

## INTD0111A/ARBC0111A

# The Unity and Diversity of Human Language

Lecture #9  
Oct 10<sup>th</sup>, 2006

### General comments on Assignment 1

- General comments on Assignment #1:
- Most people did very well, and answers to questions were very good, with an average score of 93/100.
- I did not penalize people for misunderstanding Part C of Exercise 4 as a case of “bilingualism”.

### General comments on Assignment 1

- Also, if you forgot to answer a question, you can still do it and give it to me, BUT:
  - a. you lose 20% off the points assigned to that question since this counts as delayed submission, and
  - b. you can NOT talk to other classmates about the answer to that missing question. So, you will need to write the Honor Code in this case.
- Embedded clauses are NOT relative clauses.

### General comments on Assignment 1

Things to bear in mind, though:

- “I personally believe ...” type of answers are not acceptable in science. In science we rely on “objective” criteria to judge whether a view is tenable or not. We rely on empirical data to argue for or against a certain analysis. One’s “personal” preference is simply irrelevant.

### General comments on Assignment 1

- Also, you cannot be skeptical about the data. You have to assume that they are right, and work accordingly.
- And, finally, LENGHTY correct answers are NOT better than SHORT correct answers. Please be brief!

### Mohawk

- There are three major characteristics of Mohawk that we looked at:
  - a. Complexity of word structure.
  - b. Subject and object drop.
  - c. Freedom of word order.
- As it turns out, these properties of Mohawk are less surprising than it first appears.

## Complexity of word structure

- 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."	( <i>ks</i> "dish" + <i>ohare</i> "wash")
Wa'kenaktahninu'.	"I bed-bought."	( <i>nakt</i> "bed" + <i>a</i> + <i>hninu</i> "buy")
Wahana'tarakwetare'.	"He bread-cut."	( <i>na'tar</i> "bread" + <i>a</i> + <i>kwetar</i> "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, which 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 *verb incorporation*. Consider the following pair:
  - a. Ashare' tuhsu'ne'.  
knife fell-down  
"The knife fell."
  - b. Uwari tayúhsuhte ne ashare'  
Uwari made-to-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).

## Subject and object drop in Mohawk

- Here's the data again:
  - 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 verrà.  
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 “ <i>com</i> ”	English conjugation of “ <i>eat</i> ”
yo <i>como</i>	I eat
tu <i>comes</i>	you (sg.) eat
el <i>come</i>	he eats
nosotros <i>comemos</i>	we eat
vosotros <i>comeís</i>	you (pl.) eat
ellos <i>comen</i>	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

<i>kenuhwe's</i>	“I like it”	<i>rakenuhwe's</i>	“he likes me”
<i>senuhwe's</i>	“you like it:	<i>yanuhwe's</i>	“he likes you”
<i>ranuhwe's</i>	“he likes it”	<i>ronuhwe's</i>	“he likes him”
<i>yenuhwe's</i>	“she likes it”	<i>shakenuhwe's</i>	“he likes her”
<i>yakwanuhwe's</i>	“we like it?”	<i>shukwanuhwe's</i>	“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.
- BUT: Why do some languages without rich verbal morphology still drop subjects and objects? Any ideas?

### Freedom of word order in Mohawk

- Here are the data again:

### Freedom of word order in Mohawk

- Sak ranuhwe's ne atya'tawi (SVO)  
Sak likes the dress.
- ranuhwe's ne atya'tawi (ne) Sak (VOS)  
likes the dress (the) Sak.
- ranuhwe's ne Sak ne atya'tawi (VSO)  
likes (the) Sak the dress.

### Freedom of word order in 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.

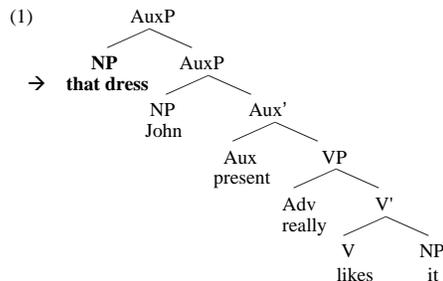
### Introducing “dislocation”

- 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



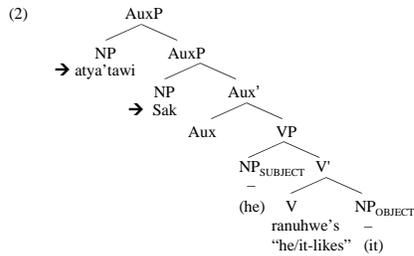
### The Pronominal Argument Hypothesis

- 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).

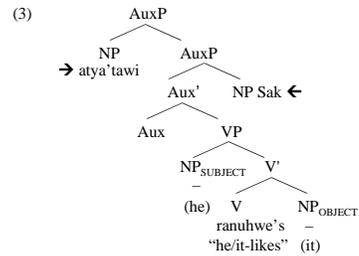
### The Pronominal Argument Hypothesis

- Under this analysis, syntactic trees for Mohawk OSV and OVS orders, for example, are as in the following two trees, with arrows pointing to the dislocated elements:

## Deriving OSV order in Mohawk



## Deriving OVS order in Mohawk



## Evidence for the dislocation analysis

- 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 within the minimal clause they are in.”
- Binding Condition B:** “Pronouns have to be free within the minimal clause they are in.”

## Evidence for the dislocation analysis

- John<sub>i</sub> likes himself<sub>i</sub>. (“*himself*” has to refer to “*John*”)
- John<sub>i</sub> says that [Barry<sub>j</sub> likes himself<sub>\*i/j</sub>]. (“*himself*” has to refer to “*Barry*”, not to “*John*”)
- John<sub>i</sub> likes him<sub>\*i</sub>. (“*him*” cannot refer to “*John*”)
- John<sub>i</sub> says that [Barry likes him<sub>i/\*j/k</sub>]. (“*him*” can refer to “*John*”, but not to “*Barry*”)

## Evidence for the dislocation analysis

- Dislocation of reflexive pronouns is not possible in English, however (can you explain why?):  
\*John<sub>i</sub> really likes him<sub>i</sub>, himself<sub>i</sub>.
- 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 ronuhwe's rauha  
Sak likes himself
- To express reflexivization, Mohawk relies on its polysynthetic affixation again:  
Sak *ratatenuhwe's*  
Sak self-likes

## Evidence for the dislocation analysis

- 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”:

  - Chris, I saw her in the market yesterday.
  - \*Nobody, I saw her in the market yesterday.

### Evidence for the dislocation analysis

- 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.

### 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, is, thus, a consequence of its polysynthetic nature. The difference between Mohawk and English can then be expressed in terms of one basic parameter, the “*polysynthesis parameter*”:

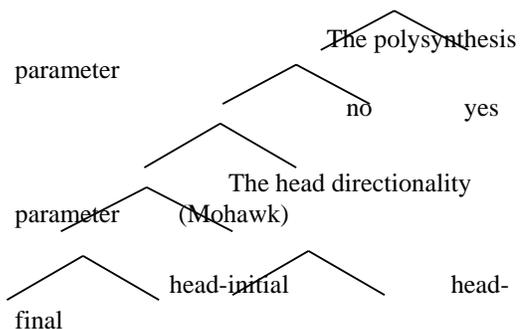
### The polysynthesis parameter

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

### The polysynthesis parameter

- Adding this at the top of the parameter hierarchy, we get version 3 of the hierarchy:

### Baker's parameter hierarchy (3<sup>rd</sup> version)



## Polysynthetic languages of the world

(table from Baker 2001:115)

Language family	Sample languages	Where spoken
Caddoan languages	<i>Wichita</i>	American Great Plains
Tanoan languages	<i>Suothern Tiwa, Jemez</i>	New Mexico
Nahuatlan languages	<i>Nahuatl (esp. Classical)</i>	Central Mexico
Gunwiniguan languages	<i>Mayali, Nunggubuyu, etc.</i>	North central Australia
Paleosiberian languages	<i>Chukchee, Koryak</i>	Northeastern Siberia
Mapuche	<i>Mapuche</i>	Central Chile
Ainu	<i>Ainu</i>	Northern Japan
Munda languages?	<i>So:ta?</i>	India

## Polysynthesis and head directionality

- Question: Judging from version 3 of the parameter hierarchy, is the head directionality parameter relevant to polysynthetic languages?
- No. The way it looks now, the answer is negative.

## Polysynthesis and head directionality

- It turns out, however, that there are languages for which both polysynthesis and head directionality seem to be relevant.
- We talk about that on Thursday.

## Agenda for next class

- Optional polysynthesis. Baker Chapter 5 (pp. 143-156)
- A few more parameters: Baker Chapter 6.