Auxiliaries in English

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1 Pre-auxiliary Phrase Structure Rules

Before we introduced auxiliary and modal verbs, we had the following set of PSRs for English (excluding conjunction rules):

S $\longrightarrow$ NP VP

NP $\longrightarrow$ { (DP) (AP*) N (PP) / Pronoun / Name }

VP $\longrightarrow$ V (NP) (AP) (PP)

DP $\longrightarrow$ (NP) D

AP $\longrightarrow$ (Int) A (PP)

PP $\longrightarrow$ (Dir) P (NP) (PP)

VP $\longrightarrow$ VP PP

NP $\longrightarrow$ NP PP

2 Introducing (non-modal) auxiliaries

2.1 Data

We have some *auxiliary* verbs, $have_1$ and be_1, that can appear next to the *main* verb in a sentence (i.e. the one that describes the basic event).

(1) a. Haile Gebrselassie *has* won a marathon.
b. The little girl with the yellow jacket *has* given the monkey her banana.
c. My roommates *are* building a loft.
d. Tara *was* skating in 1999.
e. We *had been* cooking Thai food on Sundays.
f. Students of English literature *have been* reading Hawthorne.

The positive (grammatically acceptable) data in (1) suggests the following generalizations:

(i) auxiliary verbs $have_1$ and be_1 occur before the main verb
(ii) more than one auxiliary verb can occur in a single sentence
(iii) when $have_1$ and be_1 occur together, $have_1$ must come first
(iv) $have_1$ and be_1 require verbs that follow them to appear in a certain form

Question: How can we test these generalizations? What kind of data do we want in addition to (1)?

2.2 Three hypotheses

Assume (for now) that $have_1$ and be_1 are in the lexical category *Aux*, distinct from the category V. Fill in their lexical entries below:

- $have_1$, Aux, _____
- be_1, Aux, _____

We would like to work out how the phrase structure rules handle the new category. All of the data we have seen so far suggests that an Aux must appear after the end of an NP and before the main verb. Before we do any more detailed investigation, there are three hypotheses for how we could integrate Aux into our PSRs:

A. **Hypothesis I:** Auxiliaries occur in a sister category to NPs and VPs.

   i. *Write out the rules that would accompany this hypothesis. Remember that we can have more than one auxiliary.*

   ii. *Draw a tree for (1d) under this hypothesis.*

   iii. *Note down some objections to this hypothesis.*

B. **Hypothesis II:** Auxiliaries occur within the VP

i. *Write out the proposed rules.*

ii. *Draw a tree for (1d).*

C. **Hypothesis III:** Auxiliaries are grouped with the VP, but are not part of it.

i. *Write out the proposed rules.*

ii. *Draw a tree for (1d).*

Question: Assuming we have ruled out Hypothesis I, are there any obvious reasons to prefer one of the other two? How can we test which one is correct?

3 The category M

We next introduced data with *modals*:

(2) a. Haile Gebrselassie *might* win the marathon.
b. The girl in the yellow jacket *may* have given the monkey her banana.
c. My roommates *could* be building a loft.
d. Tara *can* skate.
e. We *will* have been cooking Thai food.
f. We *would* go to Bali on Sunday.
g. The students *shall* read Hawthorne.
h. English students *should* be reading Melville.
i. The literature students *must* have read Shakespeare.

Question: What generalizations does this positive data suggest? Come up with ways of testing your conclusions.

(i) *Where do modal verbs occur?*

(ii) *Can modals occur together? If so, how many, and in what order?*

(iii) *Can modals and auxiliaries occur together? What restrictions apply?*

(iv) *What other requirements do modals impose?*

Give the lexical entry for the modal verb *might*:

- *might*, M, _____

Given what we learned about auxiliaries in section 2, what hypotheses seem most promising for integrating modals into our PSRs? Make two suggestions and test them.

Draw a tree for the following example:

(3) My roommates could have been cooking.

4 Consolidating our PSRs

We noticed that items in category M pattern together, and items in categories Aux and V pattern together in certain ways. What are some of these?

The following data suggested that *all* sentences involve an item of category M:

(4) a. Steve might move to Portland. [*might*]
b. Steve should move to Portland. [*should*]
c. Steve will move to Portland. [*will/FUT*]
d. Steve moved to Portland. [*PAST*]
e. Steve moves to Portland./Steve is moving to Portland. [*PRES*]

Fill in the PSRs and lexical entries below:

Phrase Structure Rules:

S $\longrightarrow$ NP MP

MP $\longrightarrow$ _____

VP $\longrightarrow$ _____

(Selected) lexical entries:

have$_1$, _____, _____

be$_1$, _____, _____

give, _____, _____

move, _____, _____

might, _____, _____

will, _____, _____

PAST, _____, _____

PRES, _____, _____

Do: Using the latest PSRs, draw trees for the following examples:

(5) a. Erica is winning the game.
b. Erica has won the game of chess.
c. Erica might win the game on Sunday.
d. Erica might be winning the game.
e. Erica should have won the last game.
f. Erica will have won the game by now.
g. Erica won the game on Saturday.
h. Erica had won the last game.