

Complementizers as Probes

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1 Setting the stage

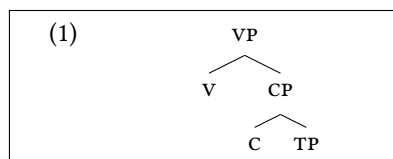
1.1 Goal of the talk

The main goal of the talk is to:

- propose a thorough analysis of several distributional and interpretive properties of clausal embeddings formed with complementizers (hereafter, cs) within a restrictive theory of grammar,
- show that any syntactic theory of clausal complementation must pay close attention to two interrelated questions regarding C(omplementizers):
 1. where do cs enter the derivation?
 2. how do cs 'get together' with their surface complement?

1.2 The standard view

- The standard view is that cs form a constituent with their surface complement, the TP, by merging directly with it, as in (1):

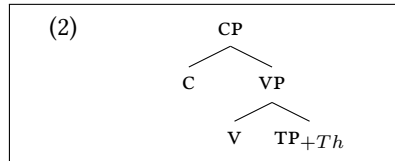


- The hypothesis behind (1) is as in early generative approaches (cf. Bresnan 1972, Stowell 1981 i.a.), that the c and its surface complement must be born together as a constituent by merging directly because they behave as a constituent on the surface.
- However, the inventory of existing operations predicts that constituents can also be derivationally built via internal merge (aka movement). Given this, it is an open question whether the c and its surface complement:
 - are born together as a constituent by merging directly as in (1),
 - are built into a constituent in the course of the derivation via movement.

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1.3 Preview of the analysis

- This talk proposes in contrast to the standard view, that the *c* and its surface complement enter the syntactic derivation as discontinuous pieces of structure:



- *cs* are merged in the matrix clause higher than the matrix verb (cf. Kayne 2000, 2005).
- *cs* function as probes attracting their surface complement, that is, they ‘get together’ with their surface complement via movement.

The new finding supporting the proposal that *cs* are merged in the matrix clause is, as I will show, that:

(3) *cs* are licensed by grammatical properties of the matrix verb which are determined higher than the matrix *vp*.

I also show that two more findings, which are puzzling for the standard view of clausal complementation follow directly under the proposal in (2):

- Clausal embeddings in different languages exhibit previously unnoticed extraposition effects.
- Clausal embeddings exhibit striking subject-object asymmetries.

2 Background on *C*-selection in Greek

- Why do we care about Greek?

The conditions under which *cs* are licensed in Greek are more transparent because finite clausal embeddings are formed with a number of *cs*. In contrast, well-studied Romance languages or English have just one *c* that productively introduces finite embedded clauses.

2.1 Greek

- Just like other Balkan languages e.g. Bulgarian, Greek lacks non-finite clauses (cf. Terzi 1992).
- Greek has four distinct elements introducing declarative embedded clauses i.e. na, oti, pos and pu:

- (4) a. I Dhespina dhen thimotan na ehi pai s-tin Vrazilia.
 the Dhespina not remembered.3SG na have.3SG gone.3SG to-the Brazil
 ‘Dhespina did not remember that she has been to Brazil.’
- b. I Dhespina dhen thimotan pos ehi pai s-tin Vrazilia.
 the Dhespina not remembered.3SG pos have.3SG gone.3SG to-the Brazil
 ‘Dhespina did not remember that she has been to Brazil.’
- c. I Dhespina dhen thimotan oti ehi pai s-tin Vrazilia.
 the Dhespina not remembered.3SG oti have.3SG gone.3SG to-the Brazil
 ‘Dhespina did not remember that she has been to Brazil.’
- d. I Dhespina dhen thimotan pu ehi pai s-tin Vrazilia.
 the Dhespina not remembered.3SG pu have.3SG gone.3SG to-the Brazil
 ‘Dhespina did not remember that she has been to Brazil.’

- This talk focuses on clauses formed with oti and pu (cf. Angelopoulos 2019).

2.2 The puzzle

- The puzzle raised by the distribution of oti and pu is that they are mutually exclusive after most clause embedding predicates:

- (5) a. *I Eleana herete oti perase tis eksetasis.
 the Eleana be.happy.3SG oti passed.3SG the exams
 ‘Eleana is happy that she passed the exams.’
- b. I Eleana herete pu perase tis eksetasis.
 the Eleana be.happy.3SG pu passed.3SG the exams
 ‘Eleana is happy that she passed the exams.’

- Under which conditions are oti and pu licensed?

2.3 The picture from previous literature

2.3.1 Factivity

- The oti vs. pu alternation has been discussed since very early in the Greek generative linguistic literature (cf. Christidis 1982, 1986, Roussou 1994, 2010, 2018, Varlokosta 1994 i.a.).
- This literature has focused on just one aspect of the behavior of oti- and pu-clauses. The consensus is that:
 - Oti-clauses are by default non-factive: the speaker is not committed to the truth of the clause.
 - Pu-clauses are obligatorily factive: the speaker is committed to the truth of the clause.

- (6) a. Thimame oti tin icha sinadisi s-to Parisi, ala bori na kano lathos.
 remember.1SG oti 3.SG.ACC.F had.1SG met in-the Paris, but might be do.1SG wrong
 ‘I remember that I had met her in Paris, but I might be wrong.’
- b. Thimame pu tin icha sinadisi s-to Parisi, # ala bori na kano lathos.
 remember.1SG pu 3.SG.ACC.F had.1SG met in-the Paris, but might be do.1SG wrong
 ‘I remember that I had met her in Paris, but I might be wrong.’

2.3.2 Modification Puzzle

- The factive/ non-factive distinction is a crucial one. However, as mentioned already in Christidis (1982), it does not pertain to the contrast below:

- (7) a. Thimotan (me dhiskolia) oti milise s-tin Eleana.
 remembered.3SG with difficulty oti talked.3SG to-the Eleana
 ‘She remembered with difficulty that she talked to Eleana.’
- b. Thimotan (*me dhiskolia) pu milise s-ti Eleana.
 remembered.3SG with difficulty pu talked.3SG to-the Eleana
 ‘She remembered with difficulty that she talked to Eleana.’ (modified from Roussou 2018)

- This contrast shows that the same embedding predicate, *thimotan*-‘remembers’, behaves differently with respect to the modifiers it accepts when it embeds an oti- or pu-clause.

- What kind of modifiers do pu-embedding predicates reject?
- Pu-embedding predicates reject modification by manner adverbs or manner PPs.

- NB: Manner adverbials have been used as a diagnostic for eventivity:
 - **Eventive** predicates are compatible with manner adverbs.
 - **Stative** predicates reject manner adverbial modification.

Given this, I propose the following effect:

(8) The ASP-COMP effect:
Pu-clauses can only combine with stative predicates.

- This effect showing an interaction between *c* and the inner aspect of the matrix verb is surprising for current theories of clausal complementation because they have been tailored to account for *c*-selection in regard to:
 - grammatical properties of the verb in the embedded clause, that is, whether it is finite or not,
 - or whether the matrix verb embeds a declarative or an interrogative clause,
 - a factive or a non-factive one.

2.4 Manner Adverbs: diagnostic for eventivity

- Vendler (1957) distinguishes two kinds of predicates:
 - **States**
 - **Events:** activities, achievements and accomplishments
- States and events behave differently with respect to manner adverbial modification (cf. Katz 2003, Maienborn 2005, 2015 i.a.):

- (9) a. I Eleana *iche* aftokinito (*dhiskola).
 the Eleana.NOM had.3SG car with difficulty
 ‘Eleana had a car with difficulty.’ State
- b. I Eleana *efaghe* (dhiskola).
 the Eleana.NOM ate.3SG with difficulty
 ‘Eleana ate with difficulty.’ Activity
- c. O Vasilis *kerdhise* ton aghona (dhiskola).
 the Bill.NOM won.3SG the race with difficulty
 ‘Bill won the race with difficulty.’ Achievement
- d. O Vasilis *elise* tis askisis (dhiskola).
 the Bill.NOM solved.3SG the exercises with difficulty
 ‘Bill solved the exercises with difficulty.’ Accomplishment

- I use unambiguous manner adverbs for my investigation (see Appendix A for confounds with ambiguous adverbs):
 - efkola-‘easily’ and dhiskola-‘with difficulty’
 - apotoma-‘abruptly’

2.5 The data

2.5.1 Data Base: Greek clausal complementation

- I present a subset of examples from a nearly exhaustive data base I have created with clause embedding predicates of Greek.
- The predicates were collected from the dictionary of Triantafyllidis (1998) and they were classified into distinct categories depending on various syntactic and semantic criteria e.g. c-selection, factivity.
- The data patterns reported below have been systematically checked with ten native speakers of Greek.

2.5.2 Subject experiencer predicates

Thimoni-‘be/ get angry’ can be interpreted as stative or eventive in different syntactic contexts:

- (10) a. *Thimoni* (*efkola/ apotoma*).
get.angry.3SG easily/ abruptly
‘She gets angry easily/ abruptly.’
- b. *Thimoni* (*efkola/ apotoma*) me *tin kavernisi/ to jehonos*.
get.angry.3SG easily/ abruptly with the government the fact
‘She gets easily/ abruptly angry with the government/ the fact.’
- c. *Thimoni* (* *efkola/ *apotoma*) pu *apoliun prosopiko*.
be.angry.3SG easily/ abruptly pu fire.3PL personnel
‘She is (* easily/ * abruptly) angry about the fact that they fire personnel.’

2.5.3 Psych predicates: Class II

- This class of psych predicates is relevant because they have been shown in previous literature to be ambiguous between a stative and an eventive usage (cf. Belletti and Rizzi 1988, Pesetsky 1996, Landau 2009, Alexiadou and Iordăchioaia 2014 i.a.).
- Class II psych predicates uniformly select an accusative experiencer. They also select an additional argument which can be:
 - a nominative DP
 - a pu-clause.
- I show that the eventive use of Class II psych verbs is possible when they select nominative DPs. On the other hand, when Class II psych verbs combine with pu-clauses, they must be stative.

- (11) a. (*Dhiskola*) *tin stenohori* [*i kaki siberifora tus*]_{Causer}.
with difficulty 3SG.F.ACC sadden.3SG the bad behavior.NOM their
‘approx. Their bad behavior can hardly make her sad.’
- b. (* *Dhiskola*) *tin stenohori* [pu *dhen pire proaghoghi*]_{SubjectMatter}.
with difficulty 3SG.F.ACC sadden.3PL pu dhen pire proaghoghi
‘She is (*with difficulty) sad about the fact that she did not get promotion.’

2.5.4 Oti- and pu-clauses in Small Clauses

The distribution of oti- and pu-clausal embeddings in small clauses shows that:

- just as we saw previously, the stative vs. eventive distinction plays important role in c-selection,
- the stative predicate conditioning the presence of *pu* is not the predicate of the small clause but, crucially, the matrix verb selecting the small clause.

(12) DPS as subjects in small clauses

- a. [Afto to jeghonos]_{DP} *itan* ksekatharo.
 this the fact.NOM was.3SG clear
 ‘This fact was clear.’ State
- b. [Afto to jeghonos]_{DP} *ejine* ksekatharo.
 this the fact.NOM became.3SG clear
 ‘This fact became clear.’ Event

(13) Oti-clauses as subjects in small clauses

- a. *Itan* ksekatharo [oti to pirama ejine lathos].
 was.3SG clear oti the experiment was.conducted.3SG wrongly
 ‘It was clear that the experiment was conducted in a wrong way.’ State
- b. *Ejine* ksekatharo [oti to pirama ejine lathos].
 became.3SG clear oti the experiment was.conducted.3SG wrongly
 ‘It became clear that the experiment was conducted in a wrong way.’ Event

(14) Pu-clauses as subjects in small clauses

- a. *Itan* ipervoliko [pu apelian prosopiko sihna].
 was.3SG overwhelming pu fired.3PL personnel often
 ‘It was overwhelming that they fired personnel often.’ State
- b. **Ejine* ipervoliko [pu apelian prosopiko sihna].
 became.3SG overwhelming pu fired.3PL personnel often
 ‘It became overwhelming that they fired personnel often.’ Event

2.6 Analysis

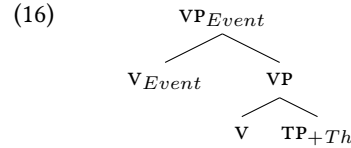
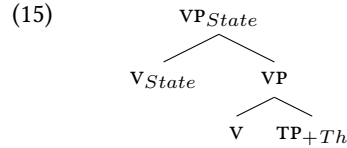
How to capture the finding that cs are sensitive to grammatical properties of the embedding verb:

- cs have selectional properties. In Greek, cs select the inner aspect of the embedding verb:
 - Pu is compatible only with stative predicates because it selects stative predicates.
 - Oti is compatible with stative or eventive predicates because it selects both.

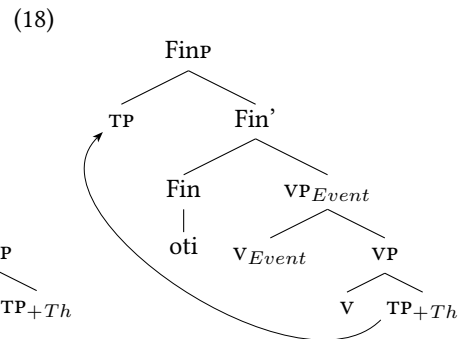
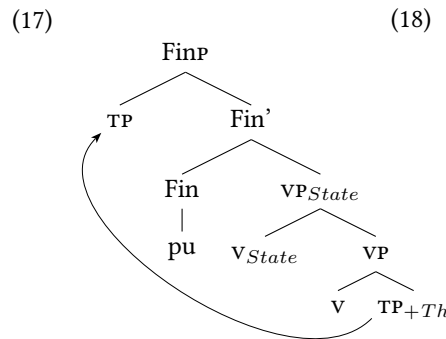
Background theoretical assumptions:

- **Principle of Locality of Selection:** selection must be satisfied in a strictly local relation, that is, either head-complement or specifier-head (cf. Sportiche 2005 for a more recent formulation).
- **Direct syntax-semantics interface:** the stative vs. eventive distinction is determined in the syntax via projections introduced higher than the lexical verb (Borer 2005, Harley 1995, Ramchand 2008 i.a.).

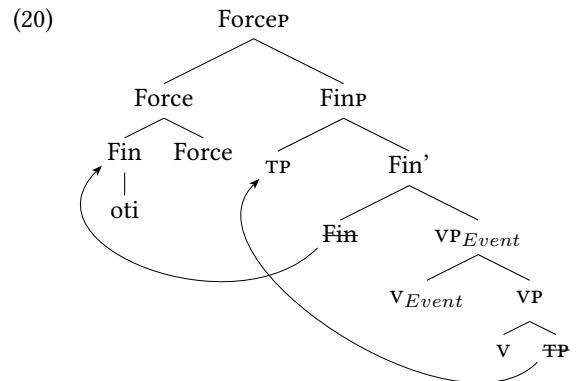
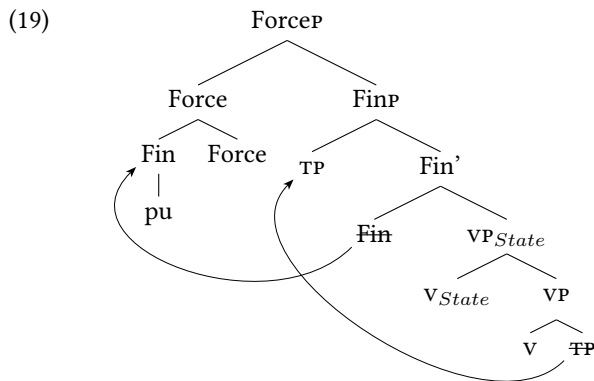
- In complement clauses, the surface complement of $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ is a TP entering the derivation in a thematic, +Th, position.



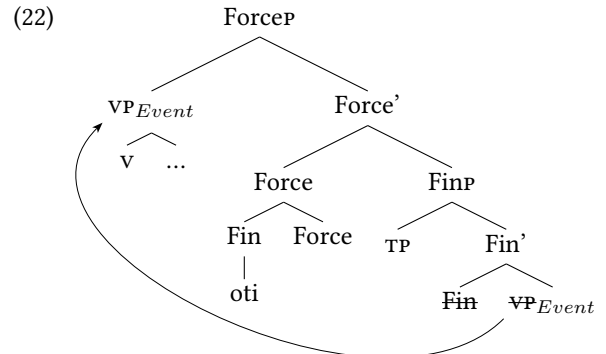
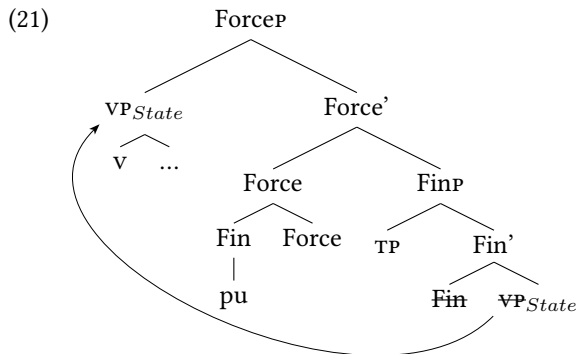
- $\boxed{\text{Pu}}$ and $\boxed{\text{oti}}$ enter the derivation in a Fin head of Rizzi (1997). This head is introduced in the matrix clause where $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ can satisfy their selectional requirements in a local manner via Head-Comp.



- (17) and (18) also show that $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ attract the TP. This is so because $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ select a TP, therefore, they must attract it in order to satisfy their selectional property via Head-Spec.
- $\boxed{\text{Pu}}$ and $\boxed{\text{oti}}$ undergo head movement to a higher head. This movement step could be analyzed on a par with Fin to Force movement in Rizzi (1997) (see Section 7 for an alternative).



- Force selects and subsequently attracts the VP into its specifier giving rise to the surface order “v pu/oti TP”.



2.7 Interim Conclusion

- The proposed analysis captures in a strictly local manner the finding that cs are sensitive to grammatical properties of the embedding predicate.
- The analysis suggests that the c and its surface complement ‘get together’ via movement.
- These movement steps as well as the underlying structure find support in extraposition effects, discussed next, and subject-object asymmetries in the distribution of $\boxed{\text{oti}}$ - and $\boxed{\text{pu}}$ -clauses.

3 Extraposition with complement clauses

- Embedded clauses formed with initial cs are well-known cross-linguistically to undergo the effects of “extraposition” (cf. Singh 1980, Dryer 1992, Bayer 1995, 1999). These effects become more visible in ov languages.
- For instance, Bengali is head final, that is, ov with DP objects. However, clausal embeddings formed with $\boxed{\text{je}}$ are obligatorily extraposed.¹

(23) * $\boxed{\text{je-TP} \gg \text{v}}$ $\checkmark \text{v} \gg \boxed{\text{je-TP}}$

- a. * chele-Ta [je or baba aS-be] Sune-che
 boy-CF c his father come-FUT3 hear-PTS3
 ‘The boy heard that his father is coming.’
- b. chele-Ta Sune-che [je or baba aS-be]
 boy-CF hear-PTS3 c his father come-FUT3
 ‘The boy heard that his father is coming.’

Bayer (1999, 11b)

- Clausal embeddings have also been shown in vo languages to undergo the effects of “extraposition” in different syntactic contexts (see Stowell 1981, Kayne 2005, Moulton 2015 i.a. for English).²

3.1 Extraposition in small clauses

3.1.1 DPS in small clauses: optional extraposition

- Small clauses formed with DPS permit two orders in which the small clause predicate may either precede or follow the DP argument.
- The DP argument may also be doubled by a clitic in both orders (cf. Anagnostopoulou 1994).

(24) $\checkmark \boxed{[\text{DP} \gg \text{ADJ}]_{SC}}$ $\checkmark \boxed{[\text{ADJ} \gg \text{DP}]_{SC}}$

- a. Dhen (to_i) theori [[afto to astio]_i ekseretika eksipno].
 not 3.SG.ACC.NEUT consider.3SG this the joke extremely smart
 ‘She does not consider this joke extremely smart.’
- b. Dhen (to_i) theori [ekseretika eksipno [afto to astio]_i].
 not 3.SG.ACC.NEUT consider.1SG extremely smart this the joke
 ‘She does not consider this joke extremely smart.’

¹ $\boxed{\text{je}}$ is also used in relative clauses just like English *that* or Romance *che/que* (cf. Bayer 1999).

² The fact that English finite embedded clauses undergo obligatory “extraposition” can be seen in the contrast below:

- (1) a. I consider [[who you decide to work with] to be unimportant].
 b. *I consider [[that you work with Roger] to be unimportant].

Stowell (1981, (28b,29c))

3.1.2 Oti-clauses in small clauses: obligatory extraposition

- In contrast to DPS in small clauses, oti-clauses obligatorily surface after the predicate of the small clause.

(25) *[oti-TP >> ADJ]_{SC} ✓[ADJ >> oti-TP]_{SC}

- a. *Dhen (to_i) theori [[oti tha apovlithi o Jorghos]_i poli sighuro].
 not 3.SG.ACC.N consider.3SG oti will get expelled.3SG the George.NOM very certain
 ‘She does not consider it very certain that George will get expelled.’
- b. Dhen (to_i) theori [poli sighuro [oti tha apovlithi o Jorghos]_i].
 not 3.SG.ACC.N consider.3SG very certain oti will get expelled.3SG the George.NOM
 ‘She does not consider it very certain that George will get expelled.’

3.1.3 Pu-clauses in small clauses: obligatory extraposition

- Just like oti-clauses, pu-clauses undergo obligatory extraposition after the predicate of the small clause.

(26) *[pu-TP >> ADJ]_{SC} ✓[ADJ >> pu-TP]_{SC}

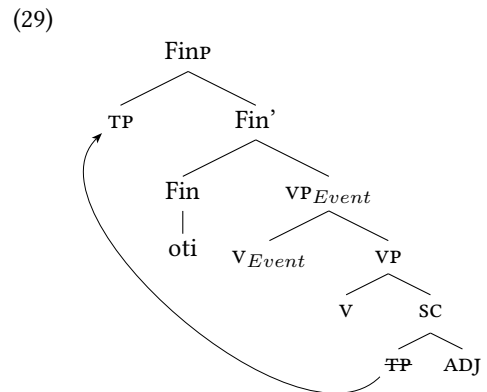
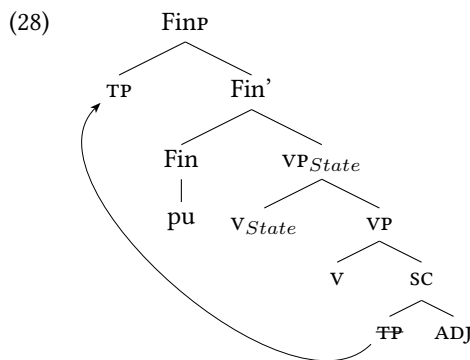
- a. *Dhen (to_i) theori [[pu tha apoalun ton Jorgho]_i poli adhiko].
 not 3.SG.N.ACC consider.3SG pu will expelled.3PL the George.ACC very unfair
 ‘She does not consider it very unfair that they will expel George.’
- b. Dhen (to_i) theori [polu adhiko [pu tha apoalun ton Jorgho]_i].
 not 3.SG.N.ACC consider.3SG very unfair pu will expelled.3PL the George.ACC
 ‘She does not consider it very unfair that they will expel George.’

3.1.4 Analysis: extraposition is built in the syntax

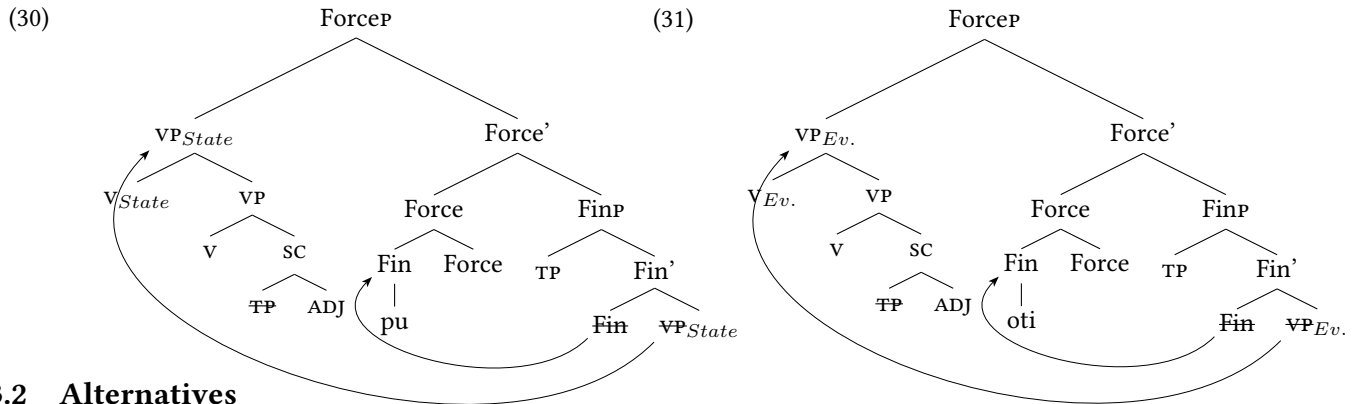
- The extraposition effects pu- and oti-clauses exhibit are built in the syntax, and follow from the analysis I proposed without invoking any special extraposition rules or rightward movement operations.
- Since in small clauses cs are sensitive to the grammatical properties of the verb selecting the small clause (cf. Section 2.5.4), the merge order should be:

(27) pu/oti > Asp > v > [TP ADJ]_{SC}.

- This merge order is reflected in the derivations below.



- Subsequent Fin to Force movement and remnant VP movement give rise to the effects of extraposition in the surface order “v >> ADJ >> oti/pu-TP.”



3.2 Alternatives

3.2.1 Prosody

- In contrast to *DPS*, clausal embeddings undergo extraposition due to intonation or processing factors related to length/ size considerations.³
- Note that *DP* constituents which are longer than the *oti*- and *pu*-clauses we examined do not have to surface after the predicate of the small clause:

(32) $\checkmark [DP \gg ADJ]_{SC}$ $\checkmark [ADJ \gg DP]_{SC}$

- Dhen theiri [oti tis pune i dhaskali tis s-to sholio] dhedhomeno].
not consider.3SG what 3SG.F.DAT tell.3PL the teachers her at-the school granted
'approx. She does not take what her teachers tell her at school for granted.'
- Dhen theiri [dhedhomeno [oti tis pune i dhaskali tis s-to sholio]].
not consider.3SG granted what 3SG.F.DAT tell.3PL the teachers her at-the school
'approx. She does not take what her teachers tell her at school for granted.'

- The length/ size of a constituent does not correlate with extraposition.

4 Subject-object asymmetries

- *Pu*- and *oti*-clauses can serve as internal arguments, as we have seen already (cf. 10).
- On the other hand, *pu*- and *oti*-clauses are ruled out as external arguments of verbs (cf. Roussou 1991, 1994).

(33) *Oti*-clauses as subjects

- * [Oti ehis filus] dhihni pola ja sena.
oti have.2SG friends show.3SG a lot for you
'That you have a lot of friends shows a lot about you.'
- * Dhihni pola ja sena [oti ehis filus].
show.3SG a lot for you oti have.2SG friends
'It shows a lot about you that you have a lot of friends.'

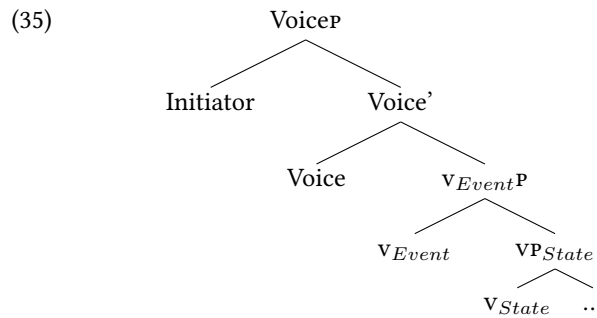
³ In order to exclude the possibility that the small clause predicate has undergone incorporation into the matrix predicate leaving the clause in-situ, the examples always comprise modified adjectival predicates e.g. *poli adhiko* 'very unfair.'

(34) Pu-clauses as subjects

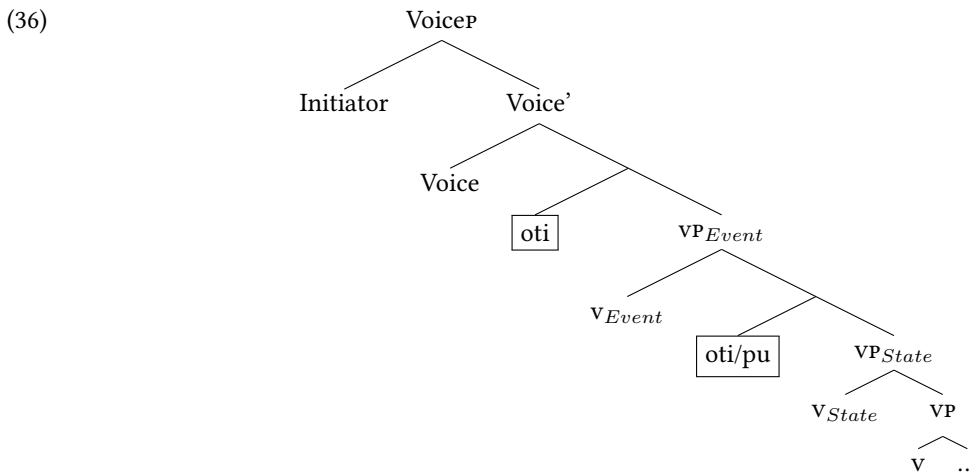
- a. * [Pu ehis filus] dhihni pola ja sena.
 pu have.2SG friends show.3SG a lot for you
 ‘That you have a lot of friends shows a lot about you.’
- b. * Dhihni pola ja sena [pu ehis filus].
 show.3SG a lot for you pu have.2SG friends
 ‘It shows a lot about you that you have a lot of friends.’

4.1 Analysis

- The head introducing the causing event is different from the head where the initiator of the causing event is introduced and theta-marked (cf. Folli and Harley 2007, Legate 2014, Pylkkänen 2008).



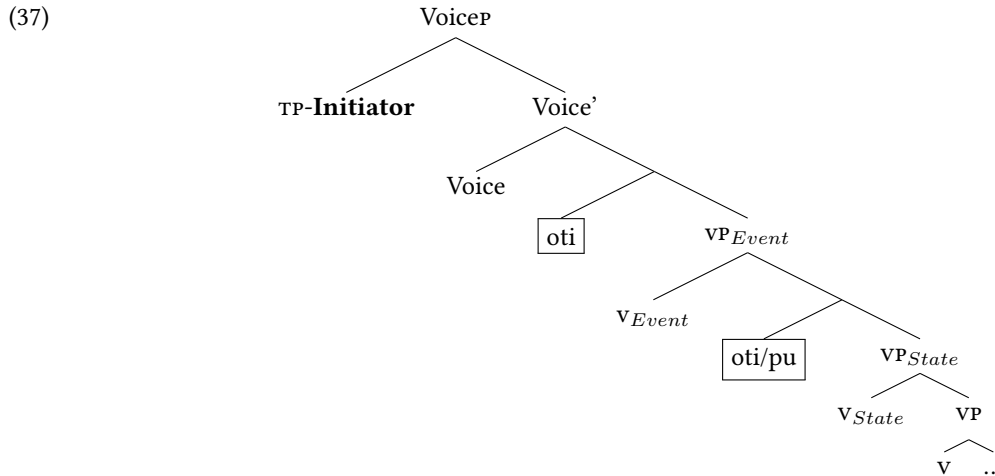
- In this structure, pu and oti merge at distinct syntactic heights where they can satisfy their selectional properties in a local manner.



- Since pu can only combine with stative embedding verbs, I assume that it can merge as high as the low *vPState*.
- On the other hand, since oti can combine with stative or eventive embedding verbs, it selects either for a stative or an eventive *VP* in which case it must be merged locally with them.

4.1.1 The subject restriction

- Clauses functioning as external arguments are introduced as bare TPs in Spec VoiceP:



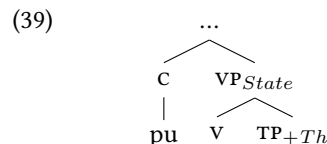
- $\boxed{\text{Pu}}$ and $\boxed{\text{oti}}$ are probes that must attract the TP into their specifier.
- However, this is not possible with the external argument because it is introduced higher than the merge position of $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$.
- If the surface complement of $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ is introduced in the internal argument position of the verb, $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ can attract it. Consequently, there is no syntactic restriction blocking the formation of complement clauses.

5 Open questions

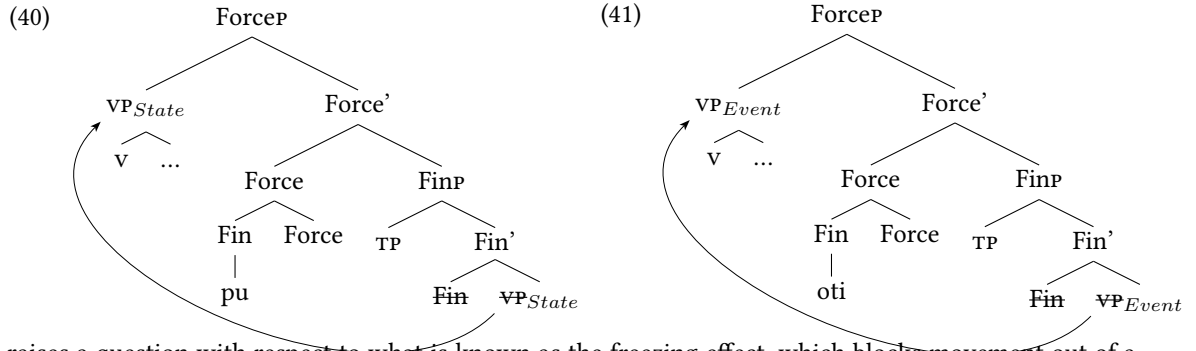
- Why can *pu*-embedding predicates be only stative? What blocks them from becoming eventive?
 - Following extensive previous literature, I assume just as I did previously that v_{Event} is introduced higher than v_{State} (cf. Ramchand 2008 i.a.),
 - v_{Event} selects VP_{State} :



- *Pu* also selects VP_{State} , therefore, $\boxed{\text{pu}}$ and v_{Event} are mutually exclusive because they compete for the same position.



- *Oti*-clauses permit extraction out of them. Nonetheless, if you look at the proposed syntactic structure, this would mean that extraction would have to take place out of a moved constituent, the TP:

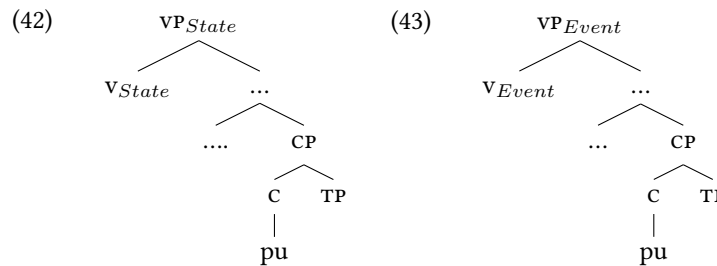


- This raises a question with respect to what is known as the freezing effect, which blocks movement out of a moved constituent. The freezing effect is not as not an absolute constraint (see Barbiers 2002 and Bošković 2008 i.a.). Bošković (2008) argues that there is nothing wrong in principle with movement out of moved elements.

6 The standard analysis

6.1 c-selection sensitivity

- The standard analysis cannot immediately capture why *pu* is sensitive to the “inner” aspect of the matrix predicate because the *c* is not local to the relevant aspectual projections.



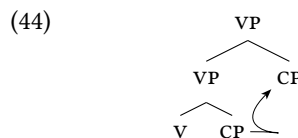
- Furthermore, if pu has already been merged in the embedded clause, it is unclear what blocks the matrix verb from becoming eventive.

6.2 Subject-object asymmetries

- The subject-object asymmetries have not received any principled account in the standard analyses.

6.3 Extraposition

- Under some standard analyses, cps show the effects of extraposition because they must undergo rightward movement (cf. Rosenbaum 1965, Büring and Hartmann 1997, Bruening 2018 i.a.).

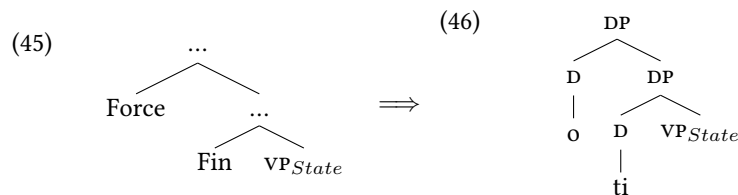


- The issue with this account is that rightward movement lacks independent motivation as it is tailored to apply to cps only.

7 Future Directions

7.1 The internal structure of cs and historical development

- $\boxed{\text{Pu}}$ is historically derived from the D morpheme *p-* and the genitive suffix *u* of Greek: $\boxed{\text{p-u}}$ (cf. Meillet 1921).
- Similarly, $\boxed{\text{oti}}$ comprises two items which are synchronically active, the definite determiner *o* and the *wh*-item *ti*-‘what’: $\boxed{\text{o-ti}}$.
 - If these items that $\boxed{\text{pu}}$ and $\boxed{\text{oti}}$ comprise are syntactically active, how are they merged into the syntactic structure?
 - A possible alternative is that Fin and Force correspond to clusters of D morphemes merged VP externally:



7.2 Cross-linguistic research

- Test predictions of the current proposal:
 - subject-object restrictions should only arise with cs which are sensitive to the inner aspect of the matrix verb (cf. Bayer 1995, 1999).
- Look at other Balkan languages have rich complementation systems e.g. Bulgarian (cf. Krapova 2010). Do we find similar interactions between cs and the inner aspect of the matrix verb?
- Look at the Dutch complementation system where it is clear that that the choice of the matrix verb correlates with the syntactic structure realized inside the embedded clause:

- (47) a. Ik denk [dat ze eerlijk gezegd/ helaas/ misschien niet komen].
 I think that they honestly unfortunately perhaps not come
 ‘I think that they honestly unfortunately perhaps won’t come.’
- b. *Ik wil [dat ze eerlijk gezegd/helaas/misschien niet komen].
 I want that they honestly unfortunately perhaps not come
 ‘I want that they honestly unfortunately perhaps won’t come.’
- Barbiers (2018, 63,(9))

Speaker oriented and epistemic adverbs are not possible in the complement clauses of *willen*. If adverbs are hosted in designated positions (cf. Cinque 1999), the embedding verbs select these positions. Under the standard view, this is not possible because the matrix verb can only select the complementizer. These data make more sense if the c is merged later and the verb selects the embedded clause directly (or, if the embedded verb is merged inside the embedded clause, as in Barbiers 2018).

7.3 PP constituents

- Do we ever find other cases in which a constituent is not the result of direct merge?
 There are a number of reasons to believe that prepositions and their DP surface complements are not born together as a constituent (Angelopoulos 2019).
- Just like cs, ps are sensitive to grammatical properties of the verbs they combine with.

- For instance, the Greek preposition apo can combine with passive verbs in which case it introduces the agent.
 - On the other hand, the preposition ja is possible in double object constructions in which case it introduces the beneficiary.
- The following examples show that apo and ja are mutually exclusive in the syntactic contexts in which they can occur:

(48) Agent PPS: ✓apo *ja

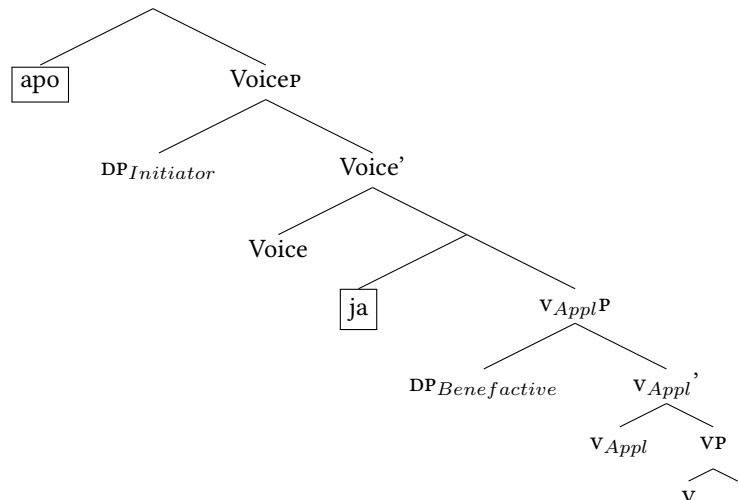
- a. I tenia hirokrotithike apo to cino.
 the movie applauded.NACT.3SG apo the audience
 ‘The movie was applauded by the audience.’
- b. *I tenia hirokrotithike ja to cino.
 the movie applauded.NACT.3SG ja the audience
 ‘The movie was applauded by the audience.’

(49) Benefactive PPS: ✓ja *apo

- a. I Maria edhose ena vivlio ja tin Eleana.
 the Maria gave.3SG a book ja the Eleana
 ‘Maria gave a book for Eleana.’
- b. *I Maria edhose ena vivlio apo tin Eleana.
 the Maria gave.3SG a book apo the Eleana
 ‘Maria gave a book for Eleana.’

- If we want to extend the analysis of cs to ps, this behavior of apo and ja can be captured as follows:
 - apo and ja are merged separately from their surface DP complements,
 - apo select Voice_P and ja selects v_{Appl}P,
 - the surface DP complements of apo and ja are introduced in the corresponding argument position.

(50)



- If this syntactic structure is correct, the prediction is that the surface DP complement of $\boxed{\text{apo}}$, that is, the initiator DP should be able to bind a benefactive reflexive and trigger Condition c with it.
- This is so because the surface complement of $\boxed{\text{apo}}$, the initiator DP, c-commands the benefactive.

7.4 Reflexive Binding

- The surface DP complement of $\boxed{\text{apo}}$ can bind a benefactive reflexive in a $\boxed{\text{ja}}$ -PP.⁴
- The Greek reflexive resists logophoric usages.

- (51) a. Aftes i diataksis psifistikan $\boxed{\text{apo}}$ tus vuleftes₁ tis kavernisis $\boxed{\text{ja}}$ ton eafto
 these the regulations were voted.3SG by the MPs the government.GEN for the self
 tus₁.
 their
 ‘These regulations were voted by the MPs of the government for themselves.’
- b. Aftes i bluzes epilechtikan $\boxed{\text{apo}}$ ta pedja₁ $\boxed{\text{ja}}$ ton eafto tus₁.
 these the t-shirts were selected.3P by the kids for the self their
 ‘These t-shirts were selected by the kids for themselves.’

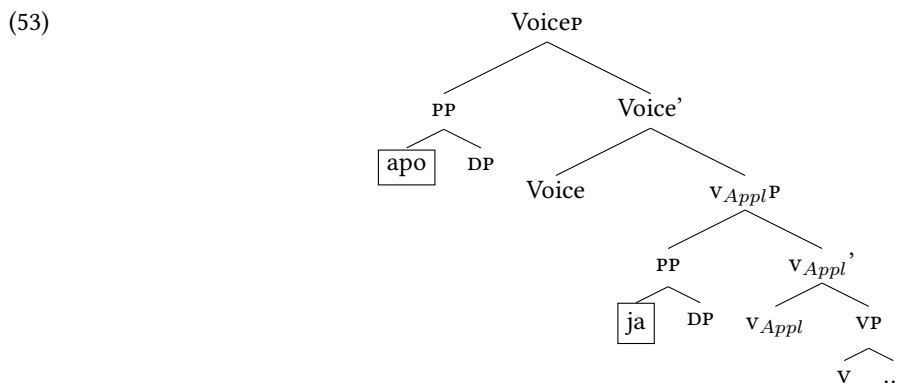
7.5 Condition c

- The surface DP complement of $\boxed{\text{apo}}$ triggers Condition c with a proper name contained in a $\boxed{\text{ja}}$ -PP.

- (52) a. Psifistike apo aftin₁ ja tin Maria_{*1/2}.
 was voted.3SG by her for the Maria
 ‘It was voted by her for Maria.’
- b. Epilechtike apo aftin₁ ja tin Maria_{*1/2}.
 was selected.3SG by her for the Maria
 ‘It was created by her for Maria.’

7.6 The standard analysis

- Under the standard analysis PPs enter the derivation as constituents.



⁴ Pesetsky (1996) discusses similar English facts where the surface complement of P can bind a reflexive. These facts led Pesetsky (1996) to the assumption that PPs also merge in a cascade structure.

- If the principles behind reflexive binding and Condition c rely on c-command,⁵ it is unclear in (53) how exactly the surface complement of [apo] can bind a benefactive reflexive or give rise to Condition c effects with it.

7.7 Residual Issues

- Abels and Neeleman (2012) argue against Kaynean derivations as in Cinque (2005):

Similar predictions can potentially be derived from other phenomena sensitive to c-command, such as the licensing of negative polarity items, scope, or binding. We are not aware of any effects of this type, but it seems to us that the burden of proof is on proponents of the SHCH, who should be committed to showing that the additional material and operations required for SHCH-compatibility have testable consequences.

- See Angelopoulos (2019, Ch.2) for discussion that these additional operations do indeed yield consequences, which are testable and compatible with standard Binding Principles.

8 Conclusion

- **Empirical Contribution:**

- I presented data showing that c-selection in Greek is conditioned by grammatical properties of the matrix verb.
- Just as in ov languages, embedded clauses of vo languages exhibit extraposition effects and,
- they show striking subject-object asymmetries.

- **Theoretical Contribution:**

- I proposed that the facts above support an analysis in which cs are merged in the matrix clause separately from the surface complement.
- I showed that there are reasons to believe that this view can be extended to account for properties of PPs.

- **Take-home message**

- A surface constituent might be:
- born as such,
- the output of a syntactic derivation involving movement.

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⁵ Bruening (2014) argues that c-command must be replaced by precede and phase-command. In his reply, Zwart (2015) shows that “[...] condition c effects cannot be used to show the relevance of phases for the definition of syntactic dependency.”

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A Manner adverbs: confounds

- A few manner adverbs can have an additional meaning e.g. *quantity/ degree* or *temporal*.
- **Confound:** these ambiguous adverbs are compatible with states in their quantity/ degree or temporal usage. For instance, *kala*-‘well’ is an ambiguous adverb (see fn.6 for a similar observation about English *well*).⁶

- (54) a. Pos pighe/ perase to kaloceri?
how go.3SG/ pass.3SG the summer
approx. ‘How did your summer go?’
- b. Pighe/ perase kala.
go.3SG/ pass.3SG well
‘It went well.’
- c. Pighe/ perase efkola/ dhiskola.
go.3SG/ pass.3SG easily/ with difficulty
‘approx. It went easily/ with difficulty.’
- d. *Pighe/ perase ligho/ poli.
go.3SG/ pass.3SG a little/ a lot
‘*It went a little/ a lot.’
- (55) a. Poso tin kseri?
how much 3.SG.F.ACC know.3SG
‘approx. To what degree/How much does she know her?’
- b. Tin kseri kala.
3.SG.F.ACC know.3SG well
‘She knows her well.’
- c. Tin kseri ligho.
3.SG.F.ACC know.3SG a little
‘She knows her a little.’
- d. *Tin kseri efkola/ apotoma.
3.SG.F.ACC know.3SG easily/ abruptly
‘She knows her easily/ abruptly.’

- The confound can be avoided if we use unambiguous manner adverbs.

B Complementation and Relativization

- If complementation involves *DS* which are very often used in relative clauses, the question that arises is what is the relation between complementation and relativization?
- For instance, *oti* is used in free relative clauses and *pu* is used in the formation of restrictive relative clauses.

⁶ McNally and Kennedy (2013) observe that English *well* can have a degree reading and a “quality” reading in the following examples:

- (1) a. a well-loaded truck (high degree of loadedness or loaded in a skilled/neat etc. way)
b. well-loaded hay (loaded in an organized/skilled/neat etc. way)

McNally and Kennedy (2013, (3))

- (56) a. Aghorase oti chriazotan.
bought.3SG whatever need.3SG
'She bought whatever she needed.'
- b. Idhe to ktirio pu keghotan
saw.3SG the building pu was.burning3SG
'She saw the building that was burning.'

- Note that the behavior of pu and oti is not uncommon cross-linguistically.

		DEM _{Pro}	COMP _{Pro}	REL _{Pro}	WH _{Pro}
W.Germanic	English	that	that	that	what
	Dutch	dat	dat	dat	wat
	German	das	dass	das	was
	Sw. German	das	dass	wo	was
	Yiddish	jenc	vos az	vos az	vos
Romance	French	ce	que	que	que
	Italian	quello	che	che	che
	Spanish	aquél	que	que	qué
Hellenic	Modern Greek	afto/ecino	pu oti pos	pu oti •pos	pu ti pos
E.Slavic	Russian	to	čto	čto	čto
S.Slavic	Serbo-Croatian	to	što	što	što
	Bulgarian	tova	deto	deto	deto 'where'

Table 1: Syncretism patterns cross-linguistically.