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Conditions for Infinitival Complementation

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THE SYNTAX-SEMANTICS INTERFACE CONDITIONS FOR INFINITIVAL COMPLEMENTATION

ANGELIKA WÖLLSTEIN-LEISTEN AND AXEL HEILMANN

ABSTRACT. There is a common syntactic construction in West Germanic languages, the so-called 'coherent' infinitive. This construction is an alternative to sentential infinitival constructions. While with non-coherent infinitival complements we have two distinct argument structures, with coherent infinitives these argument structures are unified rendering a monosentential construction.

Although the syntactic conditions for the occurrence of coherent constructions are clear, there are verbs matching all these syntactic conditions but yet they don't allow coherent constructions.

In this paper we are working out some semantic condition ruling out the occurrence of coherent infinitives with a subclass of verbs. These verbs presuppose their infinitival complement, a fact which obviously entails the necessity for a full sentential representation of the complement.

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1. Introduction

We are going to show that there exist some semantic requirements that act as restrictions on the syntax of infinitival complementation in German.

In German we have at least two possibilities to realize an infinitival complement within a sentence. The position of the infinitival complement can be on the left of the matrix verb, then we talk about an intraposed infinitival complement. Or the position is on the right of the matrix verb, then the infinitival complement is extraposed. The extraposed infinitival complement is always a clausal or sentential construction, whereas the intraposed infinitival complement could be a sentential or a non-sentential one.

These two possibilities for complementation are restricted to a subclass of verbs that select the '*zu*'- infinitive, the so called second status. Some of the matrix verbs selecting the *zu*-infinitive are unable to allow an optionally coherent variant for the intraposed infinitival complement, i.e. their infinitival complements must always be sentential. This indicates that the matrix verb determines the type of complementation.

As the matrix verb determines the type of complementation for infinitives with *zu* we are testing matrix verbs only for restrictions on infinitival complementation with infinitives with *zu*.

We are going to show that it cannot be a merely syntactic restriction that prevents some verbs from allowing a coherent alternative.

The feature we are going to prove responsible for strictly selecting non-coherent infinitival complements is only one among various others. The so-called *verba dicendi*, for instance, also allow non-coherent infinitives only. Still, the reason for this is not the feature we are going to demonstrate. This means that our proposal is not meant to cover all the features determining whether a verb selects non-coherent infinitival complements only. It is meant as a description of one subclass of verbs allowing only non-coherent infinitives.

For these we propose the following environmental features to match both syntactic and discourse requirements:

1. The construction algorithm of the semantic representation imposes matching conditions on the interface representation: in particular, a clausal presupposed complement in the DRS must match with a clausal construction in the syntactic representation.
2. One fact of this matching requirement is the exclusion of a frequent alternative construction of clausal infinitival complements with a subclass of verbs

3. Following an idea proposed by Hans Kamp and Hubert Haider, we are going to show that if a matrix verb selects a propositional complement, this complement must be realized sententially if the matrix verb presupposes it as well. Thus the complement can't go into a coherent construction.

There are various syntactic features which determine if a matrix verb either selects a sentential complement or allows (or even forces) a coherent — that is non-sentential — construction. Our proposal can determine a subclass of control verbs that never allow coherent constructions at all.

We are going to show that certain semantic restrictions entail restrictions on the syntactic structure thus rendering some insight in how the syntax-semantics-interface works.

2. Coherent vs. Non-coherent Infinitives

2.1. **Description.** A special feature of West-Germanic languages like Dutch, Frisian, and German are the so-called 'coherent' infinitive constructions (ref.: Bech (1983) [2]; Evers(1975) [4]). Bare infinitives are always coherent, whereas, depending on the matrix verb, *zu*-infinitives can be obligatorily coherent, both coherent and non-coherent, or non-coherent only. To enable a coherent construction with *zu*-infinitives the matrix verb must be a control verb selecting the infinitive as a direct object (ref.: Haider (1993) [8]), or as an ergative subject.

With infinitives representing a prepositional complement a coherent construction is never possible, e.g. *sprechen (3), denken (think), fiebern (crave), drängen (urge), leiden (suffer)* etc. With these verbs it is impossible to have an intraposed infinitival complement i.e. we have an explicative construction only. Furthermore the prepositional element functioning as an explicate cannot be left out. Infinitives like these can never occur in a coherent construction as an infinitive constructed monosententially must be the unspecified argument (i.e. the direct object) of the matrix verb (ref.: Haider (1993:251) [8]).

The descriptive features of coherent constructions have been determined in the works of Bech (1983) [2], Evers(1975) [4] and various others.

Summing up all the descriptive features, coherent constructions have the following properties: (ref: Haider (1993:248) [8]):

1. Verbal Complex
   Verbal complexes entail the following features:
   - the verbal chain can be placed in the *Vorfeld* i.e. the position left to the finite verb in a main clause

- the scope of scope elements includes all verbs
- the verbal chain must not be interrupted
- dislocation of the finite verb to the front of the embedded one and IPP
- 'long' passive (ref.: Höhle (1978) [12])

2. 'Monosentential' Middle Field
   The 'monosentential' middle field entails the following features:
   - Wackernagel movement to the front of the matrix subject
   - no sentential movement inside the middle field
   - long extraposition
   - no separate negation domains
3. These constructions are restricted to a subset of control verbs only

While non-coherent (i.e. sentential) infinitives can occur in an extraposed position, coherent infinitives can't be extraposed, compare (1f) with *scheinen (seem)* which takes an obligatorily coherent infinitive and (1a) *versuchen (try)* which can take both types of infinitives. N.B. with *versuchen* the extraposed infinitive is non-coherent, while the intraposed infinitive can be analysed in both ways (1b,c).) Unless you force a coherent reading as in (1d) you are not able to distinguish between the two structures.

(1) a. ..., daß er versucht, [PRO ihn zu treffen]
that he tries him to meet
that he tries to meet him

b. ..., daß er ihn zu treffen versucht (coherent)
that he him to meet tries
that he tries to meet him

c. ..., daß er [PRO ihn zu treffen] versucht (non-coherent)
that he him to meet tries
that he tries to meet him

d. ..., daß ihn der Mann zu treffen versucht (coherent)
that him the man to meet tries
that the man tries to meet him

e. ..., daß er ihn zu kennen scheint (coherent)
that he him to know seems
that he seems to know him

f. * . . . , daß er scheint, [ihn zu kennen]
that he seems him to know
that he seems to know him

As we didn't force a coherent reading in (1b,c) we don't have any syntactic indication which of the structures is selected. Thus we assume both options are possible here.

Verbal clusters occurring only in a coherent construction cannot be split up by adverbs or negation (2b), whereas this is well possible with non-coherent infinitives (2a).

(2) a. daß er sie zu kennen (nicht) bedauerte
that he her to know (not) regretted
that he did (not) regret to know her

b. daß er sie zu kennen (*nicht) schien
that he her to know (*not) seemed
that he did (not) seem to know her

2.2. **Syntactic Structures.** There are several proposals for the syntactic description of these features which can be sorted into two groups

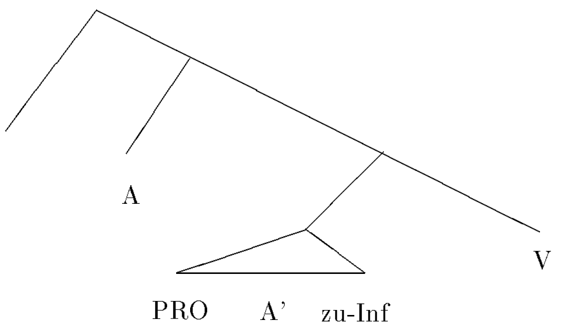
1. a derivational one
   and
2. a representational one

There exist various proposals for how to derive the coherent structure from the non-coherent one cf.:

Verb raising (Rosengren (1992) [16], Sternefeld(1989) [18]),
or evacuation (Fanselow (1990) [5]),
or reanalysis (Stechow, Sternefeld (1988) [17])

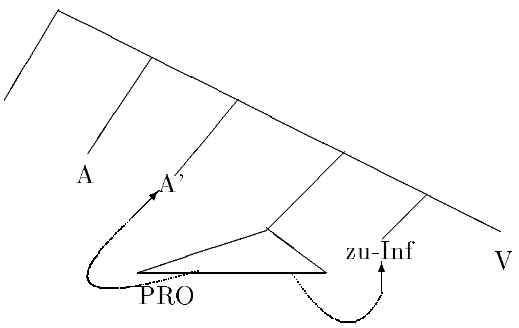
The structural difference between the two types of *zu*-infinitives can roughly be illustrated as follows:

non-coherent:



This shows the complete sentential (functional) projection in the middle field containing the complete argument structure of the infinitive including PRO. Both analyses assume this structure for sentences like (1c):

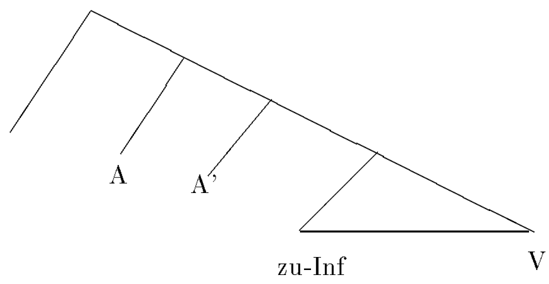
coherent:



In a derivational analysis the coherent construction is derived from the structure above. The infinitival complement opens a functional projection out of which all its elements (including PRO) have been moved.

A representational analysis like the one of (Haider (1989)) assumes that coherent constructions, both obligatory and optional ones, cannot be derived from a sentential construction. With these infinitives there must be a monosentential construction as occurring with bare infinitives as well.

coherent:



Case conversion (as shown in the next section) is one of the strongest arguments in favour of this analysis. A monosentential representation doesn't contain any sentential borders or PRO, whereas a derivational analysis contains both. In a monosentential representation the argument structures of all verbs are unified and realized as one.

Thus we can describe an essential difference between coherent and non-coherent constructions. The main structural difference between the two types of infinitives (within a representational analysis) is that non-coherent infinitives are sentential arguments of the type:

[PRO Arguments Infinitive]

while coherent infinitives combine their argument structure with the argument structure of the matrix verb rendering a complex structure in which the infinitive is part of a verbal cluster:

[Arguments [$_{\text{verbal cluster}}$Infinitive Matrix Verb]]

3. Empirical Facts

We have several ways to find out whether we are dealing with a coherent construction or not. In the following, we will show the contrast between these two constructions using the verbs *glauben (believe)* (optionally coherent) and *bedauern (regret)* (non-coherent).

3.1. **Wackernagel Position.** The Wackernagel position (WP), the position at the top of the German middle field (MF) tends to be occupied by unstressed pronouns. If we can move a pronominal argument of the *zu*-infinitive to WP of the matrix verb, the construction is coherent, i.e. there is only one complex verbal projection. In the non-coherent construction this would equal long-distance extraction of the pronoun, which is ungrammatical in general.

(3) a. Bisher hat **sich** Max noch nie rasieren zu müssen geglaubt
Up to now has **himself** Max still never shave to must believed
Up to now Max has never believed that he had to shave

b. *Bisher hat **sich**$_i$ Max noch nie [PRO e$_i$ rasieren zu müssen] bedauert
*Up to now has **himself** Max still never PRO shave to must regretted
Up to now Max has never regretted having to shave

It is possible in (3a) to place a reflexive pronoun in the Wackernagel position of the matrix verb although the reflexive belongs to the infinitive. There is no cross-over effect although we move the reflexive *sich* across its binding element *Max.* In (3b) *bedauern* embeds a non-coherent infinitive. This entails long movement out of a sentential structure leading to an ungrammatical construction, as the reflexive cannot be moved out of a domain in which it is bound by a subject (i.e. the embedded CP/IP).

3.2. **Topicalisation.** We can topicalise the verbal complex, which is only possible with coherent infinitives, as only those allow the type of constituent formation needed. We force the coherent reading by Wackernagel movement of the reflexive pronoun.

(4) a. [Rasieren zu müssen geglaubt] hat **sich** Max noch nie (coherent)
shave to must believed has **himself** Max still never
Max has never believed he had to shave

b. *[Rasieren zu müssen bedauert] hat **sich** Max noch nie (non-coherent)
*shave to must regretted has **himself** Max still never
Max has never regretted having to shave

3.3. **Partial Topicalisation.** We can topicalise the infinitive only, which again is only possible with coherent infinitives: the infinitival verbal head can't be extracted out of a sentential complement, because a head can't be moved without its arguments if it is the head of a sentential construction.

(5) a. [Rasieren zu müssen] hat **sich** Max noch nie geglaubt (coherent)
shave to must has **himself** Max still never believed
Max has never believed he had to shave

b. *[Rasieren zu müssen] hat **sich** Max noch nie bedauert (non-coherent)
*shave to must has **himself** Max never regretted
Max has never regretted having to shave

In (5a) we have topicalisation of part of the verbal complex, whereas in (5b) we have the head of a sentential construction without its arguments. This cannot be moved as it would leave its arguments behind ungoverned.

3.4. **Case Conversion: Accusative — Nominative.**

3.4.1. ... *With Passive of the Matrix Verb.* We observe case conversion in passivized coherent constructions. Nominative is assigned to the direct object of the *zu*-infinitive if the matrix verb is in the passive (cf.: Höhle (1978) [12]). This can only occur with coherent constructions and is known as 'long passive'.

(6) a. Noch nie hat Maria [PRO dies**en** Staubsauger verkauft zu haben] bedauert (non-coherent)
still never has Maria PRO this$_{\mathrm{ACC}}$ vacuum cleaner sold to have regretted
Maria has never regretted having sold this vacuum cleaner

b. Noch nie wurde [PRO *dies**er**/dies**en** Staubsauger verkauft zu haben] bedauert (non-coherent)
Still never was PRO this$_{\mathrm{NOM}}$/this$_{\mathrm{ACC}}$ vacuum cleaner sold to have regretted

There have never been any regrets about having sold this vacuum cleaner

c. Noch nie hat Maria dies**en** Staubsauger zu verkaufen versucht (coherent)
Still never has Maria this$_{\mathrm{ACC}}$ vacuum cleaner to sell tried
Maria has never tried to sell this vacuum cleaner

d. Noch nie wurde dies**er**/*dies**en** Staubsauger zu verkaufen versucht (coherent)
Still never was this$_{\mathrm{NOM}}$/*this$_{\mathrm{ACC}}$ vacuum cleaner to sell tried
There has never been any attempt to sell this vacuum cleaner

If we had a non-coherent sentential complement in the middle field, passivizing the matrix verb should not have any impact on the direct object of the complement. The point yet is that with a coherent construction it is completely ungrammatical to passivize the matrix verb without converting the case of the embedded direct object (6d). (6b) on the other hand shows the contrast if we actually have a non-coherent, i.e. sentential projection inside the middle field.

Passivizing the matrix verb in a coherent construction suppresses the designated argument of the matrix verb and allows to externally realize the direct object of the complement verb.

Case conversion in a coherent construction occurs as a result of the verbs having unified their argument structure and thus rendering a simple sentence only. As the external argument of the matrix verb has been deactivated due to a passive construction there is only one argument available for externalisation. This is the syntactically active, structurally internal argument of the complement verb.

3.4.2. *Case Conversion with Ergative Matrix Verbs.* The same feature of case conversion occurs with ergative verbs in the coherent construction.

Ergative verbs assign nominative case to their internal argument in simple, active sentences. Coherent constructions with an ergative matrix verb also show case conversion.

> *Das für strukturellen Kasus spezifizierte Argument wird aufgrund der Priorität der externen Kasuslizenzierung über die interne NOM-AKK-Abhängigkeit externalisiert.* Haider (1993:253)
> The argument specified for structural case has to be externalised due to the fact that external case licensing comes prior to internal nominative-accusative dependencies.

(7)
a. Es ist ihm noch nie gelungen, [PRO **den** Preis zu gewinnen]
It is him still never succeeded PRO **the**$_{ACC}$ price to win
He has never succeeded in winning the price

b. Noch nie ist ihm gelungen, [PRO **den** Preis zu gewinnen]
Still never is him succeeded, PRO **the**$_{\mathrm{ACC}}$ price to win
He has never succeeded in winning the price

c. [Zu gewinnen] ist ihm **der/*den** Preis noch nie gelungen
To win is him **the**$_{\mathrm{NOM}}$**/the**$_{\mathrm{ACC}}$ price still never succeeded
He has never succeeded in winning the price

d. [Zu gewinnen gelungen] ist ihm **der/*den** Preis noch nie
To win succeeded is him **the**$_{\mathrm{NOM}}$**/the**$_{\mathrm{ACC}}$ price still never
He has never succeeded in winning the price

3.5. **Anaphor Binding.** With reflexives and object control, we find that coherent constructions do not allow binding of the reflexive by a dative controller (cf.: 8c, 8e).

(8)
a. Zu verbessern gelungen ist ihm der Apparat/*den Apparat noch nie
To improve succeeded is him the$_{NOM}$ apparatus/the$_{ACC}$ apparatus still never
He has never succeeded in improving the apparatus

b. Ihm$_i$ ist noch nie gelungen, [PRO$_i$ **sie**$_j$**/sich**$_i$ zu verbessern] (non-coherent)
Him$_{i\ \mathrm{DAT}}$ is still never succeeded PRO$_i$ **her**$_j$**/himself**$_i$ to improve
He has never succeeded in improving her/himself

c. Ihm$_i$ ist noch nie [(PRO$_i$) **sie**$_j$**/sich**$_i$ zu verbessern] gelungen (possibly coherent)
Him$_{\mathrm{DAT}}$ is still never PRO$_i$ **her**$_j$**/himself**$_i$ to improve succeeded
He has never succeeded in improving her/himself

d. [Zu verbessern gelungen] ist **sie**$_j$**/*sich**$_i$ ihm$_i$ noch nie (coherent)
To improve succeeded is **her**$_j$**/*himself**$_i$ him$_{i\ \mathrm{DAT}}$ still never
He has never succeeded in improving her/himself

e. Er hat **sie**$_j$/***sich**$_i$ ihm$_i$ zu verbessern geholfen (coherent)
He has **her**$_i$/***himself**$_i$ him$_{i\ \mathrm{DAT}}$ to improve helped
He helped him to improve her(/himself)

f. [Zu verbessern] hat er **sie**$_j$/***sich**$_i$ ihm$_i$ nicht geholfen
To improve has he **her**$_j$/***himself**$_i$ him$_{i\ \mathrm{DAT}}$ not helped
He didn't help him to improve her(/himself)

The reflexive in the non-coherent construction in (8a) is bound by the dative object of the matrix verb. In simple sentences it is impossible for dative objects to bind a reflexive. Binding via PRO is possible in a complex construction like the non-coherent one.

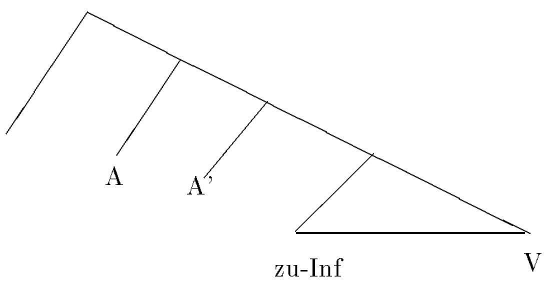
As long as we have an intraposed infinitive without forcing the coherent reading it is still possible to bind the reflexive to a dative. We have to assume that there is a PRO in this construction.

As soon as the coherent reading has been forced like in (8c) it is no longer possible to bind the reflexive to a dative. Cross-over effects cannot account for this observation, as the reflexive can easily move across the subject, compare (3a).

Obviously a reflexive pronoun can't be bound by a dative controller in a coherent construction.

This feature indicates that there is no PRO in the coherent infinitival complement, i.e. the complement is non-sentential. This also indicates that a coherent construction can't be derived from a non-coherent one. In the latter case it should be possible to bind the anaphor to PRO, whether it is in a derived position or not. We will therefore proceed using a non-derived representational structure.

coherent:



In this non-derived structure we assume only **one** clause, one argument structure, no PRO and a single verbal cluster. (cf. Haider 1987 [11], 1991 [9], 1993 [8])

If we do not assume the coherent construction to be derived from a functional projection inside the middle field we need not care how to handle PRO or the sentential projection. The monosentential syntactic structure renders all the syntactic options like case conversion, partial topicalisation, anaphor binding, and so on.

4. Conditions for Infinitival Complementation

4.1. **Basic Requirements.** As mentioned above we need some preconditions to allow coherent constructions.

- the infinitival complement must represent the direct object of the matrix verb (or the subject of an ergative verb)
- the matrix verb must be a control verb
- the subcategorization frame must correspond to that of a simple sentence

4.2. **Some Contrast.** Some verbs still do not allow coherent constructions, although all the above conditions are met. The question now is, why we can't always have coherent constructions as an alternative to the sentential infinitive, even though the syntactic conditions would permit this. To exemplify this, refer to example (9) where two matrix verbs show identical subcategorization frames. The first is *glauben (believe)* which allows both coherent and non-coherent infinitives, the second is *bedauern (regret)* which allows non-coherent infinitives only.

(9) a. Max hat die Behauptung geglaubt
Max has the assertion believed
Max believed the assertion

b. Max hat die Behauptung bedauert
Max has the assertion regretted
Max regretted the assertion

c. Max hat geglaubt, daß er sich rasieren muß
Max has believed that he himself shave must
Max believed that he had to shave

d. Max hat bedauert, daß er sich rasieren muß
Max has regretted that he himself shave must
Max regretted that he had to shave

e. Max hat geglaubt, sich rasieren zu müssen
Max has believed himself shave to have
Max believed he had to shave

f. Max hat bedauert, sich rasieren zu müssen
Max has regretted himself shave to have
Max regretted having to shave

But note the structural difference between the two predicates when we again force the coherent reading by moving the reflexive to WP. Note the contrast between (10a,b) vs.(10c,d).

(10) a. [Rasieren zu müssen] hat **sich** Max geglaubt
shave to must has **himself** Max believed
Max believed he had to shave

b. *[Rasieren zu müssen] hat **sich** Max bedauert
*shave to must has **himself** Max regretted
Max regretted having to shave

c. [Rasieren zu müssen geglaubt] hat **sich** Max
shave to must believed has **himself** Max
Max believed he had to shave

d. *[Rasieren zu müssen bedauert] hat **sich** Max
*shave to must regretted has **himself** Max
Max regretted having to shave

Obviously both verbs have identical subcategorization frames, and there is no syntactic feature that would prevent a coherent construction (such as case frame overload etc.). Thus there can't be any syntactic reason for the fact that *glauben* allows coherent infinitives, whereas *bedauern* doesn't.

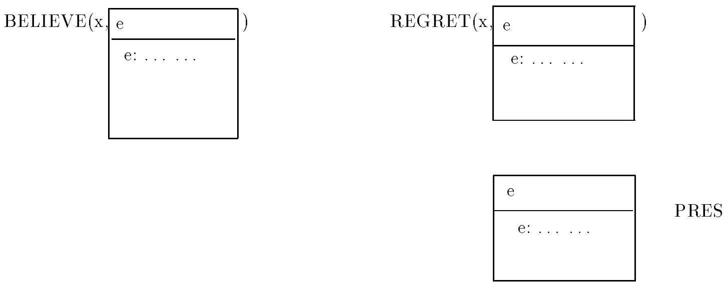
4.3. **Semantic Conditions.** The question is now, whether there could be any semantic feature which occurs only in the semantics of *glauben (believe)*, but not in the semantics of *bedauern (regret)*?

The semantic feature we are looking for might be that some verbs presuppose the propositions they take as an argument, while other verbs don't (as suggested by Hans Kamp and Hubert Haider). [1]

This justifies the following new premise:

> If the semantics of a predicate include a propositional argument that is presupposed, this presupposition is separately constructed and calculated in the syntactic representation.

The difference between the verbs should roughly be something like:



This representation shows the basic difference between the two verbs. The sematic representation of *regret* includes a propositional complement, which is presupposed as well, whereas with *believe* there is no presupposition of that type.

The important point seems to be that the verbs expresses an attitude towards a given proposition without further influencing the state or event expressed.

In contrast to this type of verbs there is another set of verbs including a similar presupposition. These are verbs like *anfangen* (start, begin) or *aufhören* (stop, end). These verbs presuppose as well, but contrary to the above type of verbs, they express a change with respect to the presupposition. This means that these verbs can influence the state or event presupposed, whereas verbs like *bedauern* (regret) don't influence this state or event. The point is that once it stopped raining there is no more rain falling while if someone regrets having met somebody else, he still has met someone. Additionally these verbs do not allow a that-clause

[1] We wish to thank Antje Roßdeutscher and Uwe Reyle for their help with the semantic analyses of the verbs.

instead of the infinitival complement indicating that the presupposition has to be processed in a different way compared to verbs like *regret*.

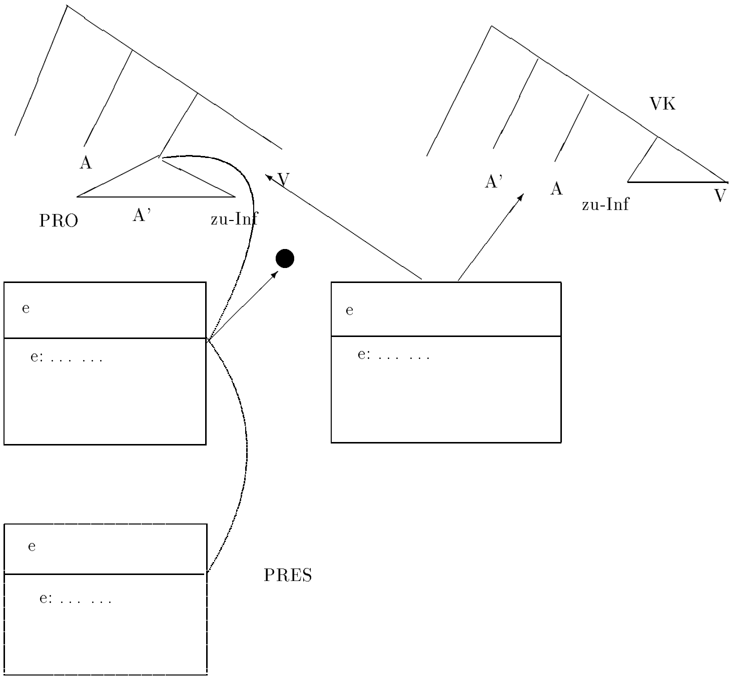
(11) a. *Heute hat er angefangen, daß er das Buch liest
Today has he started that he the book reads
Today he has started to read the book

b. Heute hat er angefangen, das Buch zu lesen (non-coherent)
Today has he started the book to read
Today he has started to read the book

c. Heute hat er es zu lesen angefangen (coherent or non-coherent)
Today has he it to read started
Today he has started to read it

d. Er hat es heute zu lesen angefangen (coherent)
He has it today to read started
Today he has started to read it

Our concern is to show that a propositional complement in the semantic structure of a lexical entry may need a full, i.e. sentential, representation in syntax. This full representation must occur whenever the complement is presupposed as well, as long as the verb expresses nothing but an attitude towards the presupposition.



The picture above is to show the contrast in the selection mechanisms of the two types of verbs. While both possible syntactic realisations are accessible for the verb not presupposing its complement there is only one choice for the verb including a presupposition. These verbs can only select the syntactic structure including a sentential representation for the infinitival complement. The monosentential representation with a verbal complex is not accessible. N.B. Verbs of the *anfangen*(begin)-type have both choices, i.e. with respect to the selection mechanism they behave as if they were of the non-presupposing type.

4.4. **Trying the Mechanism.** A fine example for this observation is the verb *lernen (learn)*, where we can directly see the difference, because *lernen* can select a presupposed proposition as a complement.

In the following examples we always have the same meaning as in all cases 'he' hates or has hated his father.

(12) a. Er lernt, daß er seinen Vater haßt
He learns that he his father hates
He learns that he hates his father

b. Er lernt, daß er seinen Vater gehaßt hat
He learns that he his father hated has
He learns that he has hated his father

c. Er lernt nicht, daß er seinen Vater haßt
He learns not that he his father hates
He doesn't learn that he hates his father

In the following examples the meaning is that from now on 'he' will hate his father, there is no proposition selected (we can't have a that-clause here), and we can have a coherent construction.

(13) a. Er lernt, seinen Vater zu hassen
He learns his father to hate
He learns to hate his father

b. Er lernt nicht, seinen Vater zu hassen
He learns not his father to hate
He doesn't learn to hate his father

c. [Zu hassen] hat ihn Max gelernt (coherent)
To hate has him Max learned
Max has learned to hate him

d. [Zu hassen gelernt] hat ihn Max (coherent)
To hate learned has him Max
Max has learned to hate him

Both the following examples mean that 'he' always hated his father, there is a proposition presupposed and selected (cf. 11), and we can't have a coherent construction.

(14) a. Er lernt, seinen Vater gehaßt zu haben
He learns his father hated to have
He learns that he hated his father

b. Er lernt nicht, seinen Vater gehaßt zu haben
He learns not his father hated to have
He doesn't learn that he hated his father

c. *[Gehaßt zu haben] hat ihn Max gelernt (non-coherent)
*Hated to have has him Max learned
Max has learned that he hated him

d. *[Gehaßt zu haben gelernt] hat ihn Max (non-coherent)
*Hated to have learned has him Max
Max has learned to have hated him

Some people don't get all the readings above for *lernen* (learn), but note that eg. *vergessen (forget)* behaves in the same way. Anyway the contrast is still clear, so this shows that the system even works for new readings not common to all speakers.

(15) a. Er hat vergessen, sich zu rasieren
He has forgotten himself to shave
He forgot to shave
i.e. he didn't shave

b. Er hat vergessen, sich bereits rasiert zu haben
He has forgotten himself already shaved to have
He has forgotten having shaved
i.e. he has shaved (presupposed)

c. [Zu rasieren vergessen] hat er sich schon oft
To shave forgotten has he himself already often
He has often forgotten to shave

d. *[Rasiert zu haben vergessen] hat er sich schon oft
*Shaved to have forgotten has he himself already often
He has often forgotten having shaved

4.4.1. *Third Construction Data.* There is another infinitival construction in German that is presumably coherent, the so-called 'third construction'(Bech ([2])). This looks like a partially extraposed infinitival complement. The acceptability of this construction is limited, some speakers don't accept it at all. The construction occurs with only a subset of verbs allowing coherent constructions as well.

(16) a. ... daß Hans versucht dem Kind das Buch vorzulesen
that Hans tries the child the book to read
that Hans tries to read the book to the child

b. ... daß Hans dem Kind versucht das Buch vorzulesen (3rd construction)

that Hans the child tries the book to read
that Hans tries to read the book to the child

Again there are various proposals on how to derive this construction from a coherent or non-coherent one (eg. long scrambling, VP-Raising), and the structural status of the construction is quite unclear. Anyhow, with this construction we find both case conversion and limited anaphor binding, so we treat it as being coherent somehow. Note again the structural difference between the constructions.

(17) a. ... daß Hans versucht dem Kind den Comic vorzulesen
that Hans tries the child the cartoon to read
that Hans tries to read the cartoon to the child

b. ... daß versucht wird dem Kind den Comic vorzulesen (passive, extraposed)
that tried becomes the child the cartoon to read
that sombody tries to read the cartoon to the child

c. daß der/*den Comic versucht wird, dem Kind vorzulesen (passive, 3rd)
that the$_{NOM/*ACC}$ cartoon tries becomes the child to read
that somebody tries to read the cartoon to the child

(18) a. daß versucht wird PRO$_i$ sich$_i$ dem Freund zu zeigen (passive, extraposed)
that tried becomes PRO oneself the friend to show
that sombody tries to show PRO himself to the friend

b. *daß dem Freund versucht wird sich zu zeigen (pasiive, 3rd)
that the friend tried becomes himself to show
that somebody tries to show himself to the friend

In both above examples one can observe the same effects as in coherent constructions. The embedded direct object has to undergo case conversion if the matrix verb is passivised and if we have a third construction, and it is impossible to bind a reflexive in the third construction, whereas the reflexive can be well bound by an arbitrarily controlled PRO in the extraposed construction. Whatever structural type the third construction may be, it is obvious that there can't be any PRO in it, thus it is very similar to coherent constructions.

From all the examples above we can see some additional point. The readings forcing the presuppositional variant of the verb usually go together with perfect tense or modal modification, whereas the non-presuppositional readings don't. Verbs allowing only one of the readings also keep this feature active. I.e. verbs simlpy presupposing their infinitival complement show a tendency to prefer their infinitival complement being modally modified or in perfect or past tense. The other set of verbs not or not simply presupposing their complement either don't show a tendency like this at all, or they prefer their complement not to be modified or not to be in past or perfect tense.

5. Summary

These observations lead to the distinction of two groups of verbs subcategorising infinitival arguments.

- The first group takes some propositional argument that it presupposes as well, without further influencing the state or event presupposed, thus it needs a sentential argument in order to project this correctly. These verbs allow that-clauses instead of the infinitive. With these verbs the semantics of the lexical entry restrict the syntactic argument selection. These verbs never allow coherent constructions. Many of the verbs in this group show a tendency to prefer their complement to be in past or perfect tense or to be modally modified.
- The second group either doesn't presuppose its propositional argument, or it presupposes the argument and influences the state or event presupposed, or it has no propositional argument at all, thus there is no need for a sentential argument, and thus coherent constructions are possible. Some verbs in this group have argument structures which make it necessary that there always be a non-sentential infinitive (e.g. raising verbs). With these verbs coherent infinitives are obligatory.

non-coherent only	coherent	
	optional	obligatory
bedauern	glauben	scheinen
lernen	lernen	
leugnen	versuchen	
zugeben	anfangen	
zugestehen	aufhören	
⋮	⋮	

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