Morphology IV: Capturing Syncretism

Feature Geometries, Markedness

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- In the previous set of slides, we saw some basic concepts that are used to capture syncretism across different frameworks:.
  - Underspecification
  - The Subset Principle
  - Feature Decomposition

- Today, we will apply these concepts in more detail by looking at some more case studies of syncretism and also learn some new concepts that are sometimes used to explain syncretism and syncretism distributions across languages.
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  - ↪ The concepts we will hear about today are feature geometries and markedness.
- And, if there is time, we can also briefly discuss the concept that Peter Ackema used on Wednesday to capture person syncretism: Feature Functions.

A Case Study from Ineseño Chumash

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1SG-obey-3SG
'I obey him.'

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'I obey him.'

- Both sets of agreement markers show numerous instances of syncretism:
  - ↪ The subject prefix shows syncretism across number.
  - ↪ And the object suffix shows syncretism across number and person.

(2) Ineseño Chumash Agreement:

	subject	stem	object
1SG	k-	V	-it
2SG	p-	V	-in
3SG	s-	V	-us
1DU	kiš-	V	-iyuw
2DU	piš-	V	-iyuw
3DU	siš-	V	-wun
1PL	kiy-	V	-iyuw
2PL	piy-	V	-iyuw
3PL	siy-	V	-wun

- How do the various theories deal with agreement with different arguments:

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- In a lexicalist theory, the presyntactic morphological module simply builds words including two agreement markers
- In the syntax then, both markers need to be checked against the syntactic context to make sure that they match up with the other elements in the clause.

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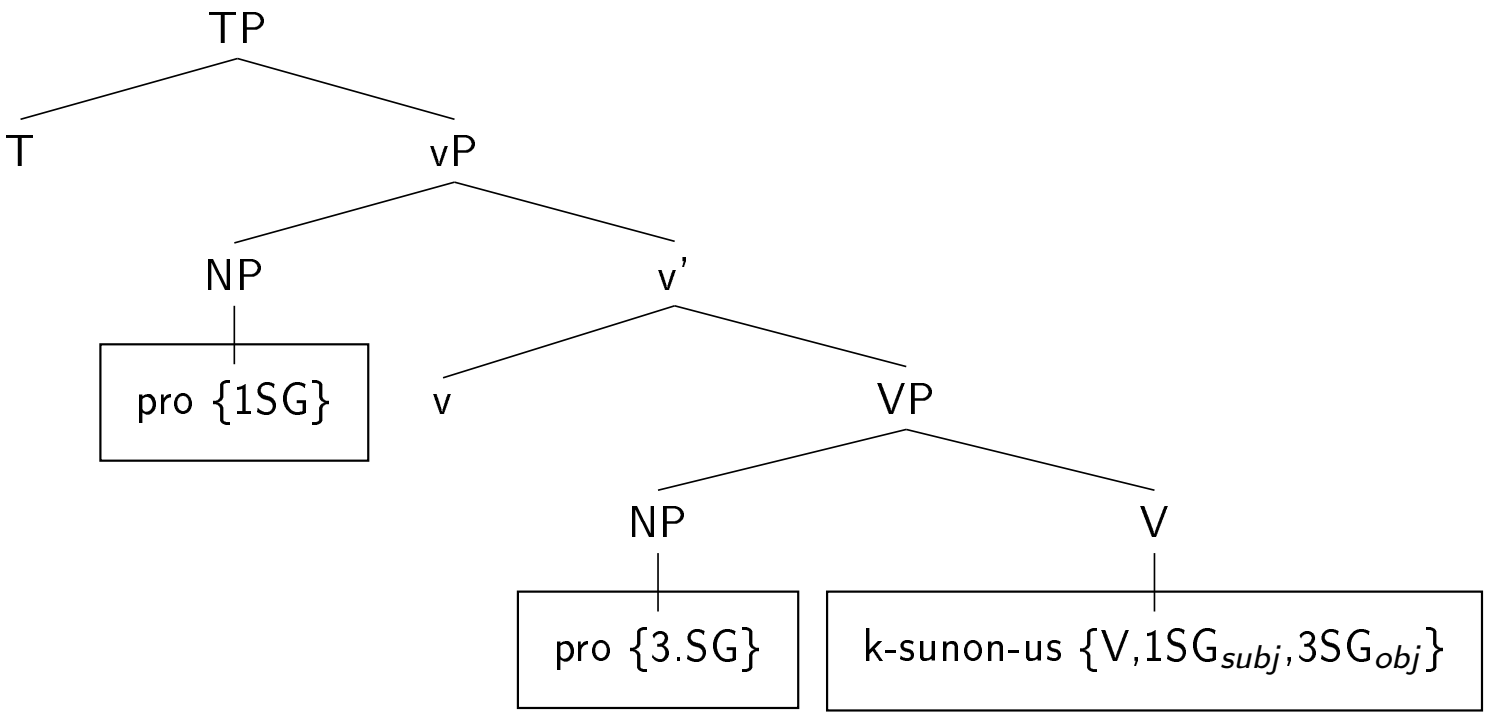

- Each word is built up with the complete feature structure and then the contexts are checked via Agree.

- In a DM-like framework, agreement with multiple arguments by assumption comes about via different agreement probes on different functional heads in the clause:

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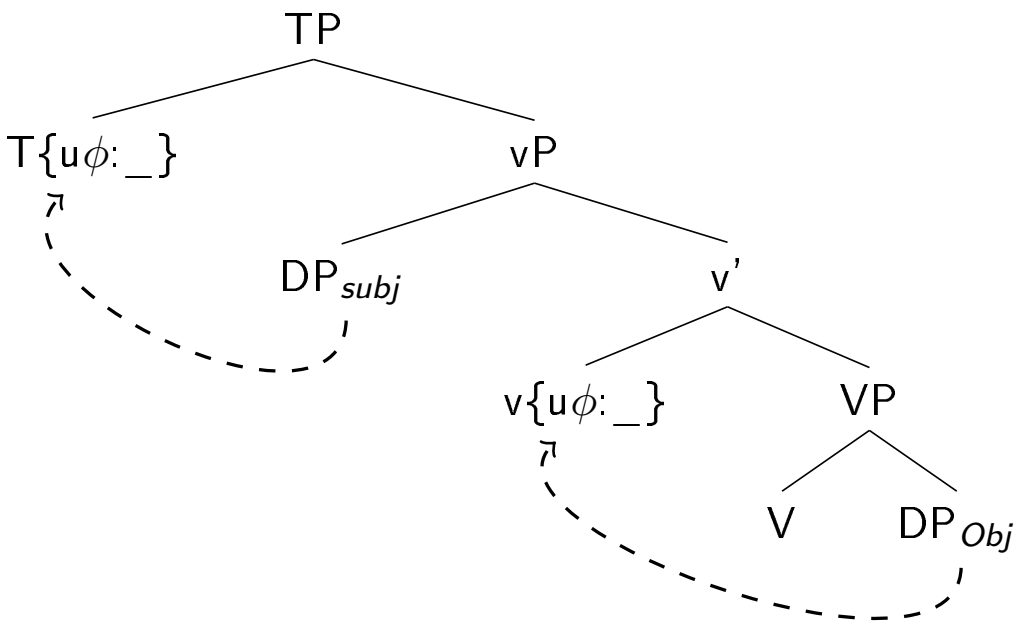

- Then, in a second step, word-formation processes such as head-movement apply, with the result that T-V-v form a morphosyntactic word.

- All we need to do is specify the insertion contexts for the markers in order to capture the syncretism patterns.

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- Many frameworks including those of the Chomskyan tradition, the terms subject and object are not primitives of the respective theories. We thus need a way to identify them in the morphology.

- All we need to do is specify the insertion contexts for the markers in order to capture the syncretism patterns.
- How do we make sure that a certain set of ϕ-features refers to the subject or the object?
- Many frameworks including those of the Chomskyan tradition, the terms subject and object are not primitives of the respective theories. We thus need a way to identify them in the morphology.
- Luckily, we can simply refer to them by using the categorial feature of v and T. The former bears the features of the object and the latter bears the features of the subject.

(5) Ineseño Chumash Agreement:

	subject	stem	object
1SG	k-	V	-it
2SG	p-	V	-in
3SG	s-	V	-us
1DU	kiš-	V	-iyuw
2DU	piš-	V	-iyuw
3DU	siš-	V	-wun
1PL	kiy-	V	-iyuw
2PL	piy-	V	-iyuw
3PL	siy-	V	-wun

- Which features need to be decomposed? What kind of decomposition do we need?

One Solution:

(6) Vocabulary Items:

a. /-it/ ⇔ [v,+Part,+Sp,+SG,–Aug]
b. /-in/ ⇔ [v,+Part,–Sp,+SG,–Aug]
c. /-us/ ⇔ [v,–Part,–Sp,+SG,–Aug]
d. /-iyuw/ ⇔ [v,+Part,–SG]
e. /-wun/ ⇔ [v,–Part,–SG]
f. /-iš-/ ⇔ [T,–SG,–Aug]
g. /-iy-/ ⇔ [T,–SG,+Aug]
h. /∅/ ⇔ [T,+SG]
i. /k-/ ⇔ [+Part,+Sp]
j. /p-/ ⇔ [+Part,–Sp]
k. /s-/ ⇔ [–Part]

(7) Ineseño Chumash Agreement:

	sub	V	obj
1SG	k-	V	-it
2SG	p-	V	-in
3SG	s-	V	-us
1DU	kiš-	V	-iyuw
2DU	piš-	V	-iyuw
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1PL	kiy-	V	-iyuw
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- We managed to model the complex paradigm of Ineseño Chumash with only 11 Vocabulary Items.
  - ↪ A theory which would simply list the respective wordforms would need more than 70 entries since all combinations of subjects and objects are possible.
- We captured all instances of syncretism by using an appropriate decomposition of number and person

- We managed to model the complex paradigm of Ineseño Chumash with only 11 Vocabulary Items.
  - ↪ A theory which would simply list the respective wordforms would need more than 70 entries since all combinations of subjects and objects are possible.
- We captured all instances of syncretism by using an appropriate decomposition of number and person
- We made sure that the correct arguments are referenced by the correct markers by referring to the categorial feature v or T which has undergone agreement with the respective argument.

Feature Geometries

- We find that many languages show variation wrt. to the morphological categories they encode:

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  - ↪ Some languages do not show tense distinctions whereas others have an elaborated complex system
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  - ↪ etc.
- Does it, against this background, make sense to assume universal morphosyntactic feature systems?

- An interesting proposal to solve this dilemma are feature geometries.

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- With feature geometries, we also assume a set of features (just as with feature decomposition) but in addition, we assume that there are dependency relations between different features.

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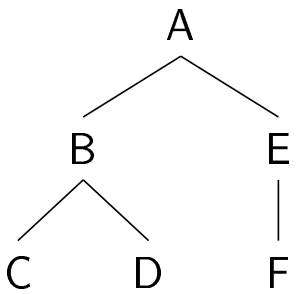

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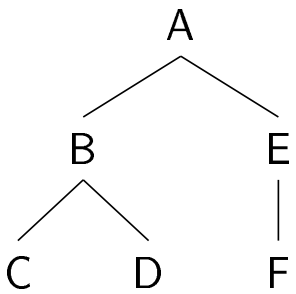

- A language can choose from the set of possible features (A-F) but needs to consider the dependency relations between certain features.
- No language can encode feature C if it does not encode feature B.

- An example of a feature geometry for pronouns from Harley & Ritter (2002):

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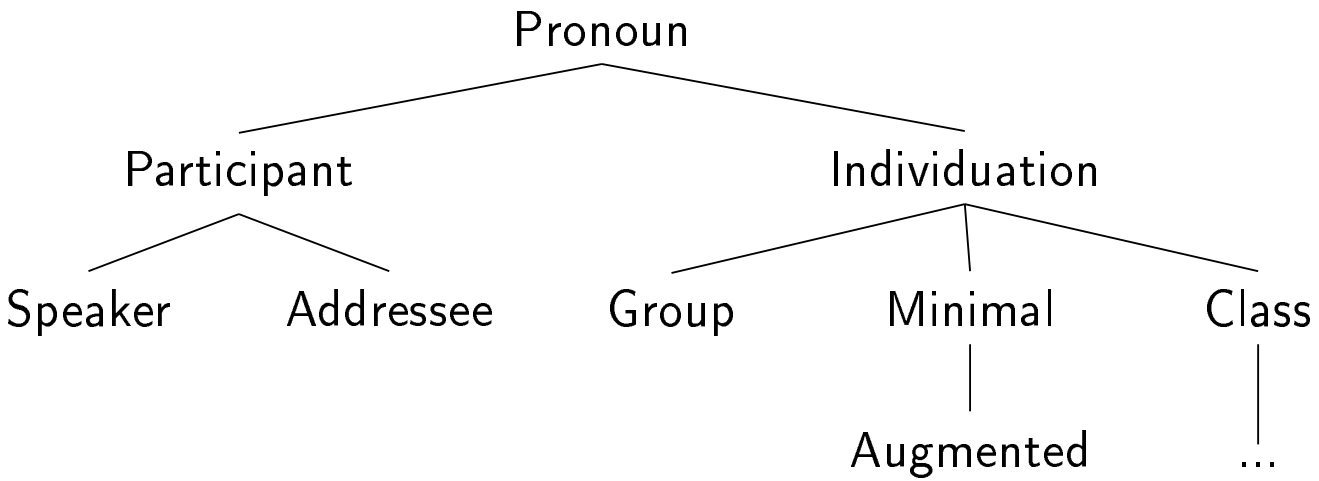

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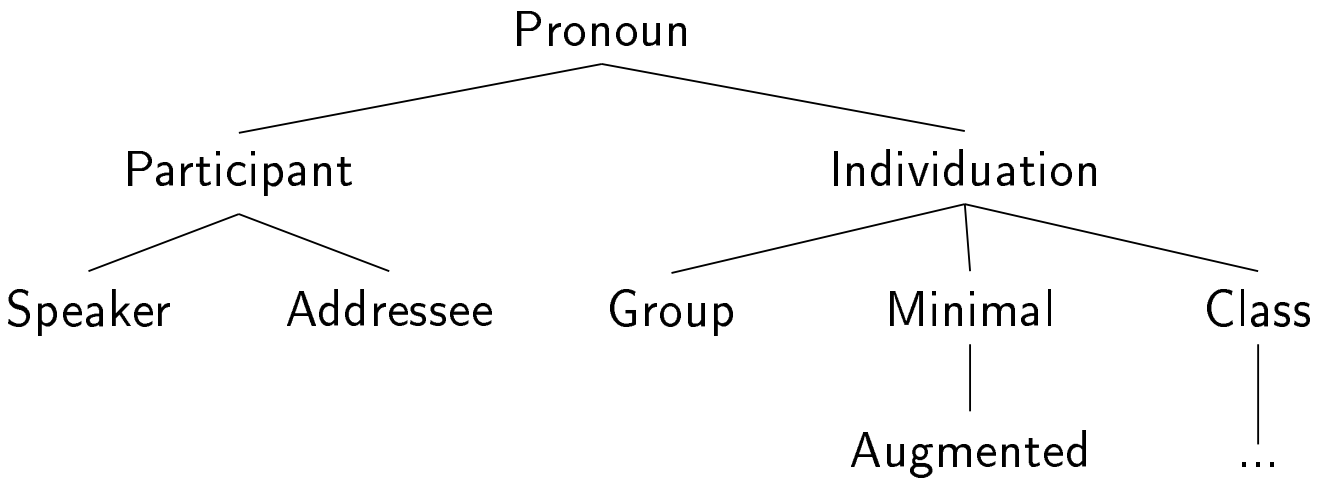

- The privative features in this system are in a dependency relation: No language can encode the feature *Addressee* if it does not encode the feature *Participant*.

- The actual feature specifications of the specific pronouns then look like this:

1SG:	[Part:Speaker]	[Indiv:Minimal]
2SG:	[Part:Addressee]	[Indiv:Minimal]
3SG:	[ ]	[Indiv:Minimal]
1PL.INCL:	[Part:Speaker,Addressee]	[Indiv:Group]
1PL.EXCL:	[Part:Speaker]	[Indiv:Group]
2PL:	[Part:Addressee]	[Indiv:Group]
3PL:	[ ]	[Indiv:Group]
...		
1DU.INCL:	[Part:Speaker,Addressee]	[Indiv:Minimal,Group]
...		
3.PAUCAL:	[ ]	[Indiv:Minimal:Augmented, Group]
...		

- One idea behind these feature geometries is to derive some universals or crosslinguistically strong tendencies:
  - ↪ 3. Person is often ∅, whereas first and second person are usually overt.

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- These are Greenbergian Universals.

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- A pronominal paradigm from Tok Pisin:

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Person	SG	DU	PL
1 Inkl.	–	yumitupela	yumipela
1 Exkl	mi	mitupela	mipela
2	yu	yutupela	yupela
3	em	tupela	ol

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- The markers for first person plural inclusive are transparent combinations of first and second person.
- The markers for the dual include the markers of the plural.

(11)

Person	SG	DU	PL
1 Inkl.	–	yu-mi-tu-pela	yu-mi-pela
1 Exkl	mi	mi-tu-pela	mi-pela
2	yu	yu-tu-pela	yu-pela
3	em	∅-tu-pela	ol

- The feature geometry proposed by Harley & Ritter (2002) provides us with (almost) everything we need to derive this paradigm straightforwardly.

- The only thing we need in addition is a way to refer to the third person because there is a highly specific third person plural marker that seems to block insertion of other elements.

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  - ↪ We can implement this by using binary features:

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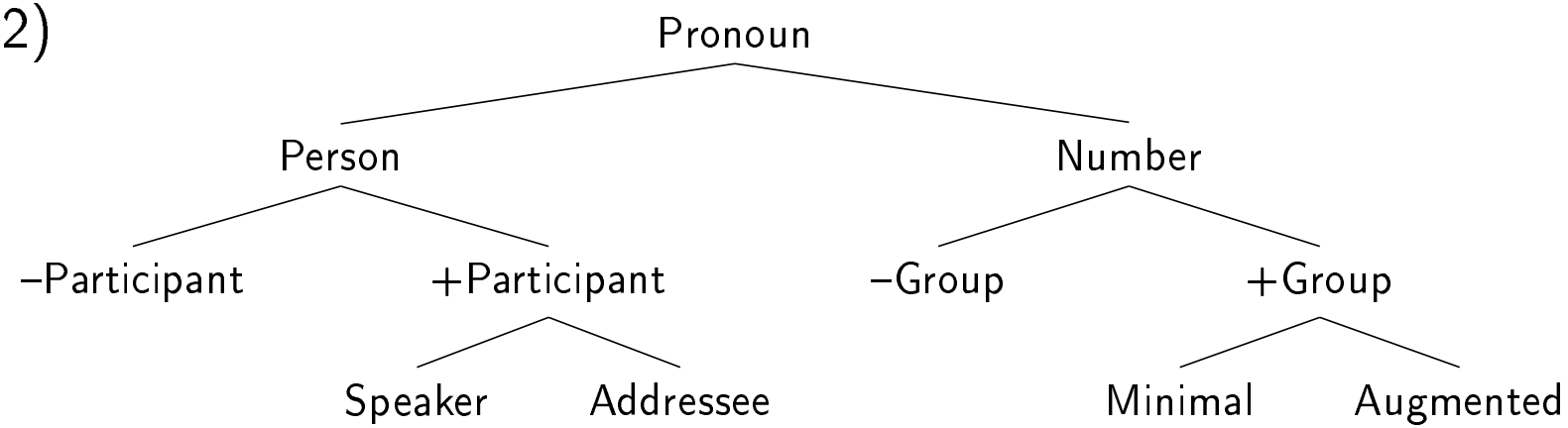

The actual features of the respective pronoun combinations then look like the following:

	Numerus	Person
1.SG	[–Group,	+Part:Speaker]
2.SG	[–Group,	+Part:Addressee]
3.SG	[–Group,	–Part]
1.DU.EXCL	[+Group: Minimal	+Part:Speaker]
1.DU.INCL	[+Group: Minimal	+Part:Speaker,Addressee]
2.DU	[+Group: Minimal	+Part:Addressee]
3.DU	[+Group: Minimal	–Part]
1.PL.EXCL	[+Group: Augmented	+Part:Speaker]
1.PL.INCL	[+Group: Augmented	+Part:Speaker,Addressee]
2.PL	[+Group: Augmented	+Part:Addressee]
3.PL	[+Group: Augmented	–Part]

With these features, we can posit simple Vocabulary Items that straightforwardly derive the distribution of every marker:

(13) Vokabularelemente:

a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]
d. /mi/ ⇔ [Speaker]
e. /∅/ ⇔ [–Part]
f. /tu/ ⇔ [Minimal]
g. /pela/ ⇔ [+Group]

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g. /pela/ ⇔ [+Group]

- Aside: We need to make the additional assumption that insertion of several VIs into the same head can apply as long as the specific feature in question has not been realized.

We will go through the markers one-by-one:

Person	SG	DU	PL
1 Inkl	–		
1 Exkl			
2			
3	em		ol

(14) a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]

Person	SG	DU	PL
1 Inkl	–	yu	yu
1 Exkl			
2	yu	yu	yu
3	em		ol

(15) a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]

Person	SG	DU	PL
1 Inkl	–	yu-mi	yu-mi
1 Exkl	mi	mi	mi
2	yu	yu	yu
3	em		ol

(16)
a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]
d. /mi/ ⇔ [Speaker]

Person	SG	DU	PL
1 Inkl	–	yu-mi	yu-mi
1 Exkl	mi	mi	mi
2	yu	yu	yu
3	em	∅	ol

(17)
a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]
d. /mi/ ⇔ [Speaker]
e. /∅/ ⇔ [–Part]

- Note that the ∅-marker does not occur in 3SG or 3PL even though its feature specification would be appropriate. But the [–Part]-feature that it realizes was already realized by a more specific marker.

Person	SG	DU	PL
1 Inkl	–	yu-mi-tu	yu-mi
1 Exkl	mi	mi-tu	mi
2	yu	yu-tu	yu
3	em	∅-tu	ol

(18)
a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]
d. /mi/ ⇔ [Speaker]
e. /∅/ ⇔ [–Part]
f. /tu/ ⇔ [Minimal]

Person	SG	DU	PL
1 Inkl	–	yu-mi-tu-pela	yu-mi-pela
1 Exkl	mi	mi-tu-pela	mi-pela
2	yu	yu-tu-pela	yu-pela
3	em	∅-tu-pela	ol

(19)
a. /ol/ ⇔ [–Part,+Group,Augmented]
b. /em/ ⇔ [–Part,–Group]
c. /yu/ ⇔ [Addresse]
d. /mi/ ⇔ [Speaker]
e. /∅/ ⇔ [–Part]
f. /tu/ ⇔ [Minimal]
g. /pela/ ⇔ [+Group]

➤ pela also does not occur in 3PL since its [+Group]-feature has already been realized by /ol/.

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  - ↪ All syncretisms are resolved
  - ↪ All markers except for the suppletive ones in the 3rd person realize exactly one feature
- Such an analysis is evidently more elegant than storing independent entries for each feature combination.

Markedness

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- The concept *markedness* is is used by some theories and rejected by others.
  - ↪ This choice often does not correlate with the choice of the actual framework one adopts:
  - ↪ Many people using DM reject the theoretical concept of markedness but many others use it very productively
- This issue is complicated by the fact that the term *markedness* conflates several distinct meanings.

- The term *markedness* or *marked feature* can be used purely descriptively to point out that one feature (specification) is morphologically marked.

(20) a. dog
b. dog-**s**

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b. dog-**s**

- But since language after language decides to use a specific marker for plurals rather than for singulars, people extended the use of *marked* to mean different things.

- Possibly some features (such as plural as opposed to singular) are morphosemantically marked. This might either be the result of language-specific factors or general psychological factors.

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- Possibly some features (such as plural as opposed to singular) are marked in terms of usage. They might be less frequent (wrt types or tokens) or applicable in less contexts.

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  - ↪ These include tendencies of the Greenbergian type as seen above. Some people view Dual as a marked feature as opposed to Plural since only a subset of languages encode plural also encode dual.
  - ↪ Similarly, it was claimed that Future is a marked tense feature as opposed to Past or Non-past. The idea is that, only a language which makes a past vs. non-past distinction actually marks future tense morphologically.

- Markedness is often also described to account for the observation that some paradigms show less morphological distinctions than others (i.e. show more syncretism).
  - ↪ In the plural, many languages make less person distinctions than in the singular

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  - ↪ In the plural, many languages make less person distinctions than in the singular
  - ↪ In the dual/plural, we find less case distinctions than in the singular
  - ↪ In the past tense, languages make less person distinctions than in the non-past

(21) Dutch verbal inflection:

	Present	Past
1SG	lach-∅	lach-te
2SG	lach-t	lach-te
3SG	lach-t	lach-te
1PL	lach-en	lach-te-n
2PL	lach-t	lach-te-n
3PL	lach-en	lach-te-n

Bobaljik (1995)

- Similarly, *markedness* is sometimes also invoked to regulate other morphological processes such as suppletion.
  - ↪ The case marker of a *marked* case feature such as instrumental case is less likely to trigger allomorphy or suppletion on a pronoun.

(22) Icelandic Pronoun Suppletion:

	Nom	Acc	Dat
1SG	ég	mig	mér
1PL	við	okkur	okkur
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Smith et al. (2018)

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- Markedness is also used to regulate diachronical processes.
  - ↪ Marked feature (combinations) tend to lose their specific morphological marking faster over time.

- *Markedness* can be implemented in various ways.
  - By employing meta-constraints on the application of certain processes.
    - ↪ We might for example posit restrictions on operations that regulate syncretism or allomorphy.

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  - By employing meta-constraints on the application of certain processes.
    - ↪ We might for example posit restrictions on operations that regulate syncretism or allomorphy.
    - ↪ In DM, this is often done by means of Impoverishment, which could be assumed to apply only in marked feature configurations.
    - ↪ Similarly, we could posit that only unmarked cases can trigger allomorphy or stem suppletion.

- Another way to implement *markedness* is to encode it in the feature (specification)s themselves.
  - ↪ We could say that [plural] is a privative feature and the absence of that feature characterizes singular.
  - ↪ Then it would be clear why certain rules would only apply to marked configurations.

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  - ↪ We could say that [plural] is a privative feature and the absence of that feature characterizes singular.
  - ↪ Then it would be clear why certain rules would only apply to marked configurations.
- Similar ideas can be pursued by specifying features as [±]plural and then stating that rules can only refer to positive feature values.

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  - ↪ We have seen that the feature geometry from Harley & Ritter (2002) was also intended to derive Greenbergian markedness implications.

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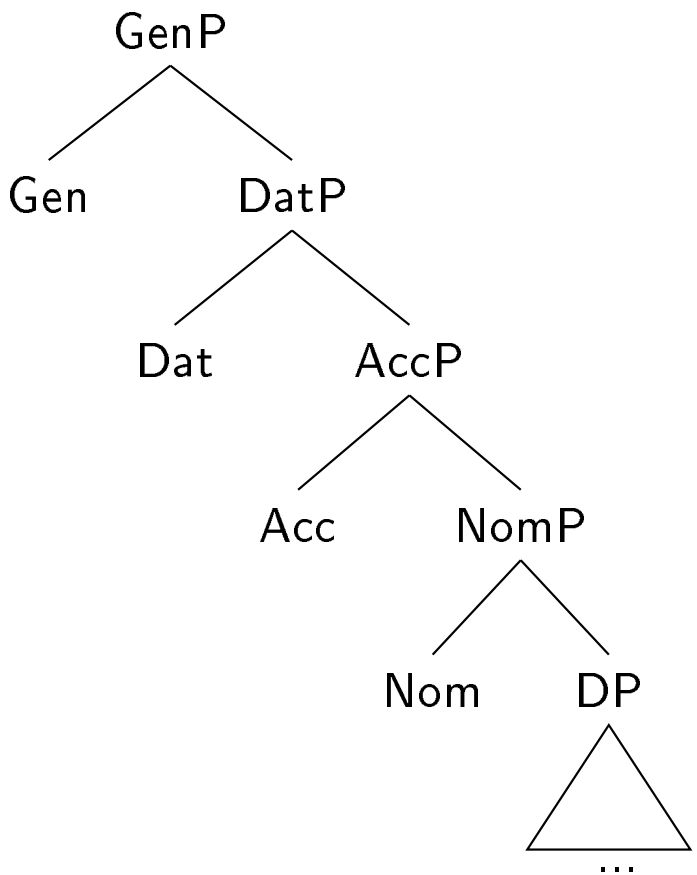
  - ↪ We have seen that the feature geometry from Harley & Ritter (2002) was also intended to derive Greenbergian markedness implications.
  - ↪ This is derived by saying that a feature X counts as marked (as opposed to a feature Y) if it depends on the presence of Y.

- Another way to encode *markedness* is in terms of feature geometries.
  - ↪ We have seen that the feature geometry from Harley & Ritter (2002) was also intended to derive Greenbergian markedness implications.
  - ↪ This is derived by saying that a feature X counts as marked (as opposed to a feature Y) if it depends on the presence of Y.
- The feature [Minimal] which characterizes the dual depends on the presence of the [Group] which characterizes the plural. Thus dual counts as marked as opposed to plural.

- The final way of modelling markedness is in terms of actual structural complexity.
  - ↪ A feature counts as marked if it is composed of more structural layers.

(23)



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- In recent approaches to allomorphy, such structures were employed to derive why marked features (e.g. Genitive case) cannot trigger allomorphy or suppletion.
- It is then simply possible to formulate the application of allomorphy rules in terms of structural locality.

Conclusion:

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- We have looked at feature geometries as another powerful concept to model syncretism and markedness relations.
- And finally, we discussed the term *markedness*, often a problematic concept which is used in various different notions and referring to various things. We have seen the motivation for positing markedness as a concept and how it can be modelled in a technical fashion.