply used to refer to a proposition, hence (just as in the case of referring expressions in general) contextual givenness is also not a necessary requirement.
- b. **[cP [CP]]**: a non-referential semantic object denoting a speech act, i.e. an unresolved proposition or an open question. Since speech acts cannot be presupposed (fully presupposed propositions are not felicitous as speech acts, given that speech acts must add something to the context) true factives are not compatible with this type of complement.

We claim that the often muddled concepts of “presupposition” and “givenness” are independent from each other, and neither is active in syntax. Clauses are differentiated syntactically only by referentiality. In what follows, we show that this view predicts both the syntactic/semantic phenomena noted by authors on this topic, and the difficulty of reconciling the (partially overlapping) concepts of factivity and givenness with the syntactic observations. In our view, the reason that exceptions are abundant to previous generalizations is precisely that, while referentiality clearly overlaps with presupposition and givenness to some extent, this overlap is not perfect. We should not expect these concepts to coincide perfectly because they operate in different modules of the grammar: factivity in semantics, givenness in pragmatics, and referentiality in syntax.

2.3.4 Evidence for the Referentiality of CP and the Non-Referentiality of cP

In this section we sketch some evidence for the referentiality distinction between the clause types. Some of this evidence is impressionistic at best, and much more careful research is needed to establish the patterns clearly. Nevertheless, we believe that the abundance of cross-linguistic examples pointing in this direction indicates that our account is on the right track. Finally, we show that the availability of the expletive *azt* in Hungarian is predicted if we take *cP* to be non-referential.

The first set of observations comes from the realm of association of sentential complements with different types of pro-forms. In English, *do-so* replacement targets VP, as in (13a), while *it-*

replacement works for referential arguments, as in (13b). What is important for us here is to note that [so] replaces something predicational, while [it] stands for something referential.

- (13) a. Bill tried the cake, and John did [_{VP} so] too
 b. Bill tried the cake, and John tried [_{DP} it] too

Under a non-factive, *that Bill had done it* can be replaced with *so* (just like the VP *tried the cake* in (13)), or with *it*. However, only *it* is available under a factive predicate.⁶

- (14) a. John supposed [that Bill had done it], and Mary supposed [it/so] too
 b. John regretted [that Bill had done it], and Mary regretted [it/*so] too
 (Kiparsky & Kiparsky, 1971:362)

In the terms of the present analysis, *so* is able to replace non-referential cP in (14a), while the proform *it* can be substituted for referential CP. Since non-factive predicates are compatible with either cP or CP, we predict that either substitution in (14a) should be fine.

Coming back to the Hungarian pattern in (8) and (10), it is interesting to note that the presence of *azt* in (8b) is actually tied to an independently motivated fact of Hungarian syntax, namely that non-referential expressions are always required to leave the VP and move up to the preverbal position in this language. Kiss (2004:29-30) notes (crediting Alberti, 1997 for the observation) that “*postverbal argument positions [in Hungarian] are reserved for referential expressions*” because “*arguments of the verb can be legitimized in one of two ways. In the unmarked case they have referential legitimacy [...] Non-referential expressions can be legitimized by obtaining predicative legitimacy in the assertive part (i.e., the operator field) of the predicate.*” An example is below.

- (15) *János keringőt táncolt. / *János táncolt keringőt* [Hungarian]
 John waltz- ACC danced John danced waltz-ACC
 ‘John was waltzing’ (Kiss, 2004:29)

The non-referential argument in (15) cannot stay post-verbal but must move into the preverbal field. Referring expressions are not subject to this requirement. Looking at (8) from this perspective, we can say that the non-referential cP embedded under a non-factive in (8b) is subject to this constraint, so it must “move” to the preverbal position via the expletive.⁷ Meanwhile, the referential CP in (8a) is fine in the postverbal field, so no expletive is needed in (8a). Since factive verbs do not take cP as a complement, we never see the expletive with a factive verb in a neutral context. Meanwhile, non-factive verbs are possible with either cP or CP, hence the pattern in (10): when the non-factive verb takes a cP, *azt* appears, due to the non-referential character of the complement; when the complement is a CP, no *azt* is required. What this pattern shows is that cP does in fact pattern with non-referential expressions in general, while CPs behave like referring expressions.^{8,9}

3 Counterproposal: Kallulli (2006, 2009)

In contrast to our claims above, Kallulli (2006, 2009) follows a Kiparskian line of analysis and argues that the [+presupposed] or [+given] status of an embedded CP must be marked by an extra functional projection in the syntax. The head of this projection must either be realized by (a) an

⁶See Cushing (1972) for a related account, proposing that a [-definite] S(entence) pronominalizes as *so*, while a [+definite] S(entence) pronominalizes as *it*.

⁷Clauses cannot undergo the relevant movement, see Kenesei (1992) for discussion.

⁸We do not discuss *azt* in constructions involving contrastive focus on the complement clause here, although that pattern also confirms our predictions. Please refer to de Cuba & Ürögdi (to appear) for details.

⁹Due to lack of space, we cannot go into discussing data from other language families here. Among the most interesting, relevant facts come from Kwa (Collins, 1994; Aboh, 2005) where factive clauses are formally relative clauses, or Albanian (Kallulli, 2006) where a clitic pronoun normally associated with referential DPs shows up with factive embedded clauses.

expletive element of some sort (a pronoun, modal, or clitic), or (b) by destressing or deaccentuation of the embedded CP in a probe-goal relationship with the head. For example, Kallulli claims that factivity can be “triggered” in a clause embedded under a non-factive verb like *believe* (16a) if an expletive pronoun (16b) or a modal (16c,d) is present.

- (16) a. I believed that John left (but in fact he didn’t).
 b. I didn’t believe it that John left. *In fact he didn’t.
 c. I can believe that John left (*but in fact he didn’t).
 d. Can you believe that John left? *In fact, he didn’t. (Kallulli, 2006:212)

However, this triggering of factivity does not seem to be very productive. It seems that *can* is the only modal that triggers factivity: *will, would, could, may, should*, etc. do not have the same effect in sentences like (16c).

- (17) Bill may/might/will/could believe that John left (but in fact he didn’t).

In addition, it is difficult to think of another non-factive verb that allows this construction (indeed, all of Kallulli’s examples are with *believe*).

- (18) a. *I thought/asserted/said/claimed it that John left.
 b. Can you think/assert/say that John left? (still non-factive)

This construction is, on the other hand, prevalent with factives (19a,b) and semifactives (19c). The contribution of *it* in the sentences in (19) is curious under Kallulli’s analysis, since the embedded clauses in (19) are all [+presupposed], whether *it* is present or not.

- (19) a. I regretted (it) that John left.
 b. I resented (it) that John left.
 c. I noticed (it) that John left.

The contribution of *it* in fact seems to be [+given], as was illustrated above in (11), making clear that givenness and presupposition (factivity) are not the same thing. Since a factive interpretation is retained whether the embedded clause is contextually new (as in (11a) with no *it*) or old (as in (11b) featuring *it*), givenness and factivity clearly operate independently.

It is important to note that, in contrast to the limited evidence of “factivity triggering” presented in Kallulli 2006 (as far as we know only one modal (*can*) and only one verb (*believe*) participate), the Hungarian pattern with and without *azt* in (10) above is quite robust, with many different non-factive predicates participating. This shows that the alternation between a non-factive verb with a *cP* complement and a CP complement is fully productive, as predicted by our analysis.

Additionally, even the limited cases of “triggering factivity” are questionable, and, in our view, stem from the confusion of referentiality and presupposition. For example, Kallulli presents the example in (20) as evidence that prosodic prominence on a main verb also “induces” factivity.

- (20) I didn’t see John leave my party, but then he called me from his home phone. Now it was obvious. I believed that John left. (Kallulli, 2006:215)

However, as (21) shows, presupposition is by no means obligatory in this case. The speaker in this example obviously does not presuppose the truth of the embedded proposition *that he would marry me*, despite the prosodic prominence falling on the main verb.

- (21) John was such a liar, and yet I believed that he would marry me. What an idiot I was! (Ürögdi & Ishihara, 2008)

It is true, as Kallulli observes, that in a neutral factive construction the main V has highest prominence, while in a neutral non-factive construction it is (prototypically) the embedded clause.

- (22) a. John resents that Mary is coming tomorrow.
 b. John thinks that Mary is coming tomorrow. (prominent element underlined)

However, this prominence relation does not correspond to factivity (cf. (21): non-factives can also bear main stress, and this does not induce presupposition of the complement). Factives, meanwhile, always appear to bear prosodic prominence, which makes sense given that they only occur in one syntactic configuration. Prosody does not correlate with novelty of information: factives can also introduce new information with no effect on the prosodic relations in the sentence, as in (23).

- (23) Q: Why is John so sad and angry today?
 A: He resents that Mary is coming tomorrow.

On our view, this seemingly complicated state of affairs is to be expected. Since prosody is mapped from syntax, prosodic prominence on the main verb is predicted to correlate only with the *cP*/*CP* distinction (which, as we have discussed, does not implicate presupposition or givenness). Thus, we expect *believe* with main stress to pattern with factives only in that it has a *CP* complement (not a *cP*). This is, of course, possible for a non-factive verb. It does not, however, result in presupposition, as (21) shows. Meanwhile, factives always take a *CP* complement, so they are always prominent in the prosody. This, once again, does not mean that their complement is necessary given in the context: they can introduce new information, as in (23), in which case the truth-conditional presupposition is accommodated, given the lexical semantics of the verb.

Another point of comparison between Kallulli's analysis (positing extra structure "triggering factivity") and our account (positing extra structure associated with non-referential complements) is the locus of this extra syntactic structure. In our view, there is one clear syntactic position associated with this contrast, *cP*. Kallulli, on the other hand, makes no concrete claim as to where exactly the extra structure is – factivity can be induced by a modal (presumably in *TP*), a clitic (in a clitic head above *VP* according to Kallulli), an expletive (presumably an *NP* selecting a *CP*, a *la* Kiparsky & Kiparsky), and as an abstract phonological deaccenting morpheme (also in the clitic head according to Kallulli, on analogy to clitics). Any one of these elements "triggers factivity" through an agree relation to the associated clause/phrase below it. As mentioned above, questions remain for Kallulli's analysis with regard to what kind of elements exactly trigger factivity (why only *can* and not other modals appear in this pattern (17), why only *believe* and not other non-factives employ the expletive triggering factivity (16), and what precisely is triggered – givenness or factivity, cf. (20) vs. (21)).

To sum up, Kallulli's analysis – while based on interesting observations, some of which also remain unexplained on our account (like the role of modals in the type of complement clause selected) – does not hold up to scrutiny. On our view, the conceptual problems and abundant counterexamples the analysis is faced with are due to the blurring of the line between factivity, givenness and referentiality that we claim is crucial, since for us this line is the dividing line between semantics, pragmatics and syntax. We now turn briefly to some prosodic evidence for our view.

4 Prosodic Evidence: Factivity, Givenness and Prosody Are Independent

Ürögdi & Ishihara (2008, 2009) provide clear experimental evidence for the claims presented in de Cuba & Ürögdi (to appear) and the present paper. In a series of experiments conducted on Hungarian data, Ürögdi & Ishihara recorded and analyzed prosodic patterns of these structures:

- (24) a. [*azt* V [cP [CP]]] (cf. (8b), (10a))
 b. [V [CP]] (cf. (8a), (10b))

The test conditions were controlled for factivity, givenness, and syntactic structure. While structure (24a) is only possible with non-factive verbs, structure (24b) yielded four possible conditions: [factive V; given complement], [factive V; new complement]; [non-factive V; given complement]; [non-factive V; new complement]. In addition, contrastive focus on both the matrix verb and the complement clause were also added as controls to isolate the effects of focus.

Clearly, the competing syntactic analyses make distinct predictions for prosody, given the

common assumption that prosody is mapped from syntax. If factivity were active in syntax and syntactic structures contrasted based on the factivity of the matrix verb, prosodic contrasts should be found between factive and non-factive embedding constructions. Hence, if information structure is kept constant, the effect of factivity should be visible. Meanwhile, an analysis like Kallulli's (2006, 2009) that takes factivity and givenness to go hand-in-hand predicts that givenness effects should not be witnessed when factivity is kept constant. Therefore, factive constructions should feature one prosodic pattern, and non-factive constructions another, with the former involving a given complement and the latter a novel one. In contrast, our analysis predicts no factivity contrast if givenness is successfully controlled. We may, however, expect to see both factive and non-factive examples to show the effects of givenness, since both verb types are expected to be able to take a given or novel CP complement.¹⁰ Further, we expect novel complement clauses of the *cP* type (i.e. featuring *azt*) to contrast prosodically with novel complement clauses of the CP type (i.e. without *azt*) since these are different syntactically. In fact, we may expect to see matrix-like prosody in the *cP* case, given that *cP* encodes a speech act.

Crucially, Ürögdi & Ishihara's findings confirm the predictions dictated by our account. (For details and pitch contours/statistics, we refer the reader to their work.) When syntactic structure and pragmatics were controlled, no significant effect of factivity was detected in their recordings. Meanwhile, both factive and non-factive constructions featuring a CP complement showed a significant effect of contextual givenness (with given complement clauses showing much smaller peaks than novel ones), evidence that factivity, syntactic structure and givenness operate independently. In addition, a significant contrast was found between a non-factive verb with a novel CP complement and the same verb with a novel *cP* complement (these minimal pairs were tested in the same context). While the embedded clause had clear peaks in both cases, the peaks in the *cP* case were much higher in the complement, while the matrix verb had clear prominence in the CP case. Results showed that the *cP* had matrix-like intonation with higher prominence than a novel complement clause of the CP type, which means that the exceptionally high peaks witnessed in the *azt*-cases were not due to novelty of information, but to the *cP* (i.e. speech act) complement.

5 Conclusions

Based on the discussion above, we conclude that neither factivity, nor givenness/novelty of information is responsible for the well-known syntactic contrasts observed in the realm of sentential embedding constructions. Rather, we have shown that an account building on the referentiality of the complement clause itself can go a long way towards clearing up the conceptual, empirical and terminological confusion in this area. It remains to be seen how such an account can be extended to cover the immense range of relevant data and observations (like complementizer drop, extraction facts, scope of negation, and so on). It is highly possible that some of these phenomena will be tied to the syntactic difference we posit between the two clause types, and some will fall out of the semantics of referentiality. All this will be dealt with in ongoing and future work.

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¹⁰This does not necessarily signal a syntactic difference since pragmatic factors like surprise or exclamation are known to influence prosody. The point is that when pragmatic factors are controlled, we should not see a prosodic effect of factivity when the complement is a CP - signaled by the absence of *azt*.

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