Sentential Subjects: Topics or Real Subjects?

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1. Introduction

The status of sentential subjects in English has been debated over the years. Examples of sentential subjects are provided in the following examples.

(1) a. It disappointed us that Mary left early.

    b. That Mary left early disappointed us.

(2) a. That the Giants lost the World Series really sucks.

    b. That the Giants lost the World series surprised me.

    c. That the Giants would lose was expected (by most columnists).
      (Alrenga, 2005:177)

(3) For the Giants to lose the World Series would be terrible.
    (Alrenga, 2005:177)

(4) Whether we do it now or later is immaterial.
    (Huddleston, 2002b:977)

(5) What a blunder it was didn't emerge till later.
    (Huddleston, 2002b:992)

These sentential subjects are subjects that consist of a finite clause and this finite clause appears to occupy the subject position. That is, at first glance, a sentence with a sentential subject appears to have the following syntactic structure, where I assume that the canonical subject position in English is SpecTP (cf. McCloskey (1997)).

(6) $[_{CP}$ C $[_{TP}$ $[_{CP}$ $[_C$ that $[_{TP}$ $[_{NP}$ Mary] $[_{T'}$ T $[_{vP}$ left early]]]]] $[_{T'}$ T $[_{vP}$ disappointed us]]]]

In this simplified tree structure it is not indicated whether the sentential subject moves into the subject position or whether it is base-generated there. The question I want to discuss in this paper is what the syntactic position of sentential subjects is, and specifically whether they are topics or real subjects.

The paper is organized as follows. Section 2 discusses the distribution of sentential subjects and topics. In section 3, other evidence that may bear on the syntactic position of sentential subjects is discussed. Evidence that sentential subjects only occur in main clause environments is provided in section 4. Section 5 contrasts sentential subjects in English and Norwegian and argues that the Norwegian data support that sentential subjects cannot occur in SpecTP. Section 6 concludes the paper.

2. The distribution of sentential subjects and topics

There is a long-standing debate regarding sentential subjects and their syntactic position. Emonds (1976); Koster (1978); Stowell (1981); Safir (1985); Postal (1998); Alrenga (2005) and Takahashi (2010) all argue that sentential subjects are topics and that something else occupies SpecTP. On the other side, Rosenbaum (1967); Emonds (1972); Delahunty (1983) and Davies & Dubinsky (2009) argue that

sentential subjects are real subjects in SpecTP. When considering these two alternatives, it is important to distinguish between the *pragmatic function* and the *syntactic position*: the question is whether a subject sits in a syntactic topic position (e.g., SpecTopP, cf. Rizzi (1997)) or in SpecTP.

2.1. Sentential subjects as topics

Sentential subjects are not prototypical subjects. This is clearly reflected in the following two quotes.

(7) "Subordinate clauses can also function as subject, as in *That he was guilty was obvious to everyone*, such subjects are, however, non-prototypical, as is reflected in the existence of a more frequent (non-canonical) alternant in which the subject function is assumed by the dummy NP *it* and the subordinate clause is extraposed: *It was obvious to everyone that he was guilty*. Other categories appear as subject under very restrictive conditions" (Huddleston, 2002a:236).

(8) "Nevertheless, clauses have enough of the distinctive subject properties to make their analysis as subject unproblematic" (Huddleston, 2002b:957).

The latter quote indicates that sentential subjects in English sit in the canonical subject position. However, as Koster (1978) observes, sentential subjects have a more restricted distribution than DP subjects (cf. Ross (1967); Emonds (1972, 1976); Hooper & Thompson (1973); Kuno (1973)). Consider the following evidence based on Alrenga (2005:177).

(9) a. *John, that the Giants lost the World Series shouldn't have bothered.
    b. John, the story shouldn't have bothered.

(10) a. *Would for the Giants to lose the World Series really suck?
     b. Did that story really suck?

(11) a. *Never before has that you are unqualified for this job been so obvious.
     b. Never before has your lack of qualifications been so obvious.

These examples show that, at the root level, DP subjects can appear after sentence-initial topics whereas sentential subjects cannot appear in this position. The same asymmetry holds for preposed auxiliaries.

For that reason, Koster argues that sentential subjects are in topic position.[1] He also points at parallels between sentence-initial topics and sentential subjects (examples from (Alrenga, 2005:177-179)).
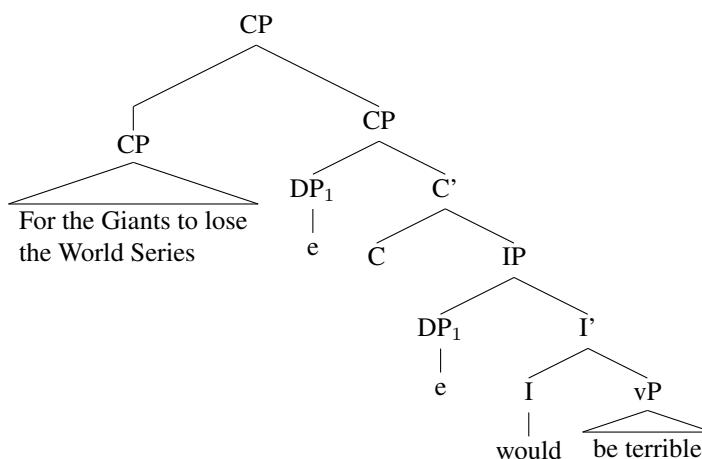
(12) a. *John, the book, I gave to.
     b. *John, that the Giants lost the World Series shouldn't have bothered.

(13) a. *Did John, the article really bother?
     b. *Did that John showed up please you?

These examples illustrate that topic phrases and sentential subjects cannot occur after other topic phrases or preposed auxiliaries.

Koster gave the following analysis, where I am using the updated structure in Alrenga (2005:180).

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[1] Koster also argues that both topics and sentential subjects do not appear in embedded clauses. However, this issue is complicated and there are counterexamples, cf., among others, Authier (1992); Bianchi & Frascarelli (2010).

(14)

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                              CP
                    ┌──────────┴──────────┐
                   CP                      CP
            ┌───────┴───────┐       ┌───────┴───────┐
      For the Giants to lose      DP₁              C'
         the World Series          |        ┌───────┴───────┐
                                   e         C              IP
                                        ┌────────┴────────┐
                                       DP₁               I'
                                        |         ┌───────┴───────┐
                                        e         I             vP
                                                  |        ┌──────┴──────┐
                                                would    be terrible
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Koster dubs sentential subjects 'satellites' because they are outside the sentence proper. They are linked to the subject position by way of a silent nominal phrase which also moves to SpecCP in current terminology (cf. Chomsky (1977) on topic constructions, of which Koster argues sentential subjects are an instance).[2]

Alrenga (2005) provides an updated and extended analysis of Koster. Alrenga's analysis says that sentential subjects are only possible when a verb sub-categorizes for a DP.

(15)   *The Sentence Trace Universal*
       Sentences can only bind DP-traces, i.e. traces with the categorial specification [+N, -V] (Webelhuth, 1992:94).

This is in part necessary in order to account for the following asymmetry (Alrenga, 2005:175-176), which was in part already noted in van Gelderen (1985:139) (see also Webelhuth (1992:95-96)).

(16)   a. It really {sucks/blows/bites/stinks} that the Giants lost the World Series.
       b. That the Giants lost the World Series really {sucks/blows/bites/stinks}.

(17)   a. It {seems/happens/appears/turns out} that the Giants lost the World Series.
       b. *That the Giants lost the World Series {seems/happens/appears/turns out}.

Alrenga also notes these data:

(18)   a. *{This/the Giant's loss} (really) seems.
       b. {This/the Giant's loss} (really) sucks. (Alrenga, 2005:197)

The account offered by Alrenga works as follows. The verb *seem* only subcategorizes for a CP complement, which is to say that it is unaccusative. This makes it impossible for a null DP to be base generated as a complement and then raise to SpecTP. Since sentential subjects must be linked to a null DP, *seem* cannot have a sentential subject.

Given the similarity between sentential subjects and topics, Koster (1978), (Alrenga, 2005:182) and Moulton (2013) equate these two structures such that they both have roughly the following representations.

(19)   a. [[That he is silly] OP [$_{IP}$ John knows t$_{OP}$]].
       b. [[That he is silly] OP [$_{IP}$ t$_{OP}$ is well known]].

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[2] Recent work has illustrated that moved CPs display connectivity effects. Consider the following example.

   (i) [That a student from his$_i$ class cheated on the exam] doesn't seem to [any professor]$_i$ to be captured by this document. (Takahashi, 2010:350)

For reasons of space, I cannot discuss this here, but see Ott (In press:fn. 32) for an alternative that is compatible with the present approach.

Alrenga points out that *seem* can occur with a sentential subject in raising constructions.

(20) a. That the Giants lost the World Series seemed to bother him.

  b. That the Giants would lose the World Series seemed obvious.

These are not counterexamples to Alrenga's analysis: "In these examples, the null DP argument is base generated within the infinitival or small clause complement of *seem*; it then raises out of this complement to the matrix Spec,IP position and finally moves to an A'-position" (Alrenga, 2005:197). If true, this predicts that if a DP cannot be base generated, the sentence should be bad.The following data confirms this prediction.

(21) That the Giants would win the World Series seems to have been {hoped *(for)/*felt/*wished *(for)/*insisted/*reasoned} (by most baseball fans).

The analysis extends to the following case as well, not discussed in the literature.

(22) a. That the Giants lost the World Series seems unlikely.

  b. *That the Giants lost the World Series seems.

As such, this analysis covers a range of facts. However, in the next subsection we will discuss some possible problems.

2.2. Sentential subjects as subjects

Delahunty (1983:384-385) points out that topics and sentential subjects differ in important ways: *Wh*-movement to the right of a topic is possible, but not not to the left. The pattern is the opposite for sentential subjects.

(23) a. To Bill, what will you give for Christmas?

  b. And to Cynthia, what do you think you will send?

(24) a. *That Fred always leaves early, who does bother?

  b. *That the Earth is coming to an end, who does upset?

(25) a. *On which shelf, the pots will you put?

  b. *For whom, a fur coat will you buy?

(26) a. Who does [that Fred left early] bother so greatly that he refuses to visit us any more?

  b. Who does [that the world is ending] upset so terribly that they have decided to abandon the planet?

  c. To whom is [that quarks are green] so well known that he cannot conceive of people who have not heard of the notion?

Delahunty (1983:388) also discusses the fact that sentential subjects undergo raising. This is shown in the following examples, where the (b)-examples illustrate the sentence prior to raising.

(27) a. That Fred is allergic to cats is believed to have bothered his mother.

  b. believes that Fred is allergic to cats to have bothered his mother.

(28) a. That Fred failed his exams seems to bother his family more than it bothers him.

  b. seems that Fed failed his exams to bother his family more than it bothers him.

These facts suggest that sentential subjects behave on a par with regular nominal subjects.

A further argument provided by Delahunty is the following. Topics may be moved to an internal topic position:

(29) Bill says that to Fred he will give a raise.

But a phrase cannot be topicalized in an infinitival sentence:

(30) a. Bill wants to give a raise to Fred.

b. *Bill wants to Fred to give a raise.

Importantly, if sentential subjects are topics, we would not expect them to be possible in an internal position. This prediction is not borne out:

(31) Bill wants [that Fred lied] to be obvious to everyone. (Delahunty, 1983:389)

For that reason, Delahunty concludes that sentential subjects are not topics, but rather regular subjects. He also provides additional arguments, to be discussed in the next section.

3. Other subject characteristics

We have so far seen that sentential subjects appear to behave somewhat like topics and somewhat like regular subjects. In this section, I will discuss two additional factors that may be relevant: subject-auxiliary inversion and subject-verb agreement.

3.1. Subject-auxiliary inversion

Koster (1978) presents data such as the following.

(32) *Did [that John showed up] please you?

(33) *What does [that he will come] prove? (Koster, 1978:53)

This sentence illustrates a claim that has been repeated frequently in the literature, namely that sentential subjects are incompatible with subject-verb inversion. Delahunty (1983) takes issue with this claim, and provides a series of what he claims are acceptable utterances. Consider the following data from (Delahunty, 1983:387).

(34) a. Does that Fred lied to them bother all of the people who bought stock in his company?
      b. Does that the world is round bother as many people now as it did 500 years ago?
      c. Does that quarks have wings explain their odd behaviour?
      d. Does that quarks have wings explain anything at all?

These examples show that there are cases of subject-auxiliary inversion where a sentential subject appears to occupy SpecTP, assuming that the auxiliary moves to C or a low head in a cartographic approach (Rizzi, 1997).

In addition, Delahunty provides the following examples where a *wh*-item and an auxiliary precede a sentential subject.

(35) **To what extent** did [that Fred failed to show up] anger those of his devoted fans who had waited by the stage door since dawn of the previous day? (Delahunty, 1983:382)

(36) **Why** does [that Fred wants to marry her] so upset Mary's mother, father, brothers, sisters and four grandparents that they haven't ceased to harangue her about it since they discovered the proposal? (Delahunty, 1983:383)

(37) **Who** does [that Fred left early] bother so greatly that he refuses to visit us any more?

(38) **Who** does [that the world is ending] upset so terribly that they have decided to abandon the planet?

(39) **To whom** is [that quarks are green] so well known that he cannot conceive of people who have not heard of the notion? (Delahunty, 1983:38)

From a contemporary perspective, one could argue that the *wh*-item sits in SpecCP and the auxiliary is in C, followed by a sentential subject in what is arguably SpecTP. A couple of additional examples that are claimed to be good are from Davies & Dubinsky (2009:115).

(40) **To whom** is [that pigs can fly] most surprising?

(41) Is [that I am done with this homework] really amazing?

Davies & Dubinsky (2009) add some parsing considerations that support Delahunty's analysis. They argue that prosody and phrasal weight play an important role: In Koster's example (32), the sentential subject is twice the length (in syllables) compared to the matrix predicate. In Delahunty's example (35), a six-word sentential subject is followed by an 18-word matrix predicate. They conclude that length issues are what is causing unacceptability for Koster's examples. For current purposes, the important point is that the grammar does not filter out the above data for Davies and Dubinsky, rather other mechanisms come into play in determining acceptability and unacceptability.

The problem with this line of argumentation is that native speakers notoriously disagree about these judgments. Some speakers agree with Delahunty, others disagree. This is possibly a matter of individual variation, though a larger-scale survey may be able to inform this question. However, for the time being, it seems that some speakers allow sentential subjects in SpecTP whereas some do not. In the next two subsections, I will consider some further issues, and then in section 4 I will use the absence of sentential subjects in embedded domains to argue in favor of the topic analysis.[3]

3.2. Subject-verb agreement

A typical characteristic of real subjects is that they can trigger agreement on the verb. Topics cannot do the same in English, as (42b) illustrates.

(42)   a.   John and Mary, Paul likes them.
       b.   *John and Mary, Paul like them.

Assuming that subject-verb agreement is a clue to identifying the subject of the sentence, we can note that sentential subjects do trigger subject-verb agreement.

(43)   [[That the march should go ahead] and [that it should be canceled]] have been argued by the same people at different times. (McCloskey, 1991:564)

(44)   That he'll resign and that he'll stay in office seem at this point equally possible. (McCloskey, 1991:564)

(45)   That the project has not been properly costed and that the manager is quite inexperienced are just two of my objections to your proposal. (Huddleston, 2002b:957)

A further indication that these are subjects is provided by the fact that whereas conjoined CPs in subject position can license *equally*, conjoined CPs in non-subject positions cannot.

(46)   Dale thought that Dana left and that Terry wouldn't come (*equally). (Davies & Dubinsky, 2009:124)

Davies & Dubinsky (2009:124), discussing the McCloskey data showing that sentential subject display subject-verb agreement, point out that *all* non-NP subjects exhibit similar properties as sentential subjects.

(47)   a.   [Under the bed]$_1$ appears [t_1 to be a good place to hide].
       b.   [Very tall]$_1$ appears [t_1 to be just how he likes his bodyguards].

(48)   a.   Under the bed and in the fireplace are not the best (combination of) places to leave your toys. (Levine, 1989:1015).
       b.   Very brawny and very studious are what Cindy aspires to be.

(49)   a.   Under the bed and in the closet equally reminded me of that game of hide-and-seek we played.
       b.   Very tall and quaintly studious equally bring to mind my sixth-grade science teacher.

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[3]   One question that has to be addressed one has to address is whether the grammar should allow these structures and then extra-grammatical factors filter some of them out (as Davies & Dubinsky (2009) argue), or whether the grammar should not allow them but they can be rescued by extra-grammatical factors.

As these examples illustrate, PP and AP subjects also undergo obligatory raising, they can trigger verb agreement, and license *equally*.

However, an important question is whether these facts really show that sentential subjects sit in SpecTP? Given current theoretical tools such as agreement at a distance ('Agree', cf. Chomsky (2000, 2001)), agreement does not generally tell us anything about the position of a nominal phrase. Therefore subject-verb agreement in general does not tell us that sentential subjects are subjects.

3.3. Interpreting topics

One reason why sentential subjects have been treated as topics, is that these subjects appear to be 'topical'. However, that is the case even for regular nominal subjects.

(50)   Travis likes pasta.

In (50), *Travis* is the topic. This is very typical, cf. Lambrecht (1994:131): "[…the correlation between topic and subject is extremely strong on the level of discourse and has important grammatical consequences, in English as well as in other languages". Lambrecht further argues that subjects are the unmarked topics. Reinhart (1981) argues that topichood is a pragmatic notion and it cannot solely be determined by way of syntactic position (see also Gundel (1988)). Based on this, and given that no one argues that *Travis* in (50) sits in a topic position in the syntax, it is not clear why sentential subjects should sit in a topic position just because they are interpreted at topics, though from a cartographic perspective (Rizzi, 1997) it makes for a transparent mapping from syntax to pragmatics.

4. Sentential subjects only in main clauses

The evidence discussed above points in opposite directions: Parts of it argue in favor of sentential subjects being subjects, other data argue in favor of sentential subjects being topics. This section will show that sentential subjects cannot generally occur in subject positions in embedded clauses.

4.1. Embedded finite clauses

Koster (1978) already pointed out that sentential subjects are much less acceptable in the subject position of embedded clauses than in main clauses.

(51)   a. ?*Mary is unhappy because for her to travel to Tahiti is no longer necessary.
       b. Mary is unhappy because her trip to Tahiti is no longer necessary.

(52)   a. ?*That for us to smoke would bother her, I didn't expect.
       b. That our smoking would bother her, I didn't expect.

Alrenga (2005:178) also notes significant lexical sensitivity:

(53)   a. I {think/said/believe} that for us to smoke really bothers her.
       b. ?*I regret that for us to smoke bothers her so much.
       c. ?*Mary wishes that for us to smoke bothered her more than it did.

Alrenga (2005:194) argues that bridge verbs have CP recursion and thus enough structure to host sentential subjects (as topics), whereas other verbs do not have enough projections. This is also consistent with the *Penthouse Principle* (Ross, 1973), which says that more syntactic operations are allowed in main clauses than in embedded clauses, on the assumption that topics generally are licensed in main clauses.

4.2. ECM and infinitives

Sentential subjects cannot appear as subjects of infinitival complements.[4]

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[4]   This is arguably why sentential subjects also cannot occur in *for … to …* constructions in English.

   (i)   He arranged for her to leave early.
   (ii)   *He arranged for [that she could leave early] to be easy.

Since sentential subjects are bad in embedded environments, we expect them to be bad in these cases as well.

(54)   a.   ?*John believes that the cult members cloned a human baby to be true.
       b.   John believes this story to be true.

(55)   *I {planned/intended/expected/hoped/prayed} for that the cult members cloned a human baby to be discovered. (Alrenga, 2005:178)

Takahashi (2010:360) argues that sentential subjects have to move to SpecTop, and that a silent Det which sits on top of the CP requires the Topic projection to be present. This is ensured by using features, which I won't present here.

    Alrenga (2005:195) discusses the absence of sentential subjects in SpecTP of an ECM structure and argues that since clauses that allow sentential subjects are CPs, a sentential subject is not licit in an ECM context. As noted by Webelhuth (1992:101), movement of sentential subjects fixes the problem:

(56)   a.   John believes [$_{IP}$ that to be obvious].
       b.   That John believes [$_{IP}$ t to be obvious].

(57)   a.   *John believes [$_{IP}$ that Bill is sick to be obvious].
       b.   That Bill is sick John believes [$_{IP}$ t to be obvious].

Again, this is in accordance with what the Penthouse Principle predicts.

4.3. Constraints on A-bar movement across sentential subjects

    Zaenen & Pinkham (1976) and Iwakura (1976) observe that embedded sentential subjects block A-movement from within their c-command domain. The following examples are taken from Alrenga (2005:191).

(58)   a.   John said that {this/for you to stop smoking} would please Sandy.
       b.   I wonder who {this/*for you to stop smoking} would please.
       c.   I can't think of anyone that {this/*for you to stop smoking} would please.
       d.   Who did you expect John to say that {this/*for you to stop smoking} would please?

(59)   a.   John thinks that {this/for her to say such things} shows that Kim wants a raise.
       b.   What does John think that {this/?*for her to say such things} shows that Kim wants?

Alrenga argues that the failure of A-bar movement is due to the additional phrasal projections that host topics. However, for speakers who accept the Delahunty data seen above, A-bar movement across sentential subjects is acceptable in main clauses:

(60)   a.   Who does that Fred left early bother so greatly that he refuses to visit us any more?
       b.   Who does that the world is ending upset so terribly that they have decided to abandon the planet? (Delahunty, 1983:385)

For these speakers, it seems that there is an asymmetry between main clauses and embedded clauses, in line with the Penthouse Principle. For speakers who do not accept these data, Alrenga's analysis works.

    In summary, sentential subjects typically occur in main clause environments.

5. English and Norwegian contrasted

    In this section, I want to discuss sentential subjects in Norwegian. Norwegian is a Verb Second (V2) language and I assume that subjects sit in SpecCP in subject-initial clauses (Travis (1984) and much later work). This means that a typical sentence with a sentential subject in Norwegian fits with Alrenga (2005)'s analysis since he assumes that sentential subjects are specifiers of CP.

(61)   At   han   kom   så sent,   ødela festen.
       that he   arrived so late,   ruined the.party
       'That he arrived so late, ruined the party.'

As Koster (1978) observes for Dutch, it is also possible to insert an expletive. The Dutch example is provided in (62) and a Norwegian example in (63).

(62) Dat hij komt   (dat) is duidelijk.
      that he comes (that) is clear
      'That he will come is clear.' (Koster, 1978)

(63) At   han vil   komme, (det) er klart.
      that he   will come   that is clear
      'That he will come is clear.'

In sentences with ordinary nominal subjects, the subject is pushed down into SpecTP when a non-subject is located in SpecCP.

(64) Bøkene   leser John hver dag.
      the.books reads John every day
      'The books, John reads every day.'

This suggests that we can use the V2 property to test whether sentential subjects can occur in SpecTP in Norwegian. The following examples show that this is not possible.

(65) a. At John vant prisen,   overrasket alle deltakerne   i fjor.
          that John won the.prize, surprised   all the.participants in last.year
          'That John won the prize surprised all the participants last year.'
      b. *Hvem overrasket at   John vant prisen,   i fjor?
          who   surprised   that John won the.prize, in last.year
          'Who did it surprise that John won the prize last year?'
      c. *I fjor   overrasket at   John vant prisen,   alle deltakerne.
          in last.year surprised   that John won the.prize, all   the.participants
          Last year it surprised all participants that John won the prize.'

These examples can be 'rescued' if a *det* 'it' is inserted so that the that-clause modifies this determiner (Faarlund et al., 1997:678).

(66) a. Hvem overrasket det at   John vant prisen,   i fjor?
          who   surprised it   that John won the.prize, in last.year
          'Who did it surprise that John won the prize last year?'
      b. I fjor   overrasket det at   John vant prisen,   alle deltakerne.
          in last.year surprised it   that John won the.prize, all   the.participants
          Last year it surprised all participants that John won the prize.'

This effect is the same as the effect one gets in English if one embeds a *that*-clause within a *the fact* phrase.

(67) a. *Did [that John showed up] please you?
      b. Did the fact that John showed up please you?

This strongly argues that sentential subjects are not topics, which is the same conclusion that the majority of scholars working on English has reached. Space limitations prevent us from considering these data more fully, but I plan to turn to them in future work.

6. Conclusion

This paper has discussed the syntactic status of sentential subjects and argued that for most speakers of English, they are topics. Cases that show that they may sit in the canonical subject position have been considered, though given speaker variation is hard to conclude much from these data. The general absence of sentential subjects in embedded environments supports a topic analysis. Lastly the paper briefly compared sentential subjects in Norwegian and English and showed that in Norwegian, sentential subjects do not sit in the canonical subject position.

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