Prolepsis

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Abstract

The linguistic term *prolepsis* refers to a construction where a structural complement of the matrix verb is semantically related to the predicate of a finite embedded clause. In the following example, the proleptic constituent is governed by a preposition and semantically related to a position occupied by a coreferential pronoun: *I believe of John that he likes Mary*. While at first sight, one may take the proleptic constituent to be an argument of the matrix verb with the pronoun establishing an anaphoric dependency, things are more complex: First, the construction is possible with a very wide range of matrix verbs, casting doubt on the argumenthood of the object. Second, a coreferential element is obligatory (cf. **I believe of this crisis that the president should resign*), which argues against a mere aboutness relationship. There is conflicting evidence concerning the base position of the proleptic object. On the one hand, there is solid evidence from anaphor binding and superiority that the proleptic object occupies an A-position in the matrix clause. On the other hand, the proleptic object reconstructs into the complement clause for anaphor and variable binding; furthermore, the proleptic object turns the construction into a (weak) island for extraction. Both properties would follow if the proleptic object were to originate in the embedded clause, but an analysis involving movement from the complement clause fails for conceptual (Improper Movement, Freezing) and empirical (lack of reconstruction for Principle C and scope) reasons. It is proposed that these paradoxical properties follow if the proleptic object is licensed by predication: The complement clause involves a base-generated operator which turns it into an open sentence. The coreferential pronoun is the variable bound by the operator. The proleptic object, then, is the subject of the predication. The relationship between the proleptic object and the silent operator involves ellipsis, as does the relationship between the operator and the coreferential pronoun. Ellipsis derives the (selective) reconstruction effects, predication explains the necessity of a coreferential element while the presence of the silent operator accounts for the opacity of the construction. Finally, the lack of scope reconstruction follows from the pronominal nature of the variable.

1 Introduction: the phenomenon

The linguistic term *prolepsis* refers to a construction where a structural complement of the matrix verb is semantically related to the predicate of the embedded clause without there being an obvious movement relationship (as the name suggests, the constituent anticipates information that will be integrated later). In the following German example, the proleptic object (sometimes also referred to as *prothetic object*) is governed by a preposition and is semantically related to a position occupied by a coreferential pronoun. In what follows, both the proleptic object and the coreferential pronoun will be underlined (the translation shows that the construction occurs in English as well, cf. e.g. Khalaily (1997)):[1]

[1] The glosses follow the Leipzig Glossing Rules, cf. http://www.eva.mpg.de/lingua/resources/glossing-rules.php

(1) Ich glaube von ihm, dass er ein ganz guter Trainer ist.
I believe.1SG of he.DAT that he a quite good coach is
'I believe of him that he is a pretty good coach.'
http://www.austriansoccerboard.at/index.php/topic/96343-sk-sturm-graz-wac/page-4, found on 10/11/ 13

The semantics of the construction is very similar to that of regular complementation (as in *I believe that he is a good coach*), the major difference being that the proleptic constituent is an aboutness relationship with the complement clause (which results from the fact that the proleptic object has obligatory wide-scope with respect to the matrix verb, cf. (29)–(31) below).
In what follows, I will illustrate the properties of prolepsis mainly by means of German (or Dutch) data where the construction is particularly prominent. It occurs most frequently as an alternative to long A'-movement or scope marking with the proleptic object undergoing A'-movement. It is most unmarked with relativization where long movement is strongly degraded if not ungrammatical, but it also occurs with topicalization and, to a lesser extent, with *wh*-movement (see Salzmann (2006, 151-154) for details about German; for the situation in Dutch including the historical development, cf. Hoeksema and Schippers (2012) and Schippers (2012)):

(2) a. Von welchem Maler glaubst du, dass Maria ihn mag?
of which.DAT painter think.2SG you that Mary him likes
'Which painter do you think that Mary likes?'

b. ein Maler, von dem ich glaube, dass Maria ihn mag
a painter of who.DAT I think.1SG that Mary him likes
'a painter who I think that Mary likes'

c. Von dem Maler glaube ich, dass Maria ihn mag.
of the.DAT painter think.1SG I that Mary him likes
'The painter, I think that Mary likes.'

While the proleptic object is related to an object in these examples, any other grammatical relation would be possible as well (such as e.g. subject as in (1) above or possor and adjunct relations). The construction is also compatible with non-finite complement clauses, cf. Salzmann (2006, 205f.).
Even though prolepsis can be found in many languages, it has received rather little attention in the literature. This is probably related to the fact that its analysis seems straightforward: the proleptic constituent is taken to be an argument of the matrix verb while the coreferential pronoun is simply anaphoric. Such an analysis seems to receive support from the following observations: First, the relationship between the proleptic object and the coreferential pronoun is not only unbounded but also insensitive to locality, cf. Salzmann (2006, 206f.) (islands are enclosed in angled brackets):

(3) a. der Mann, von dem ich denke, dass Marie
the man of who.DAT I think.1SG that Mary

< jedes Buch liest, das er schreibt .> CNPC-island
every book reads which he writes

lit.: 'the man who I think Mary reads every book that he writes'

b. der Mann, von dem ich glaube, dass niemand weiß,
the man of who.DAT I believe.1SG that no.one knows

< wie er heißt > wh-island
how he is.called

lit.: 'the man who I think no one knows what he is called'

Second, the form of the coreferential element shows the same range of possibilities that we find in anaphoric dependencies, cf. Salzmann (2006, 154-157; 299-301): It is normally a weak pronoun and occurs in the Wackernagel-position, i.e. right below TP and thus at the left edge of the middle field. But the proform can also be strong, e.g. if modified by a focus particle:

(4) a. der Mann, von dem ich glaube,
the man of who.DAT I believe.1SG

dass Maria wahrscheinlich nur *IHN* liebt
that Mary probably only HIM loves

'probably the only man who I think that Mary loves'

Furthermore, demonstratives and epithets are possible as well:

(5) a. der Typ, von dem ich vermute, dass *der* Maria heiraten will
the guy of who.DAT I suspect.1SG that DEM Mary marry.INF wants
lit.: 'the guy that I suspect he wants to marry Mary'

b. der Typ, von dem ich weiß,
the guy of who.DAT I know.1SG

dass *der Idiot* sein Vermögen verprasst hat
that the idiot his fortune squandered has

lit.: 'the guy who I know the idiot squandered his fortune'

Finally, one can also use resuming forms with more content:

(6) Das ist ein Schweinchen, von dem ich glaube, dass alle hoffen,
this is a piglet of which.DAT I believe.1SG that all hope.3PL

dass niemand *das putzige Tierchen* essen will.
that no.one the sweet little.animal eat.INF wants

'This is a piglet such that I believe everyone hopes that no one wants to eat the sweet little animal.'

Cases where the antecedent is subsumed by the class denoted by the anaphoric form are familiar from discourse, of course.
Given these properties, treating the proleptic constituent as an argument of the matrix verb (optionally undergoing short A'-movement as in (2)–(6) that is anaphorically referred to by a proform in some dependent clause seems very straightforward. Arguably, this is the predominating (though usually tacit) assumption in the literature. However, as will be shown in what follows, there is sufficient evidence that the construction has properties that call this simplistic analysis into question.

This CASE is organized as follows: Section two provides evidence against an analysis in terms of argumenthood and anaphoric binding. Section three argues that the proleptic object is base-generated in the matrix clause. Section four provides an account where the proleptic object is licensed by predication and entertains an ellipsis relationship with a base-generated operator in the complement clause. Section five briefly discusses prolepsis in other languages and related phenomena. Section six concludes.

2 Against a simple solution in terms of argumenthood + anaphoric binding

2.1 Absence of lexical restrictions

There are two arguments that clearly suggest that the obvious solution in terms of argumenthood + anaphoric binding is insufficient: First, as opposed to long A'-movement, which is limited to bridge-verbs, the construction is extremely productive: While it is most frequent with epistemic and desiderative verbs and verba dicendi, a quick search on the internet reveals that prolepsis occurs with nearly every verb (or adjective + copula/noun + verb combination) selecting a CP-complement. At this point there is no evidence that there is a class of (CP-selecting) predicates that is systematically incompatible with prolepsis. Here are a few examples, a-b are from Salzmann (2006, 200f.):

(7) a. Ich hab hier einen Link, von dem ich *bezweifle*,
I have here a link of which.DAT I doubt.1SG

dass viele den kennen
that many DEM.ACC know.3PL

'I have a link here that I doubt that many know.'
www.usa-talk.de/yabbse/index.php?topic=551.15

b. Frohen Mutes legte ich also meinen Reisepass vor,
happy spirit lay.1SG I PRT my passport PRT

von dem ich mich noch *gefreut*
of which.DAT I me still been.happy

hatte, daß er nun endlich doch noch zum Zuge kommen würde.
had.1SG that it now finally PRT still to.draw come.INF would

'I happily presented my new passport that I was happy would finally be put to use.'
www.mzillekens.de/Reiseberichte/Taiwan/seoul.html

c. Das ist das Stichwort, von dem ich mich *frage*
this is the keyword of which I me ask.1SG

warum der Autor es nicht mal erwähnt!
why the author it not even mentions

'This is the keyword that I ask myself why the author does not even mention it'
http://www.spiegel.de/auto/aktuell/bmw-setzt-maximal-laufleistung-von-150-000-km-voraus-a-855355.html, found on October 10, 2013

d. Jeder hat einen Traum von dem es *scheint*, dass er nie in Erfüllung geht.
everyone has a dream of which.DAT it seems that it never becomes true
'Everyone has a dream that never seems to become true.'
http://eltern-forum.kinder.de/archive/index.php/t-18132.html, found on October 15, 2013

It seems implausible that the proleptic object is an argument of all these verbs, at least in the canonical sense of being part of the argument structure. Arguments usually bear rather clearly delimited semantic roles that can be associated only with certain predicates, which is not the case with the proleptic object. Classifying it as a vague aboutness argument rather obfuscates than clarifies its function. One can add a diachronic argument here: Hoeksema and Schippers (2012, 162ff.) observe for Dutch that the prolepsis construction not only has become much more frequent in the last centuries, the range of verbs it occurs with has also increased drastically. Since there is no indication that the verbs' meaning has changed, it is quite unlikely that they have acquired an additional argument.

2.2 The obligatoriness of a coreferential element

The previous examples clearly suggest that the proleptic object is not an argument of the matrix verb. Interestingly, one cannot simply classify it as a normal adjunct either because unlike other adjuncts that express an aboutness relationship, the proleptic object requires a coreferential element in the embedded clause. This is why the following examples are ungrammatical, cf. Salzmann (2006, 159):

(8) a. *Von Computern glaube ich, dass jeder einen PC kaufen sollte.
of computers.DAT believe.1SG I that everyone a PC buy.INF should
lit.: 'I believe of computers that everyone should buy a PC.'

b. *ein Wetter, von dem ich hoffe, dass Peter zu Hause bleibt
a weather of which.DAT I hope.1SG that Peter at.home stays
lit.: 'a weather which I hope Peter will stay at home'

The following sentence involves a normal aboutness topic (a hanging topic) and no coreferential element in the embedded clause is needed:

(9) *Was Computer angeht*, so finde ich,
what computers concerns PRT find.1SG I

dass heutzutage jeder einen PC kaufen sollte.
that today everyone a PC buy.INF should

'As for computers, I think that everyone should by a PC these days.'

This contrast shows that the proleptic constituent is not independently (semantically) licensed inside the matrix clause. Obviously, there is some obligatory relationship with the embedded clause that is crucially involved in its licensing. Since normal anaphoric dependencies are not subject to such restrictions, the coreferring proform cannot simply be treated as instantiating anaphoric binding.[2]

[2] A potential solution in terms of finite Control as in Salzmann (2005) can be readily ruled out: First, as pointed out above, the proleptic object is unlikely to be an argument. Second, prolepsis also involves coreferential non-subjects.

3 The proleptic object is base-generated in the matrix clause

Even though the proleptic object is not independently licensed in the matrix clause, there is solid evidence that it is base-generated in the matrix clause: Its position in the matrix middle field shows the properties of an A-position that is unlikely to be derived. A derivation involving movement from the embedded clause would constitute a violation of Improper Movement. While such derivations have been proposed for *tough*-movement in recent years, we will see that despite a number of similarities between the constructions, these analyses cannot be extended to prolepsis (and also prove to be problematic for *tough*-movement).

3.1 Arguments in favor of a base-position in the matrix clause

The most obvious argument for the base-generation of the proleptic object in the matrix middle field comes from the presence of the in-situ construction as in (1). The ex-situ construction is obviously based on it, it is simply derived from it by short A'-movement.[3] Direct evidence comes from Dutch, which allows preposition stranding: When the preposition is stranded in the ex-situ construction, it surfaces exactly in the position of the in-situ construction:

(10) a. het boek waarvan$_1$ ik __$_1$ denk, dat Piet het leuk vindt
the book whereof I think.1SG that Peter it cool finds
'the book that I think Peter likes'

b. het boek waar$_1$ ik *van* __$_1$ denk, dat Piet het leuk vindt
the book where I of think.1SG that Peter it cool finds

c. dat ik *van* dit boek denk dat Piet het leuk vindt
that I of this book think.1SG that Peter it cool finds
'that I believe of this book that Peter likes it'

Importantly, this middle-field-internal position has the properties of an A-position: First, anaphors can be bound in this position, both in the in-situ and in the ex-situ construction, cf. Salzmann (2006, 188, 195) (heads of relative clauses are henceforth enclosed in brackets when they contain reconstructed material):

(11) a. dass Peter$_i$ von sich$_i$ denkt, dass er der Größte ist
that Peter of self thinks that he the greatest is
'that Peter$_i$ thinks of himself$_i$ that he is the greatest.

b. das [Bild von sich$_i$], von dem Peter$_i$ denkt,
the picture of self of which.DAT Peter thinks

dass ich es am besten finde
that I it the best find.1SG

'the picture of himself$_i$ that Peter$_i$ thinks I like best'

[3] There are a number of interesting and poorly understood differences between the in-situ and the ex-situ construction in German, cf. Salzmann (2006: 309-316). The most striking one is the fact that the in-situ construction is much more lexically restricted than the ex-situ variant. This may have to do with the fact that the ex-situ variant is a close to grammaticalized alternative to long relativization while the in-situ construction does not have a comparable function in the language. The same asymmetry seems to hold in French, cf. Godard (1988) and Koopman and Sportiche (2009) and to a lesser extent in Serbo-Croatian, cf. Boskovic (2009, 88f.). This state of affairs is somewhat reminiscent of exceptional ECM as with English *wager* and French *croire*, but it is unclear at this point whether syntactic explanation is adequate for prolepsis.

c. Von welchem Wesenszug von sich$_i$ denkt Peter$_i$,
of which.DAT trait of self thinks Peter

dass ich ihn noch nicht kenne?
that I it still not know.1SG

'Which trait of himself$_i$ does Peter$_i$ think that I don't know yet?'

Crucially, German differs from English in disallowing binding into derived A'-positions, cf. Salzmann (2006, 93):

(12) a. John$_i$ wonders [$_{CP}$ [which picture of himself$_i$]$_1$ I like __$_1$ best].

b. Hans$_i$ fragt sich, [$_{CP}$ [welches Foto von *sich$_i$/ihm$_i$]$_1$
John asks self which picture of self/him

ich am besten __$_1$ mag].
I the.best like.1SG

This implies that the proleptic object when located in the middle field cannot be in a derived A'-position.[4] The same point can be made with superiority effects:
While German is well-known not to have short-distance Superiority effects, it is equally well-established that Superiority effects re-emerge under long-distance movement (irrespective of D-linking), cf. Fanselow (2004, 78)

(13) a. [*Welchen Studenten*]$_1$ hat *welcher Professor* __$_1$ eingeladen?
which.ACC student has which.NOM professor invited
'Which student did which professor invite?'

b. * [*Welchen Studenten*]$_1$ hat *welcher Professor* gehofft,
which.ACC student has which.NOM professor hoped

dass Irina __$_1$ einlädt?
that Irina invites

lit.: 'Which student did which professor hope that Irina will invite?'

Importantly, if the proleptic object consists of a *wh*-phrase and is moved across another *wh*-phrase in the matrix clause, the result is perfectly grammatical, cf. Salzmann (2006, 198):

[4] The proleptic construction thus crucially differs from Dutch focus scrambling which can involve long A'-movement to the matrix middle field:
i. dat Jan [zulke boeken]$_1$ zelfs onder vier ogen niet zegt
that John such books even under four eyes not says
dat hij __$_1$ gekocht heeft
that he bought has
'that John would not even admit in private that he bought such books'
As discussed in Neeleman (1994a: 398-400) and Barbiers (2002, 57-58), the derived position bears all the hallmarks of an A'-position: the displaced constituent obligatorily reconstructs for binding. Quite apart from that, A'-movement from the embedded clause is unlikely in the proleptic construction given that the it is possible with verbs that normally disallow long A'-movement, (i.e. non-bridge verbs) cf. (7).

(14) Von [*welchem Studenten*] denkt *welcher Professor*,
of which.DAT student thinks which.NOM teacher

dass Irina ihn eingeladen hat?
that Irina him invited has

'Of which student does which teacher think that Irina invited him?'

If the proleptic object were to originate in the complement clause, this asymmetry would be highly mysterious. The fact that the proleptic object behaves like a clause-mate of the wh-subject with respect to superiority very much suggests that it is generated in an A-position in the matrix middle field. There is one analytical option that needs to be ruled out: The facts above are also compatible with an analysis where the proleptic object occupies a *derived* A-position. The following ECM-cases illustrate this for anaphor binding and superiority:

(15) a. dass Peter$_i$ sich$_i$ gestern ein Lied pfeifen hörte
that Peter self yesterday a song whistle.INF heard.3SG
'that Peter$_i$ heard himself$_i$ whistle a song yesterday'

b. *Wen*$_1$ sah *wer* gestern __$_1$ ein Auto stehlen?
whom saw.3SG who yesterday a car steal.INF?
lit.: 'Whom did who see steal a car yesterday?'

While ECM involves direct A-movement from the embedded clause, things are different in prolepsis where, given current assumptions about locality, there would have to be an intermediate A'-movement step to the embedded SpecCP followed by A-movement. This would, however constitute a violation of Improper Movement, cf. e.g. Müller and Sternefeld (1993) and Müller (2013) for recent accounts. Nevertheless, derivations of this type have indeed been proposed, namely for English *tough*-movement as in the following example:

(16) John is easy to please.

3.2 Improper movement analyses of *tough*-movement

In the traditional analysis of *tough*-movement going back to Chomsky (1977) there is null operator movement in the embedded clause while the subject *John* is base-generated in the matrix subject position. It receives its theta-role via predication: the complement clause, which is turned into an open sentence by operator movement, combines with the adjective to form a complex predicate and then assigns a theta-role to the base-generated subject. Rezac (2006) provides an updated version within the Agree-framework of Chomsky (2000) *et seq*. A'-movement in the complement clause is well-motivated: First, the dependency is unbounded but sensitive to locality, cf. Hicks (2009, 542):

(17) a. A guy like John is hard to imagine any woman believing she could marry __.

b.?? A guy like John is hard to imagine any woman wondering why she would agree to marry __.

Secondly, this movement creates an island for extraction, cf. Rezac (2006, 307ff.) for discussion of the various factors involved:

(18) *[How intelligent]$_2$ is John$_1$ easy [Op$_1$ to think of/regard __$_1$ as __$_2$]?

Furthermore, this movement licenses parasitic gaps, cf. Hicks (2009: 542). Direct base-generation in the matrix clause is, however, problematic given that the *tough*-subjects can reconstruct into the embedded clause (and not just below the matrix clause experiencer), cf. Mulder and den Dikken (1992, 310, note 8):

(19) a. [Pictures of himself$_i$ nude] are tough for me [to think that any man$_i$ would like __].

b. [Pictures of his$_i$ wife nude] are tough for me [to think hat any man$_i$ would show his friends __].

This has been taken as evidence that there is a representation of the *tough* subject within the embedded clause and that the most straightforward way of bringing this about is by A-movement from the embedded clause.[5] This implies, of course, a derivation in violation of Improper Movement. This is most obvious in the proposal by Brody (1993) where there is movement from the theta-position in the complement clause via Spec, CP to the matrix subject position.

(20) John$_i$ is easy [$_{CP}$ t$_i$ to please t'].

Traditionally, Improper Movement was ruled out by Principle C of the binding theory: The trace left behind by A'-movement gets bound from an A-position later on. The derivation in (20) is assumed to be licit because – by stipulation – the trace in SpecCP counts as an operator that shields the lowest trace from a Principle C violation. Intermediate A'-traces in ungrammatical Improper Movement contexts (as in **John$_i$ seems t$_i$ Mary saw t$_i$*'), however, do not count as operators so that the structures are correctly ruled out by Principle C.
A somewhat different implementation can be found in Hornstein (2001, 108-113). He proposes a sideward movement derivation whereby the complement CP is treated as an adjunct from which the *tough*-subject is moved to the internal argument position of the matrix adjective before the adjunct is combined with it (i.e. to an unconnected phrase marker). It is thus assumed that the *tough* subject also receives a theta-role in the matrix clause. Movement to Spec,CP is triggered by wh-features of the type found in relative clauses (which by assumption can be freely inserted):

(21) [[$_{TP}$ John is [$_{AP}$ John easy]] [$_{CP}$ [[wh] John] [$_{TP}$ pro to please [[wh] John]]]]

A Principle C violation is avoided here because the CP containing the variable is adjoined to matrix TP. Other cases of (true) Improper Movement are ruled because they obtain in complements where there is c-command between the antecedent and the variable.
A variant of this derivation can be found in Hicks (2009) who argues that the *tough*-subject originates within a complex DP, as a complement of the null operator N. The complex DP then moves to the edge of the CP-complement and the *tough*-subject subextracts and A-moves from there to the matrix subject position:

(22) John$_2$ is easy [$_{CP}$ [$_{DP}$ D [$_{NP}$ Op [$_{DP}$ John]$_2$]]$_1$ to please [$_{DP}$ D [$_{NP}$ Op [$_{DP}$ John]]]$_1$].

Since two distinct movement steps are involved, Improper Movement is not violated here. However, it remains unclear how cases of Improper Movement can be avoided that are indeed ungrammatical. Given the derivation proposed in Hicks (2009), this is no longer obvious.
Before discussing the virtues and downfalls of these approaches, I will first show that the parallelism between *tough*-movement and the prolepsis construction is so striking that the approaches just sketched must be considered serious options for prolepsis as well.

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[5] Further evidence for A-movement may come from the intervention effects discovered in Hartman (2009). Note, however, that Bruening (2012) argues that the ungrammaticality of such examples is not due to intervention, which is important given the analysis without A-movement to be proposed below.

3.3 An Improper Movement analysis for the proleptic construction?

The first remarkable fact is that the presence of the proleptic object significantly degrades extraction from the complement. The effect is reminiscent of that of a weak island with argument extraction becoming marginal and adjunct extraction fully ungrammatical (the a-sentences involve regular long extraction, the b-sentences involve prolepsis):

(23) a. Wen$_1$ glaubst du, dass Hans __$_1$ liebt?
who believe.2sg you that John loves
'Who do you believe John loves?

b.?? Wen$_1$ glaubst du von Hans, dass er __$_1$ liebt?
whom believe.2SG you of John that he loves
Lit.: 'Who du you believe of John that he loves?'

(24) a. Wie vorsichtig$_1$ glaubst du, dass Hans den Brief __$_1$ formulieren wird?
how carefully believe.2SG you that John the letter formulate.INF will
'How carefully do you believe that John will formulate the letter?

b. *Wie vorsichtig$_1$ glaubst du von Hans, dass er den Brief __$_1$ formulieren wird?
how carefully believe.2SG you of John that he the letter formulate.INF will
Lit.: 'How carefully do you believe of John that he will formulate the letter?'

The contrast follows if the proleptic construction involves movement in the complement clause, thereby creating a weak island.[6] Of course, the proleptic construction differs from *tough*-movement in that it is insensitive to island constraints as illustrated in (3) above. This makes movement unlikely. However, one might entertain the possibility that the resuming proform functions as a resumptive that amnesties the locality violation. Some support for this comes from the fact that the proleptic object reconstructs into the position of the proform for idiom interpretation,[7] variable binding and Principle A, cf. Salzmann (2006, 160-165):

(25) a. die [*Rede*], von der ich sagte, dass er sie *geschwungen* habe
the speech of which.DAT I said.1SG that he it swung has.SBJV
'the speech I said he gave' (swing a speech = 'give a speech')

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[6] One might object that the degradation of extraction is not due to a weak island in the complement but rather obtains because there is additional material in the matrix clause. Such effects have indeed been observed, namely when the subcategorization frame of a verb is changed and its semantics are thereby altered, cf. Lühr (1988, 83). For example, once *glauben* 'believe' additionally takes an indirect object, it means 'to believe someone something'. This results in opacity as well. However, there is no such indication that this is responsible for the ban on extraction in prolepsis because neither is the proleptic object an (optional) argument of the matrix verb nor is the semantics of *glauben* altered. Furthermore, the presence of the proleptic object does not affect the possibility of *glauben* to take a V2-complement, a property that correlates with the bridge-quality, cf. Featherston (2004). The presence of a dative argument, however, does:

i. Ich glaubte von Hans erst, er sei faul.
I believed.1SG of John first he is.SUBJ lazy
'I first thought of John that he was lazy.'

ii. Ich glaubte (*Hans), er war zufrieden.
I believed.1SG John he was.3SG satisfied
'I believed (John) that he was satisfied.'

One can conclude from this that the opacity observed in the proleptic construction is not simply due to the presence of the proleptic object.

[7] Not all idioms are possible in the proleptic construction, essentially only relatively transparent collocations. Furthermore, as we will see in (29)–(31) below, the proleptic object is necessarily specific/referential, which rules out most idioms. Idioms are also limited in *tough*-movement, cf. Rezac (2006, 291) and Landau (2011, 801-803) for discussion and references.

b. Die [Periode seines$_i$ Lebens], von <u>der</u> ich glaube,
the period his.GEN life.GEN of which.DAT I believe.1SG

dass keiner$_i$ gerne an <u>sie</u> denkt, ist die Pubertät.
that no.one likes.to at it thinks is the puberty
'The period of his life that I believe no one likes to remember is puberty.'

c. das [Spiegelbild von sich$_i$], von <u>dem</u> ich glaube,
the reflection of self of which.DAT I believe.1SG

dass Peter$_i$ <u>es</u> an der Wand sah
that Peter it on the wall saw

'the reflection of himself$_i$ that I think Peter$_i$ saw on the wall'

While the examples above involve relativization in the matrix clause, the same facts obtain with wh-movement and topicalization.

Movement analyses of resumption have become rather prominent in recent years, cf. e.g. Pesetsky (1998) or Boeckx (2003), and reconstruction effects have arguably been the major argument in their favor. It is contested whether reconstruction correlates with locality. Aoun et al. (2001) claim that it does (and limit movement derivations of resumption to configurations where the resumptive is in a transparent position) while Guilliot and Malkawi (2006) argue for the opposite position. Although the data become very delicate, reconstruction into islands seems to be possible in the proleptic construction, cf. Salzmann (2006, 278-280). The major problem with movement accounts of island-insensitive resumption is that there is to date no fully convincing account of why resumption should make movement out of islands possible. Furthermore, while reconstruction effects are traditionally considered solid diagnostics for movement, work in recent years has cast serious doubts on this, especially works showing that reconstruction is found in configurations where movement (and thus the interpreattion of a lower copy) is arguably not at stake (e.g. pseudo-clefts). Given this, a base-generation analysis of resumption seems more viable as it is directly compatible with the locality facts. For reasons of space, I cannot reproduce the arguments in any detail here, the reader is instead referred to Rouveret (2011) and Salzmann (2013, 81-85) for recent overviews over this discussion. Despite these reservations about a movement analysis, we will – provisionally – consider it a possibility for the proleptic construction to allow for a thorough discussion of the analyses sketched in the previous subsection.

The approach by Brody (1993) incurs a violation of the Activity Condition: On standard minimalist assumptions (e.g. Chomsky (2001)), a DP becomes inactive for further Agree/Case-checking, once its case feature has been valued through Agree. In his derivation, the *tough*-subject receives case both by the embedded verb and matrix T. While the Activity Condition is sometimes rejected, it still remains a very useful condition to rule out other instances of Improper Movement such as Hyperraising (**John seems likes Mary*), cf. e.g. Richards (2008) for discussion. It is thus hard to see how such an analysis could still be upheld for *tough*-movement, and the same goes for prolepsis where the proleptic object receives case both in the embedded clause and in the matrix clause by the preposition *von*. Next to its contentful uses (meaning 'from'), it functions as a default preposition that serves to case-mark nouns that otherwise fail to receive case, basically like English *of*. The very presence of this preposition suggests that the proleptic object is in need of case, but this wouldn't be the case given the derivation in Brody (1993).

The proposal in Hornstein (2001) also cannot be adapted for prolepsis: First, sideward movement always involves movement to a theta-position, but as pointed out in section 2.1 above, the proleptic object is not an argument of the matrix clause. Second, Hornstein treats the complement of the *tough*-adjective as an adjunct. At least in prolepsis, there is good reason to believe that the

CP is not a (base-generated) adjunct: First, the complement CP satisfies the subcategorization requirements of the matrix verb (and therefore sometimes appears as an infinitival or a [+wh]-CP as in (7c)). Secondly, it can be shown that the proleptic object is structurally higher than the CP at LF: the proleptic object c-commands into the complement clause as shown by the following examples involving NPI-licensing and variable binding (presupposing that there is no QR in German, cf. Sternefeld (2006, 813, fn. 45)):

(26) a. Ich glaube von *keinem Holländer*,
I believe of no.DAT Dutchman

dass er *auch nur einen einzigen Euro* verschwenden würde.
that he even only a single Euro squander.INF would.3SG

'I believe of no Dutchman that he would squander even a single Euro.'

b. Ich weiss von jedem Mitarbeiter$_i$, dass er seine$_i$ Arbeit ordentlich macht.
I know.1SG of every.DAT colleague that he his work decently makes
'I know of every colleague that he does his work decently.'

While complement CPs are arguably extraposed to matrix VP in German, they reconstruct for binding at LF, cf. Sternefeld (2006, 781). These facts clearly show that the CP is merged as a complement of the matrix verb in prolepsis, thereby ruling out a sideward movement analysis.
The analysis in Hicks (2009) seems in principle applicable to prolepsis as it avoids a violation of the Activity Condition (and, of course, Improper Movement) by splitting the movement into two separate chains. However, there remain serious objections: First, if movement is triggered by the preposition in the matrix clause, movement from Spec, CP would target a non-commanding position, thereby violating a fundamental constraint on Internal Merge.[8] If instead the proleptic object is generated together with the preposition (which may then be reanalyzed as a case marker as in Bayer et al. (2001)), there does not seem to be any reason for it to move to the matrix clause as there is no obvious probe.[9] Second, and this is an independent problem of Hicks' analysis: it involves a blatant violation of the Constraint on Extraction Domains (Huang (1982))/the freezing principle (Wexler and Culicover (1980)). Unfortunately, and surprisingly, this issue is not addressed in the paper. Third, there are empirical arguments from reconstruction against Hicks' analysis (which also argue against Hornstein's and Brody's proposals): The proleptic object fails to reconstruct for Principle C and scope, cf. Salzmann (2006, 171-175; 215-228). The following examples illustrate non-reconstruction for Principle C:

(27) a. die [Verwandten von Peter$_i$], von denen ich weiß, dass er$_i$ sie mag
the relatives of Peter of who.DAT I know.1SG that he them likes
'the relatives of Peter$_i$ that I know he$_i$ likes'

b. Von welcher Nachforschung über Peter$_i$ denkst du, dass er$_i$ sie
of which.DAT investigation about Peter think.2SG you that he it

vor dir verheimlichen wollte?
from you conceal.INF wanted.3SG
lit.: 'Which investigation about Peter$_i$ do you think he$_i$ wanted to conceal from you?'

[8] However, see Postal (2004, 83-108) for arguments for raising to prepositional object.
[9] This would cause further difficulties for a movement analysis of resumption, as the antecedent would differ from the resumptive in relevant features. This is most obvious if resumptives are the spell-out of a trace as e.g. in Pesetsky (1998). But the problem also obtains in big DP-approaches, cf. Aoun et al. (2001), where the antecedent and resumptive are normally assumed to agree in phi- and espeically categorial features.

c. Von diesem Wesenszug von Peter$_i$ denke ich,
of this.DAT trait of Peter think.1SG I

dass er$_i$ ihn noch nicht kennt.
that he it still not knows

lit.: 'This trait of Peter$_i$, I think he$_i$ does not know yet.'

Importantly, one cannot simply argue that reconstruction is optional here. Even if reconstruction is forced by means of variable binding, Condition C effects do not obtain, cf. Salzmann (2006, 184f.):

(28) a.? [die Briefe von Hans$_i$ an ihre$_j$ Eltern], von denen ich vermute,
the letters of John to her parents of which.DAT I suspect.1SG

dass er$_i$ jeder Schülerin$_j$ gedroht hat,
that he every.DAT student threatened has

sie in der Klasse vorzulesen
them in the class to.read.out.INF

lit.: 'the letters by John$_i$ to her$_j$ parents that I suspect he$_i$ threatened every student$_j$ to read out in class'

b. Von welcher Meinung von Hans$_i$ über ihren$_j$ Aufsatz] denkst du,
of which.DAT opinion of John about her essay think.2SG you

dass er$_i$ jeder Schülerin$_j$ rät, sie ernst zu nehmen?
that he every.DAT student advises it seriously to take.INF

lit.: 'Which opinion of John$_i$ about her$_j$ essay do you think he$_i$ advises every student$_j$ to take seriously?'

The lack of scope reconstruction is illustrated by the following examples which show that indefinites necessarily receive a specific or – in case of bare plurals – generic interpretation. In intensional contexts, only a *de re* reading is available.

(29) a. Von einem Mädchen weiß ich, dass Peter es geküsst hat.
of a.DAT girl know.1SG I that Peter her kissed has
'One girl I know that Peter kissed.' *existential/ok specific

b. von Feuerwehrmännern weiß ich, dass sie verfügbar sind.
of firemen.DAT know.1SG I that they available are
'Firemen I know are available.' *existential/ok generic

c. Von einer neuen Sektretärin sagte Peter, dass er sie suche.
of a.DAT new secretary said.3SG Peter that he her seeks.SBJV
'A new secretary, Peter said he was looking for.' ∃ > seek; *seek > ∃

Regular complementation with the relevant XP in the complement clause is not subject to this restriction (in the c-example, the fronted indefinite is reconstructed at LF):

(30) a. Ich weiß, dass Peter *ein Mädchen* geküsst hat.
I know.1SG that Peter a girl kissed has
'I know that Peter kissed a girl.' (existential ok)

b. Ich weiß, dass *Feuerwehrmänner* verfügbar sind.
I know.1SG that firemen available are
'I know that firemen are available.' (existential ok)

c. *Eine neue Sekretärin* sagte Peter, dass er suche.
a new secretary said.3SG Peter that he seeks.SBJV
'A new secretary Peter said he was looking for.' (de dicto ok)

As a side-effect of the constraints on the referential properties of the proleptic object, expletives are also incompatible with prolepsis.
Interaction between quantifiers shows the same property: While scope ambiguity obtains if both XPs are in the matrix clause, the distributive reading is ruled out once the universal QP is within the complement clause:

(31) a. Von *welcher Band* glaubt *jeder Lehrer*,
of which.DAT band thinks every teacher

dass die Studenten sie am besten finden?
that the students it the best find.3PL

'Which band does every teacher think that the students like best?' ∀ > wh; wh > ∀

b. Von *welcher Band* glaubst du,
of which.DAT band think.2SG you

dass *jeder Student* sie am besten findet?
that every student it the best finds

'Which band do you think every student likes best?' *∀ > wh; wh > ∀

More evidence for the general lack of scope reconstruction comes from the absence of amount readings, the necessary high construal of superlative adjectives and the incompatibility of prolepsis with comparative deletion, cf. Salzmann (2006, 224-228).
The Condition C effects are unexpected under Hicks' account involving A-movement from the embedded clause as A-movement normally reconstructs for Principle C: **John$_i$ seems to him$_i$ to be intelligent.* Interestingly, *tough*-movement patterns like prolepsis in this respect: There are no Condition C effects even if there is reconstruction for variable binding:

(32) a. [Pictures of John$_i$] are hard for him$_i$ to like __. Munn (1994, 403)

b. [Letters by John$_i$ to her$_j$] are difficult for him$_i$ to believe that any woman$_j$ would like __.
Salzmann (2006, 275)

Unfortunately, these effects are not addressed in Hicks paper. As for scope reconstruction, it has long been noticed that there is no scope reconstruction in *tough*-movement; the following example is from Postal (1974, 224); see Salzmann (2006, 276) for more examples:

(33) [*Few* girls] would be *difficult* for Jim to talk to __. few > difficult; *difficult > few

Hicks argues that A-movement generally fails to reconstruct for scope. However, as discussed in Fleisher (2013), this is not generally correct.
We can thus conclude from this, that none of the approaches that has been proposed for *tough*-movement can be extended to prolepsis. Furthermore, since they all fail to capture the reconstruction pattern observed in *tough*-movement, they also fail for *tough*-movement. The next section introduces (a revised version of) the proposal developed for prolepsis in Salzmann (2006, 232-275), which can also be applied to *tough*-movement.

4 Licensing by predication: a silent operator + ellipsis

The analysis has two major ingredients: First, the proleptic object is licensed by means of predication: There is a base-generated empty operator in the Spec,CP position of the complement, which turns the CP into a predicate. The proleptic object saturates the extra slot provided by this predicate. Second, the proleptic object is related to the empty operator by means of ellipsis, which accounts for the selective reconstruction effects.

4.1 The base-generated empty operator

The first part of the analysis bears many similarities to the traditional *tough*-movement analysis of Chomsky (1977) and Chomsky (1981) as well as to the implementation in Cinque (1990), Mulder and den Dikken (1992, 305ff.) and especially Rezac (2006), Yoon (2007) and Landau (2011).
Given that the proleptic argument is not a thematic argument of the matrix verb, it has to be licensed differently. This alternative is predication: Concretely, there is an empty operator in Spec,CP of the complement CP that turns the CP into a derived predicate ("an open sentence" in the terms of Cinque (1990)). The null operator thus functions as the syntactic equivalent of a lambda operator. Then, the predicative CP composes with the matrix verb. This satisfies the c-selectional requirements of the verb (it requires a CP-complement). However, semantically the matrix verb selects a proposition. In cases of regular complementation, the matrix verb directly takes a propositional CP. In prolepsis (and *tough*-movement), however, the propositional argument is composed out of a property and an individual: The complement CP is the property and the proleptic object, more precisely, the DP within the PP, is the individual. The proleptic object is thus the subject that satisfies the open slot of the predicate. The proleptic construction (like *tough*-movement) thus shares properties with raising – the matrix verb takes a propositional argument – but also with control – with respect to semantic composition –, cf. Asudeh and Toivonen (2012, 350). The proleptic object is thus semantically licensed, but being a DP, it also as an unvalued Case feature. As a last resort, it is case-marked by the default preposition *von/van* 'of'. Thereafter, the little v is merged and introduces the external argument of the verb.
Empty operators traditionally undergo movement, but given the insensitivity to islands in (3) and the lack of a fully convincing theory that explains how resumptives void islands, cf. the references in section 3.3 above, it is more reasonable to assume that resumption in the proleptic construction involves base-generation: The operator is directly inserted into Spec, CP from where it binds the pronoun. This is sufficient to turn the CP into a predicate. As discussed in Heim and Kratzer (1998, 106ff.), movement is not a prerequisite for predicate abstraction. It is for instance also possible with *such that*-relatives (cf. Pullum (1985)) that involve resumption and are also island-insensitive (cf. also Landau (2011, 808f.)):

(34) the [man] such that Mary reviewed < the book he wrote >

The derivation of prolepsis can thus be illustrated as follows:

predicate abstraction

(35) P [**DP$_i$**] V [$_{CP}$ [**Op$_i$**]$_1$ [$_{TP}$ XP [$_{vP}$ [$_{VP}$ [**res$_i$**]$_1$ V]]]]

subject — predicate

predication

Recall from (26) above that the proleptic object c-commands the complement clause. This is important since c-command is a prerequisite for predication. See the following pair from Dutch secondary predication, cf. Neeleman (1994b, 217):

(36) a. dat Jan$_i$ Marie$_j$ naakt$_{i/j}$ ontmoette
that John Mary nude met.3SG
'that John$_i$ met Mary$_j$ nude$_{i/j}$'

b. dat Jan$_i$ [met Marie$_j$] naakt$_{i/*j}$ sprak
that John with Mary nude talked.3SG
'that John$_i$ talked with Mary$_j$ nude$_{i/*j}$'

Note that the lexical preposition *met* blocks c-command. Functional prepositions like *von*, however, do not, cf. the following English example from Williams (1980, 204):

(37) John thinks of Bill$_i$ as silly$_i$.

Postulating a base-generated operator that turns the complement CP into a predicate accounts for two central properties of the proleptic construction: First, it derives the opacity facts from (23) and (24) above. Second, it explains why there has to be a co-referring element, cf. (8): Since the proleptic object is licensed via predication, it depends on the operator in Spec, CP, which in turn has to bind a variable (cf. the ban on vacuous quantification), viz. the co-referring element, cf. also Landau (2011, 808). The obligatoriness of the variable also holds for *tough*-movement, cf. Cinque (1990, 153) and *such-that* relatives, cf. Pullum (1985, 291), although the issue is very contested in the case of the latter, cf. Salzmann (2006, 290, fn. 235) for references. Questions regarding the overtness of the variable will be addressed in 4.4 below.
Given that the proleptic object is base-generated in the matrix clause, the analysis also – trivially – accounts for the A-properties (reconstruction and superiority) of the proleptic object discussed in (11) and (14) above.

4.2 Ellipsis accounts for selective reconstruction effects

What still needs to be fleshed out is the exact nature of the empty operator and how it is linked to the proleptic object. I will show that these two issues are intimately connected and are responsible for the selective reconstruction pattern found in prolepsis.
Reconstruction effects are a challenge for all traditional analyses involving null operators because it is unclear how content which is external to the operator can be made available in the base-position of the silent operator. This issue has been discussed in most detail with respect to restrictive relative clauses where the problem obtains as well. In the traditional head-external analysis (HEA), the external head of the relative clause is co-indexed with the relative operator:

(38) the [book about himself$_j$]$_i$ [$_{CP}$ [Op$_i$/which$_i$]$_1$ John$_j$ likes __$_1$]

It is not clear how this should handle the reconstruction facts; i.e. it is not clear how material that is *part* of the external head (like *himself* in the example above) should be available relative-clause-internally. Since the introduction of the copy theory of movement in the Minimalist Program in

Chomsky (1995) reconstruction effects have been modeled by means of interpreting the lower copy of a movement chain. Given these assumptions, reconstruction facts cannot be handled under the HEA, cf. e.g. Bhatt (2002) for discussion. Instead, this has lead to a revival of the Head Raising Analysis, cf. Kayne (1994), whereby the head of the relative originates within the relative clause and raises from there to its surface position. The following structure is the implementation proposed in Bhatt (2002) (cf. Salzmann (2006, 6-9) for more references):

(39) the $[_{XP}$ [book about himself$_j]_2$ $[_{X'}$ X° $[_{CP}$ $[_{DP}$ Op/which $\_\_2]_1$ C° [John$_j$ likes $\_\_1]]]]$

Importantly, the (null) operator takes the relative head as its complement which subextracts from Spec,CP. This involves almost the same derivation as the *tough*-movement analysis proposed by Hicks (2009). Recall the objections raised against Hicks' derivation in 3.3 above: Such a derivation not only violates the CED, it also fails to capture the reconstruction pattern in prolepsis: While there is reconstruction for idiom interpretation, Principle A and variable binding, cf. (25), there is no reconstruction for Principle C and scope, cf. (27)–(31). A different solution thus has to be found to model reconstruction effects in prolepsis (and also in *tough*-movement). There is a proposal that resolves the contradictory requirements, one that was originally developed for relative clauses, the so-called Matching Analysis (MA, cf. Salzmann (2006, 10) for references): Under this analysis, there is a relative-clause-internal representation of the external head in Spec,CP, but it is not related to the external head by means of movement, but rather by ellipsis under identity. More precisely, ellipsis targets the NP-complement of the relative operator (ellipsis = PF-deletion is indicated by strike-through):

(40) the [book about himself$_j]_i$ $[_{CP}$ [Op/which ~~[book about himself$_j$]$_i$~~]$_1$ John$_j$ likes $\_\_1$]

The material of the external head is thus available within the relative clause and by interpreting the lowest copy within the relative clause, reconstruction effects follow.[10] In addition, the MA provides a handle on non-reconstruction: As in *tough*-movement and prolepsis, but unlike in *wh*-movement, there is no reconstruction for Principle C in relatives, cf. Sauerland (2003, 211):[11]

(41) a. I have a [report on Bob's$_i$ division] he$_i$ won't like $\_\_$.

b. * [Which report on Bob's$_i$ division]$_1$ will he$_i$ not like $\_\_1$?

In the version of the MA adopted here, this follows from an independent property of ellipsis, viz. Vehicle Change (Fiengo and May (1994)): Ellipsis systematically allows for a mismatch between pronouns and R-expressions: R-expressions in the antecedent can correspond to a personal pronoun in the ellipsis site, as in the following example with VP-ellipsis:

(42) a. *John likes Mary$_i$ and she$_i$ does (like her$_i$), too.

b. John likes Mary$_i$, and she$_i$ knows that I do (like her$_i$), too.

Applied to (41a), this leads to the following (simplified) LF-representation with just a pronoun in Spec,CP and, consequently, in the theta-position:

(43) I have a [report on Bob's$_i$ division] $[_{CP}$ [Op, report on his$_i$ division] he$_i$ won't like [x, report on his$_i$ division]].

[10] There are various versions of the MA in the literature not all of which are assumed to handle reconstruction effects. The major problem is the unlicensed material (e.g. anaphors) inside the external head. A version of the MA where deletion of such material is possible under narrowly-defined conditions, is proposed in Salzmann (2006, 125-138).

[11] There is no perfect consensus concerning the data, cf. Salzmann (2006, 28-34) for an overview. The judgments given here reflect the majority view.

Interpretively, the result is equivalent to the grammatical *he$_i$ won't like this report on his$_i$ division*. Vehicle Change thus also accounts for the lack of reconstruction for Principle C in prolepsis as in (27)–(28). Note that this lack is particularly relevant because it also obtains with *wh*-movement and topicalization (27b/c), (28b) which elsewhere trigger robust Condition C effects (as in (41b)). Importantly, the lack of Condition C effects is not a general property of prolepsis because such effects do obtain if the coreferential pronoun is located in the matrix clause, cf. Salzmann (2006, 175f.)

(44) a. * Von welchen Nachforschungen über Peter$_i$ denkt er$_i$,
of which.DAT investigations about Peter thinks he

dass sie politisch motiviert sind?
that they politically motivated are.3PL

lit.: 'Which investigations about Peter$_i$ does he$_i$ think are politically motivated?'

b. * Von diesem Wesenszug von Peter$_i$ denkt er$_i$, dass er peinlich ist.
of this.DAT trait of Peter thinks he that it embarrassing is
lit.: 'This trait of Peter$_i$ he$_i$ thinks is embarrassing.'

This shows that there is regular A'-movement in the matrix clause of the proleptic construction. It is just the link between the proleptic object and its representation within Spec, CP of the complement that is subject to ellipsis. More evidence for ellipsis is discussed in Salzmann (2006, 254f.).

While ellipsis establishes the link between the proleptic object and the empty operator, what still needs to be made precise is the link between the base-generated operator and the resumptive. Obviously, simple binding will not be sufficient to account for the reconstruction effects which we have assumed to require a representation of the reconstructed material in the lowest theta-position. Here, the NP-ellipsis theory of resumption by Guilliot and Malkawi (2006) comes to the rescue: They propose that reconstruction effects under resumption – where it involves base-generation – can be modelled if it is assumed, as in Elbourne (2001), that the resumptive is a transitive determiner whose NP-complement is elided under identity with the antecedent – in our case the base-generated operator in Spec,CP.

Reconstruction for anaphor binding in an example like (25c), repeated here as (45), thus receives the LF in (46) (since relativization is involved, there are three ellipsis operations altogether):

(45) das [Spiegelbild von sich$_i$], von dem ich glaube,
the reflection of self of which.DAT I believe.1SG

dass Peter$_i$ es an der Wand sah
that Peter it on the wall saw.3SG

'the reflection of himself$_i$ that I think Peter$_i$ saw on the wall'

(46) das [~~Spiegelbild von sich$_i$~~]$_k$, [$_{CP}$ [~~von~~ [dem [~~Spiegelbild von sich$_i$~~]$_k$]$_j$]$_2$ ich
the reflection of self of which.DAT reflection of self I

[von [x [~~Spiegelbild von sich$_i$~~]$_k$]$_j$]$_2$ glaube, [$_{CP}$ [Op ~~Spiegelbild von sich$_i$~~]$_j$
of reflection of self believe.1SG reflection of self

dass Peter$_i$ [$_{DP}$ es [Spiegelbild von sich$_i$]$_j$] an der Wand sah]]
that Peter it reflection of self on the wall saw.3SG

The absence of Principle C effects in an example like (28b), repeated here as (47), follows from vehicle change that relates the R-expression *Hans* to the pronoun *er* in Spec,CP of the complement clause. It receives the simplified LF in (48).

(47) Von welcher Meinung von Hans$_i$ über ihren$_j$ Aufsatz] denkst du,
of which.DAT opinion of John about her essay think.2SG you

dass er$_i$ jeder Schülerin$_j$ rät, sie ernst zu nehmen?
that he every.DAT student advises it seriously to take.INF

lit.: 'Which opinion of John$_i$ about her$_j$ essay do you think he$_i$ advises every student$_j$ to take seriously?'

(48) [~~Von~~ [welcher ~~Meinung von Hans$_i$ über ihren$_j$ Aufsatz~~]$_k$]$_2$ denkst du
of which.DAT opinion of John about her essay think.2SG you

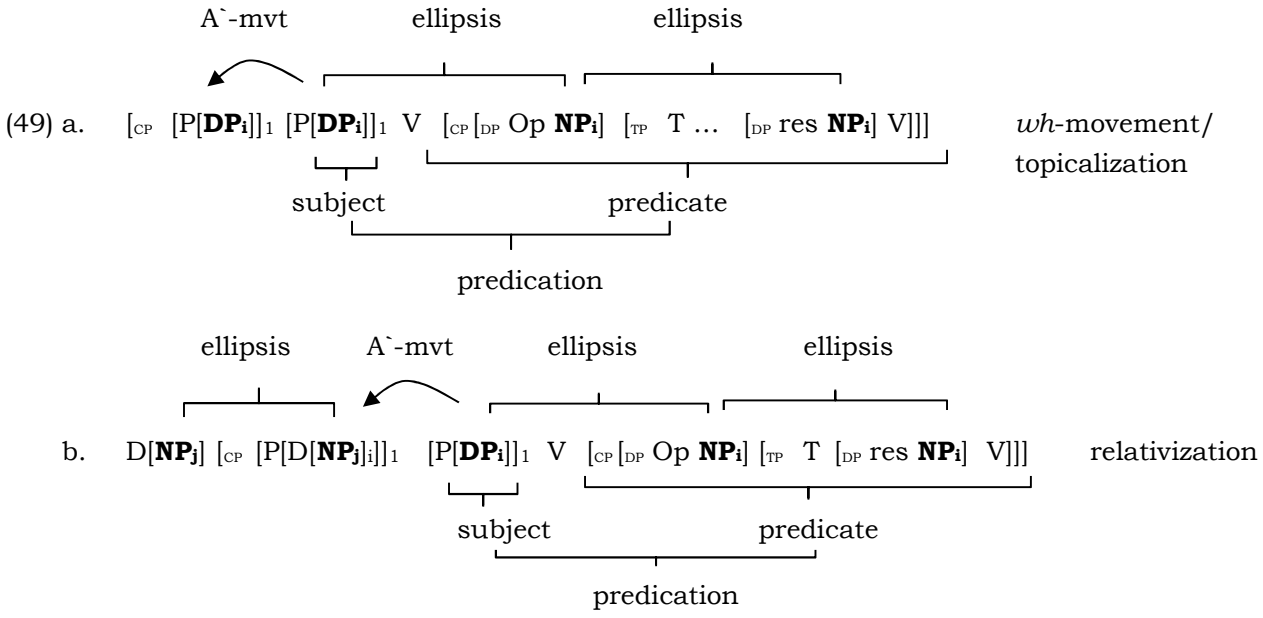
[Von [x ~~Meinung von Hans$_i$ über ihren$_j$ Aufsatz~~]$_k$]$_2$,
of opinion of John about her essay

[$_{CP}$ [Op ~~Meinung von ihm$_i$ über ihren$_j$ Aufsatz~~]$_k$ dass er$_i$
opinion of he.DAT about her essay that he

jeder Schülerin$_j$ rät, [sie [Meinung von ihm$_i$ über ihren$_j$ Aufsatz]$_k$]
every.DAT student advises it opinion of he.DAT about her essay

ernst zu nehmen]?
seriously to take.INF

The entire derivation of prolepsis thus looks as follows:



What still needs to be made more precise is the exact size of the elided constituents. While the proleptic object certainly is a DP, in the figures above, it is related to the NP complement of the operator and the resumptive. This issue is discussed in connection with the lack of scope reconstruction in the next subsection.

4.3 The absence of scope reconstruction

While the absence of reconstruction for Principle C follows from vehicle change, the lack of scope reconstruction documented in (29)/(31) above requires a different explanation.
There is a obvious solution that works for the proleptic construction: The lack of scope reconstruction is a general property of resumption. This was first observed in Doron (1982) who pointed out that in intensional contexts in Hebrew, a resumptive forces a *de re* reading while the gap allows for both a *de dicto* and a *de re* reading:

(50) a. dani yimca et ha-iša še hu mexapes
Dani will.find ACC the-woman that he seeks
'Dani will find the woman that he is looking for' √de re; √de dicto

b. dani yimca et ha-iša še hu mexapes *ota*
Dani will.find ACC the-woman that he seeks her
'Dani will find the woman that he is looking for' √de re; *de dicto

This fact has been confirmed for many other languages, cf. e.g. Cinque (1990), Sharvit (1999), Boeckx (2003) and Bianchi (2004). The fact that a definite pronoun heads the tail of an A'-dependency forces the variable to be interpreted as being of type <e>, which rules out non-specific/de dicto/non-referential interpretations, distributive readings, as well as resumptives in amount relatives and comparatives. This solution can be extended to other constructions with resuming elements like *such that*-relatives, which also fail to reconstruct for scope, cf. Salzmann (2006, 288-290).[12]
Note that the interpretive restrictions do not already follow from the fact that only the NP-part of the proleptic object is represented within the complement clause. The same holds for relative clauses where reconstructed readings are possible, cf. (50a). If only the NP-part is reconstructed, one seems to predict that DP-specifiers in the proleptic object do not reconstruct either. Although the facts are somewhat delicate, it seems that they do reconstruct, as the following examples with Secondary Strong Crossover and variable binding suggest, cf. Salzmann (2006, 258, 260):

(51) a. *Von wessen$_i$ Mutter denkst du, dass er$_i$ sie mag?
of whose mother think.2SG you that he her likes
lit.: 'Whose$_i$ mother do you think he$_i$ likes?'

b. Von seiner$_i$ Mutter denke ich, dass kein Teenager$_i$ sie toll findet.
of his.DAT mother think.1SG I that no teenager her great finds
'His$_i$ mother I believe no teenager$_i$ adores.'

The same holds for *tough*-movement, as the following example shows (adapted from Mulder and den Dikken (1992, 308), but see Hicks (2009, 552) for a different view):

(52) [His$_i$ car] is tough for me to believe that any German$_i$ would be willing to part with __.

While this could motivate a structure like that proposed in Hicks (2009) where the null operator takes a DP-complement, cf. (22) above, there are reasons to be skeptical because the

[12] Things are somewhat more complex in that non-specific interpretations do become possible with resumption in certain constructions (equatives) and with oblique relations, cf. Bianchi (2011) for discussion. In Salzmann (2006, chapter 4.6), where the issue is discussed with respect to Swiss German relatives, such cases of scope reconstruction were related to independent properties of the resuming elements: Reconstruction is (marginally) possible if the proforms are compatible with antecedents of other semantic types, a property that is orthogonal to the direct/oblique dichotomy. In German, this was the case with so-called R-pronouns. However, in most cases, proforms of other semantic types cannot be used in resumption, cf. the next subsection.

interpretation of this structure is far from obvious. A more interesting alternative is to follow Elbourne (2001, 271-274), who shows that DP-specifiers that can be anaphorically referred to by NP-ellipsis:

(53) John gave *his* paycheck to his mistress. Everybody else put *it* in the bank.

He argues (on the basis of independent evidence) that the possessors occupy NP-internal positions at LF, therefore licensing ellipsis:

(54) John gave [$_{DP}$ the [$_{NP}$ paycheck of him]] to his mistress. Everybody else put [$_{DP}$ it [$_{NP}$ paycheck of him]] in the bank.

These mechanisms account for the reconstruction properties observed in prolepsis.[13]

4.4 The necessity of a pronominal variable

Recall from 3.2 above that Improper Movement (in the sense of the sequence A-A'-A'-movement) can be ruled out by means of Principle C of the Binding Theory: The constituent in the landing site c-commands and thus binds the variable left behind by the initial A'-movement step. This problem remains for prolepsis and *tough*-movement even under the copy theory of movement because the two copies are not part of the same chain (the construction-specific modifications proposed for *tough*-movement in older work are, of course, completely non-explanatory). Crucially, in prolepsis, a Condition C violation is avoided by the fact that the tail of the A'-dependency is occupied by a pronoun, viz the resumptive.[14] In other words, the binding theory motivates one of the central characteristics of the construction.

Crucially, by the very same logic, the variable in *tough*-movement also has to be pronominal, cf. Rezac (2006, 301). Browning (1987) was the first to argue that the null operator is actually *pro*. Cinque (1990) and Rezac (2006) propose that the gap is in fact a base-generated *pronoun* that is A'-bound by a base-generated operator or just the C-probe. The only difference between prolepsis and *tough*-movement is that while there is just semantic binding in prolepsis, Agree is involved in *tough*-movement, accounting for the island-sensitivity of the construction, recall (17b). Alternatively, since silent pronouns in theta-positions in a language like English may seem ill-motivated, one can assume that the gap results from A'-movement of *pro*, which, however, takes an NP-complement and therefore allows for capturing reconstruction by means of ellipsis and the Preference Principle, basically as proposed above for prolepsis. Under either analysis, the pronominal nature of the tail of the A'-dependency blocks scope reconstruction in both constructions.[15]

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[13] Note that the NP-ellipsis approach requires proper names to be analyzed as NP-complements of a silent D, cf. Elbourne (2005, chapter 6), since they can also constitute a proleptic object. Another alternative to the NP-deletion account that avoids the complications with specifiers and proper names is the proposal in Salzmann (2006) where ellipsis between proleptic object and the operator in Spec, CP involves the entire DP, ellipsis additionally licensing the mismatch between the D-elements. The scarcity of DP-ellipsis tends to argue against this, however. See also fn. 15.

[14] Note that the fact that the resumptives are analyzed as definite determiners does not imply that they behave like referential expressions in all respects, cf. Elbourne (2005) for discussion. The cases where the resuming element is an epithet, cf. (5b)-(6) above, are more problematic because epithets are subject to Principle C of the Binding Theory, cf. Lasnik and Stowell (1991, 708f.). Arguably, the resumptive epithets are appositions to a silent pronoun (cf. Aoun and Choueiri (2000) who show that epithets can only be used as resumptives in Lebanese Arabic when combined with a demonstrative pronoun). Since on some accounts appositions are invisible for binding (cf. e.g. Vries (2006) on appositive relatives) the facts follow. Treating epithets as appositions to a possibly silent pronoun would also help to account for reconstruction with such elements, cf. Salzmann (2006, 306).

[15] Given that the tail of the A'-chain is a pronoun/pronominal, it may come as a surprise that prolepsis as in (51a) and *tough*-movement are subject to (Secondary) Strong Crossover. For the latter cf. Cinque (1990, 150), Rezac (2006, 313), Lasnik and Stowell (1991, 709):
i. * Sam$_i$ was easy to tell him$_i$ [PRO$_i$ to make Mary visit e$_i$]

While Principle C enforces the pronominal nature of the tail of the A'-dependency in both constructions, nothing requires overt resumption in prolepsis. One therefore expects instances of prolepsis with a gap. However, such cases do not seem to be attested in German and Dutch, not even when the complement clause is non-finite. Whether this points towards a fundamental property of the construction in need of explanation or just an accidental lexical gap is unclear because rather little is known about the construction in other languages. It certainly is an important question for further research. Note also that nothing in principle rules out overt resumption in *tough*-movement (e.g. in languages that have the resumptive pronouns). At least in English there is a preference for silent moving operators when they their landing site is in a non-finite clause, cf. Landau (2011, 797), but it is conceivable that base-generated operators occur in other languages. Since at this point there is no indication that the cross-linguistic differences are due to fundamental syntactic properties (apart from the availability of resumption), they are best treated as lexical differences (i.e. some languages have only moving operators while others have only base-generated ones).

The presence of a personal pronoun at the tail of the A'-dependency in prolepsis (as well as in *tough*-movement) has another effect: It forces its antecedent to be of type <e>, i.e. an individual. Crucially, however, this restriction is independent of the choice of proform: Even though languages usually have proforms for other semantic types, they cannot be used in these constructions. As a consequence, manners, predicates, amounts, and degrees are ruled out, as the following examples illustrate for prolepsis, cf. Salzmann (2006, 209-216, 276). Note that the examples are also ungrammatical without the preposition.

(55) a. *Ich glaube von einem Arschloch nicht, dass du das bist
I believe.1SG of a.DAT asshole not that you that be.2SG
lit.: 'I don't believe of an asshole that you are.'

b.* Ich glaube von achtzig Kilos, dass Peter das/so viel wiegt .
I believe.1SG of eighty kilos that Peter that/that.much weighs
lit.: 'I believe of eighty Kilos that Peter weighs.'

It is not clear why this is impossible because the proforms can be used in anaphoric dependencies. Arguably, this restriction is part of a more general constraint: resumption does not seem to be found with these semantic types. Why this should be the case is poorly understood, unfortunately, see Boeckx (2003, 91ff.) for more discussion of this issue.[16, 17]

Normally, SCO effects are thought to obtain because the tail of the A'-dependency counts as a variable/R-expression subject to Principle C. This seems to argue against the pronominal analysis. However, there is solid evidence that SCO-effects generally obtain under resumption (i.e with A'-bound pronominals), cf. e.g. Shlonsky (1992, 460) so that these data are in fact as expected. Note that Vehicle Change cannot apply here (and rescue the examples) as the antecedent for ellipsis is just an NP, not a DP as would be required (Vehicle Change can only relate a DP to a pronoun, cf. Salzmann (2006, 131f.) for evidence. Furthermore, in the SSCO case in (51a), vehicle change is additionally blocked because it cannot apply to quantifiers, cf. Safir (1999, 605).

16 Cinque (1990f., 193, fn. 33) argues for *tough*-movement and parasitic gaps that the restriction follows from the fact that null resumptives only exist for DPs. But given that overt pronominals do exist for other semantic types, it is far from obvious that their null counterparts should not exist. In fact, Engdahl (2001) shows that Swedish has non-NP-parasitic gaps and relates this to the fact that Swedish has (overt) definite proforms for these types, the parasitic gaps then involving their silent counterparts. This correlation does not work for German/Dutch prolepsis where there are similar proforms as in Swedish but the proleptic object still has to be an individual.
Similarly, one cannot derive the restrictions from the selectional requirements of the matrix preposition as it is only a case marker that would not be necessary with other semantic types (which are either not DPs and therefore do not need case or, in the case of amounts, can be licensed by semantic case).

17 One may want to try to derive this restriction from predication, under the assumption that subjects of predication have to be referential entities, cf. e.g. Lappin (1984, 243f.). The subject-predicate relationship is then essentially interpreted as a topic-comment structure where the same semantic restrictions obtain.

4.5 Restricting prolepsis

It was shown in section 2.1 above that prolepsis is possible with just about any matrix predicate. This may suggest that prolepsis is completely unrestricted. However, this is not quite correct. The correct generalization seems to be that prolepsis is possible with verbs that take a complement clause (finite or non-finite). This accounts for the following asymmetry, cf. Salzmann (2006, 208, fn. 161):

(56) a. das [Bild], von dem ich fürchte, dass alle lachen, wenn ich es zeige
the picture of which.DAT I fear.1SG that everyone laugh.3PL when I it show.1SG
lit.: 'the picture that I fear everyone laughs when I show it'

b.?? das [Bild], von dem alle lachen, wenn ich es zeige.
the picture of which.DAT all laugh.3PL when I it show.1SG
lit.: 'the picture that everyone laughs when I show it'

In (56b), there is only an adjunct clause, the matrix verb, however, is intransitive. The result is ungrammatical. Once this structure is embedded under a verb taking a complement clause as in (56a), a grammatical sentence obtains.
One therefore has to specify (by a lexical redundancy rule) that verbs taking a CP-complement can optionally take a CP whose head is specified for requiring a silent operator in its spec. Note that similar lexical specifications are necessary for *tough*-movement, cf. Landau (2011, 796-798). Such lexical specifications also accommodate the fact mentioned in 2.1 above that prolepsis nowadays occurs with a much wider range of verbs than a few centuries ago: As a consequence of the grammaticalization of the construction, a property that was restricted to a few lexical items has become a general property of verb selecting a sentential complement.
Predicative CPs can thus only occur in certain – lexically restricted – environments. Importantly, this also illustrates an important difference between truly predicative structures like prolepsis and mere aboutness relationships: At first sight, prolepsis (in German) also seems possible with other prepositions, especially *bei* 'at', a proposition that can be used for local relations but also to express aboutness like 'as far as X is concerned'. Crucially, *bei*-PPs differ from the *von*-PPs in that they are not restricted to predicates taking a CP-complement. For instance, replacing *von* with *bei* in (56b) leads to a perfectly well-formed sentence. Furthermore, aboutness phrases do not require a coreferential element in the complement clause:

(57) Wobei ich *bei Twilight* finde, dass die Filme besser sind, als die Bücher
PRT I at Twilight find.1SG that the movies better are than the books
'Because I think concerning Twilight that the movies are better than the books'
http://schreiberwald-und-lesewinkel.phpbb8.de/viewtopic.php?t=228&p=7628

The same holds for other aboutness prepositions like *hinsichtlich* and *bezüglich* both meaning 'concerning'. This shows that these constructions express a mere aboutness relationship between an individual and a proposition. Propositional clauses (as opposed to predicative clauses) only need to be interpreted as being about the topic/the individual, a pragmatic requirement that can be met without a coreferential element.[18] The same difference can be observed between hanging topics and left-dislocation, cf. Landau (2011, 806-810):

However, given that that there are also derived predicates of amounts/degrees as in comparatives and amount/degree relatives, this will not be sufficient.

[18] Although this is frequently the case, which is unsurprising since a statement about X often involves X as a participant.

(58) a. As for John, something terrible happened (to him).

b. John, something terrible happened *(to him).

5 Prolepsis in other languages

5.1 Cross-linguistic variation

The available literature suggests that many of the properties listed above for German (and Dutch) are also found in other languages. Davies (2005), which is one of the most explicit sources, mentions the following properties for English and Madurese (an Austronesian language of Indonesia): the proleptic object is unambiguously located in the matrix clause, a coreferring pronominal element (possible null)/a variable is obligatory, the pronominal/variable can bear any grammatical relation, the construction is insensitive to locality constraints, the proleptic object does not bear a theta-role in any obvious sense, there are semantic restrictions on the proleptic object such as referentiality/idioms are ruled out, and the construction is productive (occurring with many predicates that take a clausal complement). On English, see also Lappin (1984, 250, fn. 10) and Massam (1985, 180-185). The same properties are documented for Japanese in Tanaka (2002) and Takano (2003, 806-811, 822), although the former argues for a raising analysis while the latter explicitly argues for a prolepsis analysis (in addition, Japanese seems to have two different prolepsis constructions, one where the object bears nominative case and one where it bears accusative case). Korean behaves like Japanese, cf. Yoon (2007), who, however, argues in favor of an analysis where the embedded topic ('major subject') raises into the matrix clause. It seems, though, that most of the facts described also follow under the predication-analysis proposed above. The prolepsis construction has also been extensively described for French where it occurs most prominently in *dont*-relatives that end in a pronoun (in the non-relative variant, the proleptic object is governed by the functional/genitival preposition *de*), cf. e.g. Godard (1988), Tellier (1991, 96-98), Koopman and Sportiche (2009). Again, the properties are the same as in the previous languages.

Information about other languages is rather scarce. Landau (2011, 808) shows for Hebrew that the proleptic object is governed by a preposition ('about'), that a variable/pronoun is obligatory and that it can have any grammatical relation. Goodluck and Stojanovic (1996) and Boskovic (2009) show that in Serbo-Croatian *za koga*-relatives, a coreferential pronoun is obligatory and that the construction is not sensitive to locality.

The central properties of prolepsis thus seem to cluster, which is expected given the analysis described in the previous section, perhaps excluding the last property (productivity) as it is subject to lexical variation. Indeed, it seems that in some languages, the construction only occurs with a small number of verbs. An example may be the *za koga*-relatives in Serbo-Croatian, cf. Goodluck and Stojanovic (1996) and Boskovic (2009). In French, on the other hand, *dont* relatives occur with a relatively large class of verbs (essentially with propositional attitude verbs), cf. Godard (1988), Koopman and Sportiche (2009). In German and Dutch, the class of verbs that allow the construction is even larger. Languages with prolepsis can also differ with respect to the following properties: First, the proleptic object also occurs as a direct (accusative) object of the matrix verb in some languages, e.g. Japanese and Korean (see the references above) and also Biblical English, cf. Massam (1985, 180-181) or Ancient Greek and Latin, cf. Fraser (2001). In such languages, either CP does not require case so that the structural case of the verb can go to the proleptic object or the matrix verb can simply assign a second structural case. A further interesting difference is that in some languages, there is a very prominent ex-situ variant that occurs much more frequently and with more verbs than the in-situ variant. Examples are relative clauses in French, German and Dutch where the proleptic variant is an almost fully

grammaticalized alternative to long relativization and is much less marked that the in-situ construction.

5.2 Related constructions

In many languages one finds what seems to constitute finite ECM, i.e. the subject of a finite complement clause appears with accusative (or absolutive) case, cf. e.g. Massam (1985, 87-88) for a list of some languages. Here is an example from Greek, cf. Katzoglou and Papangeli (2007, 111):

(59) o petros ithele ti maria na traghudhai oli mera
the Peter-NOM wanted.3SG the Maria.ACC SBJV sing.3SG all day
'Peter wanted Maria to sing all day long.'

The construction bears many similarities to prolepsis: There is little evidence that the object is an argument of the matrix verb (even though Katzoglou and Papangeli (2007) argue for some kind of Control analysis) and we find similar semantic restrictions (such as impossibility of idioms). Syntactically, the accusative object occupies a complement position in the matrix clause and there is solid evidence that it has not raised from the embedded clause. Furthermore, extraction from finite ECM is blocked. Where the construction in Greek differs from prolepsis as described above is that it is restricted to subjects of the complement clause. Other grammatical relations cannot be raised, and the construction is not unbounded. Clearly, while base-generation of the object in the matrix clause seems straightforward, the null operator analysis from above would have to be modified. The facts could be derived if it is assumed that the C-head of the complement clause probes for a nominative goal. Furthermore, one would need to stipulate that intermediate C-heads cannot attract this type of operator, viz. that this type of operator movement is clause-bound. Agree will then be clause-bound, and the sensitivity to case correctly picks out embedded subjects (anything but a pronoun/*pro* will be ruled out by Principle C).
Other cases of finite ECM arguably require a different analysis. In most of the languages described by Massam (1985), raising is not restricted to subjects but can involve objects and obliques as well. But as opposed to prolepsis, the construction is not unbounded, it is restricted to constituents of the immediately embedded clause. Similar restrictions are found in languages with long-distance agreement as in Passamaquoddy, Innu-aimûn and Tsez, cf. Bruening (2001), Polinsky and Potsdam (2001) and Branigan and MacKenzie (2002). In these languages, the matrix verb agrees with a constituent (not necessarily the subject) of the complement clause. Furthermore, this constituent often or obligatorily (depending on the language) bears a topic interpretation. However, the authors explicitly argue against a prolepsis analysis. Instead, the propose (essentially adopting the analysis of Massam (1985)) that the „object" that is agreed with is moved (sometimes covertly) to a high A'-position of the embedded clause where it is accessible for Agree with the matrix verb. The Phase Impenetrability Condition (Chomsky (2001)) correctly limits object agreement to constituents of the immediately embedded clause under the assumptions made in Bruening (2001); alternatively, it must be assumed that the requisite A'-movement is clause-bound. The semantic effects follow from the fact that the high position in the left edge is a topic position.
Another construction that is similar to prolepsis is raising to subject from finite clauses as e.g. in Turkish, cf. Moore (1998). Here is an example from English Copy-Raising:

(60) John loooks like he is intelligent.

There is quite some evidence that the subject position is non-thematic (although the issue is contested, cf. Landau (2011)); the matrix subject displays similar semantic restrictions as the proleptic object (no idioms, obligatory wide-scope) so that it is likely to be base-generated in the

matrix clause. The analysis proposed for Greek ECM above would work here as well as long as the copy is always the embedded subject. In some languages (Haitian Creole, cf. Deprez (1992) and perhaps English) the matrix subject can be related to non-subjects in the complement clause. However, as with finite ECM, the construction seems to be restricted to constituents of the immediately embedded (finite) clause, i.e. the construction is not unbounded. Once the C-probe is no longer specified for specific cases (but still limited to occur on final C-heads), this type can be derived as well.

Prolepsis-like analyses have also been proposed for constructions that on the surface seem very different: First, Koopman and Sportiche (2009) propose that French pseudo-relatives as well as exceptional ECM-constructions and even long-distance subject extraction involve a predication structure similar to prolepsis. Here is an example with a pseudo-relative:

(61) J'ai vu Jean qui embarassait Marie.
I.have seen John who kissed.3SG Mary
'I saw John kiss Mary.'

It is proposed that the head noun + the relative clause form a small clause with *Jean* as the subject and the RC as the predicate. There is little reason to believe that the head of the relative is an argument of the matrix verb. Furthermore, it shows the familiar semantic restrictions: obligatory de re reading and incompatibility with non-referential idiom chunks. Second, Den Dikken (2009, 11-14) proposes a prolepsis-like analysis for one type of – apparent – long subject extraction in Hungarian:

(62) hány lány-t akar-sz hogy eljöjjenek?
how.many girl-ACC want-2SG.INDEF that PREV.come.3PL
'how many girls would you like to come?'

On den Dikken's analysis, the wh-phrase is generated in the matrix clause and agrees with the matrix verb (i.e. the so-called indefinite conjugation), thereby receiving accusative case. The gap in the embedded clause is analyzed as a *pro* because unlike traces, silent pronouns allow for notional/semantic agreement.

6 Conclusion

The goal of this chapter was to show that there is much more to prolepsis than meets the eye. At first sight, it seems straightforward to treat the proleptic object as an argument of the matrix verb that is anaphorically referred to by a coreferential pronoun in the complement clause. Upon closer inspection, however, the construction displays properties that are strikingly familiar from null operator constructions like *tough*-movement. It was argued that these properties are best accounted for by means of a predication analysis whereby the proleptic object acts as the subject and the complement clause as the derived predicate hosting a base-generated operator in its left edge. Additionally, the proleptic object and the silent operator are related by means of ellipsis.

7 Cross-References

SEE ALSO: Accusative Plus Infinitive Constructions in English, Bridge Phenomena, Condition C Violations and Strong Crossover, Control Phenomena, D-Linking and Specificity, Inflected Infinitives, Left Dislocation , Left Periphery of the Clause, Long-Distance Agreement, Partial *Wh*-Movement, Reconstruction, Binding, and Scope, Resumption, Topic Prominence, *Tough* Movement

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