Last class, we saw that syntactically-categorized word sequences can assist in the formulation of a concise theory of sentence acceptability. **Recursive** embedding of phrases inside other phrases explains the lack of bound on sentence-length. But what evidence can be marshaled in favor of one syntactic tree over another?

1 **Trees and Labelled Bracketing are Equivalent Notations**

(1)

```
  IP
     /\       \
    NP    I'
      /\       \
     Det   N'
      /   \  /   \
    the   N  I_{Present}
           /   \      \
          V   VC     \ C'
             \   \     /  \
              \  \   /    \
               \ I_{Future}   VP
                 \        /   \
                  \    /   \
                   \ VP   \ win
```

Both (1) and (2) express the **constituency** of a word sequence like *the team*. Other sequences, such as *that the* and *coach believes that the* are not constituents. An accurate representation will not assign these sorts of “distuents” their own bracket or their own node.

(2)

```
[IP [NP the coach ]
  [VP believes [CP that [IP [NP the team] [I' [I_{Future} will ] ] [VP win ] ] ] ] ]
]```
2 Constituency Tests

2.1 Substitution test

**substitution** If a string $A$ can be substituted by a known constituent $B$ then (1) $A$ is a constituent and (2) $A$ bears same category label as $B$

Pronouns like *he*, *she*, *it*, *they*... are the poster children for substitution. Here are some examples where a pronoun substitutes for a noun phrase, preserve acceptability.

(3) [ [ Meredith ] and [ Jill ] ] are bringing [NP a tub of [NP ice cream ] ] to [NP the party ]

  a. They are bringing a tub of ice cream to the party.
  b. She and Jill are bringing a tub of ice cream to the party.
  c. M. and J. are bringing *it* to the party.
  d. M. and J. are bringing a tub of *it* to the party.
  e. M. is bringing a handle of gin to the party, and J. is bringing a tub of ice cream to *it*.

There are also pro-forms for verb phrase: *so* and *do so*.

(4) Meredith will *ace* the final and that really tall guy will *do so*, too.

The pro-form *so* can also substitute for AP.

(5) Dantonio is very aggressive about the game and Carr is *so*, too.

Prepositional pro-forms like *here* and *there* and *then* can often substitute for locations or times.

(6) When I saw Jill [ last week ], we had lunch at a sushi place [ in Novi ]

  a. (Our book club hasn’t met since last week) When I saw Jill *then*, we had lunch...
  b. (There are some great restaurants near the 12 Oaks Mall) When I saw Jill last week, we had lunch at a sushi place *there*. 

2.2 Movement test

Only constituents can be targeted by movement operations.

a. \[NP \text{ Her coffee, } \] Meredith likes \text{ her coffee} strong and very hot.

b. \[AP \text{ So rare it’s still bleeding on the plate } \] Mark likes his steak \text{ so rare it’s still bleeding on the plate}

c. \[PP \text{ Around the corner } \] the hitman was hiding \text{ around the corner}

2.3 Coordination test

\textbf{coordination} Two strings \(A\) and \(B\) are constituents of the same category if (1) both are acceptable the same context \([X-\begin{array}{c}A \\ B \end{array}-Y]\) and (2) \([X-[A-\text{Conj}-B]-Y]\) has the same meaning as \([[X-A-Y]-\text{Conj}-[X-B-Y]]\)

a. \[NP \text{ Jane’s shoes } \] and \[NP \text{ the books in the living room } \] take up too much space.

b. During lecture, Mark \[VP \text{ got bored } \] and \[VP \text{ started playing with his Treo } \].

c. The really \[AP \text{ depressed } \] and \[AP \text{ angry } \] postdoc decided to jump off a bridge.

d. They chased the getaway car \[PP \text{ around the corner } \] and \[PP \text{ down the alley } \]

In (a.) the left context \(X\) is empty and the right context \(Y\) is the word sequence \textit{take up too much space}. In (c). \(X = \text{The really} \) and \(Y = \text{postdoc decided to jump off a bridge}.\)

3 False negatives

Not every test works for every constituent in every context. The tests can be used as an implication, but unfortunately not as a biconditional

<table>
<thead>
<tr>
<th></th>
<th>Ideal world</th>
<th>Real world</th>
</tr>
</thead>
<tbody>
<tr>
<td>If a string passes the</td>
<td>TRUE</td>
<td>TRUE</td>
</tr>
<tr>
<td>constituenthood tests,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>then it is a constituent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sometimes FALSE</td>
</tr>
<tr>
<td>If a string is a constituent, then it passes the constituenthood tests</td>
<td>TRUE</td>
<td></td>
</tr>
</tbody>
</table>
4 Click studies

A more expensive way to probe constituent structure involves people reporting where they hear a loud click. In one ear, they hear a spoken sentence. In the other, they get a click timed to interrupt the sentence. The click could appear nearer to, right on top of, or farther away from a constituent boundary.

(7)

Fodor and Bever [1965] placed clicks at equivalent points before and after the “zero” point between CP and VP in items like (7).

<table>
<thead>
<tr>
<th>unit</th>
<th>places</th>
</tr>
</thead>
<tbody>
<tr>
<td>syllable</td>
<td>-3, -2, -1, +1, +2, +3</td>
</tr>
<tr>
<td>words</td>
<td>-1, +1</td>
</tr>
</tbody>
</table>

Participants in this study were asked to write the entire sentence and indicate graphically where they thought the click had occurred. Fodor and Bever [1965] find a statistically significant tendency for participant’s subjective reports to migrate towards the zero point, the constituent break. They count this as evidence for the contention that

Noise heard during speech should tent to shift perceptually towards the boundaries of constituents. This shift should occur in such a fashion as to minimize the number of constituents the noise is perceived as interrupting

5 Homework

Turn in answers to questions 4,5,6 & 7 at the end of O’Grady chapter 5 pp195-196.

References