Why would you D that? On the D-layer in Greek clausal subjects

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1 Introduction

- In some languages, clausal subjects obligatorily have an overt DP element, like a definite article or a demonstrative, preceding them (henceforth D-layer). Researchers posit that the D-layer is essential for the clause to become a subject, as only DPs can occupy SpecTP (Hartman, 2012; Kastner, 2015).

- These facts have been argued to hold across many languages, including Greek (Kastner, 2015). However, a more intricate examination of Greek clausal subjects shows that the D-layer is not always necessary.

- In this talk we argue that the distribution of the D-layer in Greek clausal subjects is not governed by syntactic considerations, contrary to previous claims in the literature; rather, it is determined on the basis of semantics and pragmatics.

- We propose that the D-layer in clausal subjects introduces a presupposition that the proposition it modifies is consistent with the beliefs of the speaker. We then show that the proposed semantics along with additional pragmatic considerations accounts for its context-dependent distribution in Greek.

2 Empirical picture

- In Greek, clausal subjects can be headed by the neuter definite article to.

- In previous literature, the article has been to always be obligatorily present on Greek clausal subjects (Kastner, 2015; Roussou, 1994).

(1) [To oti katerfse to ktirio] fenete na ine apli. 
DET COMP collapsed DET building appear.3SG.PRES subj be simple fini. 
rumor
‘That the building collapsed seems to be just a rumor.’ (Kastner, 2015)

(2) [To oti perase tis eksetasis] me efharistise. 
DET COMP passed DET exams me happy.PASS.3SG
‘That s/he succeeded in the exams made me happy.’ (Roussou, 1994)

- Extending the range of contexts showed that in many cases, speakers find the presence of a D-layer in this position optional, as illustrated in (3).

(3) Context: There has been a murder, and we’re trying to find the killer.

[(To) oti o Christos ine o dholofonos] ine pithano.
DET COMP the Christos be.3SG the killer be.PRS probable
‘That Christos is the killer is probable.’

- While in most cases we found the use of to to be optional, we also found that in certain cases speakers can show a preference for using or omitting the D-layer depending on the context.

- In particular, the D-layer is preferred when the main predicate entails that the proposition \( p \) expressed by the clausal subject is true (i.e., \( p \) is in the set of the speaker’s beliefs), as in (4). The check-mark in this example indicates preference.
There has been a murder, and the forensic pathologist found that the victim had been poisoned.

'That the victim died of poisoning is a given.'

The D-layer is also preferred in subjects of factive verbs that presuppose the truth of their argument.

On the other hand, the D-layer is strongly dispreferred when the main predicate entails that \( p \) is false (i.e., \( p \) is inconsistent with the speaker’s beliefs), like in (6).

Instances of logical reasoning, such as when we state that one sentence entails or presupposes another, could be good candidates for this baseline.

Again, we see that the acceptability of the D-layer correlates with its compatibility with the beliefs of the speaker, even when the main predicate makes no claims about it.

So far, we have seen that the D-layer is never necessary, but can only be added when the proposition expressed by the clausal subject is compatible with the beliefs of the speaker.
Standard presupposition tests (von Fintel, 2004) indicate that this semantics arises as a presupposition that is contributed by the D-layer.

(8) Context: Speaker (a.) knows the Earth is round, but speaker (b.) believes it is flat.

a. [To oti i ghi ine strogili] ine to thema sto det comp det Earth is round be.3sg det subject in-the mathima fisikis simera.
   ‘That the earth is round is the topic in physics class today.’

b. E. miso lepto, dhen iksera oti i ghi ine strogili! hey half minute neg know.pst comp det Earth be.3sg round
   ‘Hey, wait a minute, I didn’t know the Earth is round!’

(9) An [(?to) oti forao jialia] itan alithia, dhen tha icha kani if det comp wear glasses was true neg will have done etisi ghi pilotos.
   application for pilot.
   ‘If it was true that I wear glasses, I wouldn’t have applied to be a pilot.’

2.1 Embedded contexts

- What about embedded contexts where there is an attitude holder that is different than the speaker? Does the speaker’s or attitude holder’s set of beliefs affect the presence of the D-layer in those cases?

- To test this, we need examples with a mismatch between the beliefs of the speaker and those of the attitude holder.

- Let’s see what happens if the speaker is not licensed to use the D-layer, but the attitude holder is:

(10) Context: Yanis is a member of the flat earth society, while the speaker is a respected physicist.

(Aftos o vlakas) o Yianis ipe oti [(?to) oti i ghi ine epipedhi] ine mia vaski archi tis epistimis.
   flat is a fundamental principle of science.
   ‘(That idiot) Yanis said that [that the earth is flat] is a fundamental principle of science.’

- This example shows that it’s the beliefs of the attitude holder and not those of the speaker that determine whether the D-layer can be used.

- If we now reverse the scenarios and the speaker, but not the attitude holder, is licensed to use the D-layer, we get the following judgment:

(11) Context: The speaker is a member of the flat earth society, and Yanis is a prominent physicist opposing the society.

   (Aftos o vlakas) o Yianis ipe oti [(?to) oti i ghi ipe] det idiot det Yianis say.pst comp det comp det earth
   ine epipedhi] ine psemata.
   ‘(That idiot) Yanis said that [that the earth is flat] is wrong.’

- The control case is one where both the speaker and the attitude holder believe the clausal subject to be false:

(12) Context: Both the speaker and Yanis are prominent physicists.

   O Yianis ipe oti [(?to) oti i ghi ine epipedhi] ine det Yianis say.pst comp det comp det earth is flat is
   apodedhigmena lathos.
   proven wrong.
   ‘Yanis said that [that the earth is flat] has been proven to be wrong.’

- We conclude that the D-layer presupposes the proposition expressed by the clausal subject to be compatible with the attitude holder’s beliefs.

2.2 Inadequacy of previous proposals

- Notably, this complex distribution of the D-layer is not captured under purely syntactic approaches.

\[1\] Notice, that at the absence of the determiner, a small intonational pause may be needed between the two ‘oti’ to avoid confusion.
• Hartman (2012) and Kastner (2015) propose that sentential subjects oblig-
atory bear the D-layer to be able to move to Spec,TP, as only DPs can move
to the subject position.

• However, this approach does not account for the fact that the presence of
the D-layer is never obligatory and that its distribution could be affected
by the semantics of the predicate or the state of the belief set of the attitude
holder.

• Kastner (2015) claims that the presence of the D-layer in clauses could also
correlate with the presence of a factive presupposition.

• This does not straightforwardly extend to the Greek data either. Granted,
indeed, when the proposition expressed by the clausal subject is clearly
false, the D-layer cannot be used at all.

• But, the D-layer does not presuppose that the proposition expressed by the
clausal subject is true; it is sufficient that it is possibly true for the D-layer
to be licensed.

(13) Context: There has been a murder, and we’re trying to find the killer.

[(To) oti o Christos ine o dholofonos] ine pithano.

‘That Christos is the killer is probable.’

• The D-layer also does not correlate with the proposition being anaphoric
to a previously uttered sentence, as we see examples of it is licensed in out
of the blue scenarios like (13).

3 Proposal

• We propose that the distribution of the D-layer in clausal subjects is deter-
mined by the semantics of the D-layer instead of the syntactic properties
of the clausal subjects.

• The D-layer makes use of the doxastic set $\text{dox}$ of the speaker $x$, repre-
senting the set of their beliefs and takes the proposition $p$ expressed by the
clausal subject as its argument. It then introduces a presupposition that
$p$ is not contradicting with any other proposition in $\text{dox}$. Thus, for every
proposition in $\text{dox}$, there is a world where it is true and $p$ is too.

\[ \text{let} = \lambda p_{st}. \lambda x : \forall q_{st} \in \text{dox}(x) \exists w \ [ q(w) \land p(w) = 1]. p \]

• Note that this presupposition is rather weak. One may be tempted to pro-
pose the following entry, where the presupposition is that $p$ is part of the
set of beliefs of the speaker:

\[ \text{let} = \lambda p_{st}. \lambda x : p_{st} \in \text{dox}(x). p \]

• However, (15) would make the wrong prediction for predicates like “prob-
able”, as in (13).

• If the speaker already believed $p$, then they would not simply state $p$
is probable, since this would give rise to an implicature that $p$ could be false.
Thus, (15) would wrongly predict that a D-layer is impossible in (13).

• The compatibility of the D-layer with predicates implying that the speaker
does not have beliefs about the truth value of $p$ thus leads us to propose
(14).

• The denotation in (14) rules out the presence of the D-layer in examples
like (16), where $p$ is incompatible with the speaker’s beliefs. The pre-
supposition is not met, given that the predicate ‘impossible’ entails the
proposition to be false.

(16) Context: Policemen are trying to bring the victim back to life with CPR.
A doctor who already examined the victim and knows they are dead,
says:

[(??To) oti to thima tha ksanarchisi na anapnei] ine pithano.

‘That the victim will start breathing again is impossible.’
3.1 Predicting optionality

- This semantics alone, however, does not predict the difference between the cases where the D-layer is fully optional, and the ones where it is actually preferred.

- We propose that in the contexts where the use of the D-layer is not ruled out due to the semantics of the matrix predicate, its distribution is governed by the Maximize Presupposition! principle (Heim, 1991).

- Structures with the D-layer are DPs, as opposed to CPs (see section 4 below for the evidence of the structural status of sentential subjects). The non-D-layered structure is simpler and does not compete with the D-layered one (Katzir, 2007).

- The speaker may choose a more complicated structure to satisfy Maximize Presupposition! or they may choose to minimize the structure instead.

3.2 Predicting preference

- While (Katzir, 2007) provides us with an account of why the D-layer is optional in some cases, we still need to explain why in in examples like (17) and (18) the presence of the D-layer is preferred.

(17) Context: There has been a murder, and the forensic pathologist found that the victim had been poisoned.

[(✓ To) oti to thima pethane apo dhilitiriasi] ine det comp the victim die.pst.3sg from poisoning be.prs dhedomeno.

given

‘That the victim died of poisoning is a given.’

(18) [(✓ To) oti to ktirio katerfse] anakalithike apo det comp det building collapse.3sg.pst discover.3sg.pst from dio dimosiografus.

two journalists

‘It was discovered by two journalists that the building collapsed.'

- We argue that in those cases, the presupposition of the D-layer will always be met due to the semantics of the matrix predicates. Thus, the speakers are expected to show a preference for the presence of to in these contexts.

- We follow Lauer (2016) in assuming that MP is not a normative rule, but rather a ‘linguistic preference’ between forms that speakers have. This allows us to explain why the presence of the D-layer is never obligatory in the contexts where its presupposition is met, but rather only preferred.

- In examples like (13), however, the matrix predicate does not encode that the presupposition of the D-layer is necessarily met. Thus, whether the presupposition of the D-layer is met or not is not encoded in the semantics of the sentence itself.

- However, the speaker may choose to enforce this presupposition pragmatically; this predicts that the presence of the D-layer will dependent solely on the conversational intents of the speaker.

(19) Context: We are in a courtroom and the evidence so far neither proves nor disproves that the defendant is guilty.

a. Defendant’s lawyer:

[(?? To) oti o katighorumenos ine enochos] ine mia det comp det defendant be.prs guilty be.prs a pithanotita. Ala tha sas apodikso tin athootita tu. possibility. But will you.dat prove.prs det innocence his.dat

‘That the defendant is guilty is a possibility. But I will prove to you his innocence.’

b. Prosecution’s lawyer:

[(✓ To) oti o katighorumenos ine enochos] ine mia det comp det defendant be.prs guilty be.prs a pithanotita ghia tin ora. Tha sas apodikso oti ine possibility for the time. will you.dat prove.prs comp be.prs pragmatikotita.

reality

‘That the defendant is guilty is a possibility for the time being. I will prove to you that it’s the reality.’

c. Judge:
As previously mentioned, it has been argued that the D-layer is necessary in all sentential subject (Hartman, 2012; Kastner, 2015; Roussou, 1994; Roussou & Tsimpli, 1994), the idea being that it needs to be a DP.

With respect to Greek sentential subjects, there are three theoretical possibilities about their categorical status:

- **Option 1**: All sentential subjects are always DPs for syntactic reasons. When there is no overt D-layer, there is actually a covert D present in the structure.

- **Option 2**: Sentential subject in Greek can be both DPs and CPs. Whenever a D-layer is pronounced we have a DP structure and whenever it is not we have a CP one.

- **Option 3**: Sentential subject in Greek do not need to be DPs, and in fact are always CPs. The D-layer has a purely semantic function and does not change the syntactic category of the clausal subject.

Tests on the categorical status of sentential subjects do not provide us with much clarity, unfortunately.

First, both types of sentential subject are islands for extraction; this is, however, expected given the CED constraint.

(20) [(To) oti o katighorumenos ine enochos] ine mia det comp det defendant be.prs guilty be.prs a pithanotita. As akusume ta epichirimata sas. possibility. Let hear subj arguments yours ‘That the defendant is guilty is a possibility. Let’s hear your arguments.’

4 A note on syntax

- Elliott (2020) shows ‘bare’ CPs and CPs with a D-layer are interpreted differently under the verb ‘explain’.

(22) a. Angela explained [dp the fact that Boris resigned]. **explanandum**
   b. Angela explained [cp that Boris resigned]. **explanans**

- The embedded DP in (22a) is interpreted as the thing that an Angela gave an explanation for, whereas in (22b) the embedded CP is interpreted as being Angela’s explanation.

- We see that in Greek, in a context that forces the explanandum reading, the presence of to is preferred.

(23) The prime-minister resigned and everyone is wondering why. Angela, his right-hand, finally explained to them why he did.

   I Angela eksighise [??(to) oti o prothiporghos det Angela explain.pst det comp det prime-minister paretithike] ke epita oli katalavan ghiati to submit-resignation.prs and after everyone understand.pst why it ekane. do.pst

   ‘Angela explained that the prime minister resigned and afterwards everyone understood why he did.’

(24) The prime-minister resigned and everyone is wondering why. A government official finally explained to them why he did.

   [??(To) oti o prothiporghos paretithike] eksighithike apo tin kivernisi ke epita oli katalavan ghiati to ekane. det comp det prime-minister resigned.pas was-explained by government and after everyone understand.pst why it do.pst

   ‘That the prime minister resigned was explained by the government and afterwards everyone understood why he did it.’

- On the other hand, in a context that forces the explanans reading, the presence of to is dis-preferred.
The prime-minister hasn’t come to the office for a few days and people are wondering why. Angela, his right-hand, said that he resigned but didn’t say why.

Angela explained that the prime minister resigned but nobody knows why.

I
DET
Angela
eksighise
[(??to) oti o prothipurghos
DET COMP DET prime-minister
paretithike],
ala kanis dhen kseri ghiati.
submit-resignation.PRS but nobody NEG know why

‘Angela explained that the prime minister resigned but nobody knows why.’

The prime-minister hasn’t come to the office for a few days and people are wondering why. A government official said that he resigned but didn’t say why.

[(??T o) oti o prothipurghos
DET COMP DET prime-minister
paretithike
eksighithike
explain.PST.PASS
apo by
tin
DET kivernisi,
government
ala but
kanis
nobody
dhen
NEG
know
ghiati.
why

‘That the prime minister resigned was explained by the government but nobody knows why.’

One other context where we see the D-layer appear on CPs are sentences where they act as complement of prepositions.

In English, clausal complement CPs cannot appear in the complement of a preposition. This constraint is referred to as the *[P CP] constraint.

This assumption accounts for *(the fact) that these nouns behave differently.

Similarly, Greek clausal complement CPs cannot appear in the complement of the preposition without the D-layer, so the *[P CP] holds.

Unlike in sentential subject, the presence of the D-layer in this context is always obligatory.

Maria thimose ghia *(to) oti dhen plirothike
tris
DET Maria mad.PST for DET that NEG paid.PASSIVE.PST
three
mines.
months.
‘Maria was mad for not being paid for three months.’

However, in PP phrases the D-layer on clauses does not have the associated semantics described in the previous section.

Maria is the best student in class and is very competitive. While studying with her classmates for an exam, she told them the earth is flat so that they get the answer wrong (even though she knows the earth is round).

Maria talked about the earth being flat, even though she knew it was a lie.

I don’t need to care about the earth being flat, because it’s not!

Two possible conclusions can be drawn:

1. There are two D-layers, a purely syntactic one with no semantics, and another one that has the associated semantics.2

What is more, if there are two kinds of D-layers, there is the possibility that only the purely syntactic D-layer turns CPs into DPs, while the D-layer that contributes the presupposition we described does not change the category of the CP.
2. These are cases where the presupposition contributed by the D-layer is cancelled.

- We leave exploring these options open for future research.

5 Conclusion and future research

- We focused on the optionality of the D-layer in Greek clausal subjects, observing that it is always optional and sometimes strongly dispreferred. We argued that its use correlates with a specific semantics, which we cashed out in terms of a presupposition that the proposition expressed by the clausal subject does not contradict the beliefs of the attitude holder.

- In future research, we would like to give a unified account of the use of the D-layer in indicative and subjunctive clausal subjects. In fact, the use the D-layer is more widespread in the latter, being often preferred:

[(✓) na katarefsi to ktirio] tha itan meguali tragodia.
DET subj collapse.3SG DET building will be.PST big tragedy
‘The building collapsing would be a big tragedy.’

- This provides further evidence against a factive presupposition, since the collapse of the building is hypothetical; so it is not possible to claim that the proposition described by the clause happened in the actual world.

- Yet, it is also unclear if our presupposition holds for subjunctive clausal subjects, since the D-layer can be used with events contradicting the beliefs of the speaker:

[(To) na erthi o Yanis] ine adhinaton, ghiati
DET subj-comp come.3SG DET Yanis be.PRS impossible, because
dhen zi pia.
NEG live.PRS anymore
‘Yanis coming is impossible, since he’s not alive anymore.’

- The D-layer is also preferred in pure cases of logical reasoning, where the subjunctive clausal subject does not interact with a main predicate like possible or impossible:

[(To) na sosi o Mario tin prigkipisa] proipotheti
DET subj-comp save.3SG DET Mario DET princess presuppose.PRS
oti kerdhise se olus tus ghirus.
COMP win.PST in all DET rounds
‘Mario saving the princess presupposes he won all the rounds.’

[(To) na pari kanis piitchio] sineagapete poli ke skliiri
DET subj-comp take.3SG one degree entail.PRS much and hard prospathia.
work
‘Getting a degree entails a lot of hard work.’

- Thus, we need to explain the asymmetry in the distribution of the D-layer between indicative and subjunctive clausal subjects.

- Another aspect of the empirical picture that needs to be accounted for is that there is a difference between pre- and post-verbal clausal subjects with respect to the acceptability and/or preference of the D-layer in indicative clausal subjects. Namely, the D-layer is dispreferred with post-verbal clausal subjects:

Ine dhedhomeno [(??to) oti i ghi ine strogili].
be.3SG given DET COMP DET earth be.3SG round
‘It is a given that the earth is round.’

- Another, related question, that may shed light to this issue is what happens with CPs in base position. The D-layer is in general infelicitous in base position with non-factive verbs, even if they can take DPs as complements:

I Maria ipe (*to) oti tha erthi.
DET Maria say.3SG.PST DET will come
‘Maria said she will come.’

I Maria ipe to piima.
DET Maria say.3SG.PST DET poem
‘Maria said the poem.’

- Yet, it is felicitous (and as always optional) with factive verbs that also take DPs as complements:
(39) I Maria ektrimise (to) oti ime evgheniki.
DET Maria appreciate.3SG.PST DET COMP be.PRS polite.
‘Maria appreciated that I am polite.’

(40) I Maria ektrimise tin evghenia mu.
DET Maria appreciate.3SG.PST DET politeness mine.
‘Maria appreciated my politeness.’

• This is reminiscent of the pattern in clausal subjects, but seems even stronger: the D-layer here seems to only be available with a presupposition that the proposition expressed by the CP is true.

References


