

Inflectional morphology

Today we look at the first half of the standardly assumed division between inflectional and derivational. We'll define how inflectional morphology behaves, look at different categories of inflection, and wonder a bit about the relation to syntax.

1 Overview

- During the first lecture, we defined INFLECTIONAL MORPHOLOGY as morphological processes or elements that change the forms of existing words.
 - This stands in contrast to DERIVATIONAL MORPHOLOGY, which creates new words from smaller pieces.
- Today, we focus on what it means for a word to take on different forms and how that happens.
 - Some of this is clearly conditioned by the syntactic context in which a word occurs (*e.g.*, case and agreement).
 - However, some other cases seem to have more semantic import, determined by what a speaker intends.
- Today I'll introduce some ways of thinking about how to deal with this from a syntactic point of view.

1.1 Defining inflection

- Before we can do that, we need to establish the two main criteria that inflectional morphology must satisfy:

(1) *Criteria for inflectional morphology:*

- a. Inflectional morphology does not change
 - the category of the base word,
 - its meaning, or
 - its grammatical (*i.e.*, selectional) properties.
- b. Inflectional morphology does not produce new words.

There are cases that do not clearly fit the inflectional–derivational divide described here. See Fábregas and Scalise 2012: 104–108 for discussion.

- Criterion (1a) really lists things that derivational morphology does that inflectional morphology does not. Here are some examples of each of these:

- The suffix *-ence* on *depend* in (2a) cannot be inflectional, since even though the semantics and selectional properties of the underlying verb are preserved, the resulting word is a noun.

Such derivations from verb to noun are known as NOMINALIZATIONS; see Chomsky 1970.

- a. [Harvey's dependence on his llama] surprised me.
- b. *cf.* Harvey depends on his llama.

The meaning of *depend* is still clearly there, and it still takes the same arguments assigning them the same roles.

- The prefix *un-* on *happy* in (3a) cannot be inflectional since even though the category and selectional properties of the base adjective are unchanged, the resulting word has a different meaning.

- (3) a. Ashley was unhappy with the results.
b. Ashley was happy with the results.

Both *happy* and *unhappy* take PP complements.

- The prefix *be-* on *moan* in (4b) cannot be inflectional since, although it retains the category of the base ($V \rightarrow V$) and doesn't alter the semantics of the verb it attaches to, it changes the selectional properties of the verb.

- (4) a. Sally moaned about her bad luck.
b. Sally bemoaned (*about) her bad luck.

There are other less transparent cases of this: *tend* is a raising predicate, while derivatives *pretend* and *intend* are control predicates.

- Criterion (1b) means that the form of a word changes without creating a totally new word.

Though, really, Criterion (1a) is much clearer.

- As Fábregas and Scalise (2012) put it, inflection adapts the form of a word to the syntactic context, manipulating, amongst other things:

- number (singular, plural...)
- gender (masculine, feminine, neuter...)
- case (nominative, accusative, dative...)
- aspect (perfect, imperfect, progressive...)
- tense (present, past, future...)
- mood (indicative, subjunctive...)

- The idea is that these sorts of elements don't fundamentally change the meaning of the base, or the category or selectional information.

- For instance, a verb typically takes the same arguments with the same meanings regardless of what tense/mood it is in and regardless of what sort of agreement it bears.
- A noun like *cat* still denotes those weird furry creatures people insist on keeping as pets, regardless of whether you use the plural to refer to more than one.

That said, plural seems to have some semantic import. We'll need to think about this more.

- Because inflection is taken to change forms in specific contexts, it is generally very productive.

- All words belonging to the same syntactic category should undergo the same inflectional processes or take similar inflectional affixes.

- Compare this to derivational morphology where only certain affixes combine with certain words, like the *-ize/-ify* examples from the first lecture.

- Some adjectives can take the suffix *-ize* (e.g., *legalize*) and others take *-ify* (e.g., *purify*).
- But they are not interchangeable despite meaning essentially the same thing (**legalify*, **purize*).

- This connection to the syntax is pretty much uncontroversial. It's clear, for example, that agreement morphology is determined by syntactic relations.
- Consider this simple Spanish sentence:

(5) [DP Los gatos negros] comieron.
 l-o-s gat-o-s negr-o-s com-ie-ron
 the-MASC-PL cat-MASC-PL black-MASC-PL eat-ThV-PST.3PL
 'The black cats ate.'

English inflectional morphology is a little too anemic for us to use here.

- In (5) all of the elements in the subject DP *los gatos negros* 'the black cats' must match in number and gender features.
- The form of the verb is determined by the form of the subject DP; since the subject is third person plural, the verb must bear third-person plural morphology.

Agreement in the DP is often called CONCORD.

- Consider what happens if we replace the noun with a singular with a different gender:

(6) [DP La cabra negra] comió.
 l-a cabr-a negr-a com-i-ó
 the-FEM goat-FEM black-FEM eat-ThV-PST.3SG
 'The black goat ate.'

- *Cabra* 'goat' is feminine and singular, so the morphology on the definite article and the adjective in the subject DP change to reflect this.
- Likewise, the agreement morphology on the verb also changes, since the features of the DP have changed.

Remember your syntax: Verbs agree with the subject, and the subject is a DP, so verbs do not agree with nouns directly.

- It's not just agreement. Case is a property of DPs that changes depending on where a DP occurs in a sentence.
- To go back to the example of Icelandic *hús* 'house' from the previous lectures, we can see it takes on different forms depending on whether it is the object of a verb or a preposition:

(7) *Case marking on Icelandic hús 'house':*

a. Hún lét [_{VP} byggja húsið].
 she let build house.DEF.ACC

'She had the house built.'

Thráinsson 2007: 454

b. Lögreglan fann þjóf [_{PP} í húsinu].
 police.DEF.NOM found thief.ACC in house.DEF.DAT

'The police found a thief in the house.'

Thráinsson 2007: 342

- The key take-away here is that there are cases of inflectional morphology that are dependent on syntactic context in which a word appears.
 - Number and gender concord on determiners and adjectives in the Spanish DP are dependent on properties of the noun.
 - Agreement on the Spanish verb is dependent on the subject DP.
 - Case marking on DPs in Icelandic is determined by the position of the DP in the clausal structure.

- The way this agreement occurs will depend on your syntactic assumptions.
 - Most cases of subject–verb agreement seem to be mitigated by agreement with T^0 , either through Spec–Head agreement, or with an operation like Chomsky’s (2001) Agree.
 - Case can also be mitigated through similar mechanisms.
 - DP-internal concord is a bit more mysterious, but recent work has attempted to fold it in.

- The relation to syntax has had an influence on lexicalist thinking.
- The fact that inflection is based so heavily on syntactic context has led to the proposal that only derivational morphology occurs in the lexicon, while inflectional morphology is either a syntactic or post-syntactic phenomenon.
 - This view is known as the **WEAK LEXICALIST HYPOTHESIS (WLH)**.
 - This stands in opposition to the **STRONG LEXICALIST HYPOTHESIS (SLH)**, which proposes that all morphological operations occur in the lexicon.

- Under the WLH, derivational processes occur in the lexicon, but no inflectional processes/affixation happen before the word enters the syntactic derivation.
 - It is only during the course or as a result of the syntactic derivation that inflectional morphology can be assigned to a word.
 - We will start seeing some of this below, as the view has been very influential in syntax since the 1980s.

See Norris 2017 for a general overview.

Recall that during the first lecture we discussed **LEXICALISM**, the idea that word formation happens in the lexicon.

Students who have taken LIN331 should recognize the SLH as the Spec–Head feature-checking approach to agreement.

- The feature-checking view (Chomsky 1995) assumes that words enter the syntactic derivation from the lexicon fully featured and must check these features against matching ones over the course of the derivation.
- The Agree view (Chomsky 2001) is more in line with the WLH in that it assumes that words enter the syntactic derivation with their inflectional features unvalued and must value these features over the course of the derivation. These values can determine word form at PF.

1.2 Contextual and inherent inflection

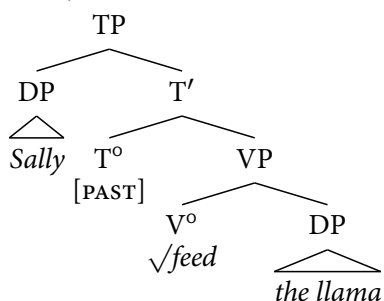
- As you may have noticed going through these examples, not all inflectional morphology is obviously determined by the syntactic context.
 - For example, whether or not a noun is plural does not seem, on the surface, to depend on whether the noun is in a plural syntactic context or not.
 - This is very different from an adjective agreeing with a plural noun, or a verb agreeing with a plural DP, phenomena which *are* contextual.
- Some linguists have noticed this; Booij (1996) (pronounced [boːi]), for example draws a distinction between CONTEXTUAL and INHERENT INFLECTION.
 - Contextual inflection is determined entirely by the syntactic context in which a word occurs.
 - Inherent inflection is determined by a speaker's communicative intentions.
- Indeed, notions like *plural* or *past* seem to communicate some degree semantic meaning that agreement does not.
- This falls out if inherent morphology has a different is treated differently in the syntax from concord/agreement.
- Consider the case of tense in English. The standard view since the mid-80s has been that tense is introduced in the head T⁰ and this is responsible for determining the form of the verb somehow.

Some students certainly puzzle over this in LIN102.

Booij's paper is available on his website [☞](#).

Another LIN331 thing: This similar to, though somewhat distinct from, the notion of INTERPRETABLE and UNINTERPRETABLE features. Any uninterpretable feature will have to be contextual, but a lot of contextual morphology can be derived by other means.

- (8) Sally fed the llama.



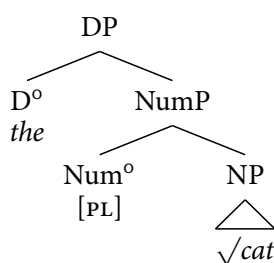
- There are several ways to think about what happens.

- A morphological rule requires the adjacent verb to appear in the form matching the feature on T⁰.
- T⁰ actually contains the affix (in this case *-ed*) which is somehow lowered onto V⁰.

This is essentially Chomsky's (1957) analysis. See Embick and Noyer 2001 for a recent implementation of this in Distributed Morphology.

- It's very easy to do something similar with number:

- (9) the cats



- We introduce a NumP that contains number features (Ritter 1992).

- A morphological rule requires the adjacent noun to appear in the form matching the feature on Num⁰ (e.g., N → N+s/[PL]__).
- Or Num⁰ contains an affix (e.g., -s) which is lowered onto N⁰.

This is grammatical number and should not be confused with numerals.

- Notice that what this does is make apparently inherent inflection contextual.
 - At least on the rule-based accounts above, the form of the verb or noun you get is determined by a feature on an adjacent head.
 - This is a bit different from the cases of agreement, where values are copied from one element to another head, so the distinction can still be seen track different mechanisms.

2 Theme vowels and desinence

- There are some cases of inflectional morphology that do appear to be purely inherent, however, and cannot readily be reduced to contextual mechanisms like the ones I suggest above.
 - THEME VOWELS, as we've seen, serve the primary purpose of expressing the conjugation class of a verb in some languages. They seem to carry no other meaning.
 - The nominal equivalent is called a DESINENCE. Although this is often conflated with grammatical gender (another form of inflectional marking), it is possible to see that desinences are, in fact, distinct from gender.
- Neither seems to be contextual on Booij's typology as they are not outwardly determined by the position in the syntactic structure or agreement in any way.
 - Rather, they seem to be purely morphological elements, unlike tense and number.
 - This suggests that inherent inflection is not a homogeneous category the way Booij (1996) suggests.

2.1 Theme vowels

- Theme vowels are affixes that express the conjugation class that a verb belongs to. They are fairly common in Romance languages, but exist elsewhere as well.
- We have seen examples of this previously in Spanish. They are most clearly identifiable in the infinitive forms of verbs before the infinitive *-r* suffix: .

(10) a. <i>cantar</i>	b. <i>beber</i>	c. <i>vivir</i>
cant -a -r	beb -e -r	viv -i -r
sing -ThV -INF	eat -ThV -INF	divide -ThV -INF
'to sing'	'to eat'	'to separate'

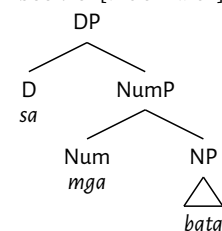
- Verbs in each class have different conjugations, in principle.

(11) a. <i>cantaban</i>	b. <i>bebían</i>	c. <i>vivían</i>
cant -a -ba -n	beb -í -a -n	viv -í -a -n
sing -ThV -IMPF -3PL	beb -ThV -IMPF -3PL	live -ThV -IMPF -3PL
'they were singing'	'they were eating'	'they were living'

As mentioned in lecture, the number head can be expressed as a separate word in some languages; for example, Tagalog *mga* is typically analyzed as a separate word, but represents plural (Schachter and Otnes 1972: 111):

librong para [sa mga bata]
book for [the PL child]

'book for [the children]'



The theme vowels undergo allomorphy in various contexts, but they are unambiguously distinguished in the infinitive.

Most of the conjugations of *-er* and *-ir* verbs are the same, though.

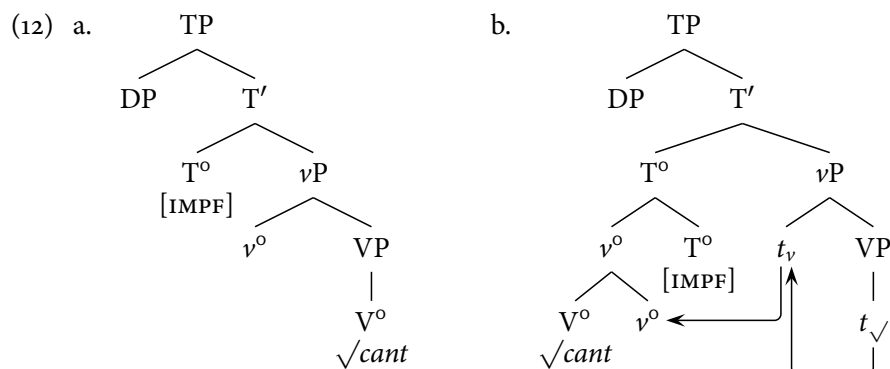
- The total apparent lack of interaction between theme vowels and the syntactic structure has been taken as evidence that even inflectional morphology does not occur in the syntax.
 - There is no agreement with theme vowels. The theme vowel is expressed only on the verb.
 - Theme vowels do not seem to correlate directly with argument structure. Intransitive, transitive, and ditransitive verbs can have any theme vowel.
- However, the syntactic benignity of these elements has led some to assume that morphology is totally independent from the syntax.
 - If the syntax does not show any independent sign of interacting with these elements, then, the argument goes, the syntax should not be responsible for determining where they go.
 - I think it's a bit of a jump from that to the conclusion that syntax and morphology must be distinct systems.

Put another way, there is no outward evidence that the syntax cares about or notices these elements at all.

2.1.1 Adding theme vowels after syntax

- Oltra-Massuet and Arregi (2005) have proposed, under Distributed Morphology, that theme vowels are a kind of morpheme that is absent during the syntactic derivation and is only added to the morphological derivation after syntax.
 - DM, as a constructionist, item-and-arrangement (IA) approach assumes that the syntax is primarily responsible for arranging morphemes.
 - However, decisions about how to pronounce syntactic material are made after S-structure/Spell-Out.
 - Under this framework, syntactically inert elements can be thought of as purely post-syntactic elements.
- On this view, Oltra-Massuet and Arregi propose that theme vowels are added as part of the process that determines how to pronounce syntactic structures.
 - Following the standard view that verbs move to T° in Spanish, they assume that the resulting structure will be a complex head in T° .

This process will be a central topic for us on 11 March.



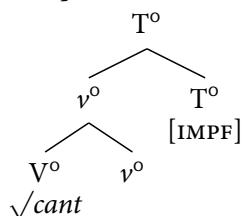
- After SS/Spell-Out, rules determining pronunciation determine how to pronounce these structures.

- Theme vowels are inserted as a morphological rule ($v^o \rightarrow [v^o + ThV]$).
- Such morphemes inserted post-syntactically are known as DISSOCIATED MORPHEMES in DM.

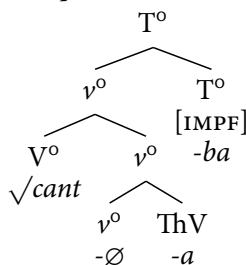
This is a bit of a simplification for presentation's sake.

(13) *Theme vowel insertion in Spanish:*

a. *The Spanish verb at SS/SO:*



b. *The Spanish verb with ThV:*



See Embick and Halle (2005) for a similar approach to theme vowels in Latin.

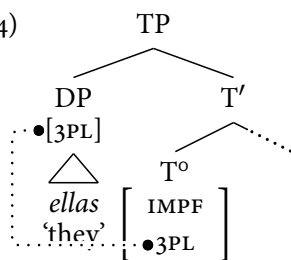
- The point here is that under Oltra-Massuet and Arregi, the inherent theme vowel is inserted after syntax.
 - Notice how different this is from the analysis of plural morphology given above.
 - Plural morphology, despite being inherent on Booijs' (1996) analysis, has syntactic effects in that other elements end up entering into agreement relations with it.
 - That means that plural, however its represented, needs to be active in the syntax somehow.
 - Not so with theme vowels!

2.1.2 *An aside on agreement*

- It's worth noting that this particular view is very similar to what DM approaches to agreement often propose.
- The usual view in syntax is that T^o agrees with some DP (the subject in this case) either by being in a Spec-Head relation with that DP or by entering into an Agree relation with it.

Languages vary with whether T^o agrees with the highest DP in the structure or some other argument.

(14)

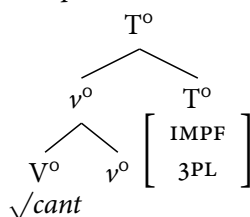


- This is a purely syntactic operation, conditioned by structural configurations in the tree.
- As such, the agreement operation is contextual, but this falls out from the fact that it is a syntactic operation rather than a morphological one.

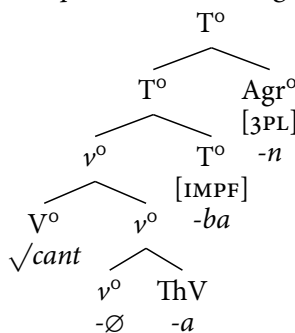
- As above, it is up to the post-syntactic component of the grammar to figure out what to do with these features and how to interpret them.
- As above, a similar rule adds a node to T^o where an agreement affix will be pronounced (T_{Fin}^o → [T^o + Agr^o]):

(15) *Agreement insertion in Spanish; cf. (11a):*

a. *The Spanish verb at SS/SO:*



b. *The Spanish verb with Agr node:*



I'm basing this analysis off of Embick and Noyer's (2007) discussion of Latin; Oltra-Massuet and Arregi (2005) do something very similar.

- This is consistent with the standard Minimalist view that there are no agreement-specific nodes in the syntax.
 - Chomsky (1995; see especially §4.10.1) argues that syntactic Agr^o heads were posited only for theory-internal reasons.
 - They appear to lack any interpretation at LF, and they don't appear to engage in any other syntactic relations.
- This divides an inflectional phenomenon between two parts of the grammar.
 - The contextual part of the phenomenon is properly part of the syntax.
 - Realizing the agreement relation is part of the post-syntactic component.
 - But this isn't really technically different from expressing a theme vowel.
- Thus, things that are sensitive to the syntax are part of the syntax; the way they are expressed is part of the morphology.

...i.e., they have no interpretable features.

To be clear: This is totally different from Boij's proposal.

2.2 Desinences

- In a noun, the desinence plays a similar role to a theme vowel in a verb.
- However, understanding them is a bit more difficult because they seemt also track grammatical gender.
 - In many cases, it looks like the desinence of a word tracks the gender feature (i.e., they are phonologically the same).
 - However, we can see from agreement that gender and desinence must be distinct in some cases.
- It's harder to give these a straightforward analysis (and I won't try to here). But it's worth seeing them for the problem they are.

In fact, in some work desinences are just called theme vowels.

2.2.1 Grammatical gender

- We should first start by defining what GENDER even is.
- In many languages, this is a property of nouns that can be thought of as an inflection/agreement class to which nouns belong.
 - As discussed above, nouns can determine the gender features of DPs in which they occur.
- However, *grammatical gender* does not correlate with any semantic feature. Words with the same meaning have different genders across languages:

(16) a. <i>French:</i>	b. <i>German:</i>
le pont	die Brücke
the.MASC bridge	the.FEM bridge
‘The bridge’	‘the bridge’

This has to be distinguished *semantic gender*, which does track the gender of the referent of that DP. We come back to this below.

- Words with the same meaning in the same language can have different genders:

(17) <i>Swedish:</i>	
a. en gris	b. ett svin
a.COMMON pig	a.NEUT pig
‘a pig’	‘a pig’

Swedish distinguishes common gender (derived from a merger of historical masculine and feminine) from neuter gender.

- The gender of the nouns in (16) and (17) are inherent inflectional properties of those nouns under Booij’s (1996) definitions.
 - They do not change under any syntactic circumstances.
 - This is different from the case of plurals, discussed earlier. These words have different plural forms, but they do not have different gender forms.
- Gender appears to be a property of nouns themselves. In languages with gender, different derivational suffixes bear different gender features.
 - For instance, the Portuguese nouns *navegador* ‘navigator’ and *navegação* ‘navigation’ have the same base but different genders.
 - The affixes *-dor* and *-ção*, which are the heads of each word, determine a different gender for each noun, as can be seen on the definite article.

Again, nouns that reflect semantic gender may have different forms.

(18) *Portuguese:*

a. o navegador	b. a navegação
the.MASC navigate-or	the.FEM navigate-tion
‘the navigator’	‘the navigation’

2.2.2 *Desinences*

- As mentioned above, a desinence is a marker of noun class. The question here is whether these are the same thing as gender markers.
 - Indeed, in many languages the desinences look the same as the gender agreement suffixes.
- The example of Spanish is discussed in the book. Spanish has two genders, masculine and feminine, which are expressed with the suffixes *-o* and *-a*, respectively.
- Recalling the examples above, one would be tempted to say that the desinences of *gato* ‘cat’ and *capra* ‘goat’ are the gender suffixes of these nouns.

Compare (5) and (6). I've adjusted the glosses here to represent the shift of calling the vowels desinences.

(19) a.	los	gatos	negros	b.	la	cabra	negra
	l-o-s	gat-o-s	negr-o-s		l-a	cabr-a	negr-a
	the-MASC-PL	cat-DES-PL	black-MASC-PL		the-FEM	goat-DES	black-FEM
	‘the black cats.’				‘The black goat.’		

- As the book points out, there are many clear exceptions.
 - A few nouns ending in *-a* are masculine.
 - *La mano* ‘the hand’ is feminine despite ending in *-o*.
 - The *-e* desinence does not correlate with the gender suffixes.

This includes many Greek loans, like *el poema* ‘the poem’.

Many apparent examples in this class are shortenings from longer words (e.g., *la motocicleta* → *la moto* ‘the motorcycle’).

(20) *Gender–desinence mismatches in Spanish:*

Desinence	Masculine	Feminine
<i>-o</i>	<i>el pelo</i> ‘the hair’	<i>la modelo</i> ‘the model’
<i>-a</i>	<i>el día</i> ‘the day’	<i>la llama</i> ‘the flame’
<i>-e</i>	<i>el postre</i> ‘the dessert’	<i>la frente</i> ‘the forehead’

- This means that it not enough to state that desinences mark grammatical gender on Spanish nouns.
 - But the vast majority of nouns ending in *-o* are masculine, and the vast majority ending in *-a* are feminine.
 - Most nouns ending in *-e* are feminine, but this is much more exceptional than the *-o/-a* cases.
 - Only a few (e.g., *la mano*) appear to be truly exceptional.
- I would venture that rejecting the idea that desinences express gender in Spanish is tantamount to throwing the baby out with the bathwater.

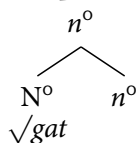
I wasn't able to come up with any published research, but a post on Spanish Stackexchange [estimates](#), based on the 1800 most common nouns in Spanish, that 0.5% of nouns with feminine grammatical gender end in *-o*, and 3% of nouns with masculine grammatical gender end in *-a*.

- It's still not totally obvious to me how one would choose to represent these affixes, though.
- Ultimately, we might want some sort of structure like the one we had for verbs:

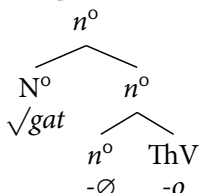
There's a squib in here somewhere.

(21) Possible desinence insertion in Spanish ($n^{\circ} \rightarrow [n^{\circ} + \text{ThV}]$):

a. The Spanish verb at SS/SO:



b. The Spanish verb with Des:



- However, the desinences can't be determined by the roots since roots can occur with different desinences, usually with different meanings.
- A case in point: Many fruits end in *-a*, while the trees that bear them end in *-o*

This is not to say that the suffixes *-o* and *-a* mean 'fruit' and 'tree', respectively, only that these desinences are used with this meaning.

(22) a. la cerez-a
the.FEM cherry-DES
'cherry (fruit)'

c. el cerez-o
the.MASC cherry-DES
'cherry (tree)'

b. la manzan-a
the.FEM apple-DES
'apple (fruit)'

d. el manzan-o
the.MASC apple-DES
'apple (tree)'

2.2.3 Semantic gender

- As the sidebar comments have suggested, SEMANTIC GENDER raises complications for any analysis of gender.
- It is possible, as with number and tense, to introduce gender features as a separate part of the syntactic representation.
- Merchant (2014) attempts this for modern Greek. He observes that some nouns, apparently change form depending on the gender of their referent:

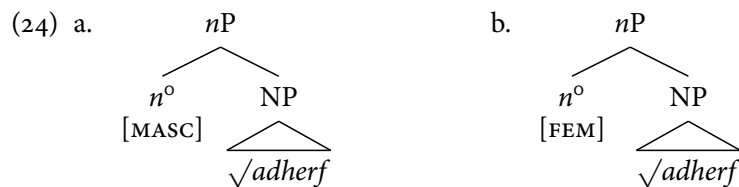
I won't get into the details here, but Merchant provides independent evidence for this morphological approach from ellipsis.

(23) a. adherf-os
sibling -MASC
'brother'

b. adherf-i
sibling -FEM
'sister'

- He proposes, similar to what I say above, that there is a node n° that introduces a restriction over the gender of the elements denoted by the noun.

$[[[\text{MASC}]]] = \lambda P.\lambda x : x \text{ is male.}[P(x)]$
 $[[[\text{FEM}]]] = \lambda P.\lambda x : x \text{ is female.}[P(x)]$



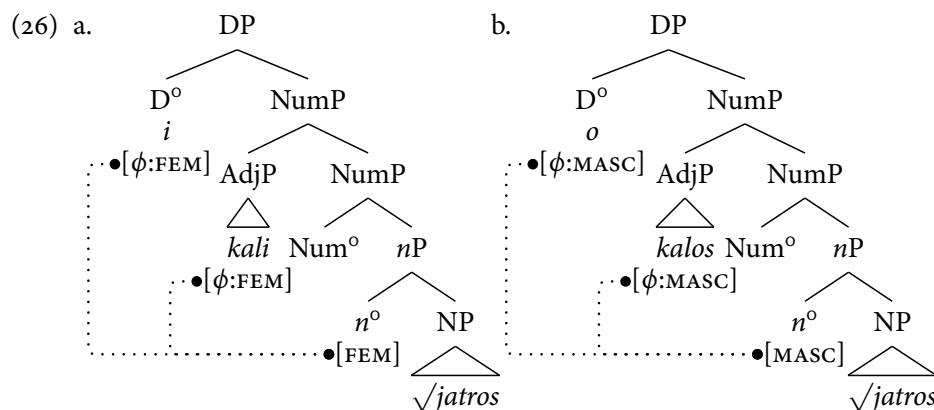
- This can occur with words that do not change form with different genders, like *jatros* ‘doctor’ that still appear to induce agreement in the DPs they occur in:

(25) *Agreement with semantic gender in nonalternating noun* (Merchant 2014):

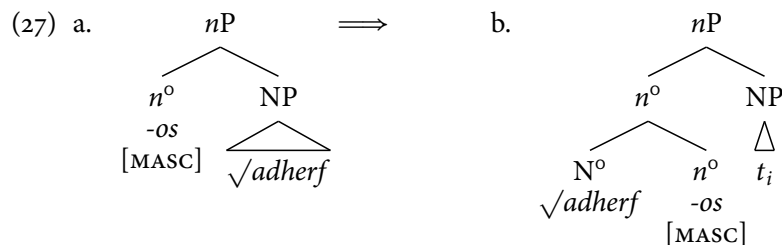
- a. I kali jatros itan xarumeni.
 the.FEM good.FEM doctor was happy.FEM
 ‘The good doctor (female) was happy.’
- b. O kalos jatros itan xarumenos.
 the.MASC good.MASC doctor was happy.MASC
 ‘The good doctor (male) was happy.’

- Regardless of the form of the noun, the other elements in the DP agree with gender feature on n° .

Agreement features are typically referred to as ϕ -features (or *phi*-features) in the Minimalist literature.

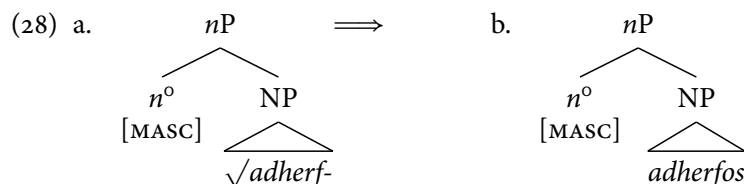


- Notice that this does for semantic gender what Num° did for number.
 - We’re saying that number isn’t an inherent part of the noun but actually something about the structure in which the noun occurs.
 - Again, this is no different from saying that the tense and agreement on a verb are determined contextually.
- A bigger question is the nature of those heads in the structure.
 - Looking back at *adherfos* ‘brother’ in (24), a constructionist view my posit that the masculine -os suffix originates in n° and that the root moves to this position.



This is similar to what is assumed for Spanish verbs in (21).

- Alternatively, we might imagine that n° has no phonology of its own but triggers a morphological rule (e.g., $N \rightarrow N+os/[MASC]_{__}$) changing the form of the noun:



2.3 Summary

- The notion of contextual *vs.* inherent inflection introduced by Booij (1996) and discussed by Fábregas and Scalise (2012) is a potentially insightful way of classifying different kinds of inflectional morphology.
- However, as I hope to have shown above, this apparent distinction between types of inflectional morphology do not easily map on to more syntactically driven approaches to morphology.
 - Most syntacticians assume, *contra* Booij, that tense is not inherent inflection but determined contextually.
 - That tack can be taken to explain number in DP and, quite possibly, semantic gender as well.
 - Theme vowels and, potentially, grammatical gender may well be purely morphological, but they cannot be taken as *prima facie* evidence that morphology has no syntactic component.

3 The status of paradigms

- The syntactic perspective that I gave above is largely constructionist.
 - In particular, the idea that certain affixes are associated with specific heads and joined together by the syntax is a narrowly constructionist view, born out of the syntax of the 1980s.
- This view is fundamentally at odds with word-and-paradigm (WP) approaches to morphology, which assume that lexical entries words include a paradigm.
 - Different inflectional forms of a word are stored in the lexicon as part of a paradigm and thus do not need to be derived by the syntax as above.

- On a view where morphemes are the heads of terminal nodes in the syntax, a paradigm simply cannot exist as a linguistic object.
 - The various forms of a word are composed in the syntax as the result of syntactic, morphological, and phonological processes.
 - We as linguists can construct lists or sets of forms that individual words may have, but in this sense a paradigm is just a descriptive device.
- However, as we discussed last time, WP approaches to morphology assume that paradigms are actual linguistic objects that speakers have access to.
 - These theories reject the notion of a morpheme, *per se*. Rather, each lexical item is associated with a paradigm.
 - Under WP approaches, paradigms can be thought of as a matrix of morphological properties a word of a particular class can have.
- Each cell in this matrix can be filled in by the grammar.
 - The way this is thought to happen is by analogy to other forms.
 - Cells of some particular lexical item are chosen, and comparisons are made between them to determine the difference in (phonological) form between them, a process Blevins (2006) labels PROPORTIONAL ANALOGY.

$$(29) \quad C_1 : C_2 = P : X$$

- An example Blevins gives are case suffixes in Russian:
 - Suppose I have the Class II noun *muščina* ‘man’ and I want to know how to inflect it in the accusative singular.
 - Find an exemplar of Class II like *škola* ‘school’ and use it as C_1 above, and then fill in C_2 with the form from the desired cell in the *muščina* paradigm.
 - Then you substitute the (nominative form of the) lexical item you’re interested in for P . The result is (30); solve for X and put X in the accusative paradigm cell for *muščina*.

$$(30) \quad škola : školu = muščina : X$$

- This sort of analogy cannot be too different from what people would have to do to identify morphemes in a morpheme-based theory.
 - The first half of the process is essentially the same: A comparison is made.
 - The difference is that the differences are taken to be isolable morphemes.
- However, one thing these sorts of approaches can do differently is include references to other cells to reduce redundancy.
 - Under Paradigm–Function Morphology, it is possible to write a rule stating that the accusative plural form is the same as the nominative plural form across the Russian nominal paradigm, accounting for SYNCRETISM.

However, cells can be left empty, giving rise to DEFECTIVENESS, where a lexical item lacks a certain inflectional form.

Paradigm for Russian *škola* ‘school’:

	Sg	Pl
Nom	<i>škola</i>	<i>školy</i>
Gen	<i>školy</i>	<i>škol</i>
Acc	<i>školu</i>	<i>školy</i>
Loc	<i>škole</i>	<i>školax</i>
Dat	<i>škole</i>	<i>školam</i>
Inst	<i>školoj</i>	<i>školami</i>

See Stump 1993.

- Finally, WP approaches can deal with irregular forms in an (outwardly) more elegant way than IA approaches.
 - Irregular or unpredictable forms can simply overwrite the analogized forms in the paradigms.
- The book discusses the example of German *Brüder* ‘brothers (GEN)’.
 - The base form of this word is *Bruder*; thus, the form above has only a change in the first vowel.
 - On the WP approach, this form can be described as the relation between the lexical item *Bruder* and the features [MASC], [PLURAL], and [GENITIVE]:

*Paradigm for German Bruder
'brother':*

	Sg	Pl
Nom	<i>Bruder</i>	<i>Brüder</i>
Gen	<i>Bruders</i>	<i>Brüder</i>
Dat	<i>Bruder</i>	<i>Brüdern</i>
Acc	<i>Bruder</i>	<i>Brüder</i>

(31) $\mathfrak{A}(\textit{Bruder}, [\text{MASC}, \text{PL}, \text{GEN}]) \rightarrow \textit{Brüder}$

- We can think of \mathfrak{A} as a function that takes the lexical item as its first argument and looks in the paradigm of that lexical item for the form matching the features in the second argument.
- In contrast, the book argues that IA approaches have to posit a series of null affixes to condition the vowel change in *Bruder* \rightarrow *Brüder*.

(32) *Brüder* $-\emptyset$ $-\emptyset$ $-\emptyset$
 brother -MASC -PLURAL -GEN

- In light of the discussion above, though, I think it's possible to see ways of responding to this this critique if you don't want to admit null affixes to your system.
 - Gender is plausibly an inherent feature of the noun itself, since all nouns must have gender in German. It's unclear whether that needs to be expressed as an affix.
 - Case is a contextual property of DPs, and the noun might acquire a [GENITIVE] case feature through agreement with D^0 . It might be, then, that the case morpheme is inserted after syntax only if necessary, like agreement or theme vowels.
- Alternatively, you might want to go after some of the oddities claiming plural is inflection actually implies.
 - Given that features like plural are, to some extent, semantically contentful, maybe you don't want to represent that as part of the inflection of a word anyway.
- But if you're comfortable with null affixes (and there's no *a priori* reason they should not exist), then I don't think this criticism amounts to much.

A meta-critique is that abstract features are, to some extent, not that different from abstract null suffixes.

Admittedly, this is challenging the distinction between derivation and inflection rather than the criticism itself, but it's something to think about in light of the discussion above.

Terms

SLH strong lexicalist hypothesis

WLH weak lexicalist hypothesis

contextual inflection Inflectional morphology that is dictated by syntax, such as person and number markers on verbs that agree with subjects and/or objects, agreement markers for adjectives, and structural case markers on nouns (Booij 1996).

derivational morphology Morphological processes or elements responsible for forming new words.

desinence An affix indicating the morphological class to which a noun belongs. Plays a similar role to theme vowels in verbs.

dissociated morpheme In the theory of Distributed Morphology, a morpheme added postsyntactically to the morphological structure after syntax.

IA item-and-arrangement

inflectional morphology Morphological processes or elements that change the form of an existing word.

inherent inflection Inflectional morphology that is not required by the syntactic context, although it may have syntactic relevance (Booij 1996). Examples include the category number for nouns, comparative and superlative degree of the adjective, and tense and aspect for verbs.

item-and-arrangement A class of morphological theories that assumes morphemes exist (*i.e.*, that they are listed in the lexicon) and that they are mappings between form and meaning.

lexicalism An approach to morphological theory that proposes that the systems deriving syntactic structures are distinct from those deriving complex words. These approaches assume word formation occurs in the lexicon.

paradigm A set of all of the forms of a word, usually arranged by features or properties that each form has.

strong lexicalist hypothesis A lexicalist hypothesis that proposes that both derivational and inflectional morphology occurs in the lexicon. The syntax plays no direct role in determining the form of a word.

theme vowel An affix indicating the morphological class to which a verb (or other categories of word) belong.

weak lexicalist hypothesis A lexicalist hypothesis that proposes that derivational morphology occurs in the lexicon, but that inflectional morphology is the result of syntactic operations.

word-and-paradigm A class of morphological theories that assumes morphemes do not exist. They assume only words are stored in the lexicon and that different word forms of every word are associated with different parts of a paradigm.

WP word-and-paradigm

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