INTD0111A

The Unity and Diversity of Human Language

Lecture #9
March 9th, 2009

Announcements

- Assignment #2 has been posted. It's due next Monday March 16th in class, or by e-mail no later than 5pm.
- Please notice that since the midterm will be also assigned on Monday, I cannot grant extensions for Assignment #2. I do need to post the solutions, so everyone can look at them before the midterm.
- Bottom line: START EARLY. That means TODAY.

Announcements

- You should be now thinking about the language you will work on for the LAP.
- The one-page LAP proposal is due April 6th.
- Given lack of resources on many endangered and unfamiliar languages, you do want to start looking for a language now, if you haven't chosen one already.
- Once you make a choice, e-mail me. Remember that no two LAPs can be on the same language. So, the early chooser catches the language.

Initial reaction to Assignment #1

- Things look fine so far.
- That said, those of you who are still unclear on how to draw a syntactic tree for a sentence should definitely come and talk to me in office hours.
- Syntax is essential to the class. And there is no knowledge of syntax if you can't analyze a sentence into its constituents.

Summary of Morphology

- Morphology is the study of word structure in human language.
- The main unit in morphology is the *morpheme*, which is the "minimal unit of meaning or grammatical function in the language".
- Morphemes can be *derivational* or *inflectional*.
- Morphemes can also be *free* or *bound*.
- Bound morphemes are further divided into four types depending on their position with regard to the root: *prefix*, *suffix*, *infix*, and *circumfix*.

Morphological typology: Index of synthesis

- Languages differ with regard to the *index of synthesis*, understood as a continuum, with isolating languages at one end, and polysynthetic languages at the other.

Isolating <--x-------x----------------------x----x-> Synthetic
　　　　　Yay　　English　　　　　Oneida Mohawk

Morphological typology: Index of fusion

- Languages differ with regard to the *index of fusion*, understood as a continuum, with agglutinative languages at one end, and fusional languages at the other.

  Agglutinative <--**x**-----------------**x**----------**x**--> **Fusional**
            Nahuatl   English Greek

Head-marking vs. dependent-marking

- One final morphological variation has to do with whether languages mark grammatical functions such as "subject of" and "object of" on the head or on the dependents (i.e., specifiers and complements in our syntactic terminology).
- Compare Japanese with Mohawk:

Head-marking vs. dependent-marking

a. John-**ga** Mary-**o**   butta   Japanese
   John-**SU** Mary-**OB** hit
   "John hit Mary."
b. Sak Uwári **shako**-núhwe's   Mohawk
   Sak Uwari he/her-likes
   "Sak likes Uwari."
c. Sak Uwári **ruwa**-núhwe's   Mohawk
   Sak Uwari she/him-likes
   "Uwari likes Sak."

Head-marking vs. dependent-marking

- To distinguish between these two types of languages, we call the Mohawk-type a ***head-marking*** language, and the Japanese-type a ***dependent-marking*** language.

Now, back to Mohawk

- Mohawk has three distinctive properties that we need to explain.
- **First**, it does not seem to place any restrictions on word order, as we saw last time.
- **Second**, it's polysynthetic with complex word structure, also discussed last time.
- **Third**, it allows both subjects and objects to drop, as in the examples on the next slide:

Subject and object drop in Mohawk

a. ranuhwe's ne atya'tawi   (subject drop)
   likes   the dress
   "He likes the dress."
b. Sak ranuhwe's   (object drop)
   Sak likes
   "Sak likes it."
c. ranuhwe's   (subject and object drop)
   likes
   "He likes it."

Making sense of polysynthetic word structure: Incorporation

- The key to understanding why words in polysynthetic languages tend to be long and complex is the syntactic operation of **noun incorporation**. Consider:
  - a. Owira'a wahrake' ne o'wahru   (plain version)
      baby   ate   the meat
  - b. Owira'a waha'wahrake'   (incorporation version)
       baby   meat-ate

Noun incorporation

- Noun incorporation is pretty common in Mohawk:

Wa'eksohare'.	"She dish-washed."	(*ks* "dish" + *ohare* "wash")
Wa'kenaktahninu'.	"I bed-bought."	(*nakt* "bed" + *a* + hninu "buy")
Wahana'tarakwetare'.	"He bread-cut."	(*na'tar* "bread" + *a* + *kwetar* "cut")

Noun incorporation

- A similar pattern to Mohawk-style noun incorporation actually appears in English compounding, e.g., *dishwasher, dishwashing, stamp-collecting, housekeeping*, etc.
- The only difference between English and Mohawk is that the latter uses incorporation in a larger number of contexts.
- Interestingly, though, the two languages behave similarly when it comes to restrictions on incorporation.

Noun incorporation

- In English only objects can appear inside compounds; subjects cannot:
  - a. The husband washed the dishes.
  - b. The husband enjoys *dishwashing*./The husband is a good *dishwasher*.
  - c. *She appreciates *husband-washing* (of dishes)./*He is a good *husband-washer* (of dishes).

Noun incorporation

- Interestingly, the same subject-object asymmetry with regard to incorporation holds in Mohawk:
  - a. Owira'a wahrake' ne o'wahru   (plain version)
      baby   ate   the meat
  - b. Owira'a waha'wahrake'   (object incorporation ok)
      baby   meat-ate
  - c. *Wahawirake' ne o'wahru   (subject incorporation *)
       baby-ate   the meat

The verb-object constraint

- An explanation of the subject-object asymmetry with regard to compounding in English and incorporation in Mohawk follows from a universal principle of grammar, that is, what Baker calls the **verb-object constraint** below (from Baker 2001:95):

  "The object of a verb must be the first NP to combine with the verb; the subject NP cannot combine with the verb until after the object does."

Verb incorporation

- Mohawk, however, shows not only noun incorporation, but also what Baker calls *verb incorporation*. Consider the following pair:
  a. Ashare' tu*hsu*'ne'.
      knife   fell-down
      "The knife fell."
  b. Uwari tayú*hsuht*e   ne ashare'
      Uwari made-fall the knife
      "Uwari made the knife fall."

Verb incorporation

- While Mohawk causativization is not possible in languages like English, causative morphemes are not that uncommon in English, e.g., *-ify* in *beautify*, *clarify*; *-ize* in *modernize*, *industrialize*.

Conclusion #1

- Complex word structure in polysynthetic languages is the result of using the same kind of word formation processes used in languages like English, though with much more frequency and in more varied contexts.
- Importantly, the use of such word-formation processes is subject to universal principles that hold of all languages (e.g., the verb-object constraint).

Why do subjects and objects drop in Mohawk then?

  a. ranuhwe's ne atya'tawi
      likes   the dress
      "He likes the dress."
  b. Sak ranuhwe's
      Sak likes
      "Sak likes it."
  c. ranuhwe's
      likes
      "He likes it."

The null subject parameter revisited

- This should sound familiar, right?

- It's obviously reminiscent of the *null subject parameter* that we talked about earlier. Remember Italian?
    a. Gianni verrá.
        Gianni will-come.
    b. Verrá Gianni.
        will-come Gianni.
    c. Verrá.
        will-come.

The null subject parameter revisited

- A plausible explanation for the occurrence of null subjects, at least in Italian-type languages, ties it to the presence of "rich" verbal morphology, which makes the reference of the subject "recoverable" from the form of the verb.
- To see this, compare the verbal conjugation paradigms of the Spanish verb "com" and the corresponding verb "eat" in English in the present tense:

The null subject parameter revisited

Spanish conjugation of "*com*"	English conjugation of "*eat*"
yo com*o*	I eat
tu com*es*	you (sg.) eat
el com*e*	he eat*s*
nosotros com***emos***	we eat
vosotros com***eís***	you (pl.) eat
ellos com*en*	they eat

The null subject parameter revisited

- As in Spanish, Mohawk verbs do inflect for agreement with their subjects. Unlike Spanish, though, they also inflect for agreement with their objects. Consider the following conjugation paradigms for the verb root *nuhwe'* (=like):

The null subject parameter revisited

*ke*nuhwe's	"I like it"	*rake*nuhwe's	"he likes me"
*se*nuhwe's	"you like it"	*ya*nuhwe's	"he likes you"
*ra*nuhwe's	"he likes it"	*ro*nuhwe's	"he likes him"
*ye*nuhwe's	"she likes it"	*shako*nuhwe's	"he likes her"
*yakwa*nuhwe's	"we like it"	*shukwa*nuhwe's	"he likes us"

Conclusion #2

- Subject and object drop in Mohawk follows from the rich morphological head-marking that verbs always show with both their subjects and objects.

How about free word order then?

- This was the initial question: Why is it that Mohawk allows this freedom in its word order in a way that other languages (e.g., English) do not?

- Here are the data again:

Mohawk

a. Sak ranuhwe's ne atya'tawi   (SVO)
   Sak likes   the dress.

b. ranuhwe's ne atya'tawi (ne) Sak   (VOS)
    likes   the dress   (the) Sak.

c. ranuhwe's ne   Sak ne atya'tawi (VSO)
   likes   (the) Sak the dress.

Mohawk

d. Sak atya'tawi ranuhwe's   (SOV)
    Sak dress   likes

e. atya'tawi Sak ranuhwe's   (OSV)
    dress   Sak likes.

f. atya'tawi ranuhwe's (ne) Sak   (OVS)
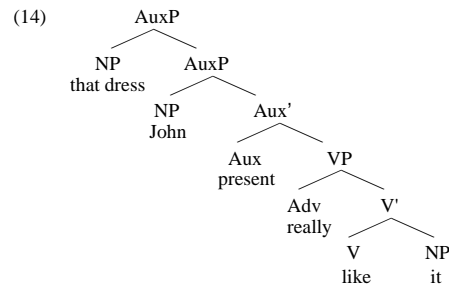   dress   likes   (the) Sak.

Introducing "dislocation"

- To understand why Mohawk has freedom of word order, we need to discuss first the phenomenon of "*dislocation*" common in many, or perhaps all, natural languages.

- Baker illustrates this with data from English:
  a. That dress, John really likes it.   (object left-dislocation)
  b. John really likes it, that dress.   (object right-dislocation)
  c. John, he really likes that dress.   (subject left-dislocation)
  d. He really likes that dress, John.   (subject right-dislocation)

Introducing "dislocation"

- As you can see from these English sentences, dislocated elements are typically linked to a pronoun in the "core" clause ("*it*" in a-b, and "*he*" in c-d). As a result, they come to enjoy more freedom with regard to their positioning in the sentence.
- The standard analysis for dislocation structures is that the dislocated element is attached to AuxP, either to the left or the to right.

Tree for dislocation structures

(14)

```
                    AuxP
                   /    \
                 NP      AuxP
              that dress  /  \
                        NP    Aux'
                      John   /    \
                           Aux     VP
                         present  /  \
                               Adv    V'
                              really  /  \
                                    V    NP
                                  like   it
```
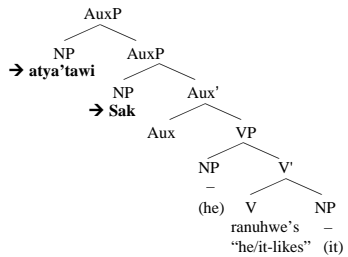
The Pronominal Argument Hypothesis

- But how does this help us explain the Mohawk facts?

- Suppose that the agreement prefixes on verbs in Mohawk are actually subject and object pronouns. If so, then the NPs these pronouns refer to will be able to appear dislocated almost in any position in the sentence, thereby giving rise to what looks like absence of restrictions on word order in the language.

- This is the so-called *Pronominal Argument Hypothesis*, which was first proposed by Jelinek (1984) .
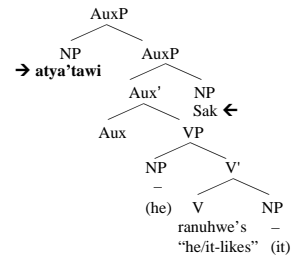
The Pronominal Argument Hypothesis

- Under this analysis, syntactic trees for Mohawk OSV and OVS orders, for example, are as in the following two trees:

Deriving OSV order in Mohawk

```
              AuxP
            /      \
         NP         AuxP
→ atya'tawi       /      \
               NP         Aux'
            → Sak       /      \
                     Aux        VP
                              /    \
                           NP       V'
                           –      /    \
                         (he)   V        NP
                            ranuhwe's     –
                          "he/it-likes"  (it)
```

Deriving OVS order in Mohawk

```
              AuxP
            /      \
         NP         AuxP
→ atya'tawi       /      \
               Aux'       NP
             /      \    Sak ←
          Aux        VP
                   /    \
                NP       V'
                –      /    \
              (he)   V        NP
                 ranuhwe's     –
               "he/it-likes"  (it)
```

Evidence for the dislocation analysis: (1) Binding

- There are two principles governing *binding* of anaphors and pronouns in human languages:
- **Binding Condition A**: "Anaphors (such as reflexives and reciprocals) have to be bound by a higher NP within the smallest AuxP they are in."
- **Binding Condition B**: "Pronouns cannot be bound by a higher NP within the smallest AuxP they are in."

Evidence for the dislocation analysis: (1) Binding

a. John$_i$ likes himself$_i$.　　("*himself*" has to refer to "*John*")

b. John$_i$ says that [Barry$_j$ likes himself$_{*i/j}$].

　　　　("*himself*" has to refer to "*Barry*", not to "*John*")

c. John$_i$ likes him$_{*i}$.　　　　("*him*" cannot refer to "*John*")

d. John$_i$ says that [Barry$_j$ likes him$_{i/*j/k}$].

　　　　("*him*" can refer to "*John*", but not to "*Barry*")

Note: Subscripts are linguists' convention to indicate coreference or lack thereof.

Evidence for the dislocation analysis: (1) Binding

- Dislocation of reflexive pronouns is not possible in English, however:
  *John$_i$ really likes him$_i$, himself$_i$.

- Can you see why?

Reflexives in Mohawk

- Now, if the dislocation analysis of Mohawk word order is correct, then we should predict that the language contains no reflexive NPs, which is true:
  *Sak$_i$ ronuhwe's rauha$_i$
  Sak likes　　himself

- To express reflexivization, Mohawk relies on its polysynthetic affixation again:
  Sak *ratate*nuhwe's
  Sak self-likes

Evidence for the dislocation analysis: (2) Quantificational NPs

- Quantificational NPs such as *everybody*, *nobody*, etc., in English, cannot be associated with pronouns, due to their lack of referentiality, hence they are "non-dislocatable":

    a. Chris, I saw her in the market yesterday.

    b. *Nobody, I saw her in the market yesterday.

Quantificational NPs in Mohawk

- If the dislocation analysis of Mohawk word order is correct, then we should predict that non-referential quantifiers are not possible in Mohawk, which is again borne out by the data:

    *Sak teshakokv yah-ukha

    Sak he/her-saw no+body

- To express the intended meaning here, the negative element "*yah*" has to appear on the verb instead.

Conclusion #3

- Freedom of word order in polysynthetic languages like Mohawk is due to the frequent use of the syntactic strategy of dislocation, which in turn is sanctioned by the presence of subject and object pronouns as prefixes on the verb in the "core" sentence structure.
- There is good evidence from the facts of reflexives and quantificational NPs in Mohawk in support of this dislocation analysis.

The polysynthesis parameter

- It's the polysynthetic morphology on Mohawk verbs then that gives rise to this surface freedom of word order.
- Lack of head directionality in Mohawk, then, is a consequence of its polysynthetic nature. The difference between Mohawk and English can then be expressed in terms of one parameter: the "*polysynthesis parameter*"

The polysynthesis parameter

- "Verbs must include some expression of each of the main participants in the event described by the verb (the subject, object, and indirect object)."

Agenda for next class

- Polysynthesis cont. Baker Chapter 4.
- Optional polysynthesis: Baker Chapter 5 (pp. 143-156)
- Also, verb serialization, Chapter 5, pp. 140-143).