Morphology
- Ling 105-

Spring 2023

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(she/her)

Week 9, Class 2

Roadmap for today's class

1. Syncretism

2. Distributed Morphology

Announcements

- Instructions for Assignment #3 posted
- Details and sign-up sheet are now posted

Syncretism

RUSSIAN

- Russian distinguishes subjects and objects in the syntax
- For example, the verb only agrees with the subject, and never with the object
- This is reflected in the inflectional morphology as well, in terms of case

(3) a. **Object → Accusative**
Maša čitaet **knigu**
Masha reads book.ACC
'Masha reads a book'

b. **Subject → Nominative**
Na stole ležit **kniga**
on table lies book.NOM
'There is a book on the table'

– But now compare:

(4) a. Maša čitaet **pis'mo**
Masha reads letter.ACC
'Masha reads a letter'

b. Na stole ležit **pis'mo**
on table lies letter.NOM
'There is a letter on the table'

Syncretism

- To describe the pattern seen in Russian, we say that ***pis'mo*** shows syncretism of nominative and accusative case.

✳ ***Syncretism***

Informally, syncretism is where the morphology 'lets down' the syntax. Formally, syncretism is the failure to make a morphosyntactically relevant distinction:

(5) **Components of syncretism**

a. a morphological distinction that is syntactically relevant

b. a failure to make this distinction under particular conditions

c. a resulting mismatch between syntax and morphology

(6) **SYNCRETISM PRINCIPLE**

Identity of form implies identity of function.

Syncretism Principle

Identity of form implies identity of function.

- "form" means the phonological string and "function" means the underlying linguistic unit that the string represents

- the Syncretism Principle is a guide, not an absolute:

 - for example, we would not want to consider /ɹɛd/ (past tense of *read*) and /ɹɛd/ (the color) to have the same function

- this is a straightforward case of accidental **homophony**

Syncretism: English

- We can seen a handful of instances of syncretism in our work on verb paradigms in English

(7) **English *be***

	SG	PL
1	am	are
2	are	are
3	is	are

- We can analyze these limited instances of syncretism using **underspecification**
- Let's assume a structure like this:

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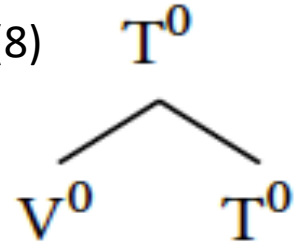

(9)

a. $\sqrt{\text{BE}} \leftrightarrow am \,/\, \_\_\_ + [1, \text{SG}]$

b. $\sqrt{\text{BE}} \leftrightarrow is \,/\, \_\_\_ + [3, \text{SG}]$

c. $\sqrt{\text{BE}} \leftrightarrow are$

Syncretism: English

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- The analysis in (9) adheres to the **Syncretism Principle** because the form *are* corresponds to one function
- Syncretism involves the identity of cells within an assumed morphosyntactic paradigm (i.e. a set of related forms)

- There are more complicated syncretic patterns that cannot be analyzed in terms of underspecification alone - we will build up to these.

Types of syncretism

1. Simple syncretism
2. Nested syncretism
3. Contrary syncretism

1. Simple syncretism

Two or more cells with different values for a feature in a paradigm are merged

(10)

Central Alaskan Yup'ik (Eskimo–Aleut)

	SG	DUAL	PL	
ABS	nuna	nunak	nunat	'land'
REL	nunam	nunak	nunat	
LOC	nunami	nunagni	nunani	
ABL	nunamek	nunagnek	nunanek	

2. Nested syncretism

Simple syncretism compounded across different environments

(11)

Upper Sorbian (Slavic)

	PL	SG	DUAL	
NOM	žony	žona	žonje	'wife'
ACC	žony	žonu	žonje	
GEN	žonow	žony	žonow	
DAT	žonam	žonje	žonomaj	
LOC	žonach	žonje	žonomaj	
INS	žonami	žonu	žonomaj	

3. Contrary syncretism

- Multiple patterns of syncretism that are not nested, but the pairings in each paradigm are *mutually exclusive*

(12)

Nuer (Nilo-Saharan)

	'dog'	'egret'	'girl'	'bug'
NOM.SG	jiök	böön	nyal	baan
GEN.SG	jiọk	böönkạ	nyal	baankä
LOC.SG	jiọọk	böönkạ	nyaal	baan

Polarity effects through syncretism

- In some instances, a form might fill two cells in a paradigm, but these cells *cannot* be easily collapsed.
- These are called polarity effects.

(13)

Old Irish (Celtic)

	SG	PL	DUAL	
NOM	fer	fir	fer	'man'
ACC	fer	firu	fer	
GEN	fir	fer	fer	
DAT	fiur	feraib	feraib	

What kinds of paradigms and features can exhibit and trigger syncretism?

- In short, any morphosyntactic feature can be the fertile domain for syncretism, but here are some common ones crosslinguistically:

– Inflection class
– Case
– Person
– Number
– Gender
– Tense-aspect-mood (TAM)
– Negation

Syncretism: morphological characteristics

A. Regularity

B. Directionality

C. Unmarkedness

A. Regularity

– Regularity refers to the **repetition** of a syncretic pattern across multiple exponents

(i.e. roots and affixes)

– Let's compare the following syncretic patterns in Latin and Kashmiri:

(14) **Latin**

	2nd declension: 'star'		3rd declension: 'chief'	
	SG	PL	SG	PL
NOM	stella	stellae	princeps	principēs
ACC	stellam	stellās	principem	principēs
GEN	stallae	stellārum	principis	principium
DAT	stallae	stellīs	principī	principibus
ABL	stallā	stellīs	principe	principibus

(15) **Kashmiri**

	1st declension: 'child'		2nd declension: 'tree'	
	SG	PL	SG	PL
ABS	gobur	gobar	kul	kul'
ERG	gobran	gobrav	kul'	kul'av
ABL	gobrɨ	gobrav	kuli	kul'av
DAT	gobur	gobran	kulis	kul'an

B. Directionality

– Directionality concerns the possible morphological affiliation of the syncretic form to one of its component values.

– Compare the following syncretic patterns in Lak and Udihe:

(17) **Lak (Northeast Caucasian) and Udihe (Tungusic)**

	Lak imperfective 'stand up'		Uidhe 'sing'	
	PRES	PAST	PAST	FUT
1SG	izan-na	izajssij-av	jexe:-mi	jexezeŋe-i
2SG	izan-ssara	izajssij-av	jexe:-i	jexezeŋe-i
3SG	izan-ssar	izajssij-a	jexe:-ni	jexezeŋe-ni

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– In Lak, there is a static relationship between the affixes and the morphosyntactic features that they express: -**av** expresses both **1sg** and **2sg**

– In Udihe, the relationship between the affixes and the morphosyntactic features varies. Sometimes **-i** functions solely as **2sg** and other times as both **1sg** and **2sg**

– This is called a **directional effect**: in Udihe, the **1sg future is based on the form for 2sg**

C. Unmarkedness

Unmarkedness concerns the possible relationship within a paradigm between a morphologically **unmarked** form and syncretism:

(18) **Francisco Leon Zoque (Mixe–Zoque)**

	poyu 'ran'		affixes	
	SG	PL	SG	PL
1	poyu	potyamu	Ø-	Ø- -tam
2	mbyoyu	mbyotyamu	Ny-	Ny- -tam
3	poyu	poyaju	Ø-	Ø- -yaj

Morphology Lab 20

- Compare the following datasets from Old English, Khanty, and Gothic respectively:

Verb ‘bindan’ (‘bind’), Old English

		PRESENT IND	PRESENT SBJV	PAST IND	PAST SBJV
1	SG	*binde*	*binde*	*band*	*bunde*
2	SG	*bintst*	*binde*	*bunde*	*bunde*
3	SG	*bint*	*binde*	*band*	*bunde*
1–3	PL	*bindaþ*	*binden*	*bundon*	*bunden*

Possessive suffixes in Khanty

	SINGULAR	PLURAL	DUAL
1ST	*-ēm*	*-ēw*	*-ēmən*
2ND	*-ēn*	*-lən*	*-lən*
3RD	*-l*	*-ēl*	*-lən*

Verb ‘niman’ (‘take’), Gothic

	ACTIVE		PASSIVE	
	SINGULAR	PLURAL	SINGULAR	PLURAL
1ST	*nima*	*nimam*	*nimada*	*nimanda*
2ND	*nimis*	*nimiþ*	*nimaza*	*nimanda*
3RD	*nimiþ*	*nimand*	*nimada*	*nimanda*

Distributed Morphology

What is Distributed Morphology?

- Distributed Morphology (DM) is the morphological framework developed by Halle and Marantz (1993, 1994)
- DM is the only morphological framework that has adherents who are not the creator(s) of said framework
- It is also very popular with generative (i.e. Chomskyan) syntacticians

Major questions DM tries to answer:

1. Lexicon
    -What kind of information about morphology is stored in the lexicon?
    -Morphemes or whole words?
2. Word formation
    -How do speakers create and understand new words?
    -Adding things or doing things?
3. Position in the grammar
    -Where in the grammar does morphology happen?
    -Before or after syntax?

Main tenets of DM

- ***Late Insertion***
  All phonological information is inserted *after* syntax.
- ***Underspecification***
  Phonological information is inserted into terminal nodes based on matching a *subset* of the features at the terminal node (crucially, it does not have to match all of the features).
- ***Syntax All the Way Down***
  The only combinatoric device in the grammar is syntax . Thus, 'words' are formed in the syntax, following the principles and operations of syntax.

• DM is '**distributed**' because it places morphology *both* in the syntax (with word formation) and *after* the syntax (with the insertion of phonological information).

Answers to the major questions provided by DM:

– Lexicon:
it stores morphemes (roots and affixes)

– Word formation:
it happens in the syntax proper, in exactly the same manner as phrases and sentences are formed

– Position in the grammar:
part before syntax, part after syntax (see point above)

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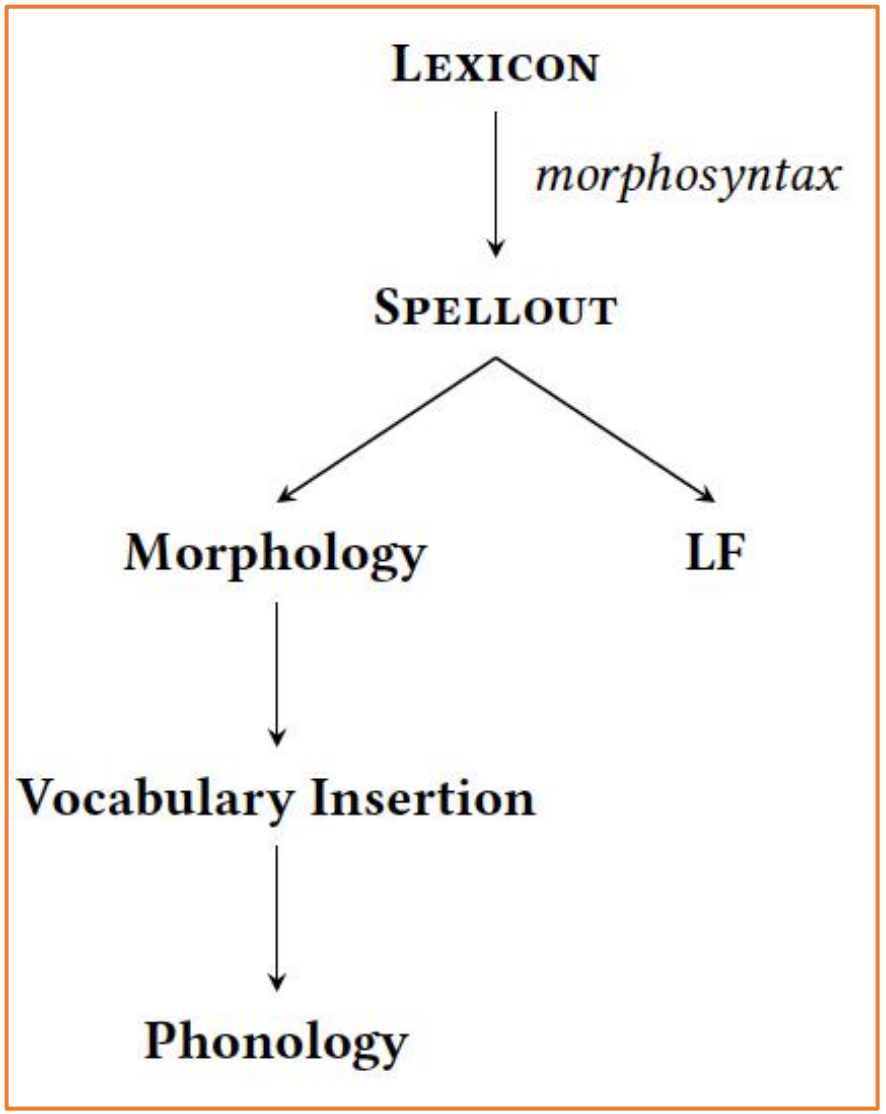


Answers to the major questions provided by DM:

Crucial components (making up PF)

– Vocabulary Insertion

inserts phonological information into the terminal nodes

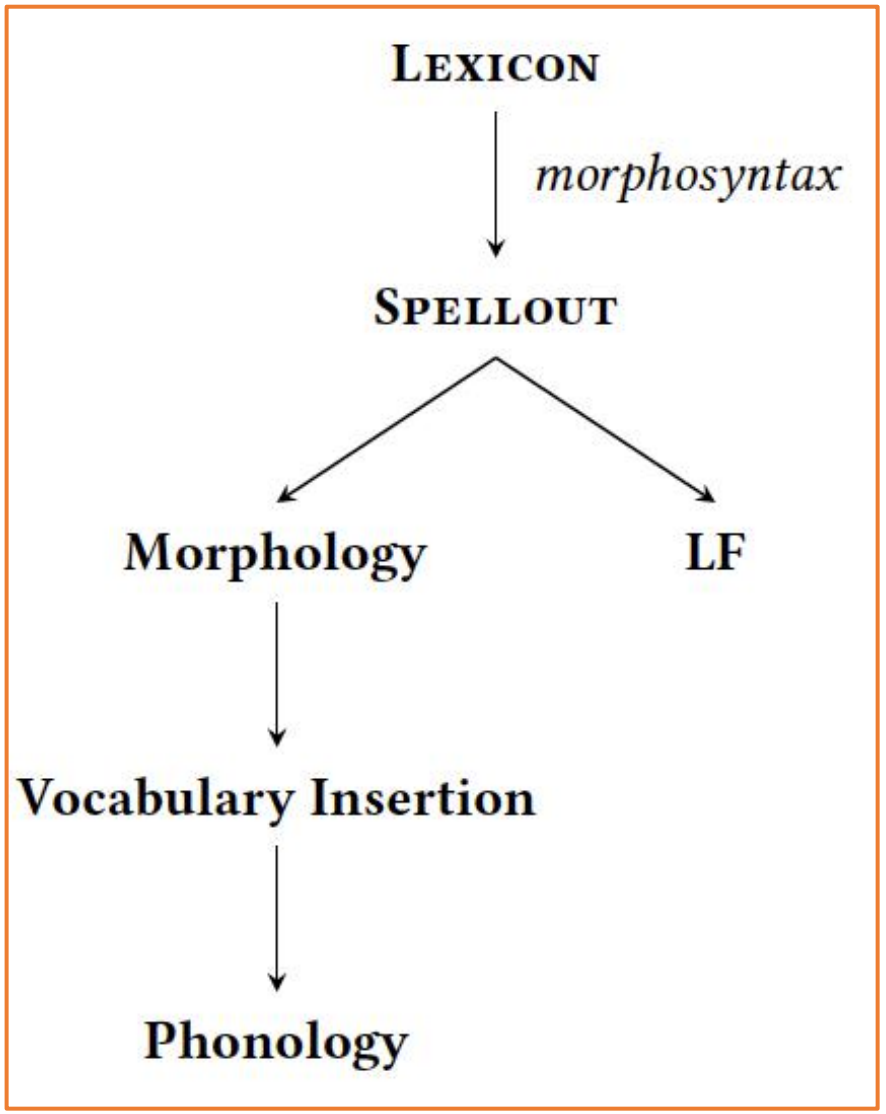
– Morphology

applies rules that modify terminal nodes before Vocabulary Insertion takes place

– Phonology

applies rules that handle phonological changes.

(19)



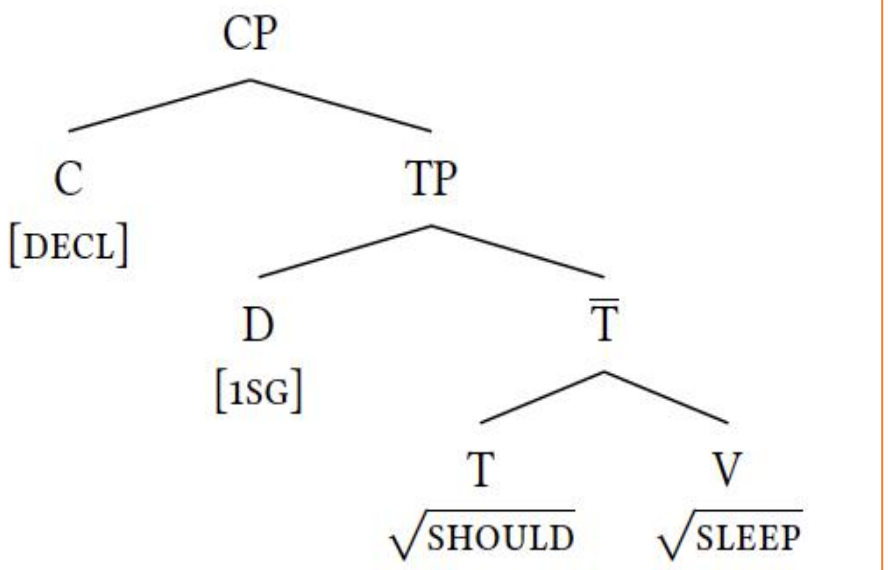
The operation of Late Insertion

No phonology in the syntax

The key idea underlying Late Insertion is that syntax operates without any reference to phonological information (or semantic information)

(20)

Structure for 'I should sleep' (simplified)



⁎ ***Vocabulary Insertion***
The phonological information is inserted postsyntactically in a process that is called VOCABULARY INSERTION.

- This information is encoded in the form of VOCABULARY ITEMS (VIs):

(3) **VOCABULARY ITEM SCHEMA**
syntactic features ↔ phonological information

Vocabulary Insertion and Vocabulary Items (VIs)

The VIs make up the morphological information that is stored in the lexicon.

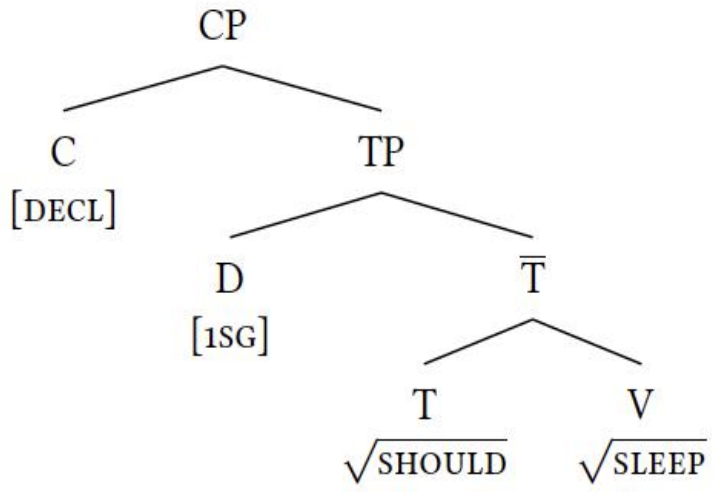
-**VIs** have many parallels with traditional SPE-style phonological rules (they can have environments, etc.), though they are not rewrite rules in the technical sense. That is, they do not replace or delete features.

-For every terminal node, there must be exactly one VI that realizes its features:

❖Exponence Constraint

Every terminal node must have exponence.

A. Structure of 'I should sleep'



B. VIs that would give exponence to the structure

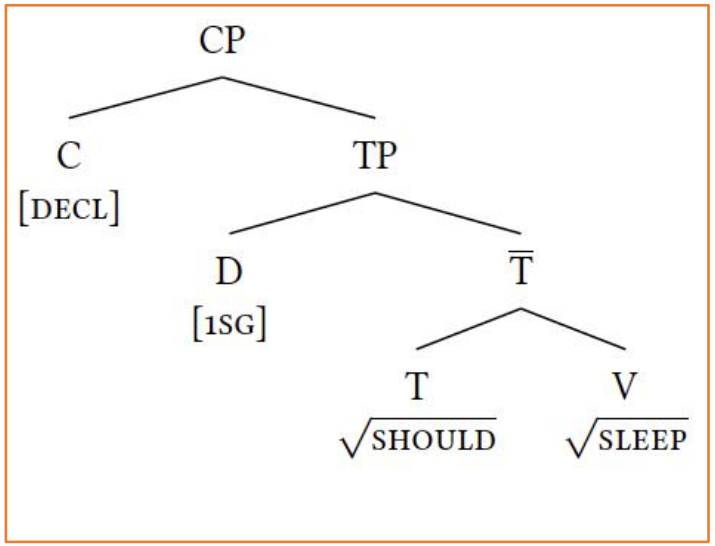
a. [DECL] ↔ ∅

b. [1SG] ↔ /aɪ/

c. √SHOULD ↔ /ʃʊd/

d. √SLEEP ↔ /slip/

DM: features and roots



Features and roots

The abstract entities over which syntax operates are morphosyntactic FEATURES:

- Technically, roots *are* features (or could be modelled as such), but we differentiate them in our notation for practical purposes.
- Features are notated with square brackets ([x]).
- Roots are notated with the square-root symbol ($\sqrt{x}$).
- Roots correspond to roots in the traditional sense (an irreducible stem).
- Features are what affixes can realize (though the affixes themselves are VIs).

The job of morphologists in DM

– As morphologists, our job (in DM) is to figure out the **features**, the **roots**, and the **VIs** (…and some other components)

– In principle, we can posit whatever features we need in order to account for the data with the right amount of generalization

– These features can in principle be quite abstract (as phonological features can be)

– However, syntacticians, semanticists, and morphologists all use morphosyntactic features in their analyses.

- Ideally, our collective inventory of features will converge or draw from a common stock

How abstract are the roots?

- There is a lot of discussion in the DM literature about what roots are and how roots are individuated from other roots.
- The state-of-the-art theory is that roots are individuated with numeric indices:[5]

(21)
a. $\sqrt{}_{42} \leftrightarrow$ /kæt/
b. $\sqrt{}_{105} \leftrightarrow$ /ʃip/

- In short, the syntax has access to no phonological information *whatsoever* about the root, however abstract.
- This is great, but as humans working on morphology, we will continue to write roots more transparently:

(22)
a. $\sqrt{\text{CAT}} \leftrightarrow$ /kæt/
b. $\sqrt{\text{SHEEP}} \leftrightarrow$ /ʃip/

Underspecification

- **Subset** => **Underspecification**

– In order for a VI to be inserted into a terminal node, the VI must match a subset of the terminal node's features

– Because a VI only has to match a subset, **VIs do *not* have to realize every feature of the terminal node**

=> VIs just have to realize the terminal node itself

- **Why might we want this setup?**

There are clear cases where morphemes bear certain morphosyntactic features that the morphemes themselves do *not* realize.

- The evidence for these features is that the features are reflected elsewhere.

Example of Underspecification: **German**

-In German, nouns have a grammatical gender, which is marked (via *concord*) on determiners and adjectives.
Gender is never reflected on the noun itself:

(23)

German nouns have grammatical gender

{*der	/ **die**	/ *das	} Katze
the.M	the.F	the.N	cat.F

'the cat'

Q: According to DM, if nouns do not reflect grammatical gender, why would VIs that insert into N nodes encode such information?

Example of Underspecification: **German**

(23) **German nouns have grammatical gender**

{*der / **die** / *das } Katze
the.M the.F the.N cat.F
'the cat'

Q: According to DM, if nouns do not reflect grammatical gender, why would VIs that insert into N nodes encode such information?

(24)

Vocabulary Items

a. $\sqrt{\text{CAT}} \leftrightarrow$ *Katze*
b. $\sqrt{\text{DOG}} \leftrightarrow$ *Hund*
c. $\sqrt{\text{SHEEP}} \leftrightarrow$ *Schaf*
d. [DEF, M] ↔ *der*
e. [DEF, N] ↔ *das*
f. [DEF, F] ↔ *die*

Underspecification of morphological items ends up being an extremely powerful analytical tool that leads to potentially better analyses!

I will see you next week:
what can we do in the meanwhile?

- review the lecture slides
- do reading from the **textbook** (Chapter 8, paragraph 6)
- **optional** reading on Distribute Morphology

- work on Assignment #3
- work on your presentation

- Teaching EVALs until 6/10

STAY SAFE & STRONG