Problem Set 2

Due September 7 before class. Submit on Luminus > Files > Student Submission > PS2.

In this problem set, we study the "language" ACBDE. ABCDE has five words:

(1) **Lexicon of ABCDE:**[1]

    a. A = [A; uC]

    b. B = [B]

    c. C = [C]

    d. D = [D; uA, uC*]

    e. E = [E; uB, uC]

For example, the word *A* has the categorial feature A and has one uninterpretable selectional feature: uC. A sentence of ABCDE is grammatical if it can be built from the words *A*, *B*, *C*, *D*, *E* using the operations in (2–4), and ends with no unchecked uninterpretable features. (Here the trees in (2–4) are *ordered*: the left daughter is pronounced before the right daughter.)

(2) **Merge(α, β):**   (read: 'merge β to α')

For any syntactic objects α, β, where α bears an unchecked selectional feature F and β bears a matching categorial feature:

    a. check the feature F on α, if any: ~~F~~;

    b. let the label γ be the unchecked non-inflectional features of α; and

    c. return $\underset{\alpha \quad \beta}{\gamma}$ if α is a head and $\underset{\beta \quad \alpha}{\gamma}$ otherwise.

(3) **Adjoin(α, β):**   (read: 'adjoin β to α')

For any syntactic objects α, β, where neither α nor β has any unchecked selectional feature,

call α the *host* and return $\underset{\alpha \quad \beta}{\gamma}$ or $\underset{\beta \quad \alpha}{\gamma}$, where the label $\gamma = \alpha$.

(4) **Move$_{\text{phrase}}$(α, β):**   (read: 'move β to α's specifier' or 'α attracts β')

If α dominates a maximum projection β, α and β share a feature F, and F is *strong* (marked F*) on α or β or both, then

    a. check the strong features F* on α and/or β: ~~F*~~;

    b. mark β in α as deleted: ~~β~~ (call this a *trace*, often indicated by *t*); and

    c. return $\underset{\beta \quad \alpha}{\gamma}$ where the label $\gamma = \alpha$.

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[1]There are no inflectional features here.

Your task is to consider the sentences in (5–11) below. For each sentence in (6–11):
  (i) determine whether or not it is a grammatical sentence of ABCDE;
  (ii) if it is grammatical, draw its tree, <u>numbering each node</u> and showing relevant features;
  (iii) give the sequence of Merge, Adjoin, and Move$_{\text{phrase}}$ steps which derive the sentence.
See the example answer for (5) below.

  (5) A B C (see example below)

  (6) C E B

  (7) C B D A

  (8) A B C D

  (9) A C E B

  (10) C D B A

  (11) C D A E B

Example:

(i) Sentence (5) *A B C* is a grammatical sentence of ABCDE.

(ii)

$$A_5$$
$$A_4[\text{u}\cancel{\text{C}}] \qquad C_3$$
$$B_2 \quad C_1$$
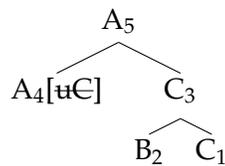
(iii) 2 steps:
  1. $C_3 = \text{Adjoin}(C_1, B_2)$
  2. $A_5 = \text{Merge}(A_4, C_3)$
  A_5 has no unchecked uninterpretable features and is pronounced *A B C*, so we're done.

EL5101R students: Turn the page...

Toba Batak is an Austronesian language spoken in northern Sumatra, Indonesia.[2] Consider the data here and answer the four questions below, in the context of the various tests discussed so far in class.

Toba Batak verbs come in two forms, called active and passive. (12) and (13) are two ways of saying the same thing. (Names are preceded by the marker *si*, glossed sɪ.)

(12)   Mang-ida si Ria si Torus.
       ACTIVE-see sɪ Ria sɪ Torus

       'Torus saw Ria.'

(13)   Di-ida   si Torus si Ria.
       PASSIVE-see sɪ Torus sɪ Ria

       'Ria was seen by Torus.' = 'Torus saw Ria.'

Let's call *si Torus* in (12) and *si Ria* in (13) the *subject*. We might then describe Toba Batak word order as verb-initial and subject-final.

Consider the following contrast:

(14)   a.   Mang-ida dirina si Poltak.
             ACTIVE-see self   sɪ Poltak

             'Poltak sees himself'

       b.   * Mang-ida si Poltak dirina.
             ACTIVE-see sɪ Poltak self

Q1: What is the contrast in (14) evidence for? What test is used?

(15)   Mang-antuk si John jala man-ipak   si Bob si Fred.
       ACTIVE-hit   sɪ John and ACTIVE-kick sɪ Bob sɪ Fred

       'Fred hit John and kicked Bob.'

(16)   Di-antuk   si John jala di-sipak   si Bob si Fred.
       PASSIVE-hit sɪ John and PASSIVE-kick sɪ Bob sɪ Fred

       'Fred was hit by John and kicked by Bob.' = 'John hit Fred and Bob kicked Fred.'

Q2: What are (15) and (16) evidence for? What test is used?

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[2]Data here comes from Paul Schachter's 1984 "Semantic-role-based syntax in Toba Batak," but don't look it up!

(17) Mang-antuk si John jala di-sipak   si Bob si Fred.
      ᴀᴄᴛɪᴠᴇ-hit   sɪ John and ᴘᴀssɪᴠᴇ-kick sɪ Bob sɪ Fred

      'Fred hit John and was kicked by Bob.' = 'Fred hit John and Bob kicked Fred.'

(18) Di-antuk   si John jala man-ipak   si Bob si Fred.
      ᴘᴀssɪᴠᴇ-hit sɪ John and ᴀᴄᴛɪᴠᴇ-kick sɪ Bob sɪ Fred

      'Fred was hit by John and kicked Bob.' = 'John kicked Fred and Fred kicked Bob.'

Q3: What are (17) and (18) evidence for? (Note: These examples teach us something new, in addition to what we learned in Q2.)

Finally, consider the contrast in (19). This data is surprising.

(19) a. Di-ida   si Poltak dirina.
          ᴘᴀssɪᴠᴇ-see sɪ Poltak self

          'Poltak sees himself.'

      b. * Di-ida   dirina si Poltak.
            ᴘᴀssɪᴠᴇ-see self   sɪ Poltak

Q4: Why is (19) surprising?