

22.09.2021

Is an orthographic definition of a word (“thing between spaces”) a good definition?

- Maybe the “least worst”? Useful in the sense that it’s good to have even a wrong hypothesis?
- Maybe the best definition we have, because words aren’t a real thing and we’ve just been convinced by our writing system that they are.
- Doesn’t seem to reflect anything significant about the nature of the thing we call a word
- There are languages without spaces (Chinese, Japanese) and languages that divide sentence-like units with spaces (Thai), so an orthographic definition of “word” isn’t good for those languages.
- Lots of languages don’t have writing systems: sign languages, smaller/Indigenous languages, dialects.
- Language existed a long time before writing was invented (and early writing systems tend not to have spaces; see also *scriptio continua*).
- In English, we have things that seem word-like but that are divided by spaces, e.g., compounds or prepositional verbs like *resort to*.

So, what about a semantic definition of “word” as a unit of meaning?

- Inflected forms have different meanings, but we still want to think of them as the same word.
- It’s easier to pin down the meaning of something like *dog* vs. something like *the* or *a*
- Some things that we want to consider words don’t have meaning except in very specific contexts, e.g.:
 - Things without meaning that we still know how to deal with morphologically (the wug test, Jean Berko Gleason).
 - Analogously, sound-symbolic things that we may not know how to deal with morphologically but that still have some kind of meaning (*bouba/kiki*).
 - Indexical/deictic elements (*him, there*).
 - Subordinators (*that*).

Ways to test wordhood:

- If you can pause between two elements, then they’re individual words.
 - Possibly. Maybe this is better as a test of unithood rather than wordhood per se, since at least some morphologically complex languages allow pauses between morphemes.

29.09.2021

Semantic definition reprise: What kinds of elements exist that we want to call words but that have no meaning on their own?

- Things that Heidi Harley calls “caboodle items” (2014 paper): “beck” in “beck and call”, “vim” in “vim and vigor”, “jinks” in “high jinks”
 - These things have phonological weight, can be coordinated, are inflected for number... they look like words.
 - So they are a strike against the notion that we can define words purely as things with meaning.
 - Also: “ruthless”, “gormless”: bound stems (cran morphemes)
- Words aren’t created without meaning; they lose meaning over time. Interesting questions:
 - When is a word considered to have no meaning?
 - When and how do words lose meaning but still stick around in caboodle items like these? (Has to do with frequency of collocation? With meaning of collocation?)

Interruptibility reprise: what can we interrupt and how?

- Swear-infixation: “abso-@(£\$*!£-lutely”
- Homeric infixation: “saxo-mo-phone”
- It has to do with stress; infix shows up before stressed syllable.
- Phonological criteria like this can only be applied to languages with living speakers, not something like Classical Latin (although we can establish prosody for Latin by looking at poetry, and we can establish some kind of constituency by looking at, e.g., where elements like -que attach, which should be a phrase boundary)
- Interesting question: how much can you interrupt and still recognise a word? (Frequency factors in, also context, surrounding discourse)
 - Legen ... dary (How I Met Your Mother), antici ... pation (Rocky Horror Picture Show)

Orthographic word reprise: Things that seem kind of the same but one is space-separated and one isn’t.

- cannot ~ do not
- watermelon ~ honeydew melon
- Are the interruptibility properties of these things different because they are written differently?
 - do 🐾 not 🐾
 - can(🐾?) not 🐾
 - water (🐾?) melon 🐾
 - honey(🐾?) dew 🐾 melon 🐾

A definition that makes a little bit more sense: phonological/prosodic word.

- A word has one primary stress and possibly some secondary stress, so to the extent that we can recognise stress, we can call the stress-bearing unit a word.
- Some processes happen at the edges of a phonological word, e.g., Celtic initial consonant mutation and cliticization

- Some processes happen throughout the span of a phonological word, e.g., consonant or vowel harmony
- Well-known constraints on phonological word: it has a minimal prosodic size, minimal phonological weight
 - Example minimal phonological word: *key* [ki]
 - Yet [ki] is not good
 - Distinction between tense/lax vowels, definable in terms of morae
- So, phonological words are fairly well-defined. Can we use phonological words as a basis for everything?

What is the problem of using a phonological word as a basis for theories of syntax and semantics?

- Syntax uses trees, and trees involves substitution classes (e.g., nouns are substitutable with other nouns), but several substitution classes/constituents can fall together in phonological words in ways that are undesirable for syntax.
- Marantz: "d'Yawanna do syntax with phonological words?"
 - "d'Yawanna" is a phonological word, contains syntactic structure behind "do you want to"
 - "do you" ... "to" end up cliticising onto "want", then phonological processes apply (palatalisation, ...)
 - The problem: "you want" is not a constituent, but it looks like it if we treat this kind of thing as one unit. So, there's no solid basis for a theory of syntax using phonological words.

Is there a way to define words psycholinguistically, in terms of processing/retrieval?

- Saffran et al 1996: studies about infants using statistical knowledge to divide constant audio input into units
- Infants undersegment; "wanna" is more likely to be perceived as one word at first, and then children must learn that it has to be broken up
- People perceive multi-word units/formulaic language, only break down into smaller units when they have to (work by Inbal Arnon, Alison Wray)

Another notion of word: morphosyntactic/grammatical. Why is it contentious to take the leaf nodes in syntax trees as words?

- Doesn't always track with phonological definitions of words.
- In formalisms that involve IP or TP, the head is either an abstract feature, e.g., [PAST], or a suffix like *-ed* to which a verb stem like *walk* is moved to produce *walked*.
 - We don't want to consider abstract features or suffixes like *-ed* to be words.
- Also, lexical integrity hypothesis/issues of recursion: do words have their own internal syntactic structure? Where do we stop drawing trees? Can syntax do stuff inside of words?

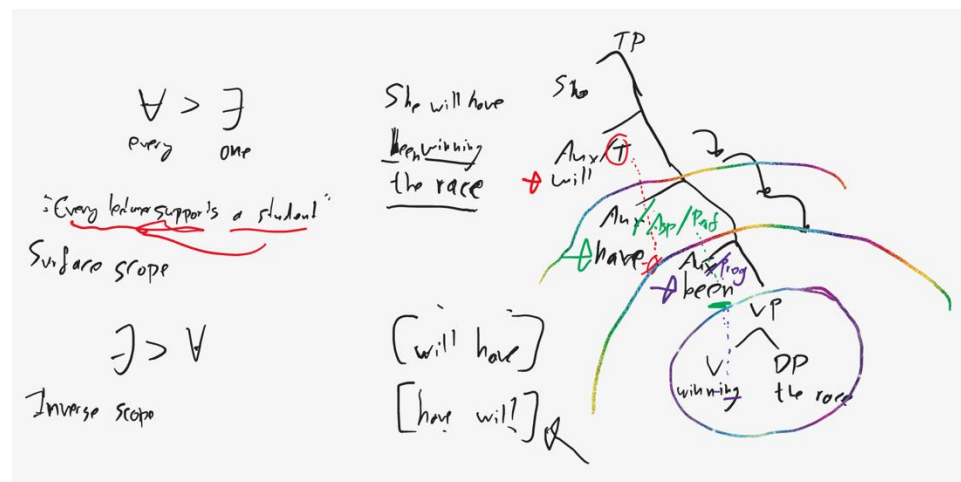
Non-homework homework for next time: brush up on the difference between inflection and derivation.

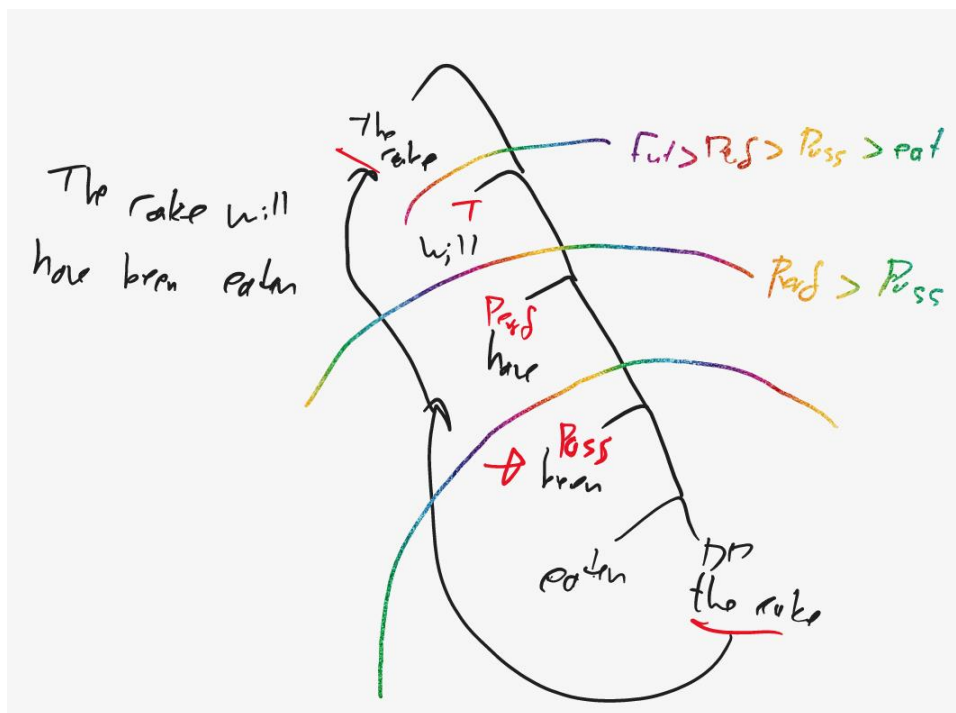
06.09.2021

(IK's notes)

First, a recap of what scope means in linguistics, or at least syntax/semantics.

- Some element has "scope" over another if the second element is in its domain.
- Examples of scope ambiguity.
- Then seeing how this plays out in the English auxiliary system: each auxiliary has:
 - Its own interpretation
 - That interpretation also takes scope over the next element down in the structure
 - Its own morphophonology (pronunciation, exponence, spell-out)
 - And that also has effects on the morphology of the next element down in the structure
- This holds regardless of whether we have auxiliaries taking scope over each other (future of a progressive) or other elements (perfect of a passive, or passive of a baking event).





We then started to list the characteristics of inflection and derivation, to be examined critically next time.

Inflection	Derivation
Forced by syntactic context	Not forced by syntactic context
Productive in all lexical categories	Limited productivity
More regular (morphologically? Semantically?)	Less regular
Does not change category	Sometimes changes category
Does not change meaning (compositional)	Usually changes meaning
Doesn't create new stems	Creates new stems
Farther away from the base	Closer to the base

13.10.2021

The focus today: bashing that table ^

On productivity:

- There are different notions of productivity. You can say that a category is productive if it applies to everything with some property (e.g., all nouns), but not every individual affix within the given category might be productive. So you can also look at the productivity of individual forms.
- There are some inflectional categories that are not very productive, e.g., subjunctive in English.
- The typical notion of productivity for inflection: you can fill in all the cells in a paradigm. But sometimes this breaks down and you get paradigmatic gaps.
- You might get gaps because of:

- Semantic constraints (e.g., an adjective must be gradable if you want to compare it; 👍 *happier* vs. 🗿 *deader*)
- Speakers not being able to figure out morphophonology (e.g., participle of “stride”: stridden? Strode?)
- Seemingly arbitrary reasons (e.g., for some subset of Russian nouns, the details of which I forget, there’s just no genitive, even though there could be; for Hebrew verbal templates, nominalizations and infinitives exist except for passive templates)
- On adjectival comparison: you get synthetic vs. periphrastic comparatives in English (e.g., 👍 *happier* but 🗿 *effortfuller*, must be *more effortful*).
 - Some analyses would say that you fill the cell with a periphrastic construction, you allow syntactic paraphrases as part of an inflectional paradigm 🤖

On being forced by syntactic context:

- Prototypical example: Syntax needs a main clause with tense, so there’s some tense inflection on the verb. But when syntax needs a noun, it doesn’t care whether the noun ends in *-ness* or *-ity*.
- Are argument-changing applicatives inflection or derivation?
 - Diagnostic: in the given language, is there any syntactic context that demands an applicative marker? In some languages, you can’t have a benefactive/double object structure without an applicative (-> inflection), while in others, you can (-> derivation).
 - It is these kinds of cases that lead people to question whether there is a difference between inflection and derivation.
- Is it true that derivation is never required by syntax?
 - *She gave a beautiful answer* vs *She answered beautifully*; the structure of the sentence determines whether you use the adjective or the adverb.
 - Arguments about whether adverbs are inflected adjectives (Pullum vs. Giegerich)
 - The origin of Germanic *-ly* is from Germanic *corpse* (compare German *Leiche*) 🤖
 - But is it really the structure of the sentence, or is it communicative need/intention? What does it mean to “require”?
 - *The storm darkened the sky* / **The storm darked the sky*.
 - We derive the verb from the adjective *dark* because the syntax needs a verb, but there are adjectives that don’t need this *-en* (e.g., *close* can be zero-derived into a verb)
 - Syntax demands a verb, but it doesn’t demand a de-adjectival verb with *-en*. Again, what does it mean to “require”?

Next week, we’ll continue along these lines. Also think about whether there is any phonological difference in any of the languages you know between inflection and derivation.

20.10.2021

Finishing up our critical examination of the inflection vs. derivation table.

On changing/not changing category:

- In general, inflection doesn't change the part of speech, while inflection does.
 - Counterexample: diminutive; derivational, but doesn't change part of speech.
- What about participles?
 - I am walking(V) the dog / the walking(N) of the dog / the walking(Adj) man
 - -ing is part of every verb's paradigm, so it's inflection, but the resulting things aren't verbs any longer; they behave distributionally like nouns and adjectives
- Wasow1977 weighs in on participles, also presents diagnostics for identifying part of speech, e.g., "very" only works before adjectives, so you can say "a very aggravated person" but not "I very aggravated you", so "aggravated" in "a very aggravated person" is an adjective, not a verb.

Phonological characteristics of inflection vs. derivation:

- Inflectional suffixes may be less phonologically prominent (for some definition of phonological prominence).
- In the language that Tatiana studies, there are vowel alternations in the stem that change one way if the stem is inflected and another way if the stem is derived.
- In English, there are suffixes that attract stress and some that don't, but these don't divide up cleanly into inflectional/derivational.

Changes in meaning:

- It seems a bit suspect to say that inflection doesn't change the meaning. In *walked*, adding *-ed* to *walk* changes the meaning to say that the event happened in the past.
- Counterpoint: well, it's still the same event, no matter when it happened, whereas the concept of *good* is not the same as the concept of *goodness* (derived with *-ness*).
- Compositionality of inflection:
 - Inflection generally comes from some pool of morphosyntactic features (tense, aspect, gender, number, etc.), and adding on an inflection adds on this feature, e.g., *walked* = "there's a walking event, and it's in the past".
 - Depending on your perspective, this might happen with derivation too, e.g., *goodness* = "there's some quality of being good, and this is the essence of that quality"
 - When is inflection non-compositional?
 - *persons* vs. *people*; subtly different meaning with the two plural forms
 - *pluralia tantum* (sg: *plurale tantum*, I believe): words without a singular form, e.g., *scissors*, *odds* in, say, "the odd-s are against you"

Sidebar: Pinker's Words and Rules theory

- Based on irregular verb inflection in English (e.g., *catch–caught* vs. the regular *walk–walked*). The basic idea: if a verb has irregular forms, those forms are stored whole in the mental lexicon. If the verb inflects regularly, then that’s done using rules, and the inflected forms are not stored.
- Influential idea but wrong; at least in reading and auditory perception, this is not how we process inflected words. Experiments have shown that inflected verbs in English are decomposed whether they’re regular or irregular.

Creating new stems:

- Comes back to the question of what’s a word and what’s a stem?
- Comes back to the question of changing the semantics of the base.
- Some say that derivation, by definition, creates a new lexeme, while inflection doesn’t.
- In English, inflection is a bit of an end point; can’t add on more suffixes once you’ve pluralized.
 - You can create compounds, though, e.g., *admission-s committee* or *publication-s record*.
 - Plural inflection can arise in compounds if the first noun is inherently plural (pertinent terminology: inherent inflection vs. contextual inflection)
 - Happens in English and in German, at least
- But in other languages, you can stack on a lot of inflectional suffixes.

Inflection is farther from the base, derivation is closer:

- Generally, yes.
- There are Dutch dialects in which clitics can intervene between the verb stem and inflectional affix.
- Udi (NE Caucasian): clitics “wantonly” disrupt words; Alice Harris has a whole book on Udi endoclititics

Zooming out and thinking about a broader theory of morphology:

- What kind of role should this distinction between inflection and derivation play in our theory?
 - Depends on what you want, how you want to theory-build.
 - Bottom-up or top-down: Do you assume that inflection builds paradigms and not new lexemes and analyse the language in accordance with these assumptions (top-down)? Or do you look at the language and see what distinctions its data supports (bottom-up, descriptive)?
 - What generalisations do you want your theory to derive or account for?
- There’s no one criterion that obviously separates inflection from derivation (except maybe ordering), so if we want to construct a theory of morphology that does separate these two, we would need to look elsewhere for a way to do it.

10.11.2021

Discussion about how to selectively/effectively read a paper, exemplified using Walker (2010) "Nonmyopic harmony and the nature of derivations". Ideally this is also how we'd write our papers.

Key message: It's OK to skip around, read a paper non-linearly, and even leave out parts that aren't central to your interests.

In general, the reading strategy that Itamar advocates:

- Read the introduction to get a sense of whether the paper is relevant.
- Read the conclusion to try to get a sense of where the paper will be going.
- Read the section headings in the body of the paper to identify the most pertinent sections for you.
- (Can also *skim* each section: read the first and last sentence, or the first sentence of each paragraph. If the paper is structured really well, you can get a very good feel for the overall narrative)

This paper is well-structured to allow this kind of reading strategy, since it compartmentalises data, analysis, and generalisations.

Good things that the intro of Walker2010 does:

- In the first paragraph, gives four different ways of conceptualising the phenomenon/orienting the reader so that the reader can latch onto whatever version speaks to them most (dense jargon, slightly less dense jargon, formal/schematic explanation, prose).

Good things that the conclusion does:

- Gives generalisation/take-aways from the formal stuff that comes before.
- Relates to the structure of the introduction, but in more specifics.
- (Should define acronyms that aren't defined in the intro.)
- Notes what issues this work raises, what to do moving forward.

Good things that the data section does:

- Gives prose description and generalisation of phenomenon, followed by examples (not the other way around). The description contains forward references to the relevant examples. Again, this gives at least two ways for readers to conceptualise what Walker is trying to say.
- Builds up the phenomenon in three steps that increase in complexity:
 - Step 1: Here's the baseline of what we're looking at. The simplest case.
 - Step 2: Here's a slightly more complex case, but things are still fairly straightforward.
 - Step 3: Here are the observations that complicate the picture. This is what makes this whole thing interesting.

Good things that the formal sections do:

- Signposting in prose around the formal stuff, so that even if you can't look at the OT tableaux and go "hm, that's fishy", she will tell you: "A problem with this analysis is X". You don't have to know the formalism to get something from her analysis.

To skip a section or not to skip?

- If it's not central to your interests, you can probably safely skip it.
- If the signposting throughout the paper is good, you know exactly what's in the section and you know that you probably don't need to read it.
- If you are willing to take the author's word for whatever they're claiming, then you can skip more formal/in-depth/detailed stuff.

24.11.2021

Main take-away from last week about affix ordering: When a word contains multiple affixes, scope dictates the order of the affixes. (Scope: something farther from the base has scope over something nearer to the base.) This happens both when there is rigid ordering (e.g., English auxiliary order is fixed but happens to reflect scope) and when the ordering is flexible (e.g., the consequence of changing the order of affixes is that the scope of the reordered affixes changes).

What evidence do we have that (some) words (in English) have structure that demands a hierarchical analysis? Where does a linear analysis not suffice?

- Need to have more than two elements; there's no way to combine only two elements that forces a hierarchical analysis over a linear one.
- In fact, need to have a prefixal element and a suffixal element; if multiple affixes are all prefixes or all suffixes, this is still compatible with a linear analysis.
- Examples that require hierarchical analysis are those where multiple bracketings are, in principle, possible, but perhaps one of them is not viable...
 - "unhelpful": [un-[help-ful]], *[[un-help]-ful] (full of unhelp)
 - "unhappier": [[un-happy]-er], *[un-[happy-er]] (not happier)
- ... or they lead to two semantically different readings.
 - Un-X-able, e.g., "unlockable": unable to be locked OR able to be unlocked
- In short: these cases of ambiguity only make sense if we're looking at word-internal hierarchical structure.

(Side note: in syntax, we know that we need a hierarchical analysis because of things like c-command, which describes phenomena like binding.)

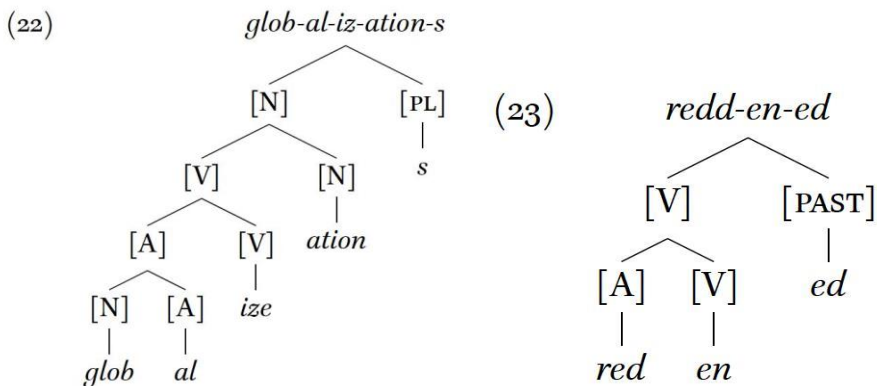
So, words have internal hierarchical structure. So do phrases. So, where's the point where we say "okay, word structure is finished now, let's seal it off and insert it into the phrase structure"?

- Depends on your theory of grammar. Different theories have different answers to this question, and even theories that answer it the same way do it for different reasons.
- Peter's example: One motivation for different sub-modules for morphology and syntax is so we can conveniently deal with things like the differences between Dutch complex verbal heads and Dutch verb-verb compounds. These things both look like clusters of heads, but they behave differently (complex verbal heads require internal inflection, which compounds don't; the order

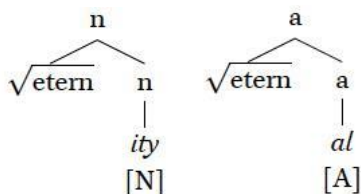
of verbs in verb clusters is variable, while in compounds, it's not). So either you need two different sub-modules that each deals with one of these in the correct way, or you need to specify some way that the overall syntactic module deals differently with these two similar-looking things.

- Also, even though word structure and phrase structure both look hierarchical, they still might be formed by different sub-modules of the grammar that are just quite similar.

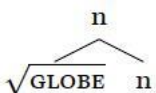
Looked at trees of *globalizations* and *reddened*. These have free roots: *globe* and *red*.



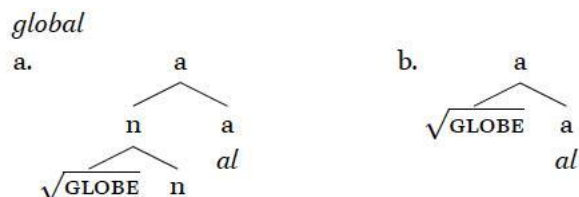
What about bound roots, like in *eternity*? We have *eternity* and *eternal*, but not **etern*. There are a couple different ways we could analyse bound roots.



But in either case, what's to stop us from always positing a bound root like this, even for a word like "globe"? We could have a bound root $\sqrt{\text{globe}}$ that has a null suffix to make it into a noun, just like the bound root $\sqrt{\text{etern}}$ has the suffix *-ity* to make it into a noun.



Then *global* can get an analysis analogous to *eternal*.



And thinking about this typologically: if we had this kind of setup, that is, if we had all bound roots that had to go through some process to become actual words, then we would expect to find languages in which all (or at least many) words contain bound roots. And we do: Semitic languages.

We'll also see in future weeks that, with this kind of theory, some characteristics of inflection and derivation fall out for free.

8.12.2021

Examples of non-compositional meaning in derivational morphology:

- *-able*: *eatable* (can be eaten) vs. *edible* (can be eaten safely).
- *Overwhelmed*, *underwhelmed*: different meaning of base *whelmed* in each case, different scales.

The change from compositional to non-compositional meaning happens at a particular point.

- *globe*: spherical object, including the world, but *globe + al*: now only the world
- *novel*: a physical book, or the written text, but *novel + ize*: now only the book

Arad2003's explanation:

- Start with a root that has a general meaning/many possible meanings, but once you build an actual word out of the root, you pick out one of those senses, and from then on, you can only stick with that sense.
- Works with chainings of suffixes like English, but maybe more impressively, also works for Hebrew non-concatenative morphology
 - (EP: because it just builds in the hierarchical structure that you get for free in concatenative morphology in another way?)

Arad makes a strong hypothesis. How do we evaluate strong hypotheses?

- Try to falsify them; find counterexamples.
- Or look for crosslinguistic confirmation.
- Look for some logic that explains why it might be the case (cognitive plausibility, e.g.)
- Diachrony: does this make sense in terms of historical progression of the language?

The notion of "phase":

- Fraught idea
- Borrowed from Minimalism
- Neat because syntactic category, phonology, and semantics are being assigned simultaneously. We get unpredictable semantics here and we also get unpredictable phonology (say, if we analyse *edible* as arising here)

Cognitive plausibility of formal theories:

- Do they need to be cognitively plausible, or are they just explanatory tools? Probably the latter. Different goals.

- What better alternative do you have to the given theory? Does this explain what we want it to explain?
- How learnable is the proposal?
 - Might be learnable because it's innate, if postulated to be in UG.
 - Might be learnable if kids get lots of independent evidence, enough to be able to make a generalization.
- How internally consistent is the theory? If it explains a lot of things, then there might be something to it.

Return to inflection vs. derivation table.

- Lots of these differences fall out for free of our present explanations (e.g., the most robust difference, nearness of marker to stem, falls out from scope considerations).
- More refined way, thanks to Arad, of talking about changes in meaning.
- Not clear how to talk about productivity yet. Still have to list a lot of information about which root takes which affixes.
 - Potential angle that IK forgot to mention: we know that a given head in the syntax imposes selectional restrictions on its complement, so is the relationship between stem and affix any different (if it too is syntactic)?