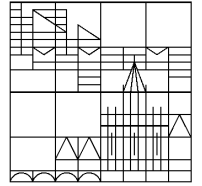




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# Mixed realisations of KP are L2-difficult, accelerating language change

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CGG, 25th April 2023



**STARFISH**

SOCIOLINGUISTIC TYPOLOGY  
AND RESPONSIVE FEATURES  
IN SYNTACTIC HISTORY

# Roadmap

## 1. Case and adposition inventory and syncretisms: theoretical predictions

- Blake's (1994) hierarchy and Caha's KP (2009)
- The Final-Over-Final Condition (FOFC) (2000, 2014)
- Synchronic and diachronic predictions

## 2. The role of L2-difficulty

- 'Mixed systems' are more L2-difficult
- 2 language change scenarios

## 3. Case/adposition change in the historical record

- Balkan Slavic
- Examining function realisation
- Locative and ablative?

## 4. Conclusion

Why?

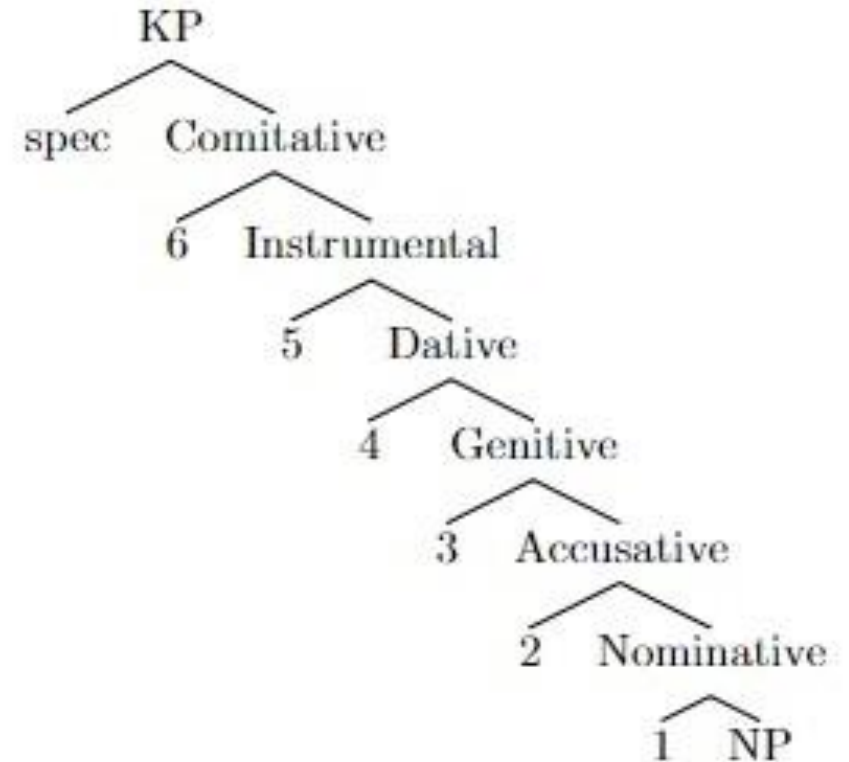
# 1. Case and adposition inventory and syncretisms: theoretical predictions

# Blake's Hierarchy and the KP (Case phrase)

Blake's Hierarchy: NOM > ACC/ERG > GEN > DAT > LOC > ABL/INS > other

The cases are in containment relationships: e.g. the dative contains the genitive and all the cases lower than it.

The KP aims to capture case inventories and syncretisms cross-linguistically. Syncretism only occurs with adjacent segments in the tree.



# Case Phrase KP- adpositions too!



(a) friend as companion

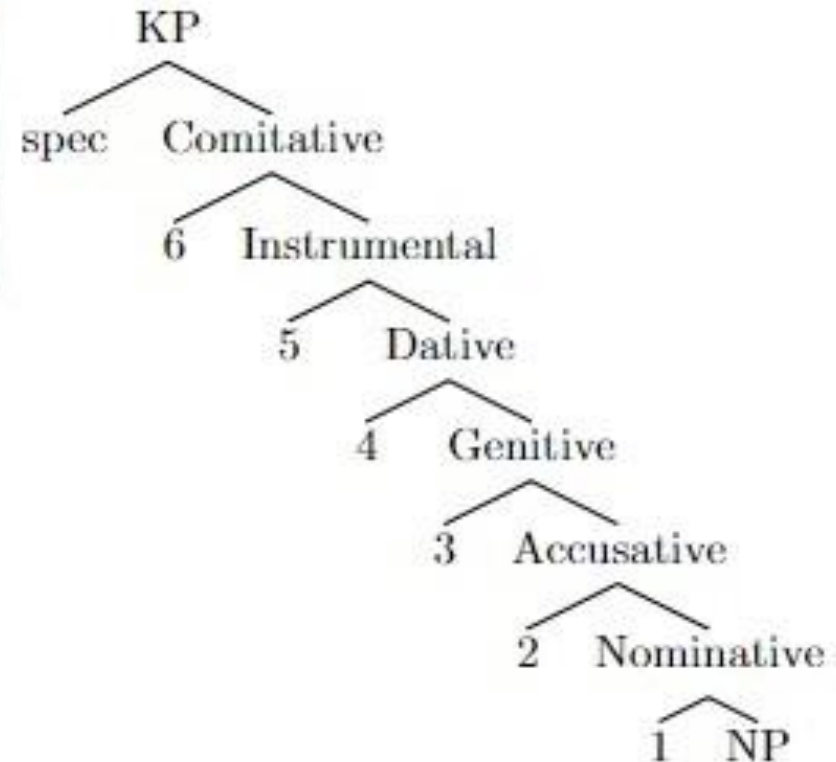


(b) friend as condiment

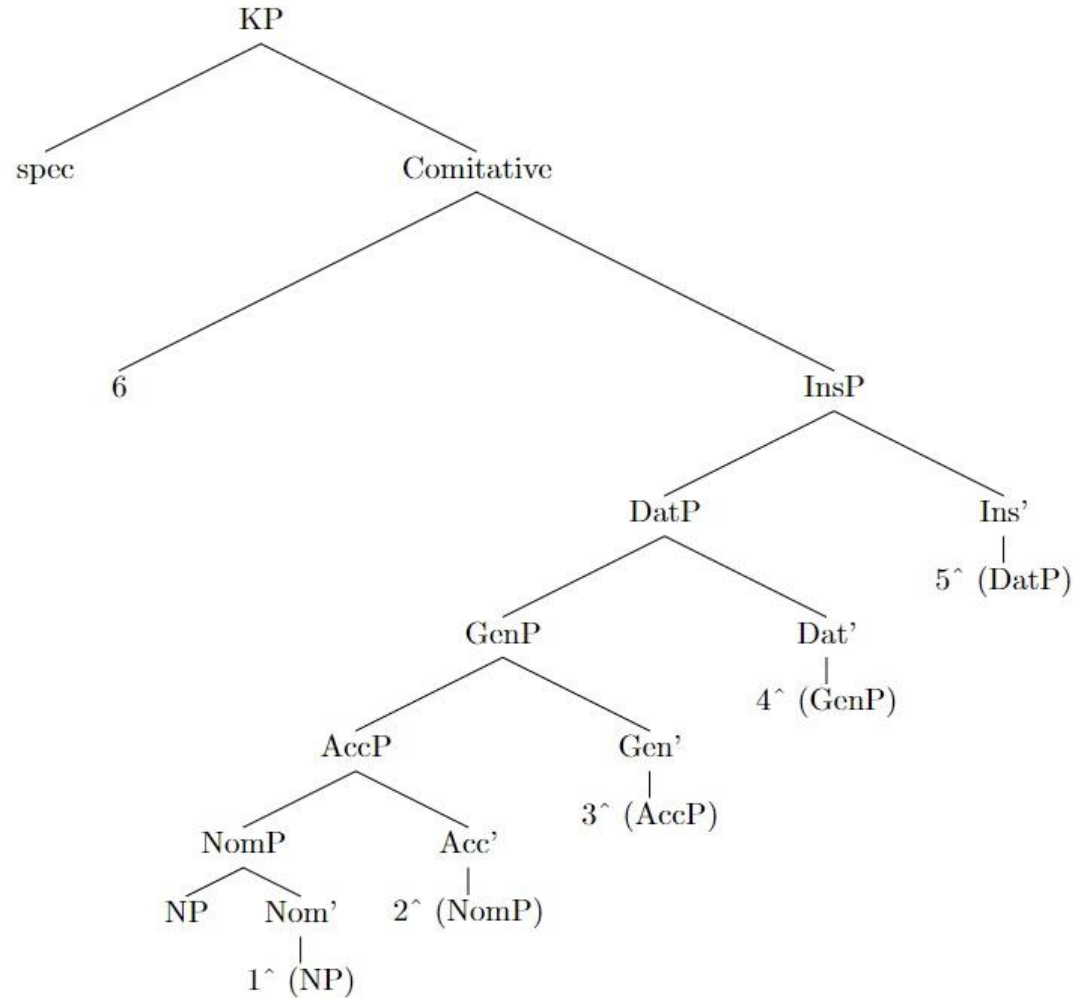
'I am eating pasta with my friend.'

In this approach, the difference between adpositions and case markers is which morphological processes do or do not apply (in a DM kind of approach).

Adpositions and case markers have the same narrow syntactic representation.



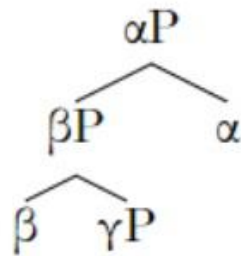
# Case Phrase KP- head directionality



# The Final-Over-Final Condition (FOFC)

- The Final-Over-Final Condition (FOFC) was first formulated by Holmberg (2000) as a potential syntactic universal, restricting certain surface word orders pertaining to the hierarchical syntactic structure.

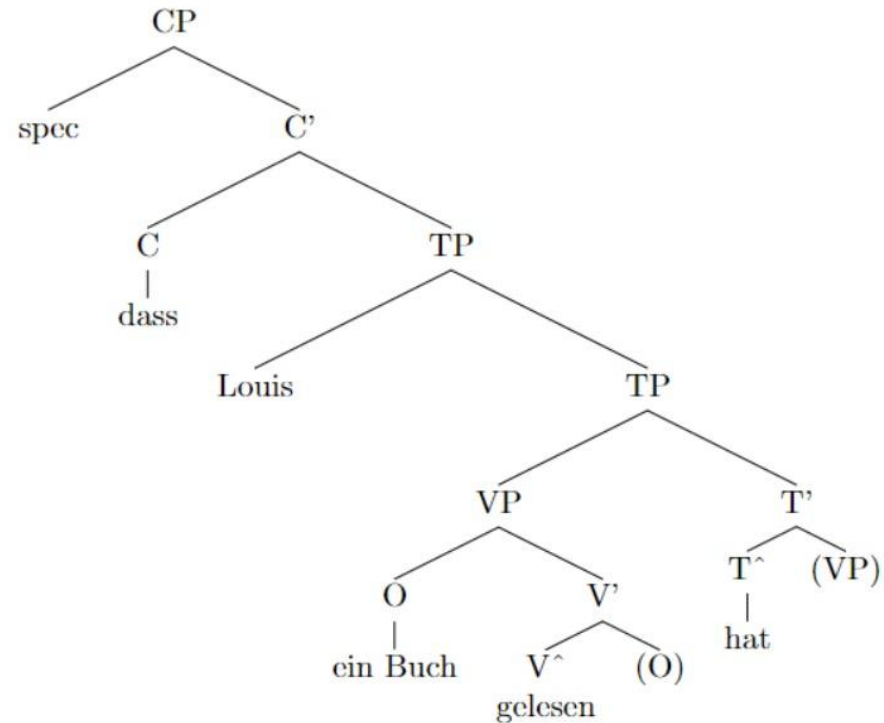
**FOFC: A head-final phrase  $\alpha$ P cannot dominate a head-initial phrase  $\beta$ P, where  $\alpha$  and  $\beta$  are heads in the same extended projection. (Biberauer, Holmberg and Roberts, 2014).**





# FOFC: deriving head-finality

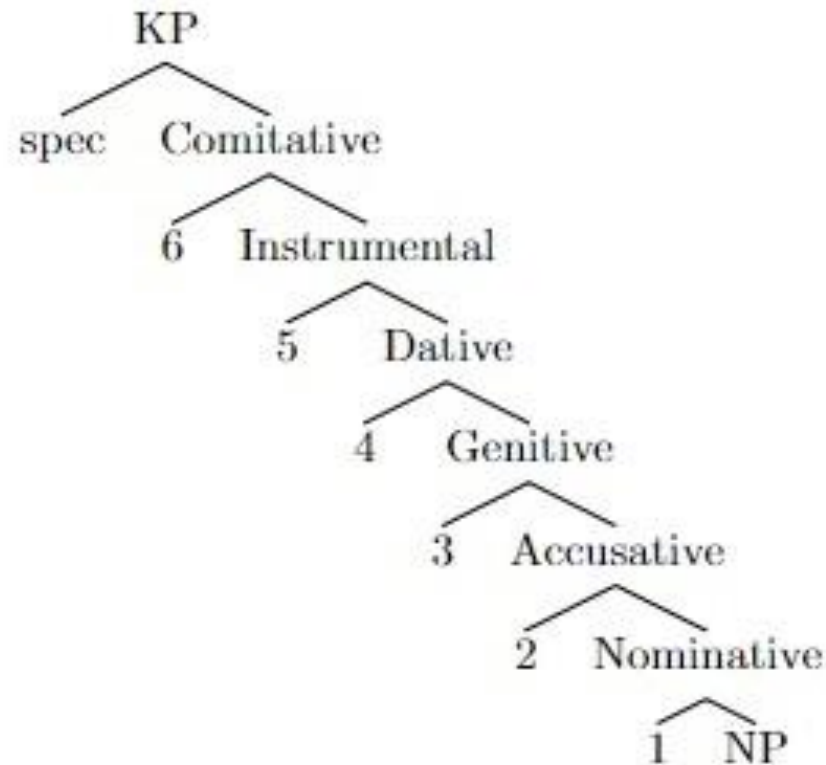
FOFC: A head-final phrase  $\alpha P$  cannot dominate a head-initial phrase  $\beta P$ , where  $\alpha$  and  $\beta$  are heads in the same extended projection. (Biberauer, Holmberg and Roberts, 2014).



- This roll-up eliciting head final structures is the same as we saw in the KP.
- Both approaches therefore make the same predictions: FOFC eliminates systems also eliminated by the KP system.

# Diachronic predictions of FOFC

- FOFC also makes diachronic predictions: diachronic change from a harmonically head-final to head-initial must occur 'top down' to avoid FOFC violations. A change from head-initial to final must occur 'bottom up'.



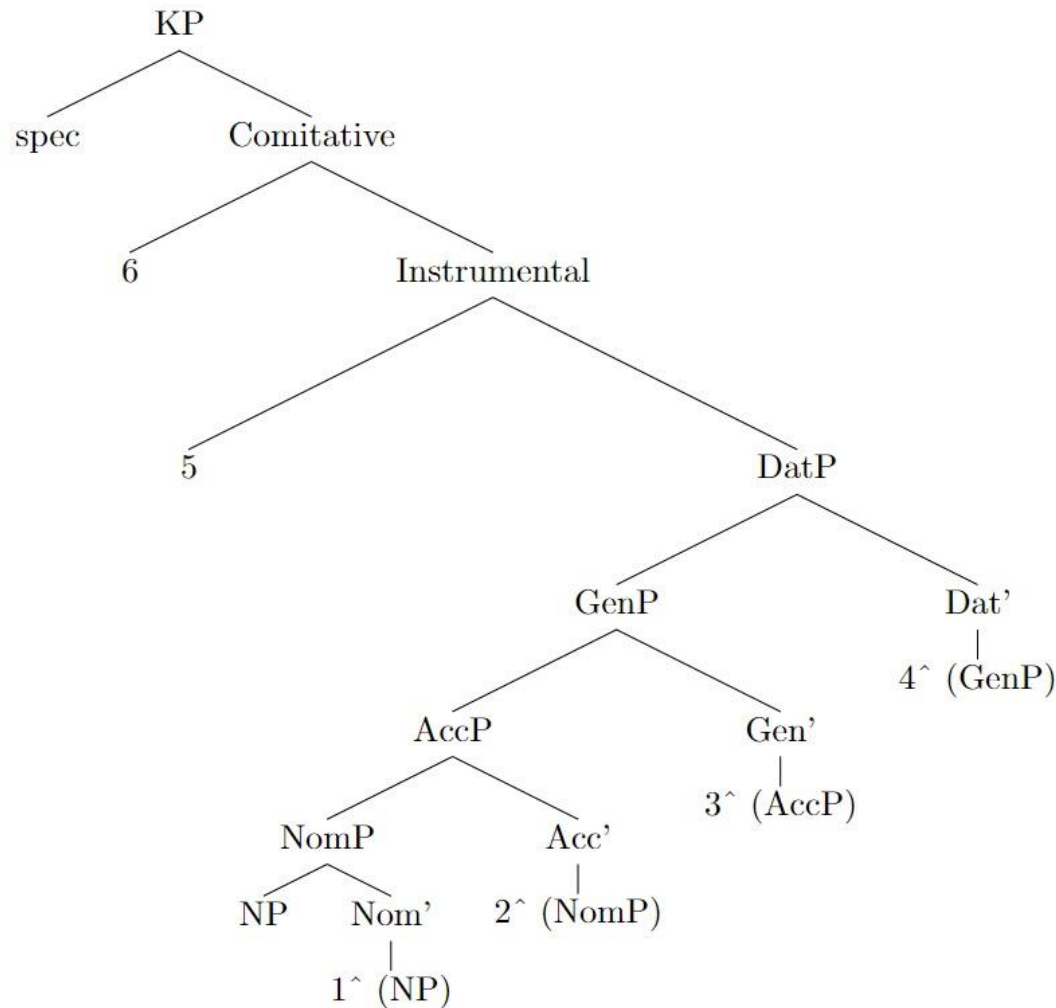
- These predictions can be directly applied to the KP. Change from head-final to head-initial in the KP must be top down, and from head-initial to head-final must be bottom up.

# Interim Summary

- A KP approach to morphological case such as Caha's and the workings of FOFC make the same synchronic predictions, and one can easily apply the diachronic predictions of FOFC to the KP:
- Diachronically in the KP, we expect to see a top down rise in head-initiality or a bottom up rise in head-finality.
- In terms of adpositions and case markers, we can make the statement: *case suffix loss is the erosion of roll-up*. This also predicts that it is the higher, more semantic cases that should be lost first, as the functional heads lose their  $\wedge$ . As I shall lay out in the next section, in terms of learnability, this loss of case/roll-up can be seen as the loss of the  $\wedge$  feature.
- The next section looks at the role L2-difficulty can play in this diachronic change.

## 2. The role of L2-difficulty

# L2-difficulty and non-harmonious, 'mixed' systems



- Harmonic head-initial or head-final grammars are easier in L1 acquisition, as the learner must only postulate one rule and then extend it fully to cover the whole KP: either all the functional heads along the KP spine have  $\wedge$ , or none of them do (Roberts, 2019).
- I extend this to second language adult difficulty: I attribute the notion of L2-difficulty (Walkden and Breitbarth 2019) to such non-harmonious systems.

# L2 difficulty and non-harmonious, 'mixed' systems

2 scenarios for 2 types of mixed system: one with more head-final than initial heads, and the one with the opposite.

- Scenario 1: L2 adults apply the roll-up feature to more heads
- Scenario 2: The L2 adults apply the roll-up feature to fewer heads

**Scenario 1**



**L2 adults postulate even  
MORE roll-up heads**

**Scenario 2**



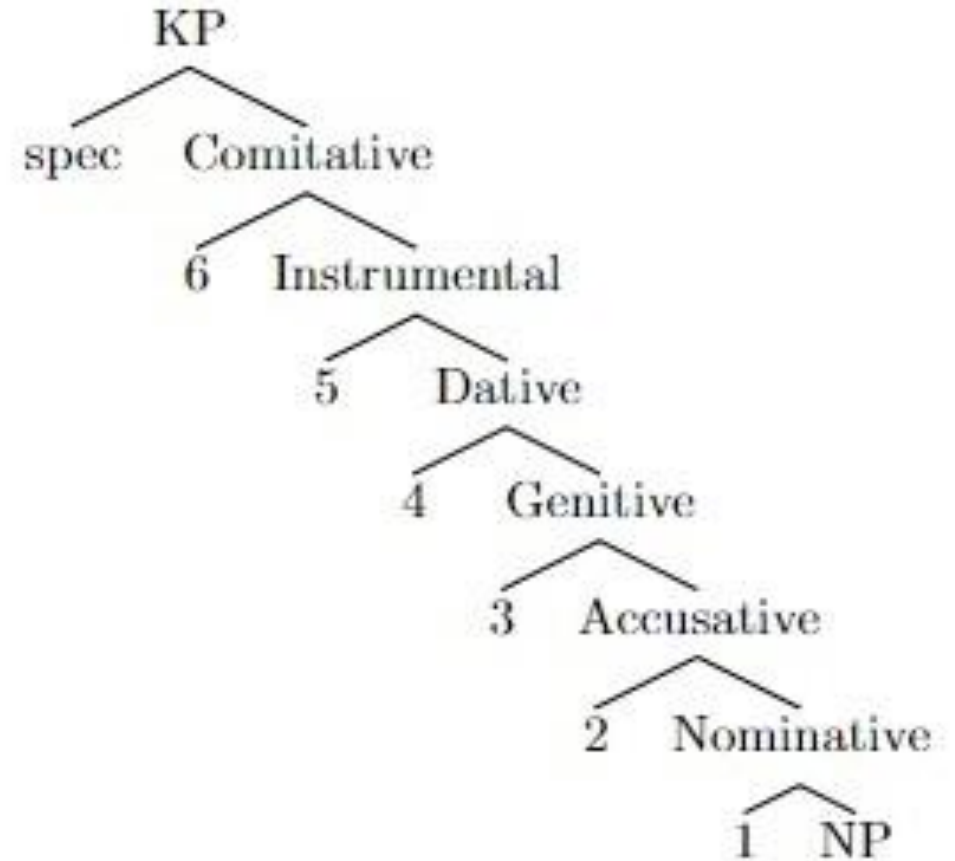
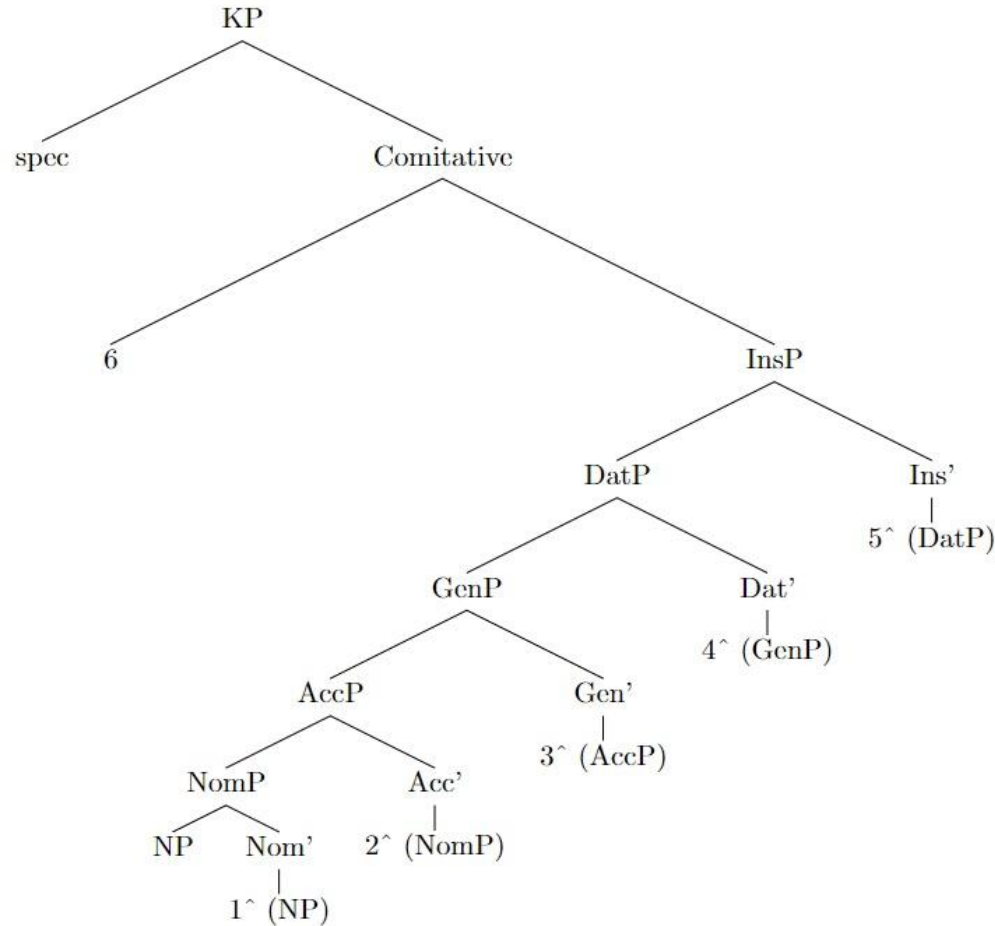
**L2 adults postulate even  
FEWER roll-up heads**

This is in line with Trudgill's (2012) simplification type of sociolinguistic change.

See project STARFISH website for further work into the role of L2 difficulty on diachronic change.

# 3. Case/adposition change in the historical record

# Balkan Slavic





# Examining function realisation

## Annotated Corpus of Pre-Standardized Balkan Slavic Literature

### Function tags:

**Comitative**

**Associative**

**Instrumental**

**Ablative: path:source, ablative, agentive, causative**

**Benefactive**

**Locative: path:goal, path, (some) temporal**

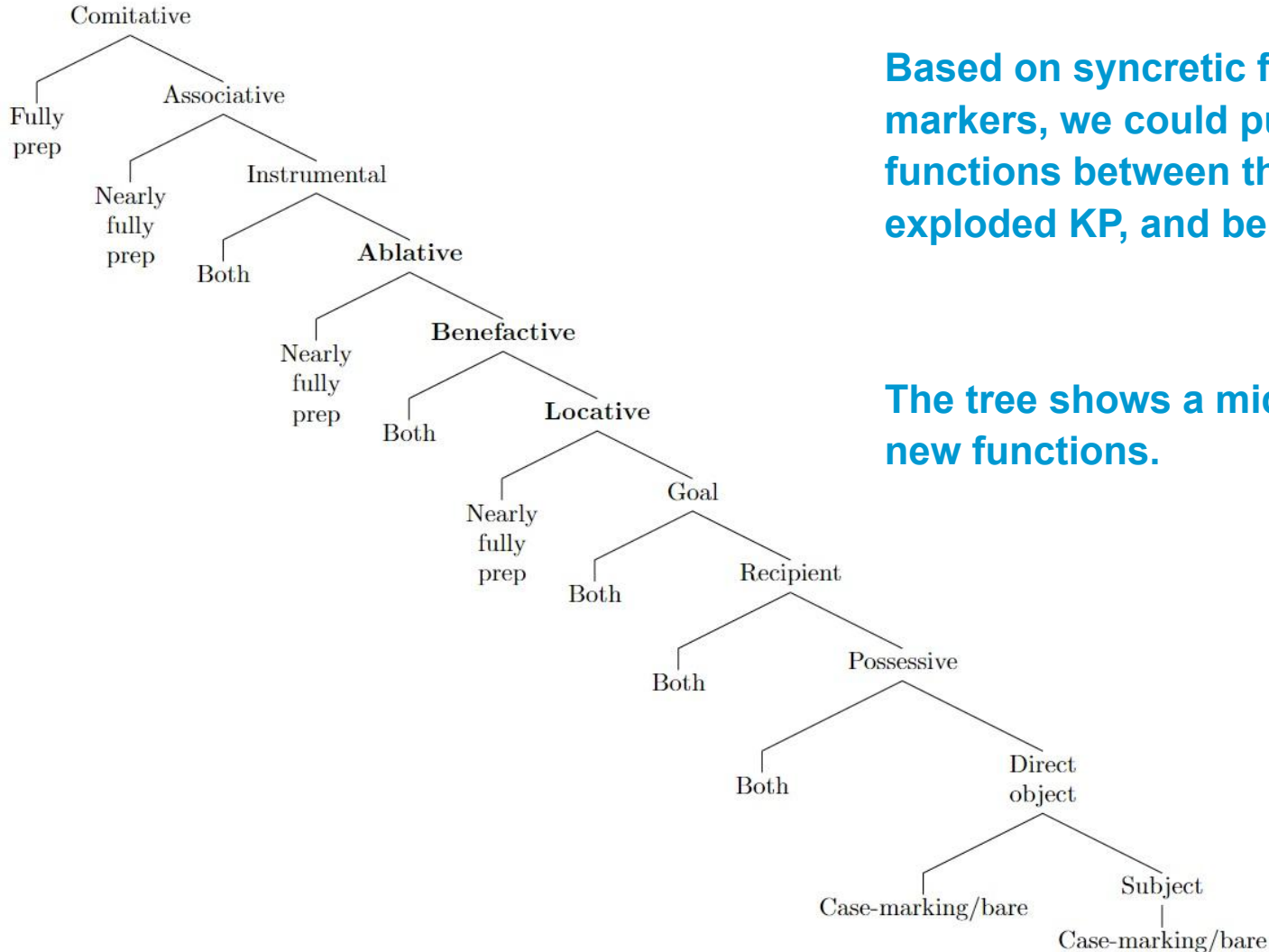
**Recipient**

**Possessive**

**Direct object**

**Subject**

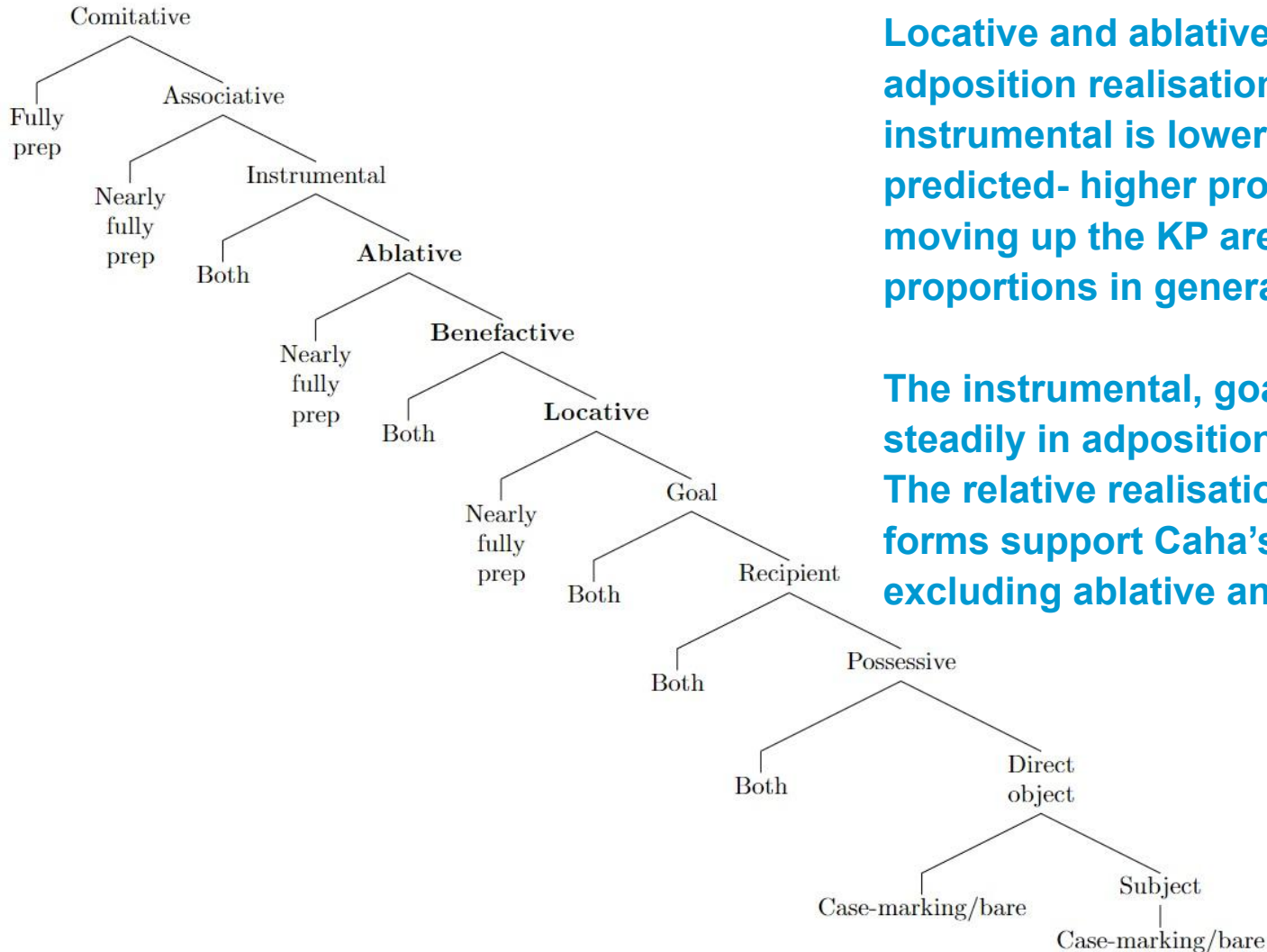
# Examining function realisation



Based on syncretic forms of both adpositions and case markers, we could put place the locative and ablative functions between the instrumental and goal in the exploded KP, and benefactive in between them.

The tree shows a midway point in the texts including the new functions.

# Locative and ablative?



However:

Locative and ablative have consistently high proportions of adposition realisation across the texts, whereas the higher instrumental is lower in adposition realisation: this is not predicted- higher proportions of adpositional realisation moving up the KP are predicted, as are higher adpositional proportions in general in the later texts.

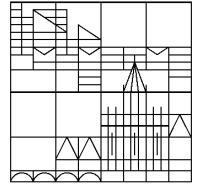
The instrumental, goal and recipient functions DO increase steadily in adposition realisation diachronically. The relative realisation proportions and analysis of syncretic forms support Caha's original KP configuration and this, excluding ablative and locative.

# 4. Conclusion

# Conclusion

- The exploded KP and FOFC yield the same synchronic predictions concerning adposition and case marker inventories.
- The diachronic predictions of FOFC can be straightforwardly applied to the KP
- I argue that high proportions of adult L2 speakers of a language can accelerate change in the KP.
- We can use diachronic corpus data to track realisation of the functional load between adpositions and case markers to test these claims.
- For a KP with the order of functions: comitative, associative, instrumental, goal, recipient, possessive, direct object marking and subject marking, the corpus data supports the predictions made concerning inventory and syncretisms.

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**Thank you  
for listening!**



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<https://www.ling.uni-konstanz.de/en/walkden/starfish/>

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# Corpus metadata

- Corpus used is *Annotated Corpus of Pre-Standardized Balkan Slavic Literature*
- Existing tagging: PoS tags (including case on nouns, adjectives and pronouns), Universal Dependency tags (e.g. subj, obj, iobj, loc)
- ‘Case’ tags on adpositions which reflect cases taken historically by the adpositions, rather than the cases taken by each instance of the adposition.
- These existing tagsets could be used to an extent, but function tags were added to more closely track adposition and case function.
- Preliminary data consists of 7 tagged and analysed texts from 1300s, 1380s, 1400s (x2), 1750, 1796, 1860
- From the modern Bulgarian area, one from Slovenia/Bosnia and one from N. Macedonia
- Rough token counts: 7600, 4550, 800, 1336, 896, 3725, 2329
- Vocative, idiosyncratic, unmarked and unknown categories taken out



# Text A: 1300s, Legend of Troy

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	0	549	0	100
Direct object	4	489	0.8	99.2
Possessive	1	251	0.4	99.6
Recipient	0	40	0	100
Goal	16	142	10.1	89.9
Path	1	0	100	0
Path:goal	88	13	87.1	12.9
Pathplace	27	0	100	0
Temporal	48	7	87.3	12.7
Locative	132	6	95.7	4.3
Benefactive	20	8	71.4	28.6
Causative	19	0	100	0
Agentive	7	3	70	30
Path:source	10	0	100	0
Ablative	35	7	83.3	16.7
Instrumental	10	42	19.2	80.8
Associative	15	11	58	42.3
Comitative	29	5	85.3	14.7

# Text B: 1380s, Life of St. Parascheva

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	1	233	0.4	99.6
Direct object	2	394	0.5	99.5
Possessive	0	247	0	100
Recipient	0	11	0	100
Goal	22	50	30.6	69.4
Path	5	0	100	0
Path:goal	42	5	89.4	10.6
Pathplace	11	1	91.7	8.3
Temporal	11	3	78.6	21.4
Locative	83	7	92.2	7.8
Benefactive	19	9	67.9	32.1
Causative	16	1	94.1	5.9
Agentive	6	8	42.9	57.1
Path:source	9	0	100	0
Ablative	20	8	71.4	28.6
Instrumental	6	65	8.5	91.5
Associative	35	8	81.4	18.6
Comitative	14	4	77.8	22.2

# Text C: 1400s, Wallachian letters

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	0	43	0	100
Direct object	0	49	0	100
Possessive	0	57	0	100
Recipient	0	8	0	100
Goal	4	8	33.3	66.7
Path	1	0	100	0
Path:goal	6	6	50	50
Pathplace	0	0	0	0
Temporal	2	0	100	0
Locative	10	0	100	0
Benefactive	3	0	100	0
Causative	3	0	100	0
Agentive	0	3	0	100
Path:source	0	0	0	0
Ablative	9	4	69.2	30.8
Instrumental	3	5	37.5	62.5
Associative	6	0	100	0
Comitative	2	0	100	0

# Text D: 1400s, Tale of Alexander the Elder (N. Macedonia)

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	1	90	1.1	98.9
Direct object	0	95	0	100
Possessive	0	55	0	100
Recipient	0	4	0	100
Goal	12	15	44.4	55.6
Path	0	0	0	0
Path:goal	9	1	90	10
Pathplace	7	1	87.5	12.5
Temporal	5	3	62.5	37.5
Locative	49	3	94.2	5.8
Benefactive	1	1	50	50
Causative	3	0	100	0
Agentive	1	0	100	0
Path:source	2	0	100	0
Ablative	4	4	50	50
Instrumental	1	4	20	80
Associative	2	2	50	50
Comitative	11	1	91.7	8.3

# Text E: 1750, Legend of Thaïs the Harlot

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	0	73	0	100
Direct object	0	88	0	100
Possessive	0	249	0	100
Recipient	2	3	40	60
Goal	3	21	12.5	87.5
Path	1	0	100	0
Path:goal	8	0	100	0
Pathplace	3	0	100	0
Temporal	5	4	55.6	44.4
Locative	8	0	100	0
Benefactive	1	3	25	75
Causative	3	0	100	0
Agentive	0	0	0	0
Path:source	0	0	0	0
Ablative	10	0	100	0
Instrumental	8	0	100	0
Associative	2	0	100	0
Comitative	3	0	100	0

# Text F: 1796, Life of Parascheva and Story of Joseph

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	0	293	0	100
Direct object	2	297	0.7	99.3
Possessive	5	5	50	50
Recipient	1	20	4.8	95.2
Goal	21	51	29.2	70.8
Path	1	0	100	0
Path:goal	54	2	96.4	10.7
Pathplace	9	0	100	0
Temporal	7	11	38.9	61.1
Locative	84	3	96.6	3.4
Benefactive	6	5	54.5	45.5
Causative	9	0	100	0
Agentive	1	0	100	0
Path:source	7	0	100	0
Ablative	23	6	79.3	20.7
Instrumental	23	1	95.8	4.2
Associative	5	0	100	0
Comitative	5	0	100	0

# Text G: 1860, Homily of saint prophet Daniel about Lord's Judgement

Function	No. of adpositional realisation instances	No. of non-adpositional realisation instances	Proportion of adpositional instances	Proportion of non-adpositional instances
Subject	0	209	0	100
Direct object	0	142	0	100
Possessive	0	78	0	100
Recipient	6	3	66.7	33.3
Goal	24	12	66.7	33.3
Path	4	0	100	0
Path:goal	13	0	100	0
Pathplace	10	0	100	0
Temporal	5	22	18.5	81.5
Locative	36	2	94.7	5.3
Benefactive	7	3	70	30
Causative	7	0	100	0
Agentive	1	0	100	0
Path:source	2	0	100	0
Ablative	23	1	95.8	4.2
Instrumental	6	1	85.7	14.3
Associative	4	0	100	0
Comitative	8	0	100	0