

*Null morpheme (-∅)*

We looked at the following data from Tz'utujil, a Mayan language spoken in Guatemala.<sup>1</sup>

|         |                   |         |                   |
|---------|-------------------|---------|-------------------|
| xinwari | 'I slept'         | xoqeeli | 'we left'         |
| neeli   | 'he/she leaves'   | ninwari | 'I sleep'         |
| ne7eeli | 'they leave'      | xixwari | 'you (pl.) slept' |
| nixwari | 'you (pl.) sleep' | xe7eeli | 'they left'       |
| xateeli | 'you (sg.) left'  | xwari   | 'he/she slept'    |
| natwari | 'you (sg.) sleep' |         |                   |

(A note on Tz'utujil spelling: x is pronounced [ʃ], and 7 is pronounced [ʔ]. Data from Dayley 1985:87.)

When we were looking to identify the morphemes in this dataset, we found that we can nicely split up the words into morphemes, with the exception of the 3<sup>rd</sup> person singular morpheme (the morpheme that should correspond to 'he/she' in the English translation). We discussed two options to account for this: one was to say that the 3<sup>rd</sup> person singular seems to be an unmarked, or default form without a corresponding morpheme, the other was to say that there is a morpheme that corresponds to the 3<sup>rd</sup> person singular, however its pronunciation happens to be empty – these special unpronounced morphemes are sometimes called null morphemes.

*Review of morphologically complex words and homophonous affixes*

*Acquisition of past tense morphology in English*

We talked about the acquisition of past tense morphology, and how, if you look at the number of “mistakes” children make, there’s a time at which they seem to get worse, rather than better. Steven Pinker (again) describes this nicely in his book “Words and Rules”. I’ll upload a copy of the relevant chapter “Kids say the darnedest things” for you, read in particular starting page 193.

He talks about the fact “that many words come in ever-so-slightly different versions”, that is that you have a word with a *paradigm*.

Morphologists sometimes distinguish two different meanings of “word” by calling them *word-form* and *lexeme*, as for instance Martin Haspelmath in his book *Understanding Morphology*:

**Lexeme:** A ‘dictionary word’ is called a *lexeme* (this is because the mental dictionary in our heads is called the *lexicon* by linguists). Lexemes are abstract entities.

**Word-form:** A ‘text word’ is called a *word-form*. Word-forms are concrete, in that they can be pronounced and used in texts. Every word-form belongs to one lexeme.

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<sup>1</sup> If you’re ever curious about a language and where it’s spoken, visit [www.ethnologue.com](http://www.ethnologue.com) for more information.

In these terms we can now also define what a paradigm is:

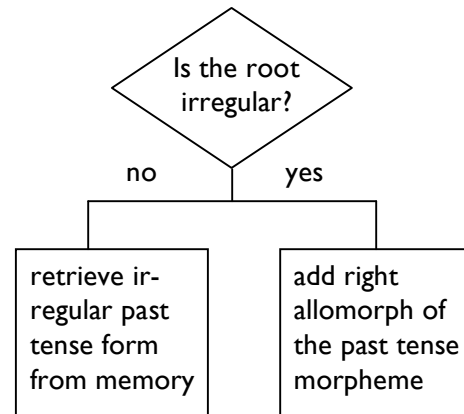
Paradigm: A *paradigm* is a set of word-forms belonging to the same lexeme.

Once kids know that there's a paradigm of related words, and they have discovered that there is a general way of deriving the forms from the verb root, they start to make use of their new "past tense production machine". Recall that you may hear children answer a question like "Where's your mom?" with something like "Mommy goed to the store." What's going on there?

- The child has discovered the regular rule for forming the past tense (add one of the allomorphs of the past-tense morpheme). Presumably it has never heard 'goed' before, so it can't have memorized it, and therefore must be computing it, using the root 'go' and adding the [d] allomorph of the past tense morpheme.
- The child has not yet learned (perhaps due to a lack of exposure) that this verb happens to have an irregular, unpredictable past tense form, which needs to be memorized.

Our final version of the "past tense production machine" looked something like this.

- 1) Take the root you want to put into the past tense. Check if it is irregular.
- 2a) If it is, look up the irregular past tense form
- 2b) If it isn't, add the right allomorph of the past tense morpheme. (We'll discuss what those are and how to choose the right one later.)



In this class, we will almost exclusively look at regular processes, which we will try to model with a rule-based system. That is, in this class, I will present to you the prevalent view that the human language capability is best modeled as a rule-based symbol-manipulating computational device. A few researchers however believe that language can be modeled with an associative system, which (much simplified) maps "similar" inputs to "similar" outputs. Steven Pinker has argued that while generally language is best thought of as rule-based, there is one corner which an associative system can explained better, namely the pattern that show up in groups of irregular verbs in the lexicon.

"The rule-rrote theory [apply the regular rule unless memorized for exists], although appealingly straightforward, is inadequate. Rote memory, if thought of as a list of slots, is designed for the very rare verbs with unrelated past tense forms, like *be-was* and *go-went*. But for all other irregular verbs, the phonological content of the stem is largely preserved in the past tense forms, as in *swing-swung*. Moreover, a given irregular pattern such as a vowel change is typically seen in a family of phonetically similar items, such as *sing-sang*, *ring-rang*, *spring-sprang*, *shrink-shrank*, and *swim-swam*, or *grow-grew*, *blow-blew*, *throw-threw*, and *fly-flew*. The rote theory cannot explain why verbs with irregular past forms come in similar families, rather than

belonging to an arbitrary list. Finally, irregular pairs are psychologically not a closed list, but their patterns can sometimes be extended to new forms on the basis of similarities to existing forms. All children occasionally use forms such as *bring-brang* and *bite-bote*. [...] Such analogizing can be demonstrated in the laboratory: faced with inflecting nonsense verbs like *splung*, many adults produce *splung*.” (Pinker 1991 ‘Rules of Language’ in *Science*, v.253)

In your homework you’ll explore the evidence that Pinker cites for his claim that regular and irregular past tense forms are produced by different processes.