On the Syntax of Correlative *Es* and Finite Clauses in German: an LFG Analysis*

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Abstract: An analysis is proposed within the framework of LFG of sentences in German in which the correlative pronoun *es* occurs in conjunction with a CP. The pattern of occurrence of *es* in the middle field, which differs according to syntactic construction and type of the embedding verb, is derived from independently motivated LFG principles, in particular those concerning the mapping from a-structure to f-structure, together with the additional assumption that German has not only a thematic *es*, but also a subcategorized non-thematic *es*. The resulting empirical coverage is broader than that of previous approaches.

1   Introduction

1.1   Overview

In German the neuter pronoun *es* is used as a correlative to clausal constituents in the functions SUBJ or OBJ. The acceptability of the cooccurrence of correlative *es* in the *Mittelfeld*[1] together with its related CP differs according to both the syntactic construction as well as the type of the embedding verb. In this paper the possibility of correlative *es* (henceforth simply *es*) and finite CP cooccurring is examined in four constructions and three verb classes for each construction. The constructions considered are (i) the CP occurring as an extraposed clause (in the *Nachfeld*); (ii) extraction out of the extraposed CP; (iii) topicalization (occurrence in the *Vorfeld*) of the matrix VP together with the embedded CP; (iv) topicalization of the CP alone. The verb-types will be illustrated by *sagen* ('say')—in both the active and the passive constructions—as an example of a transitive verb which allows sentential realization of the OBJ; *beweisen* ('prove') as an example of a transitive verb which allows sentential realization of the SUBJ; and *stören* ('disturb') as an example of the class of psych-verbs.

After presenting the cooccurrence patterns, the basic idea of the analysis of Hoekstra (1983) will be sketched. In sections 2.1–2.3 this analysis—with some additional assumptions—will be implemented in LFG terms and it will be shown to account for the patterns with the *sagen* class and the *beweisen* class. It turns out, however, that this analysis fails to capture the pattern with psych-verbs. We will see that one crucial assumption about the thematic status of *es* together with independently motivated LFG-principles will explain the entire range of data (section 2.4). Finally, some consequences of this analysis for the treatment of passive constructions are briefly discussed (section 2.5).

[1]In traditional grammar the German sentence is divided into three fields, the *Vorfeld*, the *Mittelfeld* and the *Nachfeld*. The *Mittelfeld* (middle field) is that part of a main (verb-second) clause between the finite verb and any nonfinite verbal forms or a seperable verb prefix, or that part of an embedded (verb-final) clause between the complementizer and the verb complex. A constituent that precedes the main clause finite verb occupies the *Vorfeld* (prefield), those following the verb complex occupy the *Nachfeld* (postfield).

1.2 Data

For all three verb classes, the occurrence of *es* together with an extraposed subject or object clause is optional:[2]

(1) a. weil   er (es) gesagt hat, dass Hans krank ist
        because he it   said   has   that Hans sick   is
        'because he said that Hans is sick'

    b. weil   (es) gesagt wurde, dass Hans krank ist
        because it   said   was   that Hans sick   is
        'because it was said that Hans is sick'

    c. weil   (es) deine Vorhersagen beweist, dass er den Hans eingeladen hat
        because it   your predictions   proves   that he the Hans invited   has
        'because (the fact) that he invited Hans proves your predictions'

    d. weil   (es) mich stört,   dass sie den Hans liebt
        because it   me   bothers that she the Hans loves
        'because it bothers me that she loves Hans'

With extraction out of the extraposed clause or VP-topicalization together with the extraposed clause, however, the cooccurence patterns vary according to the class of the embedding verb. With the *sagen* class, the presence of *es* with both extraction and VP-topicalization is ungrammatical. With the *beweisen* class, extraction and VP-topicalization are ungrammatical regardless of the presence or absence of *es*. The pattern with psych-verbs is just the opposite of the *sagen*-class: extraction and VP-topicalization are grammatical only if *es* is present. These grammaticality patterns are illustrated in (2) for extraction out of the extraposed clause and (3) for VP-topicalization with the extraposed clause.

(2) a. Was hat er (*es) gesagt, dass er gelesen hat?
        what has he it   said   that he read   has
        'What did he say that he read?'

    b. Was wurde (*es) gesagt, dass er gelesen hat?
        what was   it   said   that he read   has
        'What was it said that he read?'

    c. *Wen beweist (es) deine Vorhersagen, dass er eingeladen hat
        whom proves   it   your predications   that he invited   has
        'Who does (the fact) that he invited prove your predictions?'

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[2]For discussion of the data see e.g. Cardinaletti (1990), Haider (1995), Müller (1995), Vikner (1995), Webelhuth (1992). Cardinaletti assumes, however, that in sentences like (1c), *es* is obligatory, contrary to my judgment; additional counterexamples to Cardinaletti's judgment are given in Vikner (1995:237). None of these authors presents an analysis of sentences like (1d)-(4d); Haider (1995) remarks that "the role of the pronominal subject is not completely clear in constructions with psych predicates" (p.263), though he also states that "*überraschen* ['surprise', i.e. also a psych-verb] is a bridge verb for the subject clause and extraction is possible, but only with an expletive subject" (p.256). Cardinaletti (1990:94) observes that "the theme argument of psych verbs has in some sense an intermediate status between internal and external argument, for which we have no explanation to offer." (It should be noted that some speakers judge the absence of *es* in examples like (2d)-(3d) to be marginally acceptable, but there is general agreement that such sentences clearly contrast with the *sagen* class, where *es* must be absent in these constructions.)

    d. Wen   stört   *(es) dich, dass sie liebt?
       whom bothers it   you   that she loves
       'Who does it bother you that she loves?'

(3) a. Gesagt, dass er krank ist, hat er (*es) nicht
       said   that he sick is has he it   not
       'He did not say that he is sick'

    b. Gesagt, dass er krank ist, wurde (*es) nicht
       said   that he sick is was   it   not
       'It was not said that he is sick'

    c. *Bewiesen, dass er den Hans eingeladen hat, hat (es) deine Vorhersagen
       proved   that he the Hans invited   has has it   your predictions
       'That he invited Hans proved your predictions'

    d. Gestört, dass sie den Hans liebt, hat *(es) mich schon
       bothered that she the Hans loves has it   me   sure
       'It sure bothered me that she loved Hans'

Finally, if the embedded clause is topicalized by itself, *es* is always ungrammatical.

(4) a. Dass Hans krank ist, hat er (*es) gesagt
       That Hans sick   is   has he it   said
       'That Hans is sick, he said'

    b. Dass Hans krank ist, wurde (*es) gesagt
       That Hans sick   is   was   it   said
       'That Hans is sick, was said'

    c. Dass er den Hans eingeladen hat, beweist (*es) deine Vorhersagen
       That he the Hans invited   has proves it   your predictions
       '(The fact) that he invited Hans, proves your predictions'

    d. Dass sie den Hans liebt, stört   (*es) mich
       That she the Hans loves bothers it   me
       'That she loves Hans, bothers me'

1.3   *Es* as a Referential Expression

Hoekstra (1983) proposed and Bennis (1986) further developed that idea that the Dutch correlative pronoun *het* is a referential expression, which is therefore case-marked and theta-marked and has to occur in an A-position. Consequently, the clause that occurs in conjunction with *het* cannot be an argument, but must be an adjunct, occupying an adjoined position (an A-bar-position). In the absence of *het*, however, the clause itself is assumed to be the argument, base-generated as the righthand sister of the verb.

Cardinaletti (1990) and Vikner (1995), following Hoekstra's and Bennis's treatment of *het*, assume that the German correlative *es* is likewise a referential expression (Müller 1995:231 also endorses this view). That is, in their analyses correlative *es* has the same grammatical status as *het*.

As will be shown in detail below, this analysis of *es* reduces the pattern with the *sagen* class to familiar argument/adjunct asymmetries, and the pattern with the *beweisen* class to independent constraints on subject clauses. This approach fails to predict the pattern with psych-verbs, however, since extraction and topicalization are grammatical only when *es* is present.

What this suggests is that the thematic status of *es* and its related clause is different with psych-verbs than with the other verb classes. We will show, on this assumption, how the relation between the a-structure and f-structure accounts for the full pattern of (co)occurrence of *es* and its related clause.[3]

2 LFG-Analysis

2.1 Theoretical Preliminaries

The analysis is based on the following five assumptions. Note that the first four are mainly applications to German of independently motivated postulates of LFG; only the last (which is also more theory-neutral) is new to the present analysis.

  A. In German the syntactic functions of NPs are identified via case and agreement.[4] Specifically, nominative case determines that the NP functions as subject, accusative determines the function of the NP as an object, etc. If the NP shows number and person-agreement with the verb, it is marked as the subject:

NP: ($\downarrow$CASE) = NOM $\Rightarrow$ ($\uparrow$SUBJ)
NP: ($\downarrow$CASE) = ACC $\Rightarrow$ ($\uparrow$OBJ)
NP: ($\downarrow$AGR) = ($\uparrow$SUBJ AGR) $\Rightarrow$ ($\uparrow$SUBJ)

Clauses, on the other hand, are neither case-marked[5] nor do they show agreement with the finite verb.[6] The functions of clauses thus cannot be determined by case and agreement.

  B. Lexical case-assignment takes place prior to morpho-lexical operations, while default case-assignment takes place after these operations (cf. Zaenen/Maling/Thrainsson 1985). In addition, it is assumed here that default case-assignment takes place before the mapping from thematic roles to grammatical functions.[7] The highest thematic role is as-

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[3]A different approach within LFG is presented in Berman/Dipper/Fortmann/Kuhn (forthcoming); this is a unification analysis based on the assumption that *es* is a thematic argument. Whereas the present analysis follows a more strictly syntactic approach, that analysis appeals to discourse properties; however, it does not address the range of data considered here.

[4]For a general discussion of 'morphological function specification' in LFG, see Bresnan (1995: chapter 5).

[5]An anonymous reviewer suggested that clauses have an unmarked structural case. This can be proved wrong, since there are also clauses in the function of a genitive object:
(i) Er vergewisserte sich (dessen), dass alle anwesend waren. 'He made sure (of it) that everyone was present.'

[6]For example, if two or more subject-clauses are coordinated, the verb still has to be marked third person singular, not plural:
(i) Dass er den Hans nicht eingeladen hat und dass er nicht auf das Fest gekommen ist beweist/*beweisen deine Vorhersagen. 'That he did not invite Hans and that he did not come to the party proves/*prove your predictions.'

[7]Zaenen/Maling/Thrainsson (1985:465) assume that default case-assignment (which they also call 'functional case marking') applies after 'all association principles' to grammatical functions. The present approach allows a simpler account of the cooccurrence pattern with passive (see section 2.5). Additional assumptions would be necessary on Zaenen/Maling/Thrainsson's approach, though for reasons of space I refrain from showing this here; I compare the two approaches in my forthcoming dissertation.

signed nominative case, the next highest accusative.

C. The theme argument is underspecified [−r] in a-structure, which permits the theme in principle to be mapped either to the subject [−r, −o] or the object [−r, +o], in accordance with the Lexical Mapping Theory.[8]

D. German is a language that must satisfy the Subject Condition.[9] In German this may be satisified by verbal morphology in default of a phonologically realized subject (see section 2.5).

E. In the middle field both a thematic as well as a non-thematic *es* can occur. The non-thematic *es*, however, does not occupy a structurally given position; rather it must be subcategorized. Only certain classes of verbs subcategorize a non-thematic argument.

For the three verb classes considered, the following a-structures are assumed:

(5) a. sagen   <agent,   theme>
                        [−o]   [−r]
     b. beweisen   <θ[10],   theme>
                        [−o]   [−r]
     c. stören[11]   <experiencer, theme>
                        [+o]   [−r]

Contrary to Zaenen/Engdahl (1994), I do not assume a thematic role *proposition* with the intrinsic feature [−o]; hence a verb has the same argument structure regardless of the categorial realization of its arguments. Consequently, I assume that on the level of f-structure, argument clauses in German bear the same grammatical function as NPs, i.e. OBJ or SUBJ.

2.2   OBJ Clauses (*Sagen* Verbs)

Given the assumption (following Hoekstra, Vikner, etc.) that *es* is a thematic argument, the extraction pattern in (2a), repeated below in (6), is explained by the independently motivated assumption that extraction is possible out of an argument clause, but not out of an adjunct clause:[12]

(6) Was hat er (*es) gesagt, dass er gelesen hat?

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[8]Lexical Mapping Theory (LMT) (see e.g. Bresnan/Zaenen 1990, Alsina/Mchombo 1993:24-7; the latter formulation is followed here) is a theory which relates a-structure to f-structure. Linking principles are formulated in terms of the thematic hierarchy (agent > beneficiary > experiencer/goal > instrument > patient/theme > locative) and the features [±o(bject)] and [±r(estricted)]. Intrinsic properties of the thematic role determine one of its feature values (intrinsic classification). Internal arguments are intrinsically marked [+r] or [+o], other roles have the intrinsic classification [−o]. Intrinsic values cannot be changed (principle of preservation of information). The other feature value is determined by the hierarchical position of the thematic role relative to the other roles (default classification). Specifically, the highest role gets the default classification [−r], the others [+r]. Syntactic functions are not primitive notions, but defined by these features. A subject corresponds to [−o, −r], an object to [+o/−r], object$_\theta$ to [+o, +r] and oblique$_\theta$ to [−o, +r].

[9]"An f-structure with propositional content must include a subject (as one of its grammatical functions) and no f-structure may include more than one subject" (Alsina 1996:20; see also Baker 1983).

[10]It is uncertain what theta-role the propositional subject of *beweisen* bears; for present purposes it is only important that it be [−o] and ranked higher than theme.

[11]On the argument structure of psych-verbs see e.g. Grimshaw (1990).

[12]For the analogous Dutch examples, see Bennis (1986:104(22)).

According to the Lexical Mapping Theory the agent argument of *sagen* gets mapped onto the SUBJ, and the theme argument gets mapped onto the OBJ.[13] Due to the selectional properties of the verbs of this class, the OBJ can be filled by an NP or a CP.
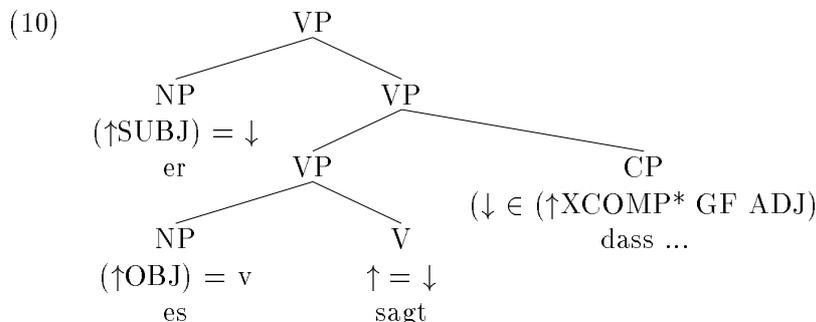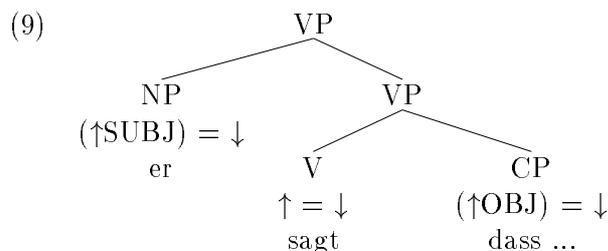
(7) sagen   <agent,   theme >
           [−o]   [−r]
           [−r]
     _____

           SUBJ   OBJ (NP/CP)

If *es* is present, it will function as the OBJ and the clause will be an adjunct (ADJ), so extraction is ungrammatical. If *es* is not present, the clause itself will be the OBJ and extraction is fine.

The VP-topicalization pattern in (3a), repeated below in (8), can be accounted for in purely structural terms on Hoekstra's and Bennis's assumption that an argument clause is base-generated as the righthand sister of the verb (9), whereas an adjunct clause is adjoined to a V-projection (10):

(8) Gesagt, dass er krank ist, hat er (*es) nicht

(9)

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                      VP
             _____/  _____
           NP                    VP
       (↑SUBJ) = ↓        _____/  _____
           er            V                CP
                       ↑ = ↓         (↑OBJ) = ↓
                       sagt            dass ...
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(10)

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                      VP
             _____/  _____
           NP                    VP
       (↑SUBJ) = ↓        _____/  _____
           er           VP                          CP
                   ____/  \____        (↓ ∈ (↑XCOMP* GF ADJ)
                 NP           V              dass ...
             (↑OBJ) = v     ↑ = ↓
                 es         sagt
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In (9) the verb and the CP form a constituent, which can be topicalized. In (10), however, the verb and the CP do not form a constituent and topicalization is not possible.[14]

This analysis (treating the CP as an adjunct when it cooccurs with correlative *es*), while capturing the extraction and VP-topicalization paradigms of the *sagen* class, does not account for the failure of topicalization of the CP alone in the presence of *es*—cf. (4a), repeated in (11) below—since in general entire adjuncts can be topicalized (cf. footnote 15):

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[13]By the principle of preservation of information (cf. footnote 8), the theme argument of *sagen*, which is intrinsically marked [−r], remains underspecified, even if per default classification it would be assigned [+r].

[14]Topicalization of the VP containing *es* and the CP is marginal:

(i) ?Es gesagt, dass der Hans krank ist, hat er nicht. 'Say (lit. said it) that Hans is sick, he did not.'

This can be explained by the general prohibition against topicalizing an OBJ-*es*. A topicalized OBJ has to receive phonological stress and since *es* cannot bear stress, topicalized OBJ-*es* is ungrammatical.

(11) Dass Hans krank ist, hat er (*es) gesagt.

However, Vikner (1995:239) suggests that there is an independent explanation for the ungrammaticality of cooccurrence here. He observes that the same effect arises with appositive NPs (Vikner 1995:239, footnote 9):

(12) a. Heute habe ich Peter$_1$ getroffen, [meinen alten Freund]$_1$
      Today have I   Peter   met   my old friend
      'Today I met Peter, my old friend.'

   b. *[Meinen alten Freund]$_1$, habe ich Peter$_1$ heute getroffen.

Vikner therefore proposes to analyse the adjunct CP as a 'kind of apposition' which likewise prevents it from moving to SpecCP (i.e. the prefield).[15]

Vikner's observation can be formulated in LFG terms as a condition on the f-precedence relation[16]: an appositive element cannot f-precede the expression it is related to. This can be formalized as follows (APP stands for the f-structure element representing the apposition):

(13) For all f-structures g: $g <_f (g$ APP$)$

Once this precedence condition is adopted, it can also be applied to the analysis of the VP-topicalization pattern, which can thus be accounted for without relying on the constituent structure assumptions of Hoekstra and Bennis (Gereon Müller, p.c.).

2.3   SUBJ Clauses (*Beweisen* Verbs)

With the *beweisen* class, the higher theta-role bearing the intrinsic feature [−o] will be mapped onto the SUBJ, the theme onto the OBJ:

(14)   beweisen   <?,   theme>
                    [−o]   [−r]
                    [−r]
                    ‾‾‾‾‾   ‾‾‾‾‾
                    SUBJ   OBJ

Thus if correlative *es* is present and has the higher thematic role, it will be mapped onto the SUBJ. Consequently, the related CP is an adjunct. In this situation, the account of the cooccurrence pattern—cf. examples (2c)/(3c)/(4c), repeated below in (15)—is therefore the same as with the *sagen* class:

(15) a. *Wen beweist es deine Vorhersagen, dass er eingeladen hat

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[15]Vikner derives this fact about appositives from the assumption that A-bar-movement (of which topicalization is an instance) is only possible with maximal projections that are assigned both a theta-role and case. However, this explanation can't be right, since adjuncts are also assigned neither a theta-role nor case, but can nevertheless be topicalized, e.g.:
(i) Obwohl Hans krank ist, hat er es ihm nicht gesagt. 'Although Hans is sick, he didn't tell it to him.'

[16]f-precedence is defined as follows (Zaenen/Kaplan 1995:226(12)): For two f-structure elements f_1 and f_2, f_1 f-precedes f_2 if and only if all the nodes that map onto f_1 c-precede (i.e., precede in c-structure) all the nodes that map onto f_2. Formally: $f_1 <_f f_2$ iff for all $n_1 \in \phi^{-1}(f_1)$ and for all $n_2 \in \phi^{-1}(f_2)$, $n_1 <_c n_2$.

b. *Bewiesen, dass er den Hans eingeladen hat, hat es deine Vorhersagen

c. *Dass er den Hans eingeladen hat, beweist es deine Vorhersagen

That is, (15a) violates the general condition on extraction from an adjunct, and (15b-c) violate the f-precedence condition (13) on appositives (in addition, the verb and complement clause in (15b) do not, on the structure assumed by Hoekstra and Bennis, form a constituent).

When *es* is absent, the extraposed clause itself functions as subject. In this case, however, in contrast to the *sagen* class, extraction and VP-topicalization remain ungrammatical. For the case of extraction, this is attributable to the independently motivated general prohibition against extraction from a subject clause (see e.g. Webelhuth 1984:229). The ungrammaticality of (3c) (= (15b) with *es* absent) indicates that VP-topicalization evidently is subject to an analogous constraint.[17]

The analysis of Hoekstra and others that *es* is the argument and the CP an apposition related to it essentially captures the cooccurence patterns with the *sagen* and *beweisen* classes. Note, too, that this analysis, though independent of the assumptions A-E listed in section 2.1, is compatible with them. As it stands, however, it cannot account for the pattern of the psych-verbs, since contrary to the predictions of this analysis extraction and VP-topicalization are only possible in the presence of *es*. In the next section it will be shown how the theory embodied by assumptions A-E accounts for the full range of cooccurrence patterns.

2.4 Psych-Verbs (*Stören* Class)

The argument structure of psych-verbs leads to the conclusion that the clause related to correlative *es* can be either a SUBJ or OBJ. The reasoning goes as follows. Note first that both passivization[18] and Topic-drop[19] are ungrammatical with psych-verbs:

(16) a. weil   mich der Fleck stört
        because me   the stain bothers
        'because the stain bothers me'

b. *weil   ich vom   Fleck gestört   wurde
        because I   by-the stain bothered was
        'because I was bothered by the stain'

(17) *(Mich) stört   der Fleck
        me   bothers the stain
        'The stain bothers me'

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[17]As an anonymous reviewer reminded me, there are examples in the literature of VP-topicalization containing an NP-subject (cf. Haider 1993:151ff.). However, since the function of CPs, unlike that of NPs, is not determined by case and agreement, configurationality may play a role in determining the functions of clauses and constraints on their occurrence. While an NP which is marked nominative and shows agreement with the verb is mapped to SUBJ regardless of its structural position, the function of a clause, which lacks this information, will be identified by phrase-structural configuration. Thus a clause which is a sister of the verb, as in the case of the VP-topicalization, will be marked as an object.

[18]As an anonymous reviewer noted, on an agentive reading of *stören* the passive is grammatical:
(i) weil ich vom Nachbarn gestört wurde. 'because I was bothered by the neighbour'
However, it seems plausible that the a-structure of the agentive *stören* is different from that of the purely experiencer reading.

[19]In German a subject or object in the prefield may in general be omitted (Huang 1984).

These observations suggest that the experiencer, the higher thematic role, receives lexical case, namely accusative, and, in accordance with assumption (B), is therefore not mapped to an OBJ (which would permit Passive und Topic-drop), but rather to an OBJ_θ.[20] Consequently, the highest thematic role to be assigned default case is the theme, which is thus case-marked nominative. Although by the Lexical Mapping Theory (C), the underspecified theme $[-r]$ can in principle be mapped to the subject or the object, it is a property of German that the assignment of nominative case forces an NP to be mapped to the subject (A). But in the case of clausal realization (where syntactic function is not defined via case) the underspecification of the theme permits mapping to either the subject or the object.[21] These properties are encapsulated in the following mapping rule for psych-verbs:

(18)   stören   <experiencer,   theme>
                    [+o] $[-r]$
                  [ACC]

$$\overline{\qquad\qquad\qquad\qquad\qquad\text{[NOM]}\qquad\qquad\qquad\qquad}$$

             OBJ_θ SUBJ (NP)
                              SUBJ/OBJ (CP)

Now if a clausal theme argument were mapped to the OBJ, then—in the absence of correlative *es*—the Subject Condition (D) would not be satisfied. However, if *es* were mapped to the SUBJ, then on the above analysis the CP would have to be an adjunct, and the grammaticality of extraction and VP-topicalization in the presence of *es*—cf. (2d)/(3d), repeated in (19a-b)—would be unexplained.

(19) a. Wen stört *(es) dich, dass sie liebt?

      b. Gestört, dass sie den Hans liebt, hat *(es) mich schon

It is the fact that these are grammatical with *es* that suggests the adoption of assumption E, that certain verbs—in particular, psych-verbs—subcategorize a non-thematic argument and assign it nominative case. Then the subject can (and as will be shown, must) be realized by non-thematic *es*, and the object by the clausal argument. This situation is encoded in the following lexical entry for *stören*:

(20)   stören   PRED = 'stören<OBJ_θ, OBJ> SUBJ'
                (↑SUBJ CASE) = NOM
                (↑SUBJ PERS) = 3
                (↑SUBJ NUM) = SG

The lexical entry of non-thematic *es* does not contain any PRED-feature:

(21)   es   (↑NUM) = SG
            (↑PERS) = 3
            (↑CASE) =c NOM
            ∼ (↑PRED)

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[20]Cf. Fanselow (1987:81), who remarks that, since the accusative marked NP argument of *stören* cannot be passivized, it is presumably not the direct object.

[21]Note that in the case of *sagen* the underspecified theme, which is assigned accusative case, cannot be mapped onto the SUBJ, even if it is realized as a CP, since the agent, which is marked $[-o]$, already fills that function (principle of functional uniqueness).

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The constraining equation on the case-feature expresses that the case must be licensed by a governing element; hence a non-thematic *es* cannot occur without being assigned case. The negative constraint '∼ (↑PRED)' prevents unification with a thematic subject; thus the cooccurrence of *es* and another nominal subject is correctly predicted to be ungrammatical:

(22) *weil   es mich der Fleck stört
     because it me   the stain bothers
     'because the stain bothers me'

The cooccurrence of non-thematic *es* and a clause, as in (1d), repeated below in (23), is however grammatical, since the CP may, as we have seen, be mapped to the object. Hence, the availability of non-thematic *es* with psych-verbs suffices to satisfy the Subject Condition in this case.

(23) weil es (SUBJ) mich stört, dass sie den Hans liebt (OBJ)/(*SUBJ)

The following f-structure for (23) shows how the Subject Condition is satisfied with psych-verbs with non-thematic *es*:

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PERS} & \textbf{3} \\ \text{NUM} & \text{SG} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\
\text{PRED} & \text{'stören} < (\uparrow\text{OBJ}_\theta)(\uparrow\text{OBJ})) > (\uparrow\text{SUBJ})\text{'} \\
\text{OBJ}_\theta & \begin{bmatrix} \text{PRED} & \text{'mich'} \end{bmatrix} \\
\text{OBJ} & \begin{bmatrix} \text{dass sie den Hans liebt} \end{bmatrix}
\end{bmatrix}
$$

Since with psych-verbs the CP is still an argument—namely OBJ—even in the presence of *es*, this accounts for the grammaticality of extraction (2d) and VP-topicalization (3d).

On the other hand, in the absence of *es* the clause itself will be mapped onto the SUBJ (to satisfy the Subject Condition):

(24) weil mich stört, dass sie den Hans liebt (SUBJ)

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{dass sie den Hans liebt} \end{bmatrix} \\
\text{PRED} & \text{'stören} < (\uparrow\text{OBJ}_\theta)(\uparrow\text{SUBJ})) > \text{'} \\
\text{OBJ}_\theta & \begin{bmatrix} \text{PRED} & \text{'mich'} \end{bmatrix}
\end{bmatrix}
$$

Thus, the ungrammaticality of extraction and VP-topicalization in this case—see (25)—is accounted for by the constraint on subject clauses, just as with the *beweisen* class.[22]

---

[22]According to Bennis (1986:135(78a-b)), the corresponding extraction sentences in Dutch have just the opposite behaviour from the German sentences: extraction out of the complement clause of a psych-verb is grammatical only if *het* is absent, ungrammatical if it is present. This indicates that the German correlative pronoun *es* is not the exact pendent of the Dutch correlative pronoun *het*, contrary to what Cardinaletti (1990) and Vikner (1995) assume.

(25) a. *Wen stört dich, dass sie liebt (SUBJ)?

  b. *Gestört, dass sie den Hans liebt (SUBJ), hat mich schon

As for topicalization of the CP alone in the presence of *es*, unlike extraction and VP-topicalization this is ungrammatical with psych-verbs, as with all other verb classes. But in contrast to the *sagen* and *beweisen* classes, in this case the ungrammaticality cannot be explained by a general prohibition against an appositive preceding the expression it is related to, since, as we have seen, with psych-verbs the clause is an argument, even in the presence of *es*.

The analysis of topicalization as left-dislocation in Berman (1996) which builds on Koster (1978) offers an explanation for the ungrammaticality. There it is argued that all finite argument clauses are obligatorily left-dislocated and can never occur in SpecCP, which is instead occupied by a resumptive pronoun. The resumptive pronoun can be dropped in accordance with the conditions on Topic-drop in German (cf. Oppenrieder 1990)—namely, only if the pronoun has the function SUBJ or OBJ. This analysis explains on the one hand why clauses in the function of a genitive or prepositional object must always be overtly left-dislocated (cf. (26)), while clauses in the function of subject or object appear to be topicalized (cf. (27)).

(26) Dass die Erde rund ist, *(darüber) hat sie sich   gewundert
     That the earth round is   it-about   has she herself be surprised
     'That the earth is round she was surprised about that'

(27) Dass Hans krank ist, (das) hat er gesagt
     That Hans sick   is, that has he said
     'That Hans is sick, that he has said'

Moreover, it also accounts for the failure of a "topicalized" clause to cooccur with a correlative pronoun in the middle field. Since the argument is already filled by the (dropped) resumptive pronoun, the occurrence of the correlative pronoun in the middle field would violate the Coherence Condition:

(28) Dass Hans krank ist, (das) hat er (*es) gesagt

In the case of *stören* the theme argument is assigned nominative case, so the resumptive pronoun, being a nominal expression, must be realized as a subject:

(29) Dass sie den Hans liebt, (das) (SUBJ) stört   mich
     That she the Hans loves that   bothers me
     'That she loves Hans, that bothers me'

Non-thematic argument *es* cannot occur here, since it cannot be unified with a function containing a PRED-feature (see the lexical entry of the non-thematic *es* in (21) and example (22)).

(30) *Dass sie den Hans liebt, (das) (SUBJ) stört es (SUBJ) mich

15

2.5 Passive of sagen

In light of the introduction of non-thematic *es*, it is necessary to consider how this interacts with the passive of *sagen* class verbs. In this construction, the most prominent role in a-structure, the agent, is suppressed. Thus the theme argument, since it is underspecified, may be mapped to the subject, but also—if clausal—to the object:

(31) gesagt   <agent,   theme>
              [−o]   [−r]

                           [NOM]
         ∅   SUBJ - NP
                SUBJ/OBJ - CP

The possibility of mapping the theme argument to the OBJ provides an explanation of the extraction and VP-topicalization patterns in (2b)/(3b), repeated in (32):

(32) a. Was wurde gesagt, dass er gelesen hat

      b. Gesagt, dass er krank ist, wurde nicht

If the CP could only be mapped onto the SUBJ, then extraction and VP-topicalization would induce a violation, as with the *beweisen* and *stören* classes; but being mapped onto the OBJ, no violation arises.

However, non-thematic *es* cannot cooccur with the CP in these constructions, since *sagen* does not subcategorize for a non-thematic argument and does not license the case of the non-thematic argument, unlike *stören* (cf. (20)–(21)). It is assumed that in this case the Subject Condition is satisfied by the verbal agreement morphology (Joan Bresnan, p.c.). There is, however, no representation of the empty subject in c-structure. The verbal morphology (which normally is unified with the information of the subject to guarantee subject-verb-agreement) supplies information about the number and person of the subject and permits a subject to be introduced at f-structure. The f-structure for (33) below shows how the Subject Condition can be satisfied with the passive of *sagen*:[23]

(33) weil   gesagt wurde, dass er das Buch gelesen hat
      because said   was   that he the book read   has
      'because it was said that he read the book'

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{bmatrix} \\
\text{PRED} & \text{'sagen} < (\uparrow\text{OBJ}) >\text{'} \\
\text{PASSIVE} & + \\
\text{OBJ} & \begin{bmatrix} \text{dass er das Buch gelesen hat} \end{bmatrix}
\end{bmatrix}
$$

---

[23]Following Alsina (1996) I assume that a non-thematic subject "is not licensed by a mapping principle, but is licensed by satisfying the Subject Condition, which is an alternative way of satisfying Coherence" (p.75). For a definition of Coherence which includes licensing conditions for non-thematic functions see Alsina (1996:71).

The so-called impersonal passive is an analogous case. The subject is not realized at c-structure, but is instead introduced at f-structure by the verbal agreement morphology:

(34) weil   getanzt wird
     because danced is
     'because people dance/are dancing'

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{bmatrix} \\
\text{PRED} & \text{'tanzen} < \; > \text{'} \\
\text{PASSIVE} & +
\end{bmatrix}
$$

In the case of psych-verbs, however, the verbal morphology cannot introduce a subject. This can be attributed to the Elsewhere Condition (Kiparsky 1973) or 'Blocking' (Aronoff 1976)—i.e., the principle that the existence of a more specific form precludes a less specific form from occurring.[24] Since non-thematic *es* has case features, it is a more specific realization of the SUBJ than verbal morphology, which only contains person and number information. Therefore, the fact that *stören* licenses non-thematic *es* blocks the less specific subject that would be introduced by the verbal morphology from realizing the SUBJ with this class of verbs. This is why in sentence (1d) with *es* absent, repeated below in (35), the embedded CP cannot be mapped onto OBJ, since then the Subject Condition would not be satisfied.

(35) weil mich stört, dass sie den Hans liebt

And being mapped onto the SUBJ results, as we have seen, in extraction and VP-topicalization being ungrammatical (cf. (25)).

With the passive of *sagen*, however, since this class does not subcategorize a non-thematic *es*, *es* in conjunction with the complement clause must be a thematic subject, with the CP therefore functioning as an apposition to *es*:

(36) weil es gesagt wurde, dass Hans krank ist

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{APP} & \begin{bmatrix} \text{dass Hans krank ist} \end{bmatrix} \end{bmatrix} \\
\text{PRED} & \text{'sagen} < (\uparrow \text{SUBJ}) > \text{'} \\
\text{PASSIVE} & +
\end{bmatrix}
$$

Thus extraction and VP-topicalization are ungrammatical, cf. (2b) and (3b), repeated here:

(37) a. *Was wurde es gesagt, dass er gelesen hat

    b. *Gesagt, dass er krank ist, wurde es nicht

---

[24]On the phenomenon of 'Blocking' see also Andrews (1990), Bresnan (1997).

3 Conclusion

The cooccurrence patterns of correlative *es* and its related CP have been accounted for by independent principles of LFG, in particular those concerning the mapping from a-structure to f-structure, together with the additional assumption that German has not only a thematic *es*, but also a subcategorized non-thematic *es*. Thematic *es* functions as an argument, to which the CP is a kind of apposition (following Hoekstra and Vikner). The extraction and VP-topicalization data confirm this analysis with verbs like *sagen* and *beweisen*. Non-thematic *es* does not fill a structurally given position in the c-structure, but must be governed by the verb and occurs to satisfy the Subject Condition. Non-thematic *es* is licensed by psych-verbs like *stören*. The a-structure of these verbs allows the CP to function as an object, even when it cooccurs with *es*; this accounts for the different pattern with respect to extraction and VP-topicalization. With the passive of agentive transitive verbs, the clausal theme argument likewise can be mapped to the object, but since these verbs do not subcategorize non-thematic *es*, the verbal morphology serves by default to satisfy the Subject Condition.

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