

Recall that a CP is a phrase headed by a complementizer, like *that* and *for*, in which the head C takes an entire sentence (IP) as its complement. Consider the following English data containing CPs:

- (1) The students hope [that the professor will cancel the final]_{CP}.
- (2) The students think [that the professor will cancel the final]_{CP}.
- (3) *The students need [that the professor will cancel the final]_{CP}.
- (4) The students hope [that the professor cancelled the final]_{CP}.
- (5) The students think [that the professor cancelled the final]_{CP}.
- (6) *The students need [that the professor cancelled the final]_{CP}.
- (7) *The students hope [that the professor to cancel the final]_{CP}.
- (8) *The students think [that the professor to cancel the final]_{CP}.
- (9) *The students need [that the professor to cancel the final]_{CP}.

- (10) *The students hope [for the professor will cancel the final]_{CP}.
- (11) *The students think [for the professor will cancel the final]_{CP}.
- (12) *The students need [for the professor will cancel the final]_{CP}.
- (13) *The students hope [for the professor cancelled the final]_{CP}.
- (14) *The students think [for the professor cancelled the final]_{CP}.
- (15) *The students need [for the professor cancelled the final]_{CP}.
- (16) The students hope [for the professor to cancel the final]_{CP}.
- (17) *The students think [for the professor to cancel the final]_{CP}.
- (18) The students need [for the professor to cancel the final]_{CP}.

Problem 1. Give the subcategorizations for the verbs *hope*, *think*, and *need* and for the complementizers *that* and *for* needed to get the grammaticality patterns in (1)–(18). Assume there are two primary types of I: I_[+finite] (for modal verbs, past tense, present tense, etc.) and I_[-finite] (for infinitives, with *to* as the head of IP). Justify and discuss your choices for the subcategorizations, citing relevant examples.

Problem 2. Consider the following data additional containing CPs:

- (19) The students hope [\emptyset_1 the professor will cancel the final]_{CP}.
- (20) The students think [\emptyset_1 the professor will cancel the final]_{CP}.
- (21) *The students need [\emptyset_1 the professor will cancel the final]_{CP}.

- (22) The students hope [\emptyset_2 the professor cancelled the final]_{CP}.
- (23) The students think [\emptyset_2 the professor cancelled the final]_{CP}.
- (24) *The students need [\emptyset_2 the professor cancelled the final]_{CP}.

- (25) *The students hope [\emptyset_3 the professor to cancel the final]_{CP}.
- (26) *The students think [\emptyset_3 the professor to cancel the final]_{CP}.
- (27) The students need [\emptyset_3 the professor to cancel the final]_{CP}.

Assume that symbols \emptyset_1 , \emptyset_2 , and \emptyset_3 represent ‘null’ complementizers (that is, they exist syntactically as the head of CP, but they have no phonetic properties). Compare these null complementizers to each other and to the overt complementizers *that* and *for*. Assume that any null complementizers that have identical syntactic distributions are actually the same syntactic object. Further assume that any null complementizer that has an identical syntactic distribution to an overt complementizer is actually the result of an optional transformation that deletes that overt complementizer.

(continued on back)

Based on these assumptions, how many total complementizers (*that* and *for*, plus all distinct null complementizers) does English seem to have listed in the lexicon, according to the data in (1)–(27)? What are they, and what are their subcategorizations? Which complementizers can be deleted by an optional transformation? Discuss your answers fully, citing relevant examples and explaining precisely how the grammaticality patterns in (19)–(27) are derived, being sure to carefully distinguish sentences that have a true lexically-listed null complementizer and those that are the result of a transformation deleting *that* and/or *for*.

Problem 3. Based on your answer to Problem 3, give revised subcategorizations for *hope*, *think*, and *need*, as necessary. If no revision to a particular subcategorization is necessary, say so.

Problem 4. Using your own native speaker intuition and/or consultation with others who are native speakers, come up with two English verbs that have the same subcategorization as *hope*, two for *think*, and two for *need*. Be sure you test sentences like (1)–(27) for all of your new verbs to ensure that they have the same grammaticality patterns as *hope*, *think*, and *need*. You don't need to defend your answer with prose; just list the verbs and which of *hope*, *think*, and *need* they are similar to.