

INTD0112 Introduction to Linguistics

Lecture #19
April 26th, 2007

Announcements

- Your last homework assignment will be posted tomorrow. Like homework 6, it'll be worth 75 points.
- Speaking of homework, any questions on assignment 6?
- How is your research paper partnership going?

Language change and "reconstruction"

- A language undergoes change in its lexicon as well as all components of grammar (morphology, syntax, phonology, and semantics).
- Over time, these changes might become considerable enough to the point where we become unable to tell if two historical varieties of the same language are actually related. Luckily, though, historical linguists developed ways to establish historical relations among languages. We discuss this today.

Historical linguistics

- The 19th century was the century for the study of historical (aka *diachronic*) linguistics.
- Herman Paul in 1891: "It has been objected that there is another view of language possible than the historical. I must contradict this."

Reconstruction and the comparative method

- Historical linguists, aka *comparativists*, were mainly concerned with "reconstructing" the properties of the parent language of a group of languages that are believed to be genetically related.
- *Reconstruction* was done by means of the *comparative method*, whereby earlier forms were determined via the comparison of later forms.
- The earlier forms are called *proto-forms*, and the earlier language is called a *proto-language*.

Cognates

- The forms compared were typically words that were believed to have developed from the same ancestral root. They are called *cognates*.
- Consider the following table of Germanic cognates:

Cognates

English	Dutch	German	Danish	Swedish
man	man	Mann	mand	man
foot	voet	Fuß	fod	fot
bring	brenge	bringen	bringe	bringa

- Compare Turkish "non-cognates":
adam (man), *ajak* (foot), and *getir* (bring)

The discovery of Proto-Indo-European

- In 1786, Sir William Jones, a British judge and scholar working in India, noted that Sanskrit bore to Greek and Latin "a stronger affinity ... than could possibly have been produced by accident," and he suggested that the three languages had "sprung from a common source".
- This common source is what came to be known later as "Proto-Indo-European" (PIE), the parent language of most of the languages spoken today in Europe, Persia, and northern India.

The discovery of Proto-Indo-European

- Thirty years later, a young Danish scholar, named Rasmus Rask, postulated general correspondences between the consonants of Germanic languages and those of Sanskrit, Greek, and Latin, noting for example that where the ancient languages showed a [p] sound, the corresponding words in the Germanic languages showed an [f].

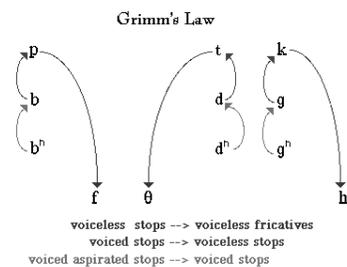
The discovery of Proto-Indo-European

Sanskrit	Latin	English
pitar-	pater	father
pad-	ped-	foot
—	piscis	fish
pasu	pecu	fee

Grimm's Law

- In 1822, a German scholar, named Jakob Grimm, extended Rask's observations and provided a detailed exposition of the Germanic consonant shift that came to be known as *Grimm's Law*.
- The crucial observation was that where ancient languages showed a voiceless stop [p, t, k], Germanic languages like English and Gothic showed a corresponding fricative [f, θ, h]:

Grimm's Law



Grimm's Law

Sanskrit	Greek	Latin	Gothic	English
pad-	pod-	ped-	fotus	foot
trayas	treis	tres	threis	three
—	kardia	kor	hairto	heart

Grimm's Law (note * = proto)

PIE form	Sanskrit	Latin	English
*p	pitar-	pater	father
*t	trayas	trés	three
*k	śun	canis	hound
*b	No cognate	labium	lip
*d	dva	duo	two
*g	ajras	ager	acre
*bh	bhrātar-	frāter	brother
*dh	dhā	fē-ci	do
*gh	vah-	veh-ō	wagon

Verner's Law

- There were exceptions to Grimm's Law, but they turned out to be systematic.
- Karl Verner traced a group of exceptions to Grimm's Law, formulating what came to be known as *Verner's Law*, which says:

When the preceding vowel was unstressed, [f, θ, x] underwent a further change to [b, d, g].

Verner's Law

Sanskrit	Gothic	
bhrā'tā	[bro:θar]	"brother"
pitā'	[fadar]	"father"

(where ' indicates stress).

English words not affected by Grimm's Law

- Notice that some words in English were not affected by Grimm's Law:

Latin	English	
ped-	pedestrian	(no p → f)
tenuis	tenuos	(no t → θ)
canalis	canal	(no k → h)

- Any ideas why?

The second Germanic consonant shift

- A second consonant shift took place in some Germanic languages (e.g., Modern German), but not in others (e.g., Modern English):

Proto-sound	After vowels	Elsewhere
*p	f	pf
*t	s	ts
*k	x	k
*d	t	t

The second Germanic consonant shift

Modern English	Modern German
open	offen
path	pfad
bite	beißen
to	zu (z = ts)
book	Buch (ch = x)
come	kommen
ride	reiten
door	Tür

So, how do we decide on the proto-form?

- Reconstruction of proto-forms makes use of two main strategies:
 - a. the phonetic plausibility strategy
 - b. the majority rules strategy.

The phonetic plausibility strategy

- The phonetic plausibility strategy requires that any sound changes posited to account for differences between proto-forms and later forms must be phonetically plausible.

Some phonetically plausible sound changes

- Voiceless sounds become voiced between vowels and before voiced consonants.
- Stops become fricatives between vowels.
- Consonants become palatalized before front vowels.
- Consonants become voiceless at the end of words.
- Oral vowels become nasalized before nasals.
- Fricatives become [h].
- [h] deletes between vowels.

The majority rules strategy

- The majority rules strategy stipulates that if no phonetically plausible change can account for the observed differences, then the sound found in the majority of cognates should be assumed.

Romance cognates

French	Italian	Spanish	Portuguese	
cher	caro	caro	caro	"dear"
champ	campo	campo	campo	"field"
chandelle	candela	candela	candeia	"candle"

- The regular sound correspondence for the initial sound is *š-k-k-k*.
- Two hypotheses: (a) $k \rightarrow š$, or (b) $š \rightarrow k$.
 - By phonetic plausibility, (a) wins.
 - By majority rules, also (a) wins.

Cognates from "Hypothetica"

- Consider these data from four languages belonging to the Hypothetica family:

L1	L2	L3	L4
hono	hono	fono	vono
hari	hari	fari	veli
rahima	rahima	rafima	levima
hor	hor	for	vol

- What's the sound correspondence for the initial sound here?

h-h-f-v

Cognates from Hypothetica

- Can you think of the hypotheses for the proto-form?
Either (a) $h \rightarrow f$ and $h \rightarrow v$,
(b) $f \rightarrow h$ and $v \rightarrow h$, or
(c) $v \rightarrow h$ and $v \rightarrow f$
- By the phonetic plausibility strategy, (a) actually cannot be right, because fricatives do change into [h], but not vice versa.
- Similarly, by phonetic plausibility, (c) loses to (b), since it is more common for [f] to become voiced than for [v] to become voiceless. The proto-sound is thus **f*.
- Notice that the majority rules strategy predicts [h] as the proto-sound, but that's irrelevant now since phonetic plausibility takes precedence.

Cognates from Hypothetica

- Now find another regular sound correspondence in the four Hypothetica languages and indicate what the proto-sound is:

L1	L2	L3	L4
hono	hono	fono	vono
hari	hari	fari	veli
rahima	rahima	rafima	levima
hor	hor	for	vol

Proto-Romance

- For a good illustration of reconstruction, read the section on "Reconstructing proto-romance" in your textbook (pp. 275-79).

Transition

- We have seen *how* a language can change lexically, semantically, morphologically, syntactically, and phonologically.
- We have also seen *how* the changes can become so substantial to the point where one language, over time, gives rise to multiple related languages.
- We have also seen *how* historical linguists use the comparative method to reconstruct proto-forms in a proto-language from a set of cognates.

The "why" question

- So, we have seen some "how's". Can we discuss some "why's" now?
- The big "why" question is: Why do languages change?

Causes for language change: Technology, contact, social pressure

- Some changes are easy to understand: Creating new words to name new objects. Or borrowing for the same purpose. Or language contact.
- As we will discuss next week, social pressure can actually lead to certain linguistic changes (the loss of postvocalic [r] in some parts of the east coast in the US).

Causes for language change: Ease of articulation

- Some sound changes might be driven by a desire for *ease of articulation*, e.g., assimilation of vowels preceding nasal consonants.
- French nasalized vowels originated from nasal assimilation followed by word-final consonant deletion: [bɔ̃n] → [bɔ̃n] → [bɔ̃].
- But how do we account for the Great Vowel Shift or the Germanic consonant shift in terms of least articulatory effort?

Causes for language change: Naturalness

- Certain patterns of sound change typically occur, though not others, suggesting that change might be in the direction of “*naturalness*”.
- For example, the CV syllable is claimed to be the most natural of all syllables.
- As it turns out, CV is indeed universal: Every human language has it.

Causes for language change: Naturalness

- Sound changes in syllable structure are typically in the direction of the CV syllable, either through consonant deletion or vowel epenthesis:
Consonant deletion:
OE “cnēow” → ModE “knee” [ni:]
Old Spanish “non” → Spanish “no”
Vowel epenthesis:
Italian “croce” → Sicilian “kiruci” “cross”

Causes for language change: Naturalness

- There is also evidence from language acquisition for the naturalness of the CV syllable. As we have already seen, children typically simplify longer syllables to change them into CV syllables:
“tree” [tri:] → [ti:]
“dog” [dɔg] → [dɔ]

Causes for language change: Analogy

- Some changes might be the result of *analogy*: the desire to reduce the number of exceptional or irregular forms in the language as much as possible:
sweep-swept → sweep-sweepled
wake-woke → wake-waked

But some changes are harder to explain than others

- Why would a language change its basic word order, the way it forms questions, the way it forms negation, verb placement, subject placement, its case and agreement system, its morphological typology, etc.?

But some changes are harder to explain than others

- And why are changes systematic and subject to the same constraints that govern cross-linguistic variation?
- So, phonological changes are subject to the same phonological rules that we find in human languages. And a syntactic change in a language never takes the language beyond the limits of what is possible in human languages in general.

But some changes are harder to explain than others

- The “why” question is obviously hard, and 19th century historical linguists felt sometimes the pressure to provide an answer, but only in ways that we cannot accept today.

Warning: This is *not* an explanation!

- So, Grimm explained the law of consonant shifts as
“connected with the German’s mighty progress and struggle for freedom ... the invincible German race was becoming ever more vividly aware of the unstopability of its advance into all parts of Europe ... How could such a forceful mobilization of the race have failed to stir up its language at the same time, jolting it out of its traditional rut and exalting it? Does there not lie a certain courage and pride in the strengthening of voiced stop into voiceless stop and voiceless stop into fricative?”

So, ...

Can we do better?

A view from the “parametric” window

- If language change is systematic, not just within the same language, but also across different languages, and if change never takes a language outside the confines of what is a “possible human language”, then it makes sense that language change is actually regulated by the same constraints that regulate cross-linguistic variation in general.
- That is: If languages differ due to selecting different parametric settings, then a language change may simply be the result of a change in the language’s parametric settings.

A view from the "parametric" window

- Thus, under the principles and parameters framework, what changes is a mental grammar, an ***I-language***, to use the term coined by Chomsky, where "*I*" stands for *intensional*, *individual* and *internal*.
- I-language is typically distinguished from ***E-language***, a collection of actual utterances, texts, corpora, of a particular language, where "*E*" stands for *extensional* and *external (to the mind)*.

I-language vs. E-language

- Given this distinction between I-language and E-language, it follows that there is actually no such thing as a "collective" grammar of English.
- Rather, there are millions of individuals whose internalized grammars generate the body of what we informally refer to as "English".
- If it helps, think of the "French liver", the "Irish wit", or the "Egyptian humor". Do these "actually" exist?

I-language vs. E-language

- The distinction between I-language and E-language may help us understand why people disagree on who causes language change: adults or children?
- In terms of E-language, of course the answer is adults. We have seen a lot of examples of innovations introduced by adults in their language.

I-language vs. E-language

- But in terms of I-language, the answer to the question is not as clear. Change in usage does not necessarily entail change in one's mental grammar. Most of the innovations used by adults may be, and in the majority of cases are, used consciously (e.g., "*whom*", or "*It's I*" in the speech of some speakers).

Changes in the PLD

- But linguistic innovations are important for biological grammars indirectly: they constitute changes to the primary linguistic data (PLD), the input experience for the next generation of children acquiring the language.
- Now, if such changes are "robust" or "salient" enough in the PLD, then the child will end up with a grammar different from that of her parents, producing utterances that will in turn affect the PLD of others learning the language. And so on and so forth.

Language change as parameter re-setting

- Why would children decide to change the parametric settings of their language?
- Well, it can't be that two-year olds are thinking "*Children of the speech community, Unite, and let's revolt against the adults' tyrannical grammars.*"
- There must be a "trigger" in the PLD that makes children choose a different setting for a particular parameter from the setting in the adult grammar, thereby giving rise to a change in the language.

Interim summary

- Thinking of language change in terms of I-language thus entails that change in a language actually happens to individuals who then spread it to the rest of the population.
- Since I-language arises in the mind of the speakers in their childhood, it follows that it must be children who actually initiate language change, which then spreads through the population.
- In what follows we look at some examples of syntactic change in English as explained by the parametric approach.

Change of word order in English

- As we mentioned last time, there was a change in word order from SOV in Old English to SVO in Middle and Modern English.
- OE had sentences like (a) below (using ModE words simply for convenience):
 - a. *The man the dog bit.*

Change of word order in English

- But OE also developed a stylistic rule such that the verb will come before the subject if the sentence is introduced by a conjunction like "and" or a transition word like "then":
 - b. *And bit the man the dog*
- Suppose the occurrence of this type of sentence becomes really frequent in the PLD. What would the child infer about word order in her language?
- "Hmmm ... is my language SOV or SVO?"

Change of word order in English

- Well, the sentence in (b) could be derived either from
 - c. *The man the dog bit.*
(which is the case in the adult grammar)or,
 - d. *The man bit the dog.*

Change of word order in English

- Suppose further that OE speakers also frequently produce sentences with the verb right after a topic phrase (e.g., adverbial):
 - e. *Yesterday bit the man the dog.*
- Since subjects can also be topics, sentences such as (f) will also occur in the PLD of a child learning OE:
 - f. *The man bit the dog.*

Ambiguity in the input

- For adults, the verb is fronted from final position. But for children, the PLD is ambiguous.
- Children may thus be driven to conclude that their language is actually verb-initial, not verb-final.
- Later on, when the fad for verb fronting dies out, English will be left with the rigid SVO order of today.

Language change as parameter re-setting

- The view of language as a biological system (as an *I-language*), thus, takes language change (at least in the area of syntax) to be the result of parameter re-setting by children in ways that differ from the adult grammar that children hear around them.
- So, while innovations start with adults, under this approach, language change is actually done by children.

From V2 to non-V2 in OE

- Using the parametric approach, David Lightfoot provides an analysis of the change of verb placement from OE to MidE and ModE.
- To remind you, some languages like German, Dutch, and other Scandinavian languages have a restriction on the position of the finite verb in the sentence: The verb has to come in second, no matter what the first constituent is.

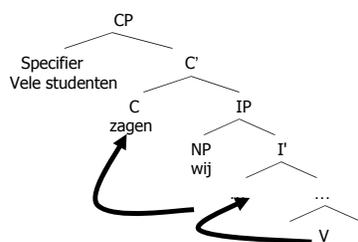
V2 in Dutch

- [Wij] zagen vele studenten in Amsterdam.
We saw many students in Amsterdam.
- [Vele studenten] zagen wij in Amsterdam.
- [In Amsterdam] zagen wij vele studenten.
- [Vaak] zagen wij vele studenten in Amsterdam.
- *[In Amsterdam] wij zagen vele studenten.
- *[Vaak] wij vele studenten in Amsterdam zagen.

V2 in Dutch

- In our discussion of syntax, we explained the V2 effect in terms of the V2 parameter, whose positive setting forces finite verbs to move all the way from V to I then to C, when specifier of C is filled.
- A tree is given on the next slide:

V2 in Dutch



Setting the V2 parameter: The trigger

- What the Dutch-learning child needs to do, as opposed to, say, the English-learning or French-learning child, is simply observe positive evidence in the PLD for the setting of the V2 parameter.
- Examples of such evidence will be sentences like (b-d) above, repeated here for convenience:
 - [Vele studenten] zagen wij in Amsterdam.
 - [In Amsterdam] zagen wij vele studenten.
 - [Vaak] zagen wij vele studenten in Amsterdam.

Setting the V2 parameter: The threshold

- Statistical counts for V2 languages, however, show that the XP in specifier of C is subject 70% of the time in conversational speech, and nonsubject 30% of the time.
- It must be then that 30% is enough to set the V2 parameter positively. Sometimes, this is expressed as the “threshold” for setting the parameter.

Now, back to OE/MidE

- OE and MidE texts show evidence for verb-second orders as well as other orders.
- On the surface, then, it looks like, V2 was optional at this stage in the history of English.
- But that cannot be right, given our general assumptions about parameters. Can you see why?
- A parameter is an either-or option. A child cannot get away with having both options in the same grammar.

Now, back to OE/MidE

- As it turns out, there is good evidence provided by Kroch and Taylor (1997) that MidE actually had two main dialects: A northern, Scandinavian-based V2 dialect, and a southern non-V2 dialect.
- The alternation in texts then is the result of the presence of these two dialects, rather than the optionality of V2 in speakers’ grammars.
- The challenging question now is: Why did the V2 grammar in MidE die out?

The loss of V2 from English

- Under the parametric approach, Lightfoot provides an analysis for the death of V2 in English.
- First, children in Lincolnshire and Yorkshire as they mingled with southerners, must have heard sentences where the verb is in second position much less frequently than before.
- According to one statistical count of V2 structures in *Sawles Warde*, a 13th century text, only 17% of main clauses had V2 where the initial element was a nonsubject. This is less than the 30% threshold we noted for the V2 languages of today.

The loss of V2 from English

- Second, northern children must have also started hearing sentences where the verb was in third position, e.g.,
 - a. *Æfter his gebede he* [_vahof] *þæt cild up*
“After his prayer he lifted the child up.”
 - b. *þis he* [_vdyde] *eat for þes biscopes luuen*
“This he did all for this bishop’s love.”

The loss of V2 from English

- Third, around that same time, the I-to-C movement to form yes-no questions was being lost from the grammar.
- As a result, forms like “*Visited you London last week?*” were becoming infrequent in the PLD, giving way to “*Did you visit London last week?*”.

The loss of V2 from English

- As a result of these three factors, Lightfoot argues, the “trigger” to set the V2 parameter positively was no longer “robust” in the PLD of children learning English, and as a result children were forced to set the parameter negatively, giving rise to the English of today.

Next class agenda

- Sociolinguistic variation: chapter 15.