A DP/NP-Shell for Subject CPs[*,1]

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1. Do Subject CPs Need Case?

Subject positions are generally filled by nominal phrases, which get nominative case from the functional T and are attracted to Spec,TP position by the EPP ([uD*]) on T. However, CPs, which have been claimed to be case-resistant (Stowell 1981), also seem to occur in subject positions.

The subject CP[2] in (1a) seems to need to check the subject case on T, being in the subject position. Even in the raising construction, subject CPs can occur instead of subject DPs, as in (1b).

(1) a. That he is a doctor surprised everyone.
b. That he will be here by 5 o'clock is very likely.

This case-related question of whether so-called subject CPs should get Case or not has long been debated in the literature (Lees 1960, Rosenbaum 1967, Koster 1978, Bošković 1995, and Adger 2002, among others).

1.1. Bošković (1995)

Boškovic (1995) treats CPs in the object position as Caseless, and posits two different lexical entries for a verb like *believe*.

(2) a. I believe$_1$ it. (*believe$_1$*: [uCase:acc])
b. I believe$_2$ that he is a doctor. (*believe$_2$*: no Case feature)

As for subject CPs, he argues that they need Case, although CPs can appear in Caseless positions. As proposition-taking verbs like *believe* exist as two different

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[1] Refer to Han (2005) for a nominal-shell analysis for non-subject CPs.

[2] The term *subject CPs* is used here, although some scholars do not analyze these CPs as structural subjects.

lexical items in the lexicon, complementizers like *that* also exist as two different lexical entries in the lexicon. In (3a), the complementizer *that* heading the CP in the object position is taken from the lexicon without Case, and the verb *believe* also does not carry an accusative case to assign. In contrast, the complementizer *that* in (3b), heading the subject CP, comes with a nominative case that should Agree with T in Case.

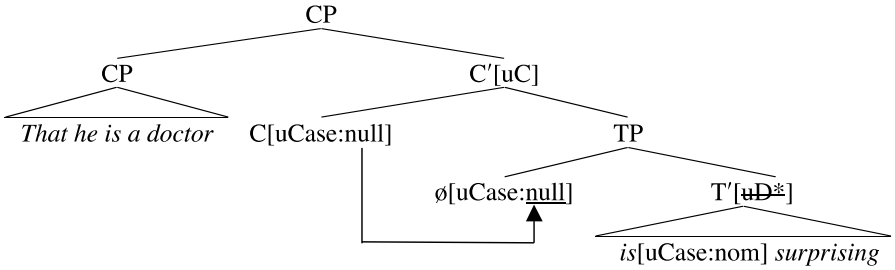
(3) a. I believe$_2$ that$_1$ he is a doctor. (*that$_1$*: no Case feature)
b. That$_2$ he is a doctor surprised me. (*that$_2$*: [uCase:nom])

However, this analysis seems to have some problems. First, it is unclear whether or not this analysis can be extended to complementizers other than *that*. In the paper, no complementizers other than *that* are discussed, and the complementizer *that* is claimed to be nominal in nature, due to its historical relation to the demonstrative *that* (citing Webelhuth 1989). So, it is questionable how this analysis can be extended to other complementizers, such as *for, if,* $\emptyset_{that}$, etc. Secondly, Chomsky (1995) requires that every sentence must have a subject, by a strong D-feature on the functional category T (EPP). If Bošković is correct, the content of the EPP must be modified, so that it can be checked by CPs as well.[3]

1.2. Adger (2002)

Adger (2002), updating Koster's (1978) analysis, argues that subject CPs are not real structural subjects. Instead of assigning Case to subject CPs, he proposes a null DP, a real structural subject checking the EPP feature. Under this analysis, subject CPs are base-generated in Spec,CP and selected by a null C, as in (4).

(4) That he is a doctor is surprising.



[3] There is a different definition of EPP, which states that "the subject position must be filled." Under this definition, the EPP may be checked by PPs or CPs as well as DPs. However, if the grammaticality of a sentence with a locative inversion like *Out of the closet came a noise* is explained in this way, it gets complicated why *At the playground met I him* is ungrammatical. Davies and Dubinsky (1998) argue that there can be a DP-shell even for PPs.

This analysis has some advantages. The EPP feature can remain [uD*] under this analysis. Furthermore, the seemingly different distributional behaviors of subject CPs and subject DPs can be accounted for. Subject CPs do not appear to undergo Subject Auxiliary Inversion (SAI), as in (5). If subject CPs are in [Spec,CP] rather than the subject position, the impossibility of SAI shown in (5) can be explained easily. Secondly, while it is clearly possible to embed a subject DP in a subject CP, it is not possible to embed a subject CP in another subject CP, as in (6). Since the embedded subject CP must be selected by the following null C, not by the preceding overt complementizer *that*, the ungrammaticality of (6b) is explained away under this analysis.

(5) a. Did [she] upset Jason?
b. *Did [that Medea killed her children] upset Jason?
(Adger 2002)

(6) a. That [the answer] is obvious upset Hermes.
b. *That [that the world is round] is unknown bothered Athena.
(Adger 2002)

However, there are also some problems with this analysis. First, it is questionable how theta-role assignment works. The semantic relationship between a subject CP in [Spec,CP] and the structural null DP subject is not explained. Secondly, McCloskey (1991) shows that subject CPs agree with a verb in number, as shown in (7). If subject CPs were in [Spec,CP], the plural number agreement on a verb could not be accounted for.

(7) [$_{CP}$ [That the march should go ahead] and [that it should be cancelled]] have been argued by the same people at different times.
(McCloskey 1991)

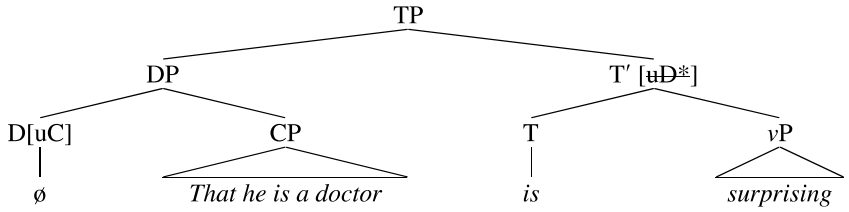
Third, there is a technical problem with what happens to the nominative case on T. Since the null D gets its Case from the special C, the Case-feature on T remains unchecked, and the derivation should crash.

2. DP/NP-Shell for Subject CPs

2.1. Advantages

The NP-over-CP analysis of sentential subjects has been around since the 1960's (e.g. Less 1960, Rosenbaum 1967). In the same vein, Davies and Dubinsky (1998) propose a DP-shell for non-NP subjects. Their structure for subject CPs is given in (8).

(8) [$_{DP}$ D [$_{CP}$ That he is a doctor]] is surprising.



This analysis can solve all the problems raised in the previous section. The idea that EPP is [uD*] can be maintained, and theta-role assignment works in the usual way. Since subject CPs are actually DPs, agreement with a verb can be accounted for as in (9).

(9) [$_{DP}$ [$_{DP}$ D That the march should go ahead] and [$_{DP}$ D that it should be cancelled]] have been argued by the same people at different times.
(McCloskey 1991)

Furthermore, Davies and Dubinsky (1998) point out that subject CPs can license the emphatic reflexive *itself*, as in (10), while the same CP in a non-subject position cannot. This further supports that subject CPs are DPs.

(10) a. That Leslie arrived drunk itself put Kelly in a foul mood.
b. Kelly was angry that Leslie arrived drunk (*itself).
(Davies and Dubinsky 1998)

Under the assumption that subject CPs can receive the same syntactic structure cross-linguistically, this analysis has another advantage. In Korean, a case-marker, which attaches to NPs, also attaches to subject CPs as in (11). If we accept the idea that subject CPs are topic phrases and there is a null subject DP (following Adger 2002), the presence of the subject case-marker following subject CPs cannot be accounted for, since case-markers cannot appear with null elements (i.e. null elements cannot host pronounced case-markers), as seen in (12).

(11) a. [$_{NP}$ [$_{CP}$ ku-ka apu- ta- nun kes]- **i**] sasil- i- ani- ta.
he-NOM sick- COMP- MOD kes- NOM true- be-not-COMP
'That he is sick is not true.'
b. [$_{NP}$ [$_{CP}$ muess- ul mek- ul- kka]- **ka**] munje- i- ta.
what- ACC eat- FUT- COMP- NOM problem- be- COMP
'What to eat is the problem.'

(12) a. sasil- i- ta.
true- be- COMP
'(Something) is true.'
b. * -i sasil- i- ta.
-NOM true- be- COMP
'(Something) is true.'

2.2. Conceivable Problems

In support of the claim that subject CPs are not real structural subjects, Adger (2002) claims that subject CPs can neither undergo SAI nor be embedded within another subject CP; in these respects, subject CPs differ from subject DPs. However, the example in (13b) shows that SAI for subject CPs becomes quite acceptable just by adding negation. Then, it becomes unclear whether SAI is really incompatible with subject CPs, or if the problem comes from the difficulty in parsing such a complex sentence. Furthermore, the fact that interrogative subject CPs can undergo SAI, as in (13c), shows that it is not the case that SAI is completely impossible for subject CPs. Actually, in some dialects of English, (13a) is a perfectly acceptable sentence, and SAI for declarative subject CPs is a productive process generating a question. Thus, Adger's claim that the impossibility of SAI for subject CPs is evidence that subject CPs are not real subjects does not seem to hold. On the contrary, if subject CPs are topic phrases, SAI for declarative subject CPs in some dialects and interrogative CPs cannot be accounted for.

(13) a. *Is [$_{CP}$ that he is a doctor] surprising?
b. Isn't [$_{CP}$ that he is a doctor] surprising?
c. Was [$_{CP}$ who was invited] ever decided?

According to Adger, the contrast shown in (14a) and (14b) comes from the structural difference between CPs and DPs. However, (14c) shows that embedding a subject DP in a subject CP also turns out to be quite unacceptable when the DP is complex. Then, it becomes really hard to decide whether the unacceptability of the sentence (14b) really comes from the structural difference between CPs and DPs or from a parsing problem.

(14) a. [$_{CP}$ That [$_{DP}$ the fact] is obvious] surprised me.
b. *[$_{CP}$ That [$_{CP}$ that the world is round] is obvious] surprised me.
c. ??[$_{CP}$ That [$_{DP}$ the fact that the world is round] is obvious] surprised me.

If we account for the contrasts in (5) and (6) as structural differences between CPs and DPs, it gets hard to explain the (un)grammaticality of (13b,c) and (14c). Ross (1967) argues that such seemingly distributional differences between subject CPs and subject DPs come from a general parsing problem. His Internal S Condi-

tion prohibits CPs from being internal to (i.e., not at the edge of) phrases of which they are immediate constituents.

3. Cross-Linguistic Evidence for the DP/NP-Shell for Subject CPs

3.1. Modern Greek: DP-Shell

There is some cross-linguistic evidence for the DP/NP-shell analysis for subject CPs. Roussou (1991) shows that the overt determiner *to* 'the.NEUT.SG.NOM/ACC' occurs with both declarative and interrogative subject CPs in Modern Greek, as in (15) and (16). Subject CPs without the determiner result in an ungrammatical sentence in Modern Greek.

(15) a. [$_{DP}$ **To** [$_{CP}$ oti efige]] m' enoxlise.
the that he.left me bothered.
'That he left bothered me.'

b. *[$_{CP}$ Oti efige] m' enoxlise.
that he.left me bothered.
'That he left bothered me.'

(16) a. [$_{DP}$ **To** [$_{CP}$ pos efige]] ine to provlima.
the how he.left is the problem.
'How he left is the problem.'

b. *[$_{CP}$ Pos efige] ine to provlima.
how he.left is the problem.
'How he left is the problem.'

3.2. Korean: NP-Shell

Considering the fact that case-markers attach to NPs, we can treat both declarative and interrogative CPs in (11) (repeated in (17)) as nominalized CPs. Furthermore, the examples in (18) show that declarative subject CPs must be overtly nominalized using *kes*, which is a morphologically dependent noun. Declarative subject CPs cannot generate a grammatical sentence without being nominalized using *kes*, as in (18b).

(17) a. [$_{NP}$ [$_{CP}$ ku-ka apu- ta- nun kes]- **i**] sasil-i- ani- ta.
he-NOM sick- COMP- MOD kes- NOM true- be-not- COMP
'That he is sick is not true.'

b. [$_{NP}$ [$_{CP}$ muess-ul mek-ul- kka]- **ka**] munje- i- ta.
what- ACC eat- FUT- COMP- NOM problem- be- COMP
'What to eat is the problem.'

(18) a. [$_{NP}$ [$_{CP}$ ku-ka apu- ta- nun **kes**]- i] sasil- i- ani- ta.
he-NOM sick- COMP- MOD kes- NOM true- be- no- COMP
'[$_{DP}$ [$_{CP}$ That he is sick]] is not true.'

b. *[$_{CP}$ ku- ka apu- ta] (-ka) sasil- i- ani- ta..
he- NOM sick- COMP-NOM true- be- no- COMP
'[$_{CP}$ That he is sick] is not true.'

In addition to the overtly nominalized CPs, Chang (1996) actually classifies Korean interrogative CPs with case-markers and non-overtly declarative CPs in the object positions as Noun Clauses.

4. DP/NP-Shell as a Sentential Nominalizer

What is the noun *kes*, which is obligatorily needed for declarative subject CPs in Korean? *Kes* is a morphologically dependent noun, and it occurs in various contexts like the following:

(19) a. Demonstrative pronouns:
i-kes 'this thing', ku-kes 'that thing', ce-kes 'that thing (over there)', enu-kes 'which thing'

b. Relative clauses:
[$_{CP}$ ku- ka ssu- n] {chayk/kes}- i chulpandoeessta.
he- NOM write- MOD book/ kes- NOM was.published
'{The book/what} he had written was published.'

c. Internally-headed relative clauses:
[$_{CP}$ ku- ka chayk- ul ssu- ess- ta- nun] kes- i
he- NOM book- ACC write- PAST- COMP- MOD kes- NOM
chulpandoeessta.
was.published
'The book he had written was published.'

d. Nominalized subject CPs:
[$_{CP}$ ku-ka chayk-ul ssu- ess- ta- nun] kes-i sasiliessta.
he- NOM book- ACC write-PAST-COMP-MOD kes-NOM was.true
'That he had written a book was true.'

In (19a), *kes* with a demonstrative determiner makes a demonstrative pronoun. It also occurs as an interrogative pronoun heading a relative clause in (19b), and this structure corresponds to an English headless relative clause. In the IHRC construction shown in (19c), *kes* refers back to the object in the preceding CP. However, even though same string of words *ku-ka chayk-ul ssu-ess-ta-nun kes-i* appears both in (19c) and (19d), *kes* in (19d) does not refer to anything. In this case, *kes* functions as a sentential nominalizer rather than as a pronoun.

The idea of nominalizing a CP using a nominal-shell is independently motivated for constructions other than subject CPs. Caponigro (2000) shows that a definite determiner *el* occurs with the complementizer *que* in Spanish, and headless relative clauses optionally occur with definite determiners, such as *ki* in Wolof, as in (20).

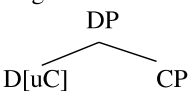
(20) a. Spanish
[$_{DP}$ [$_{D}$ El] [$_{CP}$ que no trabaja]] no come.
the:MASC:SG that not works not eats.
'The one who does not work does not eat.'

b. Wolof
door- naa [$_{DP}$ [$_{CP}$ ki nga begg] [$_{D}$ (ki)]].
hit- 1SG REL 2SG.SUBJ love the
'I hit who you love.'

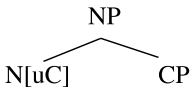
Caponigro claims that an overt D can combine with a CP to form a DP, especially in argument position, in many languages; see Williamson (1987) for some constructions in Lakhota, Zaring (1992) for *ce que* constructions in French, Roussou (1994) for Greek, Donati (1995) for factive clauses in Spanish, Adger and Quer (2001) for Basque, and Kayne (1994) and Bianchi (1995) for headed RCs.

On the basis of examinations of various syntactic, semantic, and crosslinguistic advantages (i.e. case-checking, CP subject number agreement, semantic role assignment, and the presence of Korean case-markers), it seems quite plausible to posit such a DP-shell for subject CPs in English. Once we posit a null D which corresponds to the Korean sentential nominalizing NP-shell *kes*, uniformity can be established between Korean and English subject CPs (modulo the fact that Korean lacks the DP extended projection in general).

(21) a. English[4]



b. Korean



Moreover, Korean subject CPs with an NP-shell and English subject CPs with a DP-shell share semantic presuppositionality. Lee (2004) points out that Korean head nouns of non-canonical RCs, which include *kes*-nominalization structures of subject CPs, do not appear alone in out-of-the-blue contexts, which means that Korean subject CPs with the NP-shell *kes* are presuppositional. This is consistent with Kiparsky and Kiparsky's (1970) argument that subject CPs in English are presuppositional. Considering that only definite DPs license emphatic reflexives, as shown in (22a-c), the fact that subject CPs have the ability to license emphatic reflexives (see (10)) confirms that they are definite, and therefore presuppositional.

(22) a. {The/*A} professor herself offered the student sage advice.

[4] Rosenbaum (1976), removing the exocentricity from Lees' (1960) analysis, proposed a similar structure for subject CPs. He included a pronominal head in the structure and treated a CP as its complement.

b. The zookeeper forced {the/*a} monkey itself to clean up the cage.
c. I gave my x-rays to {the/*a} doctor herself.
(Davies and Dubinsky 1998)

5. A DP/NP-Shell for Other CPs

Besides subject CPs, there are some other CPs which should be analyzed as DPs/NPs. First, Potts (2002) shows that *as*-clause gaps are CP gaps, whereas *which*-gaps are DP gaps, as shown in (23). Then, the CP *the earth is round* in (23b) should be analyzed as DPs.

(23) a. [$_{CP}$ The earth is round], as we are well aware (*of).
b. [$_{DP}$ The earth is round], which we are well aware *(of).
(Potts 2002)

The fact that interrogative CPs can be selected by a preposition, which is transitive, shows that they should be analyzed as DPs, which get Case.

(24) a. I wonder about [$_{DP}$ where I should go].
b. I wonder about [$_{DP}$ whether I should go].

Object CPs of some verbs also need a DP-shell. Potts (2002) points out that verbs which allow both DP and CP objects (e.g. *know*) can license both *as*-clause gaps and *which*-gaps, which are CP gaps and DP gaps, respectively, as in (25). In (26), verbs that do not allow DP objects (e.g. *boast*) cannot license *which*-gaps. Then, the verb *know* in (25b) must take a DP complement, and the CP *Americans should get cheap oil* must be analyzed as a DP.

(25) a. Americans should get cheap oil, as the whole world knows *t*.
b. Americans should get cheap oil, which the whole world knows *t*.

(26) a. The result was fantastic, as Albert boasted/complained *t*.
b. *The result was fantastic, which Albert boasted/complained *t*.

Another advantage of the DP/NP-shell analysis is that case-checking problems related to non-subject nominalized CPs in this section can receive a uniform analysis with subject CPs. The null D (subcategorizing for a CP) can discharge the Case on T, V, and P, as in (27).

(27) a. [$_{DP}$ D That he is a doctor] is surprising.
b. I know [$_{DP}$ D that he is a doctor].
c. I wonder about [$_{DP}$ D whether I should go].

If we assume that subject CPs are topic phrases (following Adger), a totally different account should be given to non-subject Cased CPs.

6. Conclusion

A DP/NP-shell over a subject CP can solve all the problems raised by subject CPs. By positing a covert DP-shell for English, syntactic uniformity is established between subject CPs in English and the overt DP/NP-shells of other languages like Modern Greek or Korean. The fact that the semantic presuppositionality of English subject CPs is also shared by overtly nominalized subject CPs in Korean further supports the uniform crosslinguistic analysis for subject CPs. Moreover, it appears to be possible to extend this analysis to some non-subject CPs.

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