

LING 106: Homework 2
Due: Friday, January 30, 2009, 5:00pm

1. LEXICAL ANALYSIS: WHAT LANGUAGES ARE

In class, we distinguished *descriptive* and *prescriptive* grammar. For each of the following categories, give two sentences. Try to use examples that don't resemble those in the lecture notes.

- a. Sentences that are descriptively ungrammatical, in any dialect of English. (These should be reasonably sentence-like—so not **apple happy happy the the** or **Johann muss irgendeinen Arzt heiraten**.)
- b. Sentences that are descriptively grammatical (in some dialect) but prescriptively ungrammatical: that is, sentences that some speakers would recognize as something one could say, but that break the rules of Formal Written English.
- c. Sentences that are syntactically well-formed but semantically anomalous.
- d. Sentences that are syntactically and semantically well-formed, but which are hard to understand for processing reasons.

2. FORMAL DEFINITIONS OF LANGUAGE

We defined a language as a set of finite-length strings, describable with a lexicon, a syntax, and a semantics. Set aside, for the time being, the last of these three...

2.1. *Deriving a language from its grammar*

The following is a grammar for language W , minus its semantics.

Lexicon = { <**a**, VOW, ...>, <**o**, VOW, ...>, <**i**, VOW, ...>, <**p**, CON, ...>, <**t**, CON, ...>, <**n**, CON, ...> }

Syntax: a string x is a sentence of W if x has the form CON VOW CON, where the first and last lexical items are not the same.

Provide, in list form, the set W —that is, list the strings of language W .

2.2. *Deriving a grammar from a language*

Consider language D , where the strings that are sentences of D are:

chan yana tho,
chan yana yana tho,
chan yana yana yana tho,
chan yana yana yana yana tho,
...
chan yana yana ... yana yana tho, ...

(Note that the set D consists of an infinite number of strings, but each one is finite in length.)
Provide a lexicon and a syntax that generate language D .

3. THE DISTRIBUTIONAL METHOD

In class, we saw evidence that, e.g., **fairer** and **purer** are the same category, as are **from** and **in**, and so forth. But of course, for English speakers, it's easy to pick out a couple of adjectives or prepositions. What if instead you had to face an unfamiliar language—e.g., Welsh or Finnish?¹

3.1. *Welsh*

The following lines are from *Y Gododin*, an epic Welsh poem with translations by John Williams (1811-1862). They are presented here in no particular order.

- (1) **a charnedawr tra gogyhwc gwyr trin**
“And there was raising large cairns over the heroes of toil.”
- (2) **deichyr eryr gwyr govaran**
“Unflinching eagle of the forward heroes”
- (3) **en ol gwyr pebyr temyr tudwet**
“After the strenuous warriors have extended their country's bounds”
- (4) **gwyr a aeth gatraeth veduaeth uedwn**
“The heroes marched to Cattræth, filled with mead and drunk,”
- (5) **gwyr en reit moleit eneit dichwant**
“Men renowned in difficulty, prodigal of their lives”
- (6) **gwyr nyt oedyn drych draet fo**
“The warriors did not cut their way to flee,”

Based on the above data, you should be able to give the meaning of at least one word of Welsh. What word? What does it mean? How do you know? (Note: the place name **gatraeth** “Cattræth” doesn't count.)

¹ Foreign texts borrowed gratefully from Project Gutenberg. Also, please note: I speak no Welsh at all, and only one word of Finnish, namely **jäätelöä**, “ice cream (partitive)”, which didn't appear in the corpus. Consequently: (a) not knowing Welsh or Finnish won't keep you from solving these; (b) in cases where I excerpted part of a sentence, I can't promise that what I've used is even a complete grammatical phrase.

3.2. *Finnish*

3.2.1. *Distributional information*

The following sentences are assembled from a variety of Finnish texts. They've been conveniently placed in pairs, saving you the trouble of scouring thousands of lines of Finnish prose, looking for evidence. For each numbered example (whether it's a pair of sentences, or a single, longer sentence), provide a pair of words that belong to a single category, and explain how you know.

- (7) a. ...istumaan ja halaili äitiä iloissaan, vaikka ei tiennyt syytä minkä tähden hän halaili.
b. Vaan sen puheen johdosta se kuitenkin tuntui olevan, vaikka ei tiennyt oikein minkä tähden se oli.
- (8) a. Ja jos niihen nyt muutaman tai parin satamarkkasta panee, niin se ei ole mitään, kun niissä on ijäksi ja vielä pojan pojallekin kalua, kun ne hyvät laittaa.
b. Menköön se vaikka Matin pellon ojaan, niin se ei merkitse mitään, kun se kerran on näiksi lähtenyt.
- (9) Samoin on laita, jos toisen paha sana vastataan rakkauden sanalla, niin sen viha muuttuu rakkaudeksi, jos toisen paha teko vastataan rakkauden työllä, niin se vaikuttaa rakkauden ja viha sammuu.
- (10) ...että lähetän hänelle rakkaan tervehdyksen ja että kiitän häntä kaikesta siitä hyvästä, mitä hän minulle on tehnyt, ja kaikesta siitä kunniaista, mitä hän minulle on osoittanut lapsuudesta pitäin...

3.2.2. Using Harris's Conditions

Consider one more pair of Finnish sentences:

- (11) a. ...ajatteli alottaa jotakin puhetta sen kirjeen johdosta, mutta ei tiennyt mitä oikein sanoisi.
- b. Hannan mielessä tuntui, että pitäisi siihen jotakin sanoa, mutta ei selvinnyt, mitä oikein sanoisi.

Once again, identify a pair of words that are likely to be the same syntactic category.

Now answer the following: suppose that you've hypothesized that each of these words consists of more than one morpheme. Which two sentences of the six below, presented in no particular order, would be most helpful in proving the hypothesis? Explain why, with specific reference to Harris's conditions.

- (12) a. ...ja samassa näytti koko tuo säikähtynyt kyyhkysparvi tuokioksi hämmentyneen selviämättömään sekasotkuun.
- b. Jukella siinä selkensä tiessä hengen heikkona sairastaminen kävi polttavan ikäväksi.
- c. "Jumala olkoon kanssanne, jalo sire; mitä tietä tulee lohikäärme?"
- d. ...paholaisen niin lähelle itseään selvissä verenvuodatuksen aikeissa.
- e. ...sitten, taitavasti selvittäen kirjoitetut sanat, ilmoitti hänelle, mitä Tristan pyysi.
- f. Tristan käänsi hevosensa, Kaherdin ohjasi omansa samalle tielle.