

Problem Set #1

Morphology

Junction Intro to Linguistics

June 30, 2008

Please work together in class to do this problem set. Solutions are due tomorrow, July 1.

A Few Rough Definitions

- Morphology - the study of how words are formed.
- Morpheme - a part of a word that bears a meaning or function.
- Morphemes come in several types:
 - Root - e.g. Dis-**establish**-ment, re-**locat**-ion
 - Prefix - e.g. **Dis**-establish-ment, **re**-locat-ion
 - Suffix - e.g. Dis-establish-**ment**, re-locat-**ion**
 - Infix (rare in English) - e.g. A-**whole**-nother, abso-**f*cking**-lutely
 - Circumfix (even rarer in English)

Note: Not everything that looks like a morpheme is necessarily a morpheme. For example, in English we have the morpheme *cat* meaning ‘cat’. However this morpheme is not part of the word *caterpillar*. In fact, *caterpillar* consists of only one morpheme, which means ‘caterpillar’.

1 Matching

(This problem was written by Pilar Valenzuela, Copyright 2007, University of Oregon, and viciously stolen off the Computational Linguistics Olympiad website.)

Quechua is a South American language family with about 8,000,000 speakers, most of whom inhabit the Andes mountains of Peru, Bolivia and Ecuador. Quechua was the official language of the Tawantinsuyu or Inca Empire before the Spanish invasion of 1532. For hundreds of years Cuzco, in what is now Peru, was the capital of the Inca empire. The

sentences below represent the variety of Quechua currently spoken in Cuzco and in the area around Lake Titicaca. The following are some sentences in Quechua, with their translations in random order. Indicate which translation goes with each Quechua sentence.

Quechua sentences

1. Antukaq chakranpiqa t'ikashanmi papa.
2. Siskuq chakranpiqa wiñashanmi sara.
3. Siskuq chakranpiqa rurushansi kiwña.
4. Antukaq chakranpiqa t'ikashanchá kiwña.
5. Siskuq chakranpiqa wiñashansi sara.
6. Antukaq chakranpiqa wiñashanchá papa.

English translations (in a random order)

- A. Potatoes may be growing in Antuka's field.
- B. Barley may be flowering in Antuka's field.
- C. Corn is growing in Sisku's field.
- D. I've heard corn is growing in Sisku's field.
- E. I've heard barley is yielding fruit in Sisku's field.
- F. Potatoes are flowering in Antuka's field.

Now, provide English translations for the following Quechua sentences.

7. Istuchaq chakranpiqa t'ikashansi sara.
8. Sawinaq chakranpiqa wiñashanchá kiwña.
9. Tumasaq chakranpiqa rurushanmi papa.
10. Kusiqa chakranpiqa t'ikashanchá papa.
11. Inashuq chakranpiqa rurushansi kiwña.

2 Mini-Phonology

Consider the following list of words in English.

indistinct	infallible	irresponsible	insufficient	impious	impolite
irreproachably	inaudible	imbalanced	imperfection	inaccessible	inattention
inequity	incurably	impersonator	irreverent	immutable	indecision
inconclusive	irrational	irresistible	immobile	irregular	insignificant
ineligible	incomplete	ineffectiveness	impatient	infertile	

Each of these words has a prefix. What are the different prefixes? What do they mean?

What evidence do we have that the prefixes are different from each other?

What evidence do we have that the prefixes are the same as each other?

If we were to postulate that the prefixes are actually the same, it would be nice to have some way to predict which form we get when we add the prefix to a root. Can you think of any such algorithm?

3 Mini-Syntax

In English, there is a prefix *un-*. It seems to attach to both verbs and adjectives.

Verbs:

untie	undo	unravel	unwind	untwist	unscrew	uncork	unfasten
unlatch	uncouple	unhinge	unbalance	uncurl	unfold	untangle	unhorse
unhand	unclothe						

Adjectives:

unlikely	unhealthy	unconstitutional	unambitious	unemotional	unethical
unspectacular	uncivil	unable	unreal		

Can you discern a difference in meaning between the *un-* that attaches to adjectives and the *un-* that attaches to verbs? What is it?

The following is a list of words that are formed by the morpheme *un-*, a root that is a verb, and a suffix that changes a verb into an adjective.

unobjectionable	unmentionable	unoffensive	unmanageable	unidentifiable
unintelligible	ungovernable	uncommunicative	unconquerable	unassailable
unfathomable	unforgettable	unforeseeable		

One analysis is that we simply have three morphemes and we combine them to make a word. Another possible analysis of these words is that we begin with the root, add the suffix, then add the prefix. A third possible analysis is that we begin with the root, add the prefix, then add the suffix. Which analysis is the most likely? Offer support for this analysis.

Bonus Problem

In English, we have verbs:

- (1) **Close** the door
- (2) He **closed** the door
- (3) The door was **closed**

Verbs in the past participle form are ambiguous between an adjective and a verb reading:

- (4) The door is **closed**
- (5) The door was **closed**

There is one reading in which *closed* is a verb, and the sentence depicts an action that happened in the past, in a passive voice. There is another reading in which *closed* is an adjective, and the sentence is depicting a state of being for the door. You can search your heart for a more precise description of these two readings.

Consider the following (final!) list of words.

untied unopened unwound uncorked unfolded unlatched unbuckled
unclothed undelivered undefeated uncoupled untrained unclasped

We know that the participial form (e.g. *tied*) is ambiguous between a verb and adjective. We also know that *un-* can attach to either verbs or adjectives. Thus, we might presume that when *un-* is attached to a participial form, the result is still ambiguous. Is this the case? How do your observations relate to Problem 3?