Selection and head chains*

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Abstract

This paper discusses two patterns related to sentential embedding. First, it deals with the effect of verb movement and adjunction on the optionality of complementizers; in this context it offers an explanation of Sten Vikner's generalisation that optional complementizers are only found in languages without obligatory verb movement. Second, the status of apparent verb-second complement clauses in German is investigated. The theoretical background of this discussion is the comparison of theories of phrase structure with and without categorial projection.

1 Introduction

This paper deals with the effects of a constraint on selection on the shape and the distribution of embedded clauses. The theoretical focus is on the different predictions made by standard theories of phrase structure on the one hand and a theory without categorial projection in which elements that are not in the deepest position of their chain can head structures on the other hand. In this first section, I introduce the constraint on selection, summarise the relevant assumptions of the theory of phrase structure proposed in Bury 2003, and outline the structure of this paper.

One of the earliest insights that emerged in the field of generative-transformational grammar is that certain grammatical relations can only hold of two linguistic items if neither of the two has been involved in a transformational operation. A strong form of this view is implied in the following passage from Katz and Postal 1964:[1]

> It appears that in the formally motivated underlying P-markers provided by the simplest transformational grammar there is associated with each

[1] See also Harris 1957:290 for relevant remarks.

grammatical relation a unique subconfiguration of constituents that can be taken as the formal basis for these relations. But in derived P-markers no such unique correlation between grammatical relations and configurations of constituents can be found. This is the most important sense in which derived P-markers provide only a superficial account of grammatical structure, with the 'deeper' facts represented only in underlying P-markers. (1964:39)

In fact, Chomsky (1965:117, 1966) argues that this generalisation predates the history of modern generative grammar by a couple of hundred years. He attributes the following view of language to the work of the 17th century French philosophers who developed the Port Royal Grammar:

The surface structure resulting from […] transformations does not directly express the meaning relations of the words, of course, except in the simplest cases. It is the deep structure underlying the actual utterance […] that conveys the semantic content of the sentence. (1966:35)

More recently, this generalisation has been discussed explicitly in relation to the thematic properties of chain positions, especially in the work of Brody 1987:(3), 1993:(9).[2] I will refer to the type of relation that follows this generalisation as SELECTIONAL RELATIONS, or as instances of SELECTION, and I assume that selection takes place under sisterhood.[3] The generalisation can then be formalised as follows:[4]

(1)   If α selects β, both α and β must occupy the deepest position of their chains.

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[2] Brody 1995:12 calls (1) the MAIN THEMATIC CONDITION, and later discusses it as one aspect of his GENERALISED PROJECTION PRINCIPLE. Chomsky 1995b:312 uses the more catchy name CHAIN CONDITION for (1), which I sometimes use below. For relevant discussion of the generalisation, see also Chomsky 1986b:131-144, Chomsky and Lasnik 1993:46, Chomsky 1995b: 312-316, Jackendoff 1997:101-103.

[3] For an approach to grammatical relations that does not invoke the sisterhood relation, which is compatible with the theory developed here, see Neeleman and van de Koot 2002: section 2.

[4] There have been some proposals according to which this generalisation does not hold, at least not in the strongest form (e.g. Boškovic 1994, Cormack 1995:253ff, Hornstein 1999, Manzini and Roussou 2000). Nevertheless, I assume that (1) does hold, without attempting to explain it. Critical discussion of the arguments in Hornstein 1999 can be found in Culicover and Jackendoff 2001 and Landau 2003. Relevant discussion of why (1) should hold, and different approaches to how it can be derived, can be found in Chomsky 1981, 1986b, Brody 1995, 1998, Neeleman and van de Koot 2002, among others.

The following examples illustrate the empirical basis of this generalisation.

(2) a. * John$_i$ hit t_i (Brody 1995:15)
     b. * John$_i$ believes t_i to seem that S   (Brody 1993:(8))

The examples in (2) illustrate the ban on movement to a selected position. There appear to be no transitive verbs like *hit* that do not assign case to their object. Similarly, there are no verbs that are like *believe* except that they do not assign case to the embedded subject. If the subject *John* forms a chain with the trace in object position in (2a), and with the trace in the embedded subject position in (2b), these structures can be ruled out by the constraint in (1), which bans θ-role assignment to the moved noun *John*, and therefore entails that the subject θ-role of *hit* and *believe,* respectively, cannot be assigned.

The example in (3a) illustrates the reverse of those in (2), namely that an element that is not in the lowest position of its chain cannot assign a θ-role.

(3) a. * [Den alten Mann]$_i$ traf$_j$ gestern   ein Freund von sich$_i$ t_j
             The old   man   met yesterday a   friend of himself
     b. * [Den alten Mann]$_i$ traf$_j$ gestern   ein Freund vonsich t_i t_j
             The old   man   met yesterday a   friend of himself

It is generally assumed that binding is only possible from A-positions. If *traf* could assign its internal θ-role to *den alten Mann* after movement, *den alten Mann* would sit in an A-position, and should be able to bind the reflexive *sich*. On the other hand, if, as (1) implies, θ-role assignment is only possible from the lowest position in a chain, the only way for *den alten Mann* to receive a θ-role is if it is moved out of the object position of *traf*, as in (3b). However, in (3b) *den alten Mann* occupies an A-bar position and hence cannot bind the reflexive. (The trace of *den alten Mann* cannot bind *sich* because it doesn't c-command it.)

While the generalisation in (1) is mainly discussed with regard to the relation between a verb and its arguments, it seems to hold more generally. Thus, Brody 1997a:53 note 4 suggests that (1) extends also to adverbial modification. Moreover, Chomsky and Lasnik 1993:45 argue following Williams 1980 that "[a]n argument may also receive a semantic role […] by predication by an XP […], possibly an open sentence", like a relative clause. The fact that they take the question of whether or not this semantic role should be considered a θ-role as a theory-internal matter implies that empirically modification by a relative clause behaves similar to θ-role assignment, and that it can plausibly be expected to conform to (1). I know

of no explicit theory of grammatical relations that defines which relations exactly behave according to (1), and I will not attempt to develop such a theory.[5]

The aim of this paper is simply to show how a range of apparently unrelated patterns can be understood in the context of (1). Moreover, it will be seen that the analysis of selectional relations is also helpful for the evaluation of the different predictions made by alternative theories of phrase structure. The selectional patterns to be discussed here involve two types of relations, namely θ-role assignment and the relation between a restrictive relative clause and the head that it modifies.

The implications of the claim that selection is a relation between sisters and of the ban on selection from non-chain-tail positions depend on what theory of phrase structure is assumed. Significant differences arise between theories that assume some kind of X-bar theory and theories that reject the notion of categorial projection. According to the telescope hypothesis (Brody 1997a, 2000), adopted in Bury 2003 and here, there is no categorial projection. This means that the conventional X-bar structure in (4a) should be represented as in (4b).[6]

(4)   a.   XP   b.   X
                  ⋀   ⋀
              α   X'   α   β
                      ⋀
                  X   β
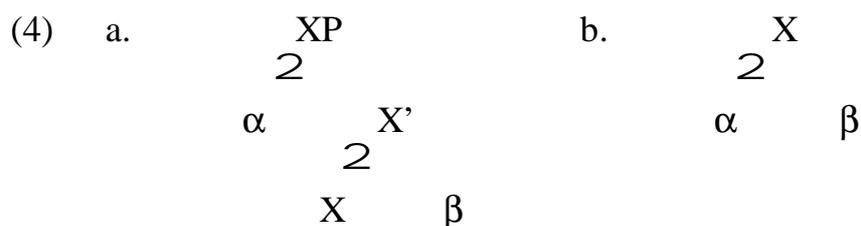
Consequently, while in conventional theories selection in principle involves sisterhood between a head and the projection of a head (or in the case of a complex selector sisterhood between two projections), here selection always involves sisterhood between two heads.

Furthermore, the assumption that material that does not occupy the deepest position within its chain can head a structure (Ackema et al 1993), combined with the Telescope hypothesis, may give rise to structures whose head is a member of a (complex) chain. Since selection is based on sisterhood, selection of (or by) such structures is expected to behave in line with the generalisation in (1). Thus, even though the structures themselves may not be part of a complex chain, it is predicted

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[5] I assume that the relation between a functional head like the complementizer *that* or the auxiliary *have* and their complements is not of the same type as relations restricted by (1). See Grimshaw 1991, van Riemsdijk 1998, Chametzky 2000, among others. See also Bury 2003: chapter 1.

[6] See Brody 2000, Bury 2003: chapter 1 for discussion of the similarities and differences between the two views of phrase structure illustrated in (4).

that they cannot enter into selectional relations. These points are discussed in greater detail throughout the paper, but the line of argumentation will be the following. The theory assumed here implies that there are structures that cannot select or be selected. Where feasible such a structure may be turned into a possible selector or selectee through insertion of an extra head, typically a complementizer. This has the effect that the head of the structure is no longer part of a complex chain. Where this is not possible, such structures simply cannot partake in selectional relations.

The next section deals with the relation of the generalisation in (1) and verb movement, and in particular with the effect of verb movement on the distribution of complementizers in complement clauses. In section 3, it is argued that like verb movement, adjunction may give rise to a head chain. Consequently, it is expected that adjunction interacts in the same way with (1) as verb movement, and hence has the same effect on the distribution of complementizers. Section 4 extends the analysis of complementizer optionality to relative clauses. The claim is that while complement clauses conform to (1) because they are selected, relative clauses do so because they themselves select. Section 5 discusses the implications of these proposals for the analysis of apparently embedded V2 clauses in German.

2   Verb movement and complementizer optionality in complement clauses

I argue in Bury 2003 that the creation of a new head position can be triggered by the need to express head movement. Since in such a context, the higher head position doesn't correspond to an additional lexical item, it must inherit its properties from its daughter. Given the structure in (5a), verb movement can give rise to the structure in (5b), where the categorial information of the lower node V is inherited by the new root node in (5b). In other words, verb movement can involve a copy of the moved verb:[7]

(5)   a.   V   b.   V
                  2   2
             A   B   C   V
                                                  2
                                             A   B

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[7] For reasons not relevant here, such verb movement is only possible if the new head has its own specifier; see Bury 2003: chapters 1 and 3 for discussion.

The existence of copies in a structure triggers the creation of a head chain that contains the copies and the original category in order to ensure interpretability of the structure (see Bury 2003: chapter 1 for details). The formation of a chain containing the two categories means that the head of the structure in (5b) is not in the lowest position of its chain. Since selection takes place under sisterhood between two heads, it follows that such a structure will be subject to the chain condition in (1) above. This case must be distinguished from a situation where a new head position is created to make possible the satisfaction of an unsatisfied selectional requirement. Take the case where a new head is created to allow the head $V\ \theta_1$ (a verb that selects one argument) to be in a selection configuration with a head N that satisfies its θ-requirement. In that case, the categorial information of $V\ \theta_1$ has to be copied up to the additional head position, but since in this position the selectional requirement q_1 is no longer active, the properties of the new head differ from those of its daughter:

(6)   a. $V\ \theta_1$ b. $V\ \theta_{1\#}$

                                                      N $V\ \theta_1$

Thus, the categories $V\ \theta_1$ and $V\ \theta_{1\#}$ are distinct, and therefore there is no head chain. Since no complex chain is formed, a structure like (6b), when it is selected, conforms to the chain condition in (1) by definition. (If there is no complex chain, every position is the lowest position in its chain.)

Some relevant structures are illustrated here with examples from English and French:[8]

(7)   a.   'Jean cuit des pâtes.'   b.   'John cooked pasta.'

                  cuit $\underline{\theta}_{1\#}\ \theta_{2\#}$ T

          $Jean_i$ cuit $\underline{\theta}_{1\#}\ \theta_{2\#}$ $John_i$ cooked $\underline{\theta}_{1\#}\ \theta_{2\#}$

                  t_i cuit $\underline{\theta}_1\ \theta_{2\#}$ t_i cooked $\underline{\theta}_1\ \theta_{2\#}$

              des pâtes   cuit $\underline{\theta}_1\ \theta_2$ pasta   cooked $\underline{\theta}_1\ \theta_2$

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[8] See Bury 2003: chapter 1, section 3 for some discussion of the difference between languages with and without verb movement.

In French, a language where verb movement involves a new head position that contains a copy of the verb, the root node and its (non-subject) daughter form a head chain. This is so because the verb's subject-role $\boldsymbol{q_1}$ is satisfied by *Jean* before it moves, and consequently the two heads share the same categorial features, i.e. they are copies. In (7a), both heads are of category *cuit* $\underline{\theta}_{\#}\, \theta_{2\#}$.[9] In contrast, in English, a language without verb movement, the two highest clausal heads do not form a chain since they are not copies.

The membership in a complex chain of the root node in verb movement structures like (7a) affects the structural contexts in which they can occur. In particular, the condition in (1) implies that a structure like (7a) is not selectable, and therefore that it cannot sit in a position that satisfies a predicate's θ-role. In contrast, selection of a structure like (7b) is no problem for this condition because the root node is in the lowest position of its (one-member) chain. These two situations are illustrated here in a schematic way; with verb movement in (8a), without in (8b):

(8) a.

$$*V_{matrix}\ \underline{\theta}_1\,\theta_{2\#}$$

$$V\ \underline{\theta}_{1\#}\,\theta_{2\#}\qquad V_{matrix}\ \underline{\theta}_1\,\theta_2$$

$$Subj_i\qquad V\ \underline{\theta}_{1\#}\,\theta_{2\#}$$

$$t_i\qquad V\ \underline{\theta}_1\,\theta_{2\#}$$

$$Obj\qquad V\underline{\theta}_1\,\theta_2$$

b.

$$V_{matrix}\ \underline{\theta}_1\,\theta_{2\#}$$

$$T\qquad V_{matrix}\ \underline{\theta}_1\,\theta_2$$

$$Subj_i\qquad V\ \underline{\theta}_{1\#}\,\theta_{2\#}$$

$$t_i\qquad V\ \underline{\theta}_1\,\theta_{2\#}$$

$$Obj\qquad V\ \underline{\theta}_1\,\theta_2$$
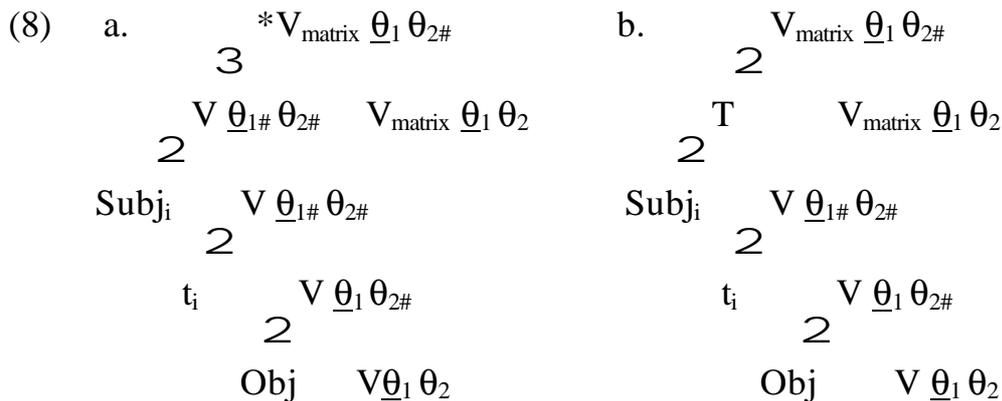
On this view of verb movement and chain formation, it is a consequence of the chain condition in (1) that a clause headed by a moved verb cannot occur in a selected position:[10]

(9)   A clause headed by a moved verb cannot be selected.

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[9] By assumption, the trigger of verb movement, possibly a condition on case assignment or properties of agreement morphology, does not affect the attributes of the verb. This idea may be related to the complementarity of feature checking and $\boldsymbol{q}$-theory assumed in Chomsky 1995:322.

[10] It would be more accurate to say that such a clause cannot be assigned a θ-role. However, on the assumption that all of a predicate's θ-roles must be assigned, some other element would have to sit in the selected position. This would in turn keep the verb movement structure from occurring in that position.

This prediction makes for an interesting difference between the present proposal and more conventional approaches to clause structure. On the standard view, verb movement is analysed as adjunction of the moved verb to some functional head. Thus, in the X-bar tree in (10) the matrix verb selects a clause in which V-to-I movement has taken place. While there is adjunction of a moved item, namely the verb, to I, it is clear that the head of the selected IP, namely the functional head I, does not itself move:

(10)

```
          V'
       3
   V       IP
        3
    Subj       I'
         r   u
        I       VP
      t  y    t  y
     Vᵢ    I   tᵢ   Obj
```

Leaving aside the possibility of a novel device that makes I invisible in selected contexts, there is no obvious way in which the condition in (1) could be extended to rule out selection of such a structure. Consequently, on such an approach to verb movement, nothing like the prediction in (9) follows.[11] Similarly, in a theory without categorial projection that takes verb movement to create a new head position rather than as head adjunction, but that assumes that complement clauses without visible *that* differ from those with a visible *that* not structurally but simply in that the structural position of *that* contains an empty element, prediction (9) does not follow. On such a view, the structures with and without (overt) complementizer in a verb movement language would be the following:

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[11] In fact, an early attempt to derive such a prediction by Rizzi and Roberts 1989, assumes that verb movement is head adjunction. To rule out I-to-C movement in selected contexts, Rizzi and Roberts introduce the concept of radically empty heads, i.e. head positions that contain no features at all. Rizzi and Roberts' substitution into an empty head position can be taken to be a precursor of more recent self-attachment proposals (e.g. Ackema et al 1993) and the device of proxy categories of Nash and Rouveret 1997. The major difference to the current proposal would then be the assumption of categorial projection and the distinction between movement to I and movement to C. Rizzi and Roberts' proposal that C is radically empty while I is not means that movement to the two positions should give rise to different effects in embedded contexts. However, the arguments presented in this paper suggest that a generalisation might have been missed there.

(11)   a.
$$\text{V } \underline{\theta}_1 \theta_{2\#}$$

que $\text{V } \underline{\theta}_1 \theta_2$
|
$\text{V } \underline{\theta}_{1\#} \theta_{2\#}$

Subj_i $\text{V } \underline{\theta}_{1\#} \theta_{2\#}$

t_i $\text{V } \underline{\theta}_1 \theta_{2\#}$

Obj $\text{V}\underline{\theta}_1 \theta_2$

b.
$$\text{V } \underline{\theta}_1 \theta_{2\#}$$

$[_C\, e]$ $\text{V } \underline{\theta}_1 \theta_2$
|
$\text{V } \underline{\theta}_{1\#} \theta_{2\#}$

Subj_i $\text{V } \underline{\theta}_{1\#} \theta_{2\#}$

t_i $\text{V } \underline{\theta}_1 \theta_{2\#}$

Obj $\text{V } \underline{\theta}_1 \theta_2$

In both cases, the highest head of the embedded clause is not the moved verb but an unmoved complementizer, which happens to be empty in (11b). It follows that there is no difference between these structures from the perspective of the condition in (1), and hence selection of both should be equally good or bad. The empirical validity of (9) then seems to be a useful help in the choice between these approaches to head movement and clause structure.

   An immediate question raised by the prediction in (9) is how clausal complements can be selected at all in languages with verb movement. The answer is obvious if we consider the following example from French, a language with verb movement:

(12)   a.   Jean pense [que [Pierre   dort [~~Pierre dort~~]]]
            Jean thinks that   Pierre   sleeps

    b.
$$\text{pense } \underline{\theta}_1 \theta_{2\#}$$

que   pense $\underline{\theta}_1 \theta_2$
|
dort $\underline{\theta}_{1\#}$

Pierre_i dort $\underline{\theta}_{1\#}$

t_i dort $\underline{\theta}_1$
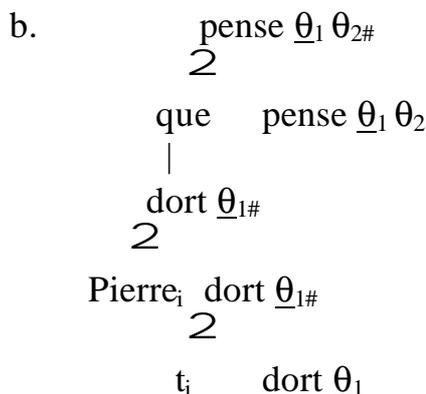
The embedded clause is headed by the complementizer *que*. As the simplified tree in (12b) illustrates, the sister of the selecting head *pense* is the complementizer, which did not move. Since the complementizer is the head of the embedded clause,

rather than the moved verb, the fact that verb movement has taken place in this clause does not affect its selectability.[12]

The role of the complementizer in making a clause in a verb movement language available for selection implies that in languages with verb movement, complementizers should be obligatory. This contrasts with languages without verb movement. Since here an embedded clause is not headed by a moved verb, its selection is unproblematic. This implies that unless there are additional constraints, complementizers could in principle be optional. Indeed, the complementizer *that* in English, a language without verb movement, is usually optional.[13] Since there is no verb movement, the condition in (1) is irrelevant to the selection of embedded clauses. The following trees illustrate clauses with and clauses without a complementizer. In both, the sister of the selecting head *thinks* is a head that doesn't move, namely the complementizer *that* or the head T:

(13)   'John thinks (that) Peter sleeps.'

a.

$$\text{thinks } \underline{\theta}_{1\#}\, \theta_{2\#}$$
$$\text{John} \qquad \text{thinks } \underline{\theta}_1\theta_{2\#}$$
$$\text{that} \qquad \text{thinks } \underline{\theta}_1\theta_2$$
$$|$$
$$\text{T}$$
$$\text{Peter}_i \quad \text{sleeps } \underline{\theta}_{1\#}$$
$$t_i \qquad \text{sleeps } \underline{\theta}_1$$

b.

$$\text{thinks } \underline{\theta}_{1\#}\, \theta_{2\#}$$
$$\text{John} \qquad \text{thinks } \underline{\theta}_1\theta_{2\#}$$
$$\text{T} \qquad \text{thinks } \underline{\theta}_1\theta_2$$
$$\text{Peter}_i \quad \text{sleeps } \underline{\theta}_{1\#}$$
$$t_i \qquad \text{sleeps } \underline{\theta}_1$$

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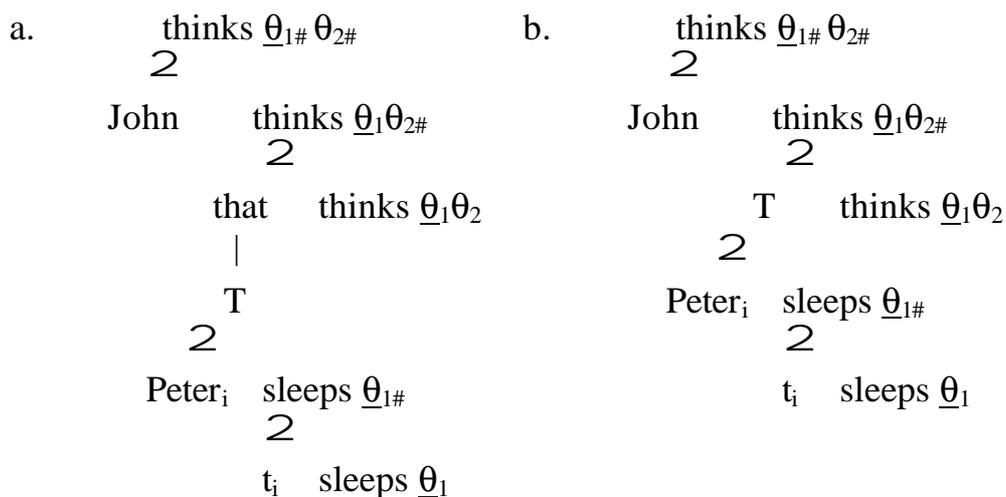
[12] Again, the relation between the complementizer and its daughter is not one of selection; see note 5 above.

[13] The complementizer is only optional if the clause sits in its base position. Grimshaw 1997:411n17 points out that speaker judgements vary in such examples with respect to complementizer optionality (cf. also McCloskey 1992:23). In contrast, examples like (i), where the complement clause doesn't occupy its base position, are ungrammatical for all speakers. This suggests that different constraints on the deletion of *that* may play a role.

(i)   *(That) he left so early shows that he was tired.

The present model then predicts that while complementizers should in principle be optional in languages without verb movement, they should be obligatory in languages with verb movement.[14]

This indeed appears to be the case. Sten Vikner recently observed that this pattern holds across the Germanic and Romance languages. Vikner's generalisation is stated in (14) and illustrated in the following examples from Vikner 2001. In Danish and English, which don't have (obligatory) verb movement in embedded clauses, complementizers are optional, while in French and Icelandic, which have verb movement, complementizers are obligatory.[15]

(14)   Complementizers in embedded clauses can only be optionally omitted in languages without overt (V-to-I) verb movement. In languages with verb movement, complementizers cannot be omitted.

(15)   a.   Jeg tror   at   skuespilleren virkelig   så   filmen.   Danish
       b.   I think   that   the actor   actually   saw the film.   English
       c.   Jeg tror   skuespilleren virkelig   så   filmen.   Danish
       d.   I think   the actor   actually   saw the film.   English

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[14] This issue is independent of the question of what determines the choice of +/- complementizer in cases where the complementizer is optional. Thompson and Mulac 1991 discuss this choice in English based on conversational discourse. They note that presence of complementizer is preferred in structures where the subjects and main verbs of the matrix clause "behave very much like single epistemic morphemes in other languages" (p.239). Thus, the lighter (in the sense of semantically bleached) the matrix and the more "assertion" the embedded clause, the more likely is omission of the complementizer. The lightness of the matrix *viz.* the likelihood of *that* omission, is increased by (a combination of) "first and second person subjects, the verbs *think* and *guess*, pronominal complement subjects, and auxiliaries, indirect objects, and adverbs" (p.249). It seems then that syntax doesn't have to say much about when an optional complementizer is used. However, syntax constrains the range of constructions where a complementizer can potentially be left out.

[15] Sten Vikner (personal communication) points out that Italian subjunctives appear to be a counterexample to his generalisation since Italian has verb movement but complementizers are optional in certain subjunctive contexts; see section 5: note 30 for some comments.

A second type of complementizer optionality (CO) occurs in Florentine Italian (Cocchi and Poletto 2001). Unlike CO with subjunctives, this type of CO is not restricted to complements of bridge verbs. However, it can take place only where the embedded verb is preceded by a preverbal subject or object clitic, by negation, or by an auxiliary. In the present framework, this pattern could receive a natural account if these preverbal elements can be analysed as heads that license the pronunciation of the verb in their position. These heads would then function like complementizers in that they allow an embedded verb movement structure to escape the effect of the chain condition in (1). Further work is needed to see if this idea is tenable.

(16) a. Ég   tel   að leikarinn   sjái áreiðanlega   myndina. Icelandic
      b. Je   crois que l'acteur   voit vraitment   le film.   French
      c. *Ég tel   leikarinn   sjái áreiðanlega   myndina. Icelandic
      d. *Je crois   l'acteur   voit vraitment   le film.   French

In fact, the pattern observed by Vikner also extends to English. While in general English doesn't display verb movement, there are certain contexts in which verb movement does occur:

(17) a. All too seldom did$_i$ he t$_i$ bring her flowers.
      b. Not even that small consideration did$_i$ he t$_i$ ever bestow on his partner.
      c. Never in her life would$_i$ she t$_i$ accept this solution.
      d. Never in his life had$_i$ he t$_i$ seen such a book.
      e. Under no circumstances would$_i$ he t$_i$ do it.
      f. Beyond the next hill stood$_i$ a large fortress t$_i$.[16]
      g. "Go to hell!" shouted$_i$ the witness t$_i$ at the judge.

Unlike regular English clauses, these constructions are headed by an auxiliary or main verb that moved in front of the subject. This means that if such a construction occurs in a selected position and there is no complementizer, a selected clause will be headed by a moved verb. According to prediction (9), such structures should be ungrammatical. The following examples show that this prediction is correct:[17]

(18) a. I know that all too seldom does he bring her flowers. (Bolinger 1977:515)
      b. You can well imagine that not even that small consideration did he ever bestow on his partner. (Bolinger 1977:519)
      c. She swore/insisted/thought that never in her life would she accept this solution. (Grimshaw 1997:(44a))
      d. The publisher told us that never in his life had he seen such a book. (Grimshaw 1979:(46))

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[16] While locative inversion patterns with more obvious cases of movement with regard to the distribution of *that*, it is not obvious that the correct analysis of locative inversion involves movement of the verb. For some discussion, see Bresnan 1994.

[17] The sentences in the following example show that the matrix verbs in these sentences are usually compatible with *that*-less complements:

(i)   I know (that) you're only joking, You can well imagine (that) he would be late, She swore/insisted/thought (that) she didn't do it, The publisher told us (that) he liked the book, The scouts reported (that) they had discovered a large fortress, The judge was shocked (that) he hadn't been informed earlier.

   e. He said that under no circumstances would he do it. (Rizzi and Roberts 1989:(42))
   f. The scout reported that beyond the next hill stood a large fortress. (Hooper and Thompson 1973:(48))
   g. ?*The judge was shocked that "Go to hell!" shouted the witness at him.

(19) a. *I know all too seldom does he bring her flowers.
      b. *You can well imagine not even that small consideration did he ever bestow on his partner.
      c. *She swore/insisted/thought never in her life would she accept this solution. (Grimshaw 1997:(44b))
      d. *The publisher told us never in his life had he seen such a book.
      e. ?* He said under no circumstances would he do it. (Rizzi and Roberts 1989:(43))
      f. *The scout reported beyond the next hill stood a large fortress.
      g. *The judge was shocked "Go to hell!" shouted the witness at him.

Thus, the condition on chains in (1) together with the present view of phrase structure correctly predicts one aspect of the distribution of complementizers, namely the correlation of verb movement and optionality of complementizers in selected clauses.[18] In contrast, this prediction doesn't follow in an obvious way on standard views (even given some condition like (1)).[19]

   The next section extends this analysis to similar patterns related to adjunction.

## 3 Complementizer optionality and topicalisation/adjunction in complement clauses

Structures headed by the copy of a lower head not only feature in the representation of verb movement. On the assumption that no abstract functional heads are available whose specifier could contain adverbs or topicalised phrases and that there is no categorial projection, the need to place an adjunct can create structures very similar to the above verb movement structures. Given the assumption that

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[18] Some speakers seem to marginally allow embedded inversion into the highest position in certain contexts, as in (i) from McCloskey 1992:(81).

(i)   ? Does the chair often know which of the promotions did the Dean support?

[19] This story implies the diachronic prediction that English should have acquired complementizer optionality at the same time as it lost "V-to-I" movement. See Arnold 1995, 1997 for relevant discussion.

phrase structure is at most binary branching, the presence of an adjunct can trigger the creation a new head position if all otherwise suitable adjunction sites already have two daughters. As in the case of verb movement, this additional head position, if it doesn't correspond to an additional lexical item, must inherit its properties from its daughter. Given the structure in (20a), adjunction can give rise to the structure in (20b), where the new root node inherits the categorial information of the lower node V:

(20)   a.   V
                    ╱╲
                  A   B

       b.   V
                    ╱╲
              Adjunct   V
                        ╱╲
                      A   B
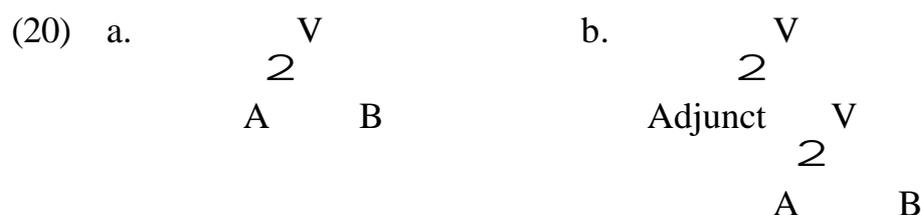
   This structure of course parallels that of verb movement discussed in the previous section. Since the two highest nodes in (20b) are copies, they must form a chain. The formation of a chain means that this structure, which is dominated by a head that is not in the root position of its chain, will be subject to the chain condition in (1) above. This case must be distinguished from a situation where a head that doesn't already have two daughters is available.[20] In such a case, it may be possible that the adjunct can be added as a daughter to this head, if no other constraint would be violated. The relevant structures are given in (21). In (21a), the verb V is dominated by a non-branching head F. As shown in (21b), placement of an adjunct in such a structure is possible without the creation of a new head position. In such a structure, the two highest nodes belong to different categories, and consequently no chain formation is necessary. The chain condition will not apply to a structure like (21b). Structures like (21b) can be found for example in Greek where a focused constituent in an embedded clause may precede complementizers like *oti* (Roussou 2000). This is illustrated in (21c).

(21)   a.   F
                     │
                     V
                    ╱╲
                  A   B

       b.   F
                    ╱╲
              Adjunct   V
                        ╱╲
                      A   B

---
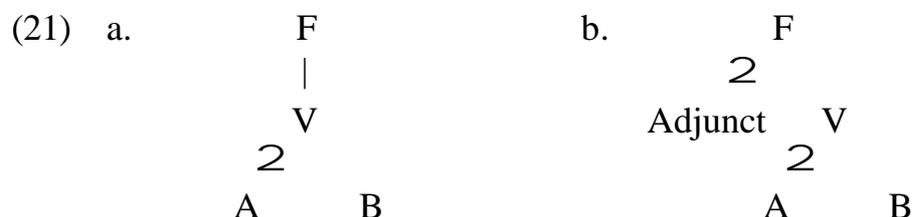
[20] This may be the case of languages that have special particles in adjunction structures, and it is the default in theories that allow abstract functional heads.

c. Fovame [$_C$ o   YANNIS   oti tha   me   apatisi]
    fear-1SG   the-NOM Yannis   that will   me-ACC   cheat-3SG
    'I fear that Yannis will cheat on me.' (Marika Lekakou, p.c.)

Examples that correspond to the structure where a new head is created in (20b) are illustrated in (22). In the example in (22a), the adverb *yesterday* and in (22b) the topicalised object *pasta* are adjoined to the top of the clause. Since neither the adverb nor the fronted object enter into a selectional relation with the root node, this node inherits the category from its (clausal) daughter unchanged:

(22) a. 'Yesterday John cooked pasta.'   b.   'Pasta, John cooked.'

As in the case of verb movement discussed in the last section, the root node and its daughter must form a head chain because they are copies. And again, the membership in a complex chain of the root node of these structures affects the positions in which they can occur. In particular, the chain condition in (1) implies that these structures are not selectable, and therefore that they cannot sit in a position to which a θ-role is assigned. These two situations are illustrated here in a schematic way, adjunction in (23a), topicalisation in (23b):

(23) a.   b.

It is then expected that even in a language without verb movement like English, complementizers should become obligatory if adjunction to the highest head in a complement clause occurs.

There are of course very popular alternatives to such analyses of topicalisation and adjunction. In particular, Rizzi 1997 and Cinque 1999, respectively, argue that topicalised constituents and adverbials and other adjuncts occur in the specifier positions of dedicated functional heads, not in adjoined positions. Simplified structures in a projection-free representation are given here:

(24) a.
$$F_{Adj}$$
Adjunct   T
Subj$_i$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$
t$_i$ V $\underline{\theta}_1\,\theta_{2\#}$
Obj   V $\underline{\theta}_1\,\theta_2$

b.
$$F_{Top}$$
Topic$_j$ T
Subj$_i$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$
t$_i$ V $\underline{\theta}_1\,\theta_{2\#}$
t$_j$ V $\underline{\theta}_1\,\theta_2$

While these proposals of course differ from the present one in their assumptions about clause structure and functional heads, the most important thing for the present argument is the fact that in these analyses, the root node does not form a chain with its daughter. That is, the heads F_{Adj} in (24a) and F_{Top} in (24b) have different categories from their daughters and consequently no head chain needs to be formed. Since there is no head chain, the chain condition in (1) does not block selection of such structures. This means that on such a view there is no obvious reason why selection of a clause with an initial adjunct should be impossible, and consequently this view doesn't entail that there should be a restriction on the omission of an otherwise optional complementizer.

The argument is then the same as in the previous section. The present proposal predicts that adjunction and topicalisation should block omission of an otherwise optional complementizer in an embedded clause. The standard alternative makes no such prediction.[21] The empirical accuracy of this prediction is then again a good indication of the relative merit of the different theories.

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[21] And again, an alternative that posits a covert complementizer in place of a missing *that/que* would pattern with the standard proposal.

Again, the present proposal gets it right. Where topicalisation or initial adverbs occur in a complement clause *that* cannot be omitted:[22]

(25) a. I hope that this book you will read. (Doherty 1997:3a)
   b. This proves that Joyce he'd read but that Yeats he hadn't. (Doherty 1997:3a)
   c. She prayed that next Wednesday the check would arrive. (Doherty 1997:12a)
   d. We maintain that in London a nice flat is hard to find (Doherty 1997:12c)
   e. She swore/insisted/thought that (,) most of the time (,) they accepted this solution. (Grimshaw 1997:(43a))

(26) a. *I hope this book you will read. (Doherty 1997:7a)
   b. *This proves Joyce he'd read but that Yeats he hadn't. (Doherty 1997:7a)
   c. *She prayed next Wednesday the check would arrive. (Doherty 1997:15a)
   d. *We maintain in London a nice flat is hard to find (Doherty 1997:15c)
   e. *She swore/insisted/thought (,) most of the time (,) they accepted this solution. (Grimshaw 1997:(43b))

While the present proposal predicts the effect of adjunction and topicalisation in a straightforward way, it is not clear how this effect could be captured in the alternative approaches.

In fact, this point is even more serious in view of the result of the previous section, where the effects of verb movement on complementizer optionality were discussed. In both cases, the present proposal outperforms the alternatives. But beyond that, this proposal also can account for the fact that verb movement and adjunction and topicalisation affect complementizer optionality in the same way. Since verb movement and adjunction (through movement or base generation) give rise to the same structural configuration, their identical behaviour with regard to selection and especially the distribution of *that* is expected. It is once more not at all clear how this generalisation could be captured in different proposals.

The similar behaviour of movement of the verb to the highest head in a complement clause and adjunction to the top projection in a complement clause has

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[22] There are similar examples where a complementizer is not obligatory:

(i)   I'm sure the lecture by Kayne he wouldn't miss. (Watanabe 1993:145n23 (attributed to Noam Chomsky))
(ii) He said no matter what stand he takes it would be misconstrued that he was sympathetic to one or the other of the Republicans. (Elsness 1984:524).

I guess here the 'matrix clause' must be a parenthetical (as *I guess* in the sentence immediately preceding this parenthesis must be, actually).

already been noted by McCloskey (1992:12n9,19) (see also Kayne 1994:28). However, McCloskey's concern is not with the distribution of the complementizer *that*, and his CP recursion analysis is not designed to provide an analysis of it. Furthermore, while the parallel restrictions on the availability of embedded inversion and embedded adjunction are both related to whether or not the projection targeted by these operations is s-selected, they are ruled out by independent conditions in McCloskey's proposal. Following Rizzi and Roberts 1989:107, embedded inversion is ruled out by the assumption that I-to-C movement is substitution and substitution into a selected position violates the Projection Principle. Embedded adjunction is ruled out by a condition called Adjunction Prohibition formulated specifically to rule out adjunction to selected constituents.[23]

In Grimshaw 1997, the similarity of inversion in embedded clauses and adjunction in embedded clauses follows from a single constraint called Pure-EP:

(27)   No adjunction takes place to the highest node in a subordinate extended projection; and no movement takes place into the highest head of a subordinate extended projection. (Grimshaw 1997:394)

A unified account of the two phenomena is of course desirable, and this constraint is clearly designed to capture this generalisation. However unless this constraint can be derived from independently motivated principles of the grammar it amounts to no more than a restatement of the facts. As Grimshaw 1997:395 points out, this formulation of Pure-EP suggests that there could in fact be two separate constraints, one on adjunction and one on verb movement. Whether this would be a more accurate analysis is an empirical question, and, as Grimshaw notes, at least for English, there seems to be no motivation for a separation of the two constraints. This can be taken as a further argument against Pure-EP, whose formulation invites such a separation.

In the next section, it will be discussed how this approach to complementizer optionality can be extended from complement clauses to a type of clause that is not selected, namely relative clauses.

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[23] See also Chomsky 1986a:6, 16, Rochemont 1989. McCloskey 1992:11 suggests that the Adjunction Prohibition may be related to the Projection Principle, but he doesn't investigate this possibility.

4   Complementizer optionality in relative clauses
4.1 The distribution of the complementizer

So far, only one half of the chain condition in (1) has been discussed, namely its restriction of the selection of material that doesn't occupy the lowest position within its chain. However, as already noted, the implications of the chain condition go further. In particular, it does not only rule out selection *of* moved material, but also selection *by* moved material. This case is illustrated by the examples in (3) at the beginning of this paper. As for the discussion of selection of higher chain members, the rejection of categorial projection is relevant here. Since there is no categorial projection, a structure whose head is not the lowest member of its chain will resemble a structure that is itself not the lowest member of its chain. Both structures are headed by a category that is not the lowest member of its chain. Given that selection is a relation between heads, this means that the chain condition not only rules out selection by a category that is not the lowest member of its chain, but also selection by a structure whose head is not the lowest member of its chain:

(28)   A structure whose head is not in the lowest position in its chain cannot select.

As discussed in section 1, the relation between a relative clause and the head that it modifies is similar to the selectional relation between a verb and an argument to which it assigns a θ-role. Thus, the chain condition and its correlate in (28) are expected to restrict the former relation, as well.

Given the assumption that selection takes place under sisterhood, a relative clause construction has the following structure. The relative clause constituent labelled RC selects its sister, the constituent labelled N.

(29)

N

N   RC

On the view, adopted here, that clauses with and without the complementizer *that* have different structures, in particular that only those with *that* have a complementizer level, this suggests that Vikner's generalisation should not be restricted to complement clauses, but that it should also hold of relative clauses. It is expected that relative clauses behave in the same way as complement clauses with regard to the correlation of complementizer optionality and verb movement and adjunction/topicalisation.

In relative clauses in languages without verb movement, complementizers are predicted to be optional, whereas in relative clauses in languages with verb

movement, complementizers are predicted to be obligatory. This is illustrated here in a schematic way with structures where the gap is in the object position of the relative clause. (30a) is a structure with verb movement and without a complementizer, while (30b) is a structure without verb movement or complementizer:

(30) a.

$$
\begin{array}{ll}
\text{* N} & \\
\diagdown & \\
\text{N} \quad \text{V } \underline{\theta}_{1\#}\, \theta_{2\#} & \\
\quad \diagdown & \\
\text{Subj}_i \quad \text{V } \underline{\theta}_{1\#}\, \theta_{2\#} & \\
\qquad \diagdown & \\
t_i \quad \text{V } \underline{\theta}_1\, \theta_{2\#} & \\
\qquad \diagdown & \\
[\text{gap}] \quad \text{V } \underline{\theta}_1\, \theta_2 &
\end{array}
$$

b.

$$
\begin{array}{ll}
\text{N} & \\
\diagdown & \\
\text{N} \quad \text{T} & \\
\quad \diagdown & \\
\text{Subj}_i \quad \text{V } \underline{\theta}_{1\#}\, \theta_{2\#} & \\
\qquad \diagdown & \\
t_i \quad \text{V } \underline{\theta}_1\, \theta_{2\#} & \\
\qquad \diagdown & \\
[\text{gap}] \quad \text{V } \underline{\theta}_1\, \theta_2 &
\end{array}
$$

In the example in (30a) with verb movement, the two highest clausal heads in the relative clause form a head chain because they are copies. This means that selection by this relative clause should be impossible. In the example in (30b) without verb movement, the two highest categories in the relative clause do not form a head chain; hence selection by this relative clause should be possible.[24] In the corresponding structures with a complementizer, selection by the relative clause is ok with and without verb movement. (31a) is a structure with verb movement and with a complementizer, while (31b) is a structure without verb movement with a complementizer:

(31) a.

$$
\begin{array}{ll}
\text{N} & \\
\diagdown & \\
\text{N} \quad \text{C} & \\
\qquad | & \\
\quad \text{V } \underline{\theta}_{\#}\, \theta_{2\#} & \\
\quad \diagdown & \\
\text{Subj}_i \quad \text{V } \underline{\theta}_{\#}\, \theta_{2\#} & \\
\qquad \diagdown & \\
t_I \quad \text{V } \underline{\theta}_1\, \theta_{2\#} & \\
\qquad \diagdown & \\
[\text{gap}] \quad \text{V } \underline{\theta}_1\, \theta_2 &
\end{array}
$$

b.

$$
\begin{array}{ll}
\text{N} & \\
\diagdown & \\
\text{N} \quad \text{C} & \\
\qquad | & \\
\quad \text{T} & \\
\quad \diagdown & \\
\text{Subj}_i \quad \text{V } \underline{\theta}_{1\#}\, \theta_{2\#} & \\
\qquad \diagdown & \\
t_i \quad \text{V } \underline{\theta}_1\, \theta_{2\#} & \\
\qquad \diagdown & \\
[\text{gap}] \quad \text{V } \underline{\theta}_1\, \theta_2 &
\end{array}
$$

---

[24] For the moment, it is enough to assume that the gap in the object position turns the relative clause into an open predicate. These structures are discussed in more detail in Bury 2003.

One more time, there is a well-known standard analysis that does not make these predictions. It has been widely assumed since Chomsky and Lasnik 1977 that all relative clauses are CPs and that the absence of an overt complementizer is the result of an optional deletion rule.[25] Thus, in projection-free terms, all relative clauses would have the structure in (32), and vary only with regard to how *wh* and C are pronounced:

(32)

$$
\begin{array}{c}
N \\
\diagdown \\
N \qquad C \\
\diagdown \\
wh \qquad V\ \underline{\theta}_{\#}\ \theta_{2\#} \\
\diagdown \\
Subj_i \qquad V\ \underline{\theta}_{\#}\ \theta_{2\#} \\
\diagdown \\
t_i \qquad V\ \underline{\theta}_1\ \theta_{2\#} \\
\diagdown \\
[gap] \qquad V\ \underline{\theta}_1\ \theta_2
\end{array}
$$

Since on this view, all relative clauses are headed by a complementizer that does not form a chain with its daughter, no interaction of selection with verb movement is expected. This is true if verb movement is analysed as proposed here, but even more so if it is analysed in terms of head adjunction, where the head of the relative clause would not have moved regardless of whether there is a complementizer or not.

Again, the present model is more successful. In languages without verb movement complementizers may be optional in relative clauses, while in languages with verb movement, complementizers are obligatory:

(33) **Languages without verb movement: English, Danish**
　　a.　I know a film (that) Frank directed.
　　b.　Jeg　kender en bog (som) denne lingvist har skrevet.
　　　　I　know　a book　that　this　linguist has written (Vikner 1991:(4))

---

[25] Although there have also been several proposals according to which not all types of relative clauses have the same structure; cf. Weisler 1980, Doherty 1993, Grimshaw 1997, Bakovic and Keer 2001, Lee 2001 among others.

(34)   **Languages with verb movement: Italian, French**
    a. L'uomo *(che) ti vuole e la.
        'The man that wants you is there.' (Cinque 1981-82: (1))
    b. L'homme *(que) je connais
        The man   that I know (Pesetsky 1998:(12d))

As with complementizer optionality in complement clauses, there are contexts where this pattern carries over to English. Where inversion, an initial adjunct, or a topicalised constituent occur in a relative clause in English, the complementizer cannot be omitted.[26] In the following examples, the standard CP analysis of relatives is indicated to highlight the fact that under such an analysis the grammaticality pattern appears rather random:

(35)   a. the film [which$_i$ [$_C$ 0] [under no circumstances did I want see t$_i$]]
        b. the film [OP$_i$ [$_C$ that] [under no circumstances did I want see t$_i$]]
        c. * the film [OP$_i$ [$_C$ 0] [under no circumstances did I want see t$_i$]]

(36)   a. *The people when you get home who want to talk to you right away…
            (McCloskey 1992:(32))
        b. This is the woman *(who) most of the time John likes.
            (Doherty 1993:63)
        c. There's the man *(who) just this morning I met in the shop.
            (Doherty 1993:63)

(37)   a. this is the book [which$_i$ [$_C$ 0] years ago [everyone was talking about t$_i$]]
        b. this is the book [OP$_i$ [$_C$ that] years ago [everyone was talking about t$_i$]]
        c. * this is the book [OP$_i$ [$_C$ 0] years ago [everyone was talking about t$_i$]]

---

[26] While it seems clear that relative clauses "strongly disallow inversions" (Rizzi and Roberts 1989:114 note 21), inversion appears to be marginally possible for some speakers. In examples (i) to (iii) the relatives are presumably non-restrictive, and these differ from restrictive relatives also in other ways (see McCawley 1988, Fabb 1990, Borsley 1992). However, (iv) and (v) seem to involve restrictive relatives, and are hence potential problems:

(i)   These are the people none of whom had I ever seen. (Culicover 1991:16)
(ii)   Here are the results, none of which were we expecting. (Hudson 1995)
(iii)   A formal wedding invitation should come in a squarish envelope, inside which should be several increasingly small envelopes accompanied by some sheets of what appears to be Soviet Union toilet paper. (Green 1996:(6f))
(iv)   Places where, upon mentioning the name of an habitue friend, might be obtained strange whiskey and fresh gin in many of their ramifications. (Green 1996:(6g))
(v)   These are the people none of whom had I ever seen. (Culicover 1991:16)

Just as in the case of complement clauses, the basic principles of the present proposal suffice to account for the observed pattern.[27] In contrast, the standard analysis would have to invoke a novel condition to capture the data.[28]

4.2 Summary

This section developed an approach to the optionality of complementizers from the perspective of the chain condition in (1) which offers a natural explanation for the parallel behaviour of complement clauses and relative clauses. Complement clauses are implicated by the chain condition because they are selected, while relative clauses are implicated because they select. This seems to be a more explanatory way to capture the facts than simply to subsume both relative and complement clauses under the label of embedded clauses (Grimshaw 1997), or to propose that a relative clause "is not an adjunct, but counts as a complement – perhaps a second object of D (NP being the first object)" (Pesetsky 1998:356).

5   Embedded V2 clauses in German?

As discussed earlier, the theory implies that a clause headed by a moved verb cannot be selected. In section 2, the consequences of this prediction for complement clauses in languages with and without so-called V-to-I verb movement as well as the limited cases of embedded inversion in English were discussed. This ban on selection of a clause headed by a moved verb also makes an interesting prediction about a further type of examples, namely so-called EMBEDDED V2-(EV2-) clauses in a language like German.

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[27] The following example from McCloskey 1992:(33) shows that adjunction to non-relative clause adjuncts is also impossible:

(i)   *I graduated while at college without having really learned anything.

This may suggest that the relation between non-relative clause adjuncts and their hosts may also be subject to the chain condition.

[28] In contrast to adjunction to clausal heads adjunction to nominal heads does not seem to trigger chain formation. If adjunction to N triggered the formation of a head chain, no more than one (restrictive) modifier should be possible. However, adjunction to nominals does not appear to be restricted in such a way (e.g. *the big book about politics by Chomsky that everyone read*.) At this point I can only speculate that the reason for this clause/noun asymmetry may have to do with differences in the functional structure in the two domains. A more serious investigation of this issue remains a subject of future research.

It is well known that the propositional argument of certain verbs in German can be realised as a V-final clause introduced by a complementizer or by a V2 clause without a complementizer:

(38)   a.   Klaus sagte [dass Werner Herzog seine Schuhe gegessen hat]
             Klaus said that Werner Herzog his shoes eaten has
             'Klaus said that Werner Herzog ate his shoes.'
       b.   Klaus sagte [$_{EV2}$ Werner Herzog hat seine Schuhe gegessen]

On a conventional analysis that treats V2 as movement of the verb into the C-position, there is no obvious reason why the structures in (38a) and (38b) should be treated differently. On such a view, the bracketed clauses would be of category CP in both cases. The examples in (38) would have structures like the following:

(39)   a.   Klaus [$_{VP}$ sagte [$_{CP}$ dass Werner Herzog seine Schuhe gegessen hat]]
       b.   [Klaus [$_{VP}$ sagte [$_{CP}$ Werner Herzog [$_C$ hat$_i$] seine Schuhe gegessen t$_i$]]

Any systematic differences that may be found between the two constructions would require an explanation that is independent of the structural configurations involved.

The present proposal makes a different claim about pairs like (38) since it implies the prediction in (9), repeated here:

(9)   A clause headed by a moved verb cannot be selected.

Since on the present view the V2 clause in (38b) is headed by a moved verb, (9) entails that it cannot be selected, and hence that it cannot occupy the same structural position as the V-final clause in (38a). A simplified structure of (38a) is given here:

(40)   V θ_1 $\theta_{2\#}$
             2
             dass   V θ_1 θ_2
             4
             … V

Here, a head that didn't move, namely the complementizer *dass*, heads the embedded clause, and one of the matrix verb's θ-roles is satisfied by the embedded clause. This is the normal case of selection.

In contrast, the bracketed V2 clause in (38b) is headed by a moved verb and has something like the following structure:

(41) $\quad$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$

$\qquad$ **2**

$\qquad$ Subj $\qquad$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$

$\qquad\qquad$ **4**

$\qquad\qquad$ …

The head of this structure is the moved verb V $\underline{\theta}_{1\#}\,\theta_{2\#}$. On the assumption that all θ-roles must be satisfied, the prediction in (9) then entails that this structure cannot occur in a selected position because this structure cannot enter selectional relations. This means that (38b) cannot have the following structure, which would parallel that of (38a) given in (40):

(42) $\quad$ * V_{matrix} $\underline{\theta}_1\,\theta_{2\#}$

$\qquad$ **3**

$\qquad$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$ $\qquad$ V_{matrix} $\underline{\theta}_1\,\theta_2$

$\qquad$ **2**

$\qquad$ Subj $\qquad$ V $\underline{\theta}_{1\#}\,\theta_{2\#}$

$\qquad\qquad$ **4**

$\qquad\qquad$ …

Instead the bracketed V2 clause in (38b) could be analysed as an independent clause. The examples in (38) would then have something like the structures in (43):

(43) a. [Klaus [$_{VP}$ sagte [$_{CP}$ dass Werner Herzog seine Schuhe gegessen hat]]
$\qquad\quad$ = (39a)
$\qquad$ b. [Klaus sagte] [Werner Herzog hat seine Schuhe gegessen]

Note that in a structure like (43b), there is no overt recipient for the object θ-role of *sagte*. Since the second clause in (43b) clearly is interpreted as the object of *sagte*, the theory implies that there must be some device that allows a linking of the apparently embedded V2 clause to the object θ-role of the apparent matrix verb.

Since in (43) the V-final example has a different structure from the EV2 example, it is expected that the two constructions differ in other ways than just the position of the verb. In particular, on the standard analysis, the EV2 clause sits in a complement position, which suggests that extraction from it should be possible. In contrast, given a parenthetical analysis like (43b), extraction from the EV2 clause should be impossible.

One argument that has been used to support the claim that EV2 clauses can occupy the structural complement position is the apparent parallelism of EV2

clauses to verb-final clauses from which a phrase has been extracted: (This discussion follows Reis 1995.)

(44) a. Wieviel   sagte   sie dir dass er dafür bezahlen   würde?
        How much   said   she you that he for this pay   would
    b. Wieviel   sagte   sie dir würde er   dafür   bezahlen?
        How much   said   she you would he for this pay
        'How much did she say to you that he would pay for this?'

The example in (44a) can be analysed in terms of *wh*-movement out of the embedded V-final clause into the highest specifier of the matrix clause:

(45)   Wieviel$_i$ sagte sie dir [t$_i$ dass er dafür e$_i$ bezahlen würde]?
       How much   said she you   that he for this pay   would (Haider 1991: (10))

Haider 1991 (among others) suggests a parallel analysis of (44b), where the *wh*-phrase apparently moves from an embedded V2 clause into the matrix clause.

(46)   Wieviel$_i$ sagte sie dir [e$_i$ würde [er dafür e$_i$ bezahlen]]?
       How much said she you would he for this pay   (Haider 1991: (10))
       'How much did she say to you that he would pay for this?'

If such an analysis is correct, it follows that the V2 clause must be the complement of the matrix verb *sagte*, because otherwise such movement would be impossible.

While such an analysis may be appealing, it is clear that given the assumptions made here that led to the prediction in (9) above, such an analysis cannot be maintained. Since the EV2 clause cannot be a complement of *sagte* an analysis of the following type is necessary, where the apparent matrix clause is analysed as an independent clause:

(47)   [Wieviel$_i$ [sagte sie dir]   würde er dafür e$_i$ bezahlen]?
       How much   said she you   would he for this pay
       'How much did she say to you that he would pay for this?'

The examples in (48) further illustrate the difference between the two types of analyses:

(48) a. Wo   glaubst du wohnt sie seit 1985?   (Reis 1995:(1))
        Where   believe you lives   she since 1985
        'Where do you believe she has lived since 1985?'

    b. In Bonn meint Franz wohnt sie seit 1985.
        In Bonn thinks Franz lives   she since 1985
        'Franz thinks it is in Bonn that she has lives since 1985.'

The two types of analyses of these examples are contrasted here. (49) is an analysis in terms of extraction from an embedded clause; (50) treats the EV2 clause as an independent clause:

(49) a. [Wo glaubst du [t' wohnt sie t seit 1985]]?   (Reis 1995:(2))
      b. [In Bonn meint Franz [t' wohnt sie t seit 1985]].

(50) a. [Wo [glaubst du] wohnt sie t seit 1985]?   (Reis 1995:(3))
      b. [In Bonn [meint Franz] wohnt sie t seit 1985].

    According to the first analysis above, a phrase moves out of a V2 clause that sits in the complement position to a selecting verb. According to the second analysis, no such movement into the apparent matrix clause takes place; the two clauses are syntactically independent.
    The following examples show that indeed the extraction analysis is not tenable, at least not for all cases of apparent extraction. This means that, for empirical reasons, any theory needs to assume that something like the parenthetical analysis, which is forced by the present model, is available for these structures. The example in (51) cannot be plausibly analysed in terms of extraction from a V2 clause complement, because, as the examples in (52) show, the putative matrix verb *fragen* doesn't take V2 complements:

(51) Wen   fragte Hans, wird der Chef entlassen? (Grewendorf 1988:84)
      whom   asks   Hans   will the boss fire
      'Who, Hans asks, is the boss going to fire?'

(52) a. Hans   fragte, ob der Chef   ihn entlassen   wird.
          Hans   asked   if   the boss   him fire   would
          'Hans asked if the boss would fire him.'
      b. * Hans   fragte, ihn wird   der Chef   entlassen.
          Hans   asked   him would the boss   fire
      c. * Hans   fragte, der Chef   wird   ihn   entlassen.
          Hans   asked   the boss   would him   fire

    This means that an extraction analysis of (51) along the lines proposed by Haider for (44b) above, is not very convincing. Instead, an analysis like that illustrated in (53b) seems necessary:

(53)   a.   *[Wen   fragte Hans [t   wird der Chef entlassen t']]?   cf. (46)
                 whom asks Hans   will the boss fire
       b.   [Wen   [fragte Hans]   wird der Chef entlassen t']?

   Further examples that clearly show that any theory will have to assume something like a parenthetical analysis are the following (from Reis 1995:46):

(54)   a.   Wo   wohnt sie **meint er**   mit dem   Kind   seit 1985?
                  where   lives   she thinks he   with the   child   since 1985
       a'.   In Bonn wohnt sie sagt Peter   mit dem   Kind seit 1985?
                  in Bonn lives   she says Peter   with the   child since 1985
       b.   Wo (/In Bonn)   wohnt sie mit dem Kind **meint er** (/sagt Peter)
                  seit 1985?
                  where (/in Bonn) lives   she with the child thinks he (/says Peter)
                  since 1985
       c.   Wo (/In Bonn) wohnt sie mit dem Kind   seit 1985 **meint
                  er** (/sagt Peter)?
                  where (/in Bonn) lives   she with the child   since 1985 thinks
                  he (/says Peter)

Here, the putative matrix *meint er* (or *sagt er*) is preceded by a non-constituent. Thus, an extraction analysis would only be possible at the cost of introducing movement of non-constituents, which is not obviously desirable. These examples then add further evidence that a parenthetical analysis is independently necessary. The following examples show that such structures can also be recursive:

(55)   a.   Was könne   man   meint er behaupte   Karl nicht länger dulden?
                  What can-SUBJ   one   thinks he claims-SUBJ Karl no longer tolerate
                  'What does he think Karl claims can no longer be tolerated?'
                  (Reis 1995:(29))
       b.   Was glaubst du   schätzt   er, wieviel das Auto   kosten wird?
                  What believe you   estimates   he how much the car   cost will
                  'How much do you think he estimates that the car will cost?'
                  (Reis 1995:(30))

   A further range of data that highlight the special properties of EV2 clauses has been observed in Den Besten 1983. First, a verb of saying can introduce an indirect discourse that contains several V2 clauses in sequence that can all be in the subjunctive, which marks indirect discourse in careful registers (cf. Den Besten 1983:109).

(56) *Er sagte, er wäre   nicht damit einverstanden.Der Karl wäre   ein netter*
      he said   he was-SUBJ not with-it agreed   the Karl was-SUBJ a nice
      Bursche, wenn er nicht zuviel getrunken hätte. Aber man wüsste   ja, dass
      guy   when he not too-much drunk   had   but one knew-SUBJ PRT that
      das normalerweise nicht der Fall wäre.   Warum hätte man ihn überhaupt
      that usually   not the case was-SUBJ why   had-SUBJ one him at-all
      eingeladen? Der wäre   ja sonst nicht interessiert an Bürgerinitiativen.
      invited   he was-SUBJ PRT   not   interested   in Citizens' Committees

      'He said (that) he agreed. Karl was a nice guy when he hadn't drunk too
      much. But everyone knew that usually that wasn't the case. Why had he been
      invited anyway? Usually he doesn't care about citizens' committees.'

This example is relevant because in many languages subjunctive mood is
restricted to complements of certain verbs, which suggests that it is licensed under
selection. Thus, at first sight, such examples seem to provide evidence against a
parenthetical analysis of EV2 constructions. However a look at more data shows
that such examples indeed cannot involve selection.

While it might be plausibly argued that a sequence of declarative V2 clauses
could constitute some coordination structure that sits in the canonical complement
position of a selecting V, such an analysis is not possible for the above text. The
important fact is that among the subjunctive V2 clauses there is a question, and
after the question, the text continues with a further declarative. As the following
example shows, such a question is not a possible complement of *sagen*:

(57)   * Er sagte, warum hätte man ihn überhaupt eingeladen?

However, if the sequence of subjunctive V2 clauses in (56) contains a clause that
can't be a complement of the matrix verb, it follows that the whole sequence also
can't be selected by this verb.

This point becomes even clearer in the following examples (cf. Den Besten
1983:122f):

(58) a. *Das Telefon klingelte.   Es war seine Chefin. Sein Kollege wäre   krank*
         the phone   rang   it was his   boss   his colleague is-SUBJ sick
         und er möchte   doch bitte zum   Büro kommen.
         and he may-SUBJ PRT   please to-the office come.

         'The phone rang. It was his boss. She said his colleague was sick, and
         asked him if he could come to the office.'

b. *Aber er wollte nicht mitmachen. Es wäre   ja unerhört   dass man*
But he wanted not   cooperate. It was-SUBJ PRT outrageousthat one
nicht verstünde,   dass er sich   weigerte   mit solchen
not understood-SUBJ that he himself   refused-SUBJ   with such
Faulenzern zu arbeiten.
bums   to work

'But he didn't want to cooperate. (He said that) It was outrageous that
they didn't understand that he refused to work with such bums.'

(59) a. *Das Telefon klingelte. Es war seine Chefin. Dass sein Kollege krank
           wäre, und er doch bitte zum Büro kommen möchte.
      b. *Aber er wollte nicht mitmachen, dass es ja unerhört wäre, dass…

Here, the subjunctive indirect discourse in V2 occurs without an introducing verb
of saying altogether. (The examples in (59) show that in the same context a V-final
clauses is not possible.) Since in these examples V2 indirect discourse occurs
without being licensed by a selecting verb, it is clear that this strategy may also be
used in a context where a verb of saying occurs. Thus, these data show that
regardless of the particular analysis that these EV2 clauses receive, the theory must
provide a way to account for their occurrence as independent clauses.

The above examples have provided clear evidence that not all apparent V2
complement clauses can be analysed as structural complements and that instead
some examples must be analysed as independent clauses. To the extent that this
argument is correct, the unanswered question of how the apparent matrix verb's
internal θ-role could be satisfied is then no longer an argument in favour of the
extraction analysis. Since any theory will have to include a device that can deal
with uncontroversial cases of missing complements like those in (53b) and (55)
where the EV2 clause cannot be a structural complement, this device will also be
available for the cases that could arguably be analysed in terms of extraction.[29]
Moreover it may be noted that a conventional approach to clause structure is left
with two possible analyses for EV2 clauses, namely EV2 clauses as complement
clauses or an analysis of the relevant constructions as independent clauses. While
this doesn't seem terribly elegant, it also raises the complex question of how one
(the linguist or the learner) should choose between the two possibilities. In contrast,
there is only one analysis of EV2 clauses that is compatible with the assumptions
made here. Since this analysis predicts that there should be certain differences

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[29] See Banfield 1982:41-52, Reis 1995 for relevant discussion.

between V-final complement clauses and EV2s, this can be seen as an advantage of this approach.[30]

In this section, I have discussed apparently embedded V2 clauses in German in light of the prediction that embedded clauses cannot be headed by a moved verb. I provided a range of empirical arguments that showed that the relevant V2 clauses in fact should not be analysed as structural complements, but instead as some kind of parenthetical construction.[31]

6 Conclusion

This paper dealt with the effects of the restriction on selection to elements in chain-tail positions and its interaction with the rejection of categorial projection and the proposal that categories in a non-chain-tail position can head a structure. Section 2 showed how this model can provide a natural account for Vikner's generalisation, i.e. the observation that only languages that lack obligatory verb movement may have complementizer optionality in complement clauses. Section 3 extended this analysis to topicalisation and adjunction to the highest position in an embedded clause. Section 4 showed how complementizer optionality in relative clauses follows the same pattern as complementizer optionality and that this pattern can be explained along the same lines. Section 5 dealt with apparently embedded verb-second clauses in German. It was demonstrated that, as the theory predicted, these clauses should not be analysed on a par with clauses introduced by a complementizer.

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[30] EV2 constructions in German are restricted to bridge verbs. It is roughly the same class of verbs that licenses omission of the complementizer in Italian subjunctives (cf. Giorgi and Pianesi 1997, Poletto 2001). As noted in section 2, these examples appear to be an exception to Vikner's generalisation, which links complementizer optionality to verb movement. However, the fact Italian complementizer optionality is restricted to a similar class of verbs as EV2 constructions in German suggests that possibly a similar analysis carries over to the Italian case. If Italian subjunctives could also receive a type of parenthetical analysis, they are no longer problematic for Vikner's generalisation.

[31] For more discussion of EV2 see e.g. Cinque 1989, De Haan 2001, Den Besten 1983, Frank 2000, Gärtner 2001, 2002, Heycock 2001, Iatridou and Kroch 1992, Öhl 2002, McCloskey 1992, Penner and Bader 1991, Reis 1995.

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