

Midterm Exam

You are not allowed to collaborate or consult with your classmates for this exam. You are, however, encouraged to contact me by email should you have any confusion about what the questions are asking for. Even though I will be traveling during Spring Break, I will have access to email.

1. This problem involves extending our phrase structure rules to cover more of the English verbal system. So far we have limited ourselves to simple tensed verbs. In this exercise, we will look at English auxiliaries of which some examples are shown below. The auxiliary verbs have been boldfaced.¹

(1) Auxiliary Verbs:

- a. John **is** dancing.
- b. John **has** danced.
- c. John **might** dance.

(1) also points out an important fact of English auxiliary verbs - they impose restrictions on the verb they combine with. Thus *be* combines with a participial verbal form that ends in *-ing*, sometimes called the present participle. *have* combines with a participial verbal form that ends in *-en/-ed*, sometimes called the past participle. And modal verbs like *might* combine with the bare uninflected form of the verbal root. Thus the following are all bad:

- (2) a. *John is dances/danced/dance.
b. *John has dances/dancing/dance.
c. *John might dances/dancing/danced.

Task 1.1: Using constituency tests, determine the constituent structure of structures like (1). We have three words in each of (1a-c) and so in principle any of the following bracketings are possible.

- (3) a. [[John is] dancing].
b. [John is dancing].
c. [John [is dancing]].

Which of (3a-c) is actually supported by constituency tests? Provide arguments for your claim. (50 points).

Task 1.2: Depending upon the constituent structure you decide on in 1.1, provide appropriate phrase structure rules that generate grammatical sentences like (1) without generating any of the ungrammatical sentences in (2). Your phrase structure rules should involve feature structures. (50 points). For simplicity, please assume that auxiliaries are verbs and employ the following feature naming convention:

¹Keep in mind that the fewer rules you have and the more general your rules are, the better it is. Cases of redundant and unnecessarily prolix rule systems will be penalized.

- (4) a. Present Participles (these end in *-ing*) have [agr: ing].
- b. Past Participles (these end in *-en/ed*) have [agr: ed].
- c. Bare Verbs have [agre: bare].

You could also assume the following featural specification for auxiliaries though this is not strictly necessary.

- (5) a. auxiliary *have* has [type: have].
- b. auxiliary *be* has [type: be].
- c. modal verbs like *might* have [type: modal].

Task 1.3: Handle Subject-Verb Agreement with auxiliaries. Your system should have lexical entries for both present and past tense *have* and *be* and for *might*. (50 points).

- (6) *be*:
 - a. John/he/she is/was dancing.
 - b. They/you/we are/were dancing.
 - c. I am/was dancing.
- (7) *have*:
 - a. John/he/she has/had danced.
 - b. They/you/we/I have/had danced.
- (8) *might*:
 - John/he/she/they/you/I/we might dance.

Task 1.4: Auxiliary verbs can embed other auxiliary verbs. Some of the possible and impossible combinations are listed below.

- (9) a. *John is having danced.
- b. *John is might danced.
- c. John has been dancing.
- d. *John has might dance.
- e. John might be dancing.
- f. John might have danced.
- g. John might have been dancing.

Check if your rules generate all of the grammatical sentences in (9) and none of the ungrammatical ones. If your system overgenerates/undergenerates, note what it overgenerates/undergenerates and modify it so that it does not do so anymore. If you are doing things right, you won't need to add any new features or rules, just modify the featural specification on the rules you came up with while doing Task 1.2. (50 points).

2. Use constituency tests to find the constituent structure of the construction exemplified below.

- (10) Comparatives

- a. John might be more surprised [_{CP}than Nate was disappointed].
- b. Steve couldn't have written more books [_{CP}than Mark has ever read].

For this problem, we are not interested in the internal structure of the comparative clause CP (enclosed in brackets above). You can treat that as a black box - draw a triangle above it. What we are interested in is how the comparative clause CP combines with the rest of the sentence.

For both (10b), show the structures that are in principle possible. (20 points). To give you an example of what I am going for, some of the structures possible for (10a) are:

- (11) Structure assumed for [John might be more surprised]:
 [John [might [be [more surprised]]]].
- a. [[John might be more surprised] [_{CP}than Nate was disappointed]].
- b. [John [[might be more surprised] [_{CP}than Nate was disappointed]]].
- c. [John might [[be more surprised] [_{CP}than Nate was disappointed]]].
- d. [John might be [[more surprised] [_{CP}than Nate was disappointed]]].
- e. [John might be more [[surprised] [_{CP}than Nate was disappointed]]].

Now that you have the possible structures for (10a, b), use constituency tests to rule out/argue for the possible structures. Show your argumentation and present the structures that are supported by the constituency tests. (30 points).

3. Problem 6 on Tzotzil on Pages 85-86 of your textbook. (50 points).