Towards a typology of agreement phenomena

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Outline of the talk

- Introduction
  - motivation and preliminaries
  - syntagmatic relations
- Main discussion
  - morphosyntactic co-variation
  - typology of agreement phenomena
- Conclusions and outlook

Preliminaries

- A phenomenon is a relation between properties of objects.
- Agreement: relatively well researched (esp. in Slavic)
  - the objects (as agreement sources)
  - their properties (agreement features & conditions)
  - the relations between them (???)

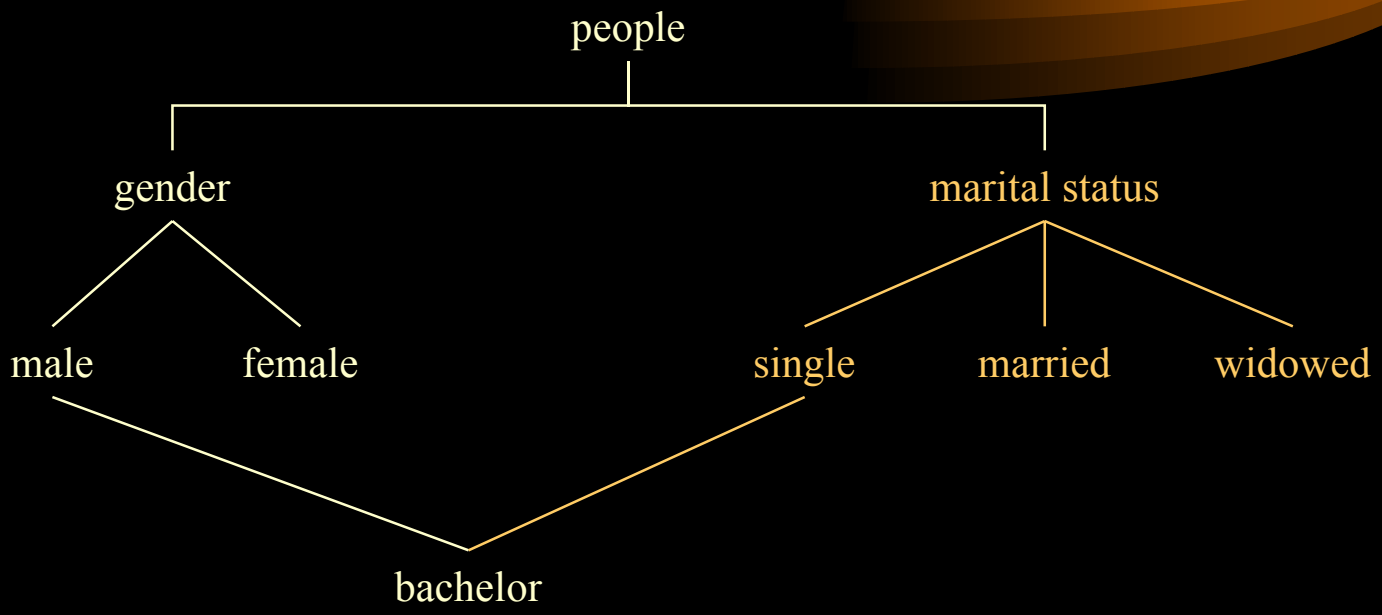
Motivation

- "Mature" linguistic theories develop
  - powerful ontologies for linguistic objects / categories
    (*words, phrases, sentences*...)
  - rich inventories of relations among (properties of) these objects
    (*agreement, subcategorisation, long-distance dependencies*...)
- However ...
  - no systematic account of grammatically relevant relations

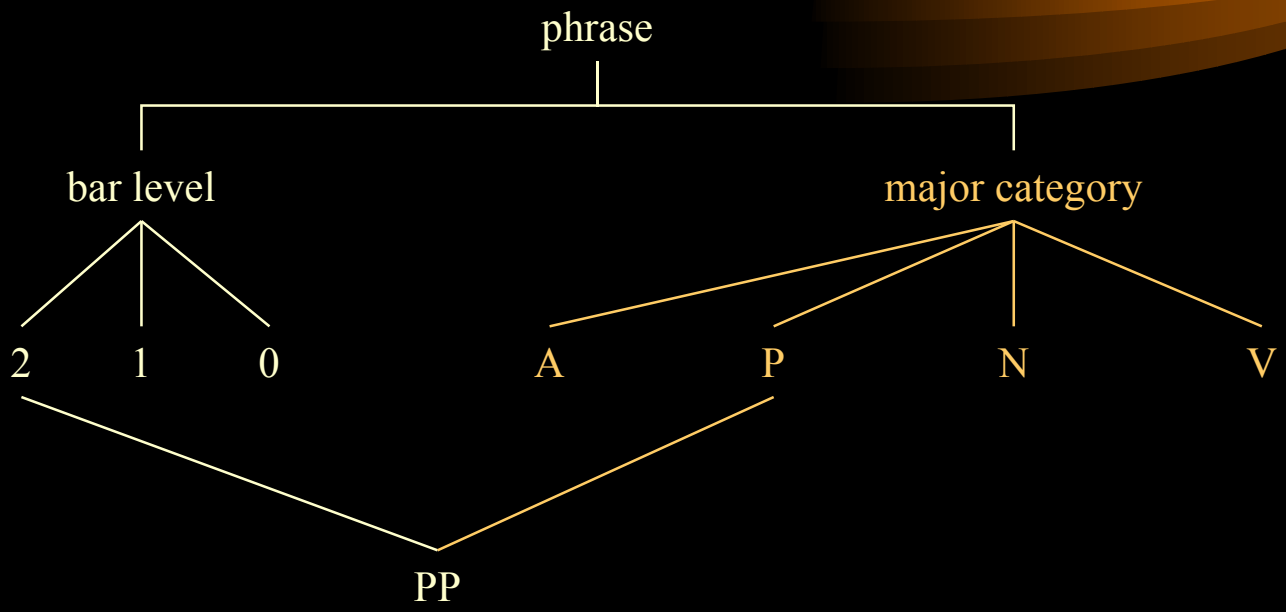
Goal

- Ontology of systematic relations in morphosyntax
  - multidimensional hierarchical organisation
  - various degrees of abstraction
  - language-specific and construction-specific parameterisation
- Novel (typological) perspective
  - cross-linguistically, across constructions, across frameworks
- On purpose not coached in a particular formalism
  - translatable in frameworks with corresponding formal means
  - “pragmatic” approach to terminology

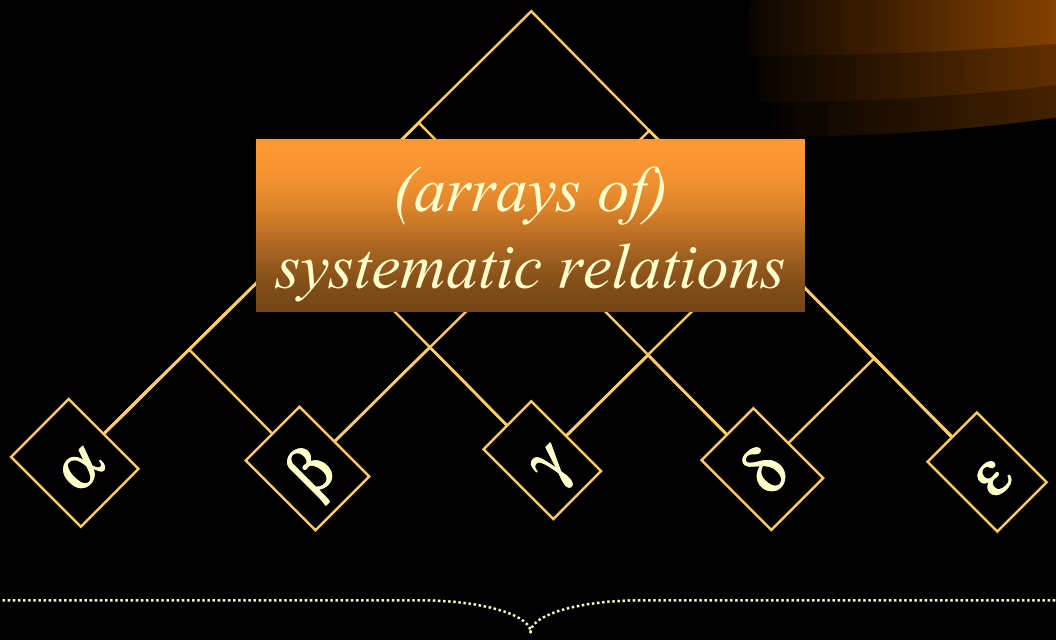
Multidimensional hierarchies



Multidimensional hierarchies

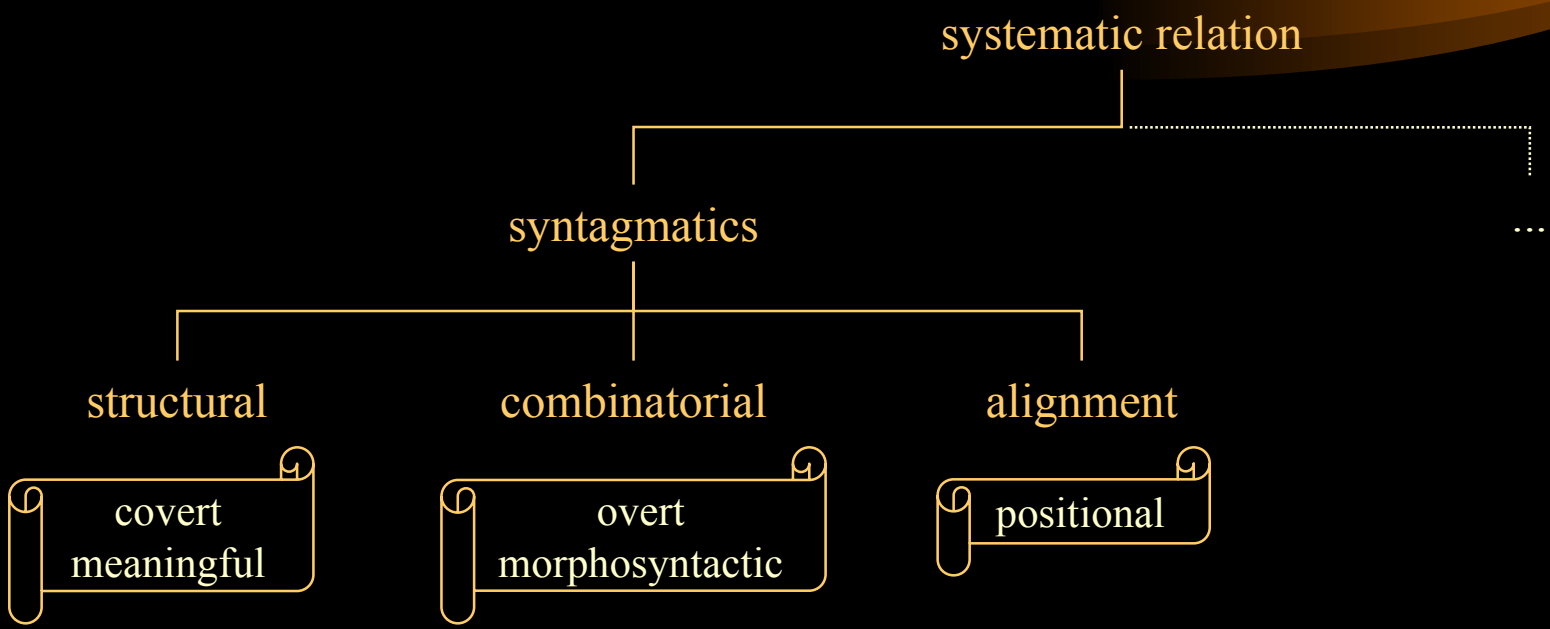


syntactically related items

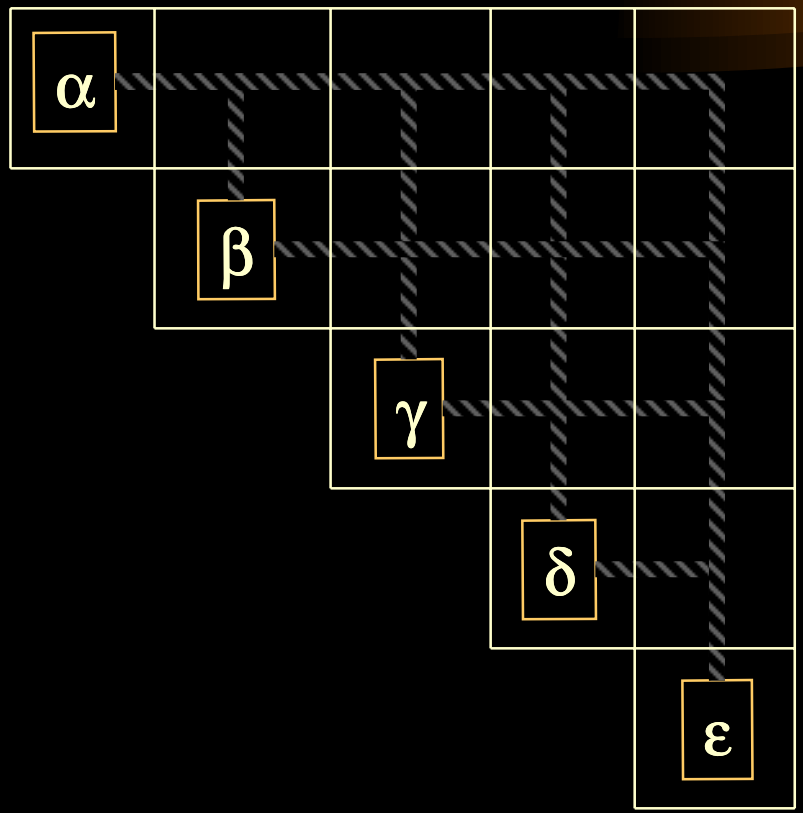


syntactically related items

Ontology of systematic relations



Relational charts



The concept of co-variation

- A relation between syntactically combined linguistic items
- Typically realised as feature congruity, i.e. compatibility of values of identical grammatical categories

  (NB. split between referential index and agreement inflection)
- A directional trigger–target concept (e.g., Corbett 1998)

> "We shall call the element which determines the agreement (say the subject noun phrase) the controller. The element whose form is determined by agreement is the target. ... As these terms suggest, there is a clear intuition that agreement is asymmetric ..."

The asymmetry of co-variation

- asymmetric
  - presupposes a trigger–target configuration
- *marked co-variation*

- distributed (balanced)
  - not interpretable in such directional terms
  - "co-targets of same trigger"
- *unmarked co-variation*

Other relevant concepts

("valence" in a broader sense)

- government
  - traditionally: the determination by one element of the inflectional form of the other, i.e. form government
  - classical instance: case government
- *marked assembling*

- juxtaposition
  - presupposes no overt morphological indication
  - classical instance: case adjunction
- *unmarked assembling*

Syntagmatics

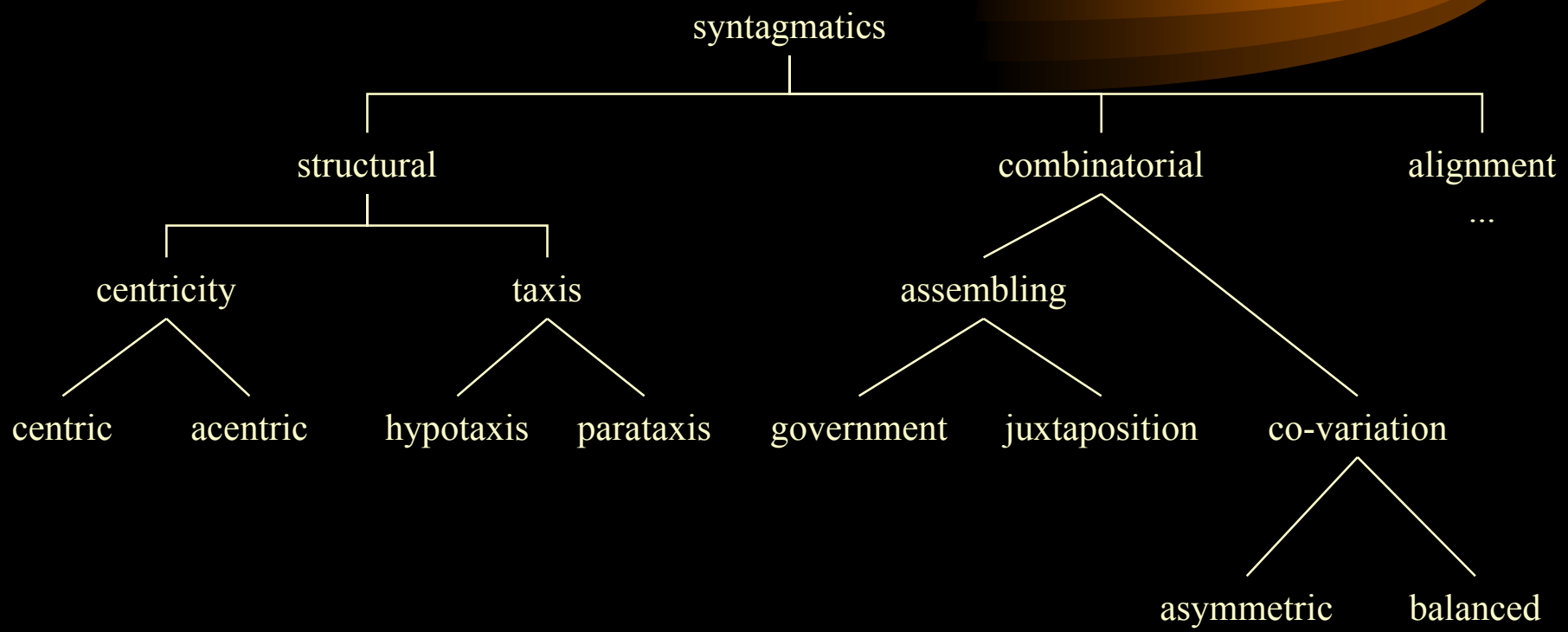
- *structural* (*two dimensions*)
  - centricity
  - taxis
- *combinatorial* (*"formal"*)
  - assembling: government vs. juxtaposition
  - co-variation: asymmetric vs. balanced
- *alignment* (*"positional"*)

Syntagmatics

- *structural* (*two dimensions*)
  - centricity: centric vs. acentric
  - taxis: hypotaxis vs. parataxis

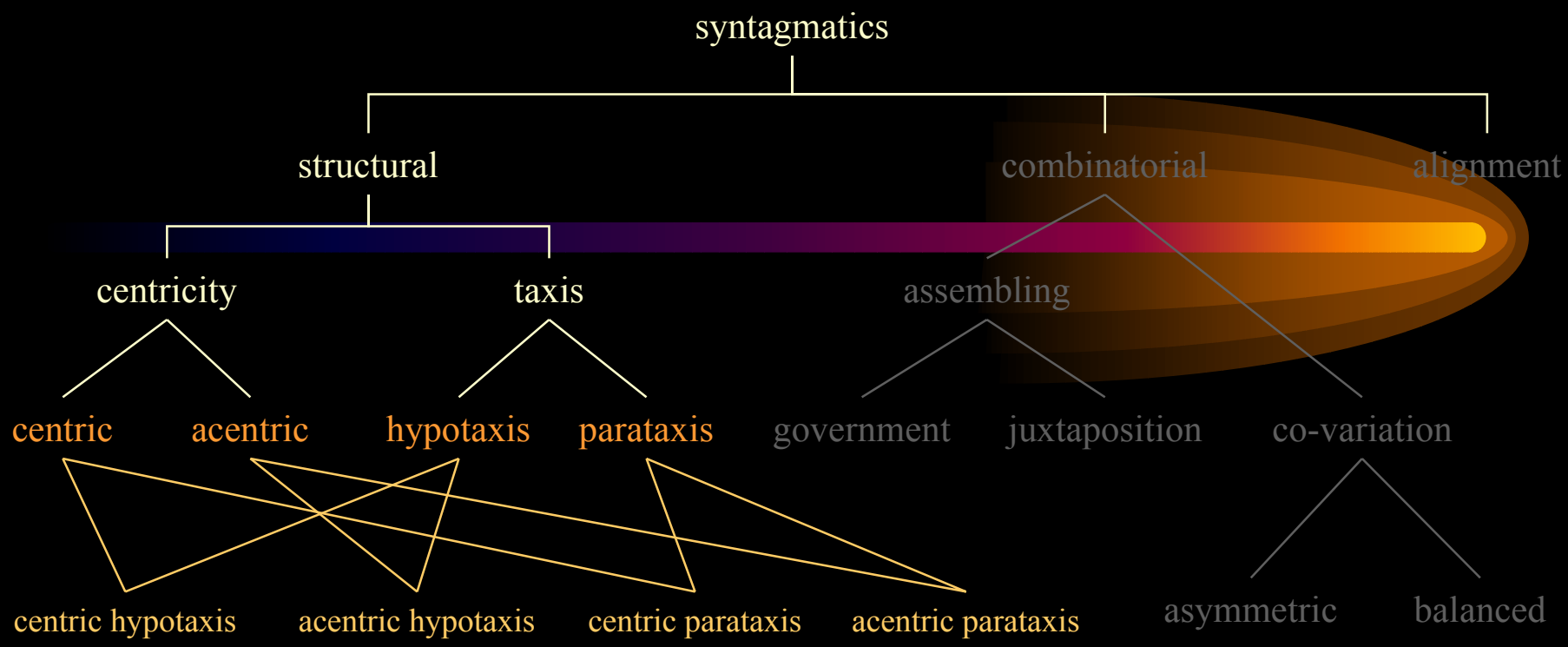
↳ interpretation of observable relations ↲

Minimal number of relation types



Structural syntagmatics (cross-classification)

	centric *(marked centricity)*	acentric *(unmarked centricity)*
hypotaxis *(marked taxis)*	centric hypotaxis *– endocentric –*	acentric hypotaxis *– only hypotactic –*
parataxis *(unmarked taxis)*	centric parataxis *– only centric –*	acentric parataxis *– exocentric –*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centricity
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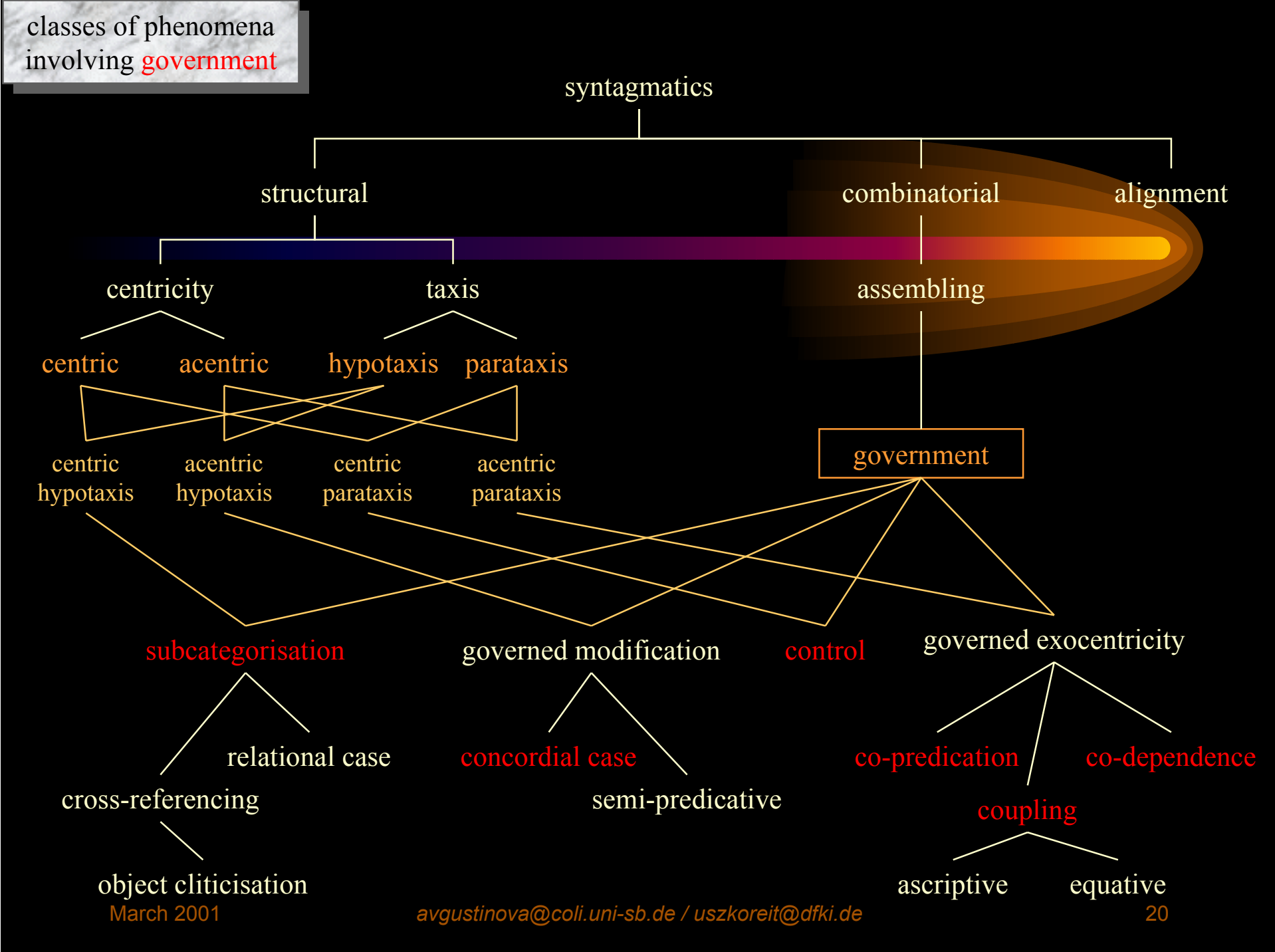
balanced


classes of phenomena involving government
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combinatorial
alignment
centricity
taxis
assembling
centric
acentric
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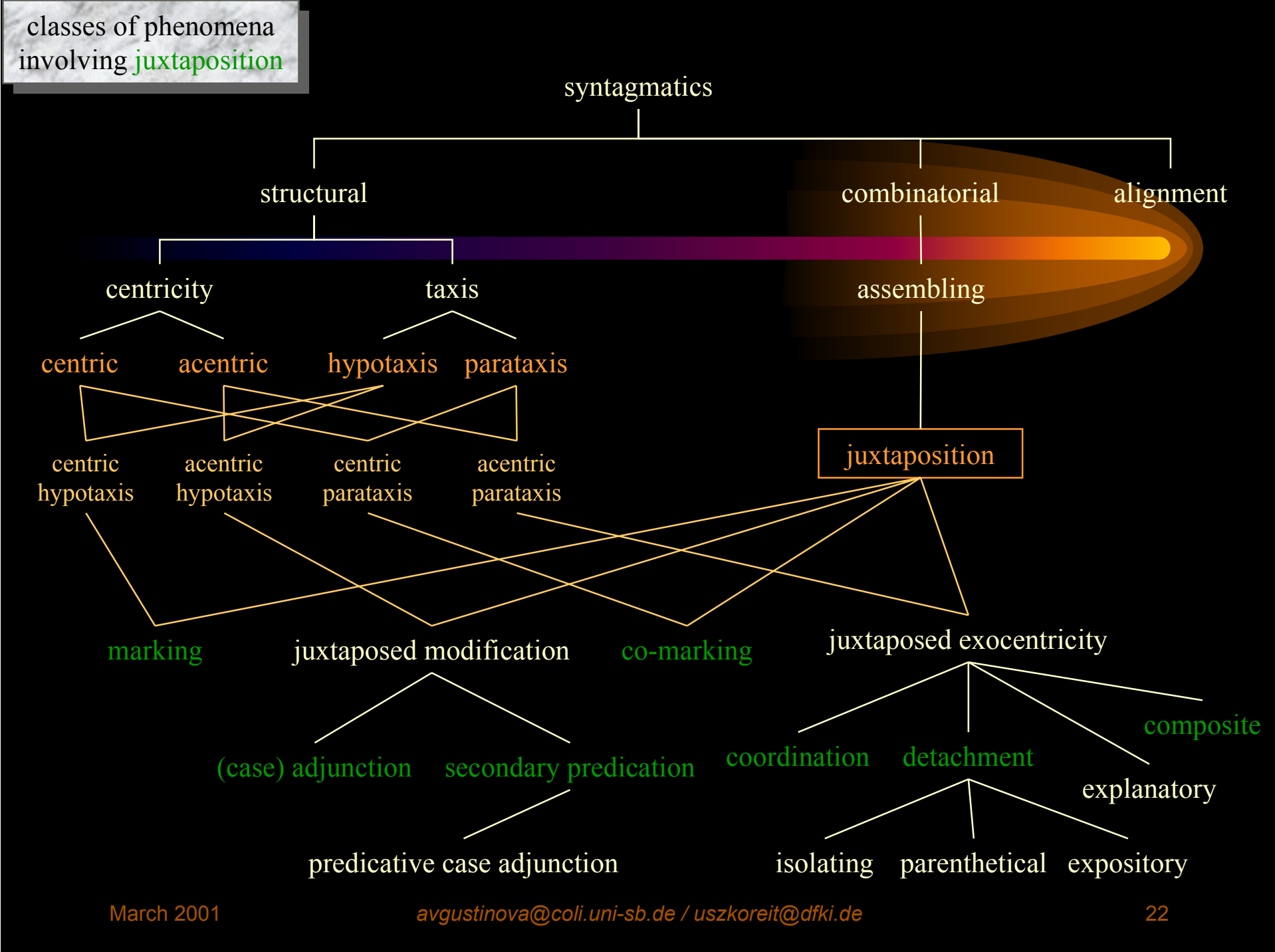
parataxis
centric hypotaxis
acentric hypotaxis
centric parataxis
acentric parataxis
government
subcategorisation
governed modification
control
governed exocentricity
relational case
concordial case
co-predication
co-dependence
cross-referencing
semi-predicative
coupling
object cliticisation
ascriptive
equative

Instances of government

	government *(marked assembling)*	
centric hypotaxis *– endocentric –*	subcategorisation	
acentric hypotaxis *– only hypotactic –*	concordial case	
centric parataxis *– only centric –*	control	
acentric parataxis *– exocentric –*	co-dependence / coupling / co-predication	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centric parataxis
acentric parataxis
juxtaposition
marking
juxtaposed modification
co-marking
juxtaposed exocentricity
(case) adjunction
secondary predication
predicative case adjunction
coordination
detachment
composite
explanatory
isolating
parenthetical
expository

Instances of juxtaposition

		juxtaposition *(unmarked assembling)*
centric hypotaxis *– endocentric –*		marking
acentric hypotaxis *– only hypotactic –*		adjunction / secondary predication
centric parataxis *– only centric –*		co-marking
acentric parataxis *– exocentric –*		coordination / detachment / composite

Structural syntagmatics externalised via assembling

	government *(marked assembling)*	juxtaposition *(unmarked assembling)*
centric hypotaxis *– endocentric –*	subcategorisation	marking
acentric hypotaxis *– only hypotactic –*	concordial case	adjunction / secondary predication
centric parataxis *– only centric –*	control	co-marking
acentric parataxis *– exocentric –*	co-dependence / coupling / co-predication	coordination / detachment / composite

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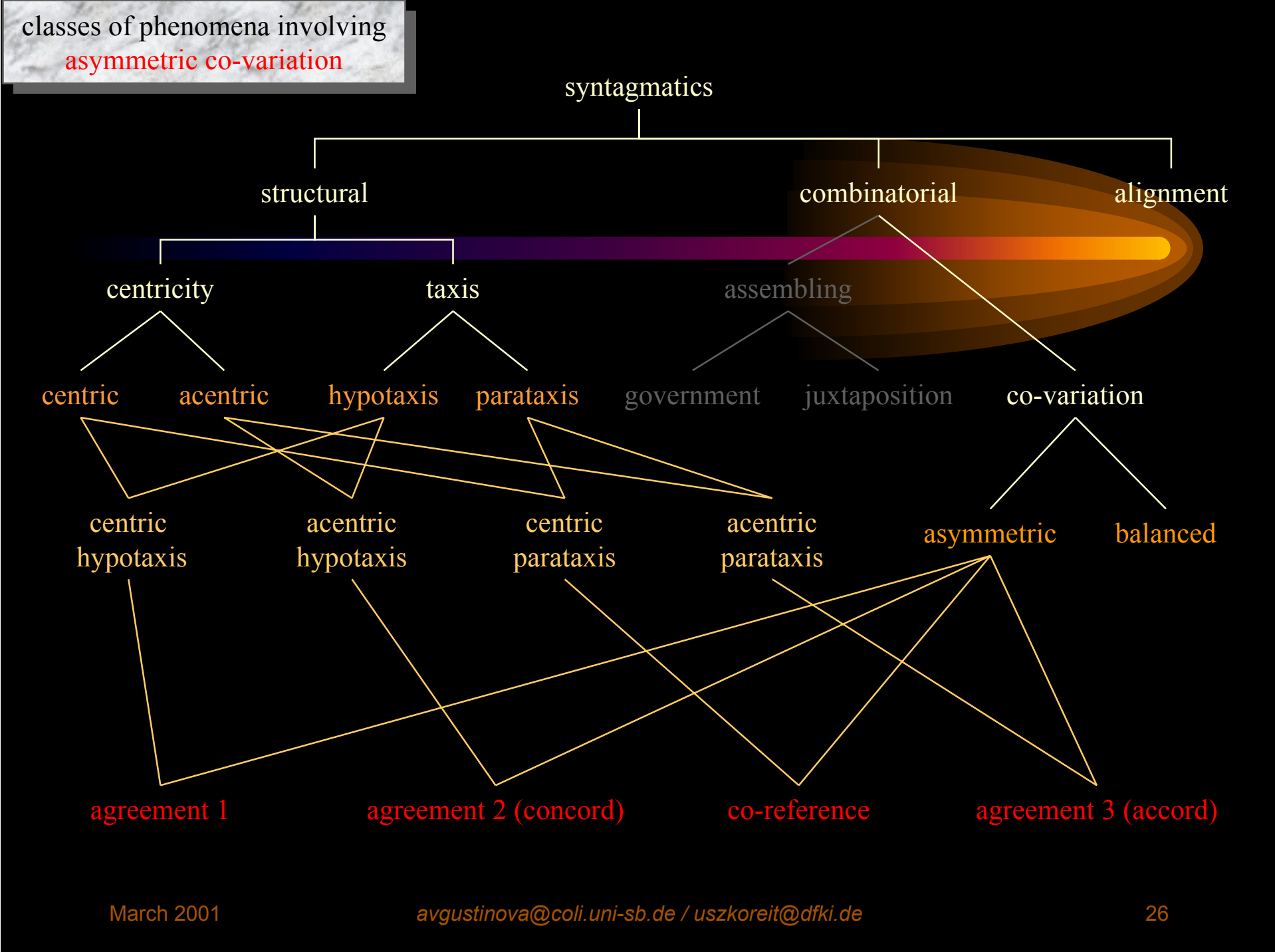
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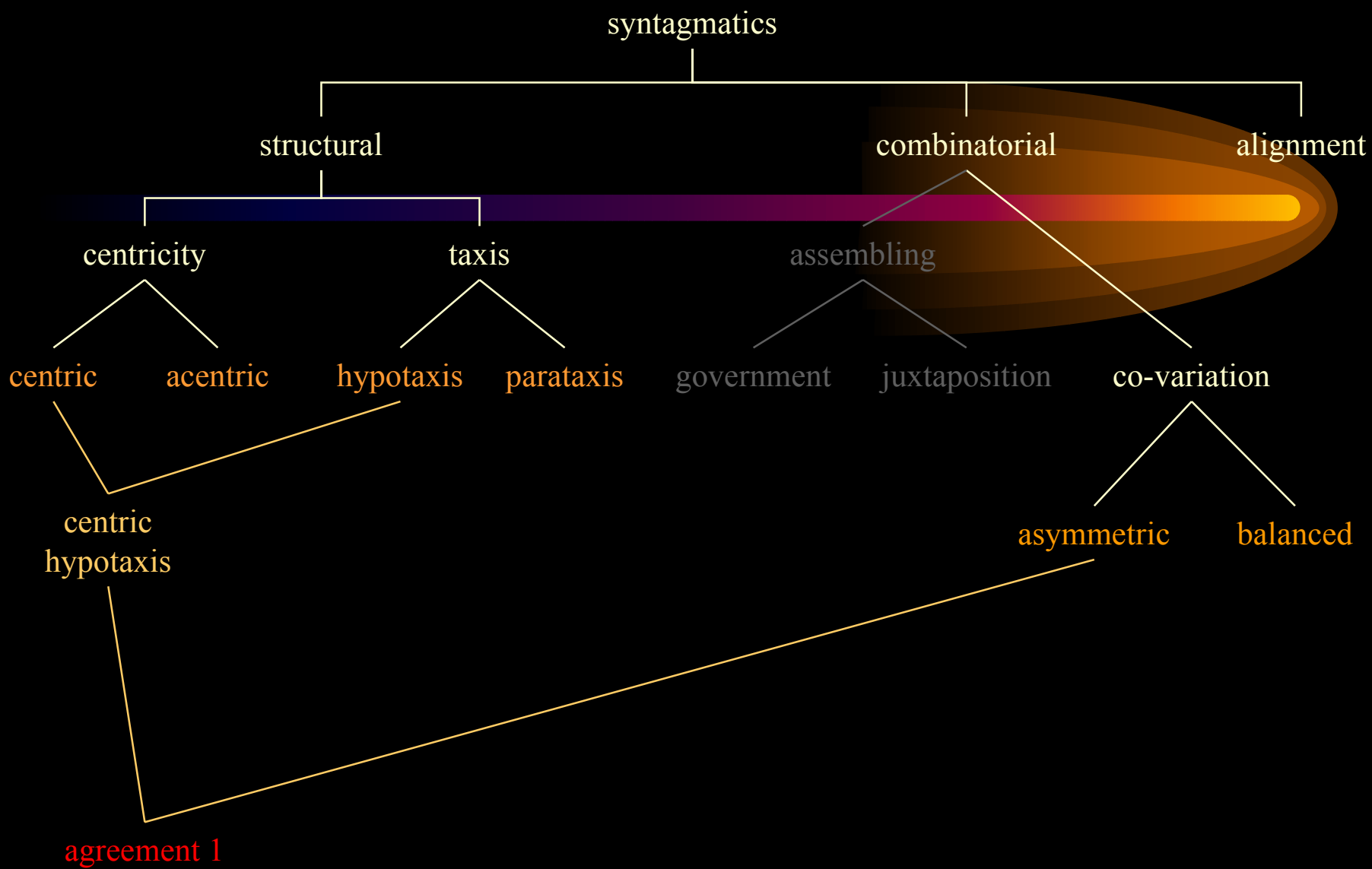
juxtaposition
co-variation
centric hypotaxis
acentric hypotaxis
centric parataxis
acentric parataxis
asymmetric
balanced
agreement 1
agreement 2 (concord)
co-reference
agreement 3 (accord)

Instances of asymmetric ("trigger–target") co-variation

	asymmetric	
centric hypotaxis *– endocentric –*	agreement 1	
acentric hypotaxis *– only hypotactic –*	agreement 2 (concord)	
centric parataxis *– only centric–*	co-reference	
acentric parataxis *– exocentric –*	agreement 3 (accord)	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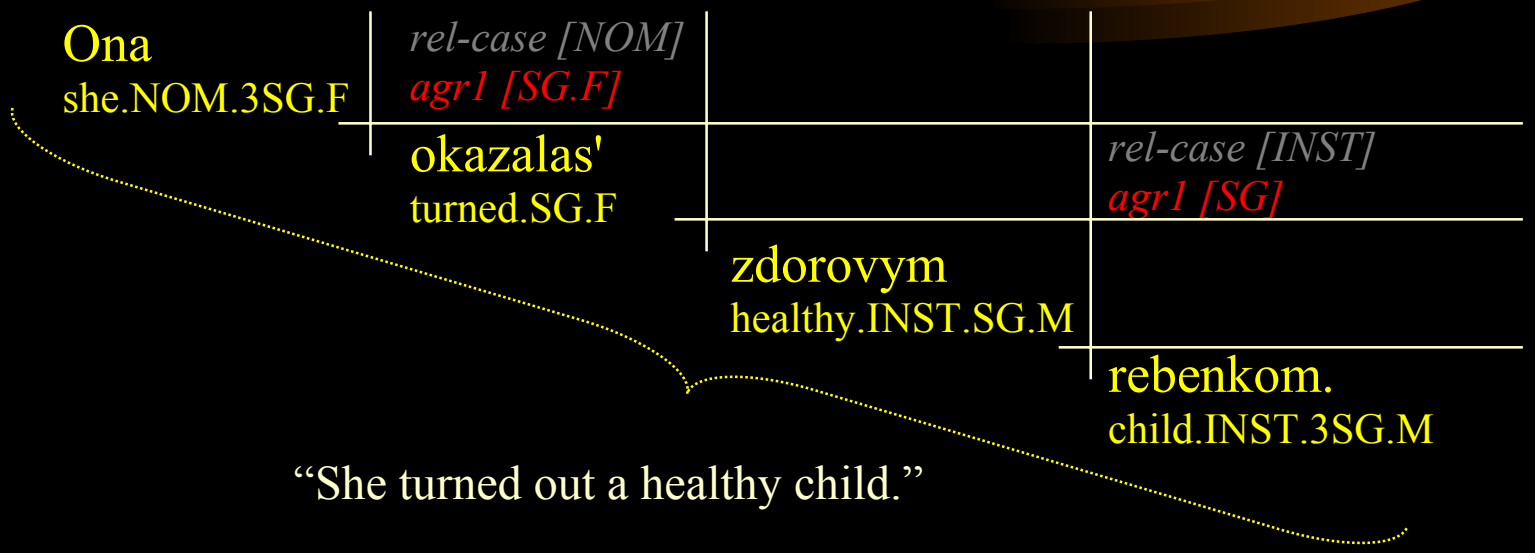
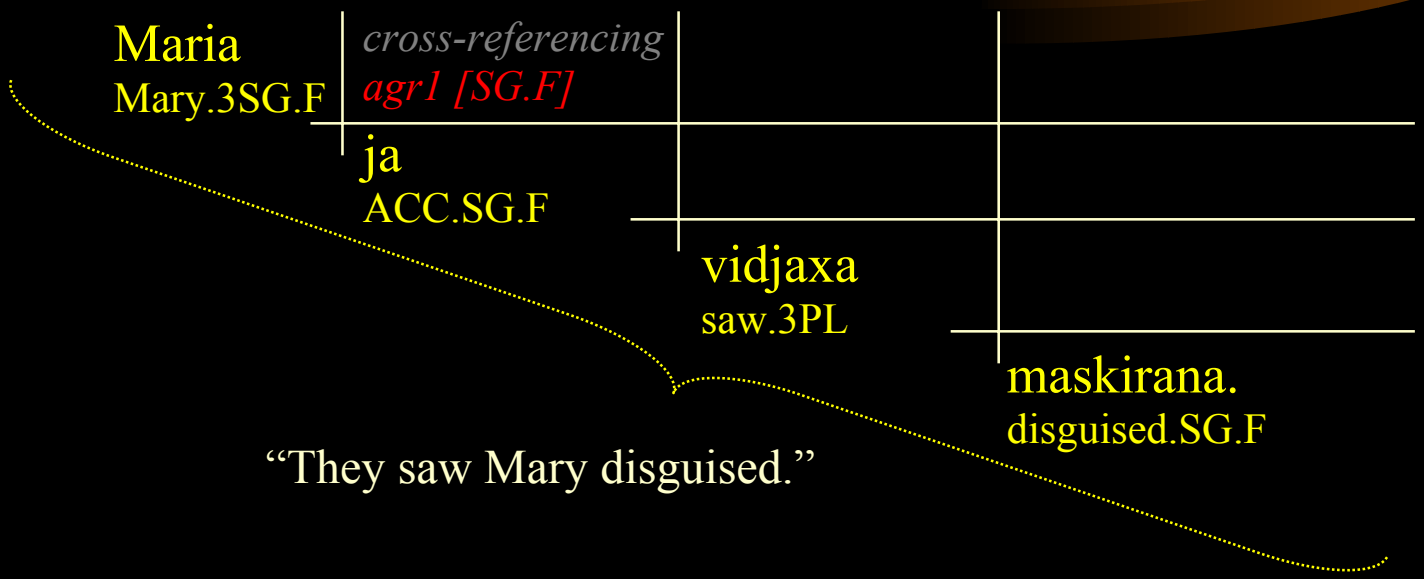
agreement 1

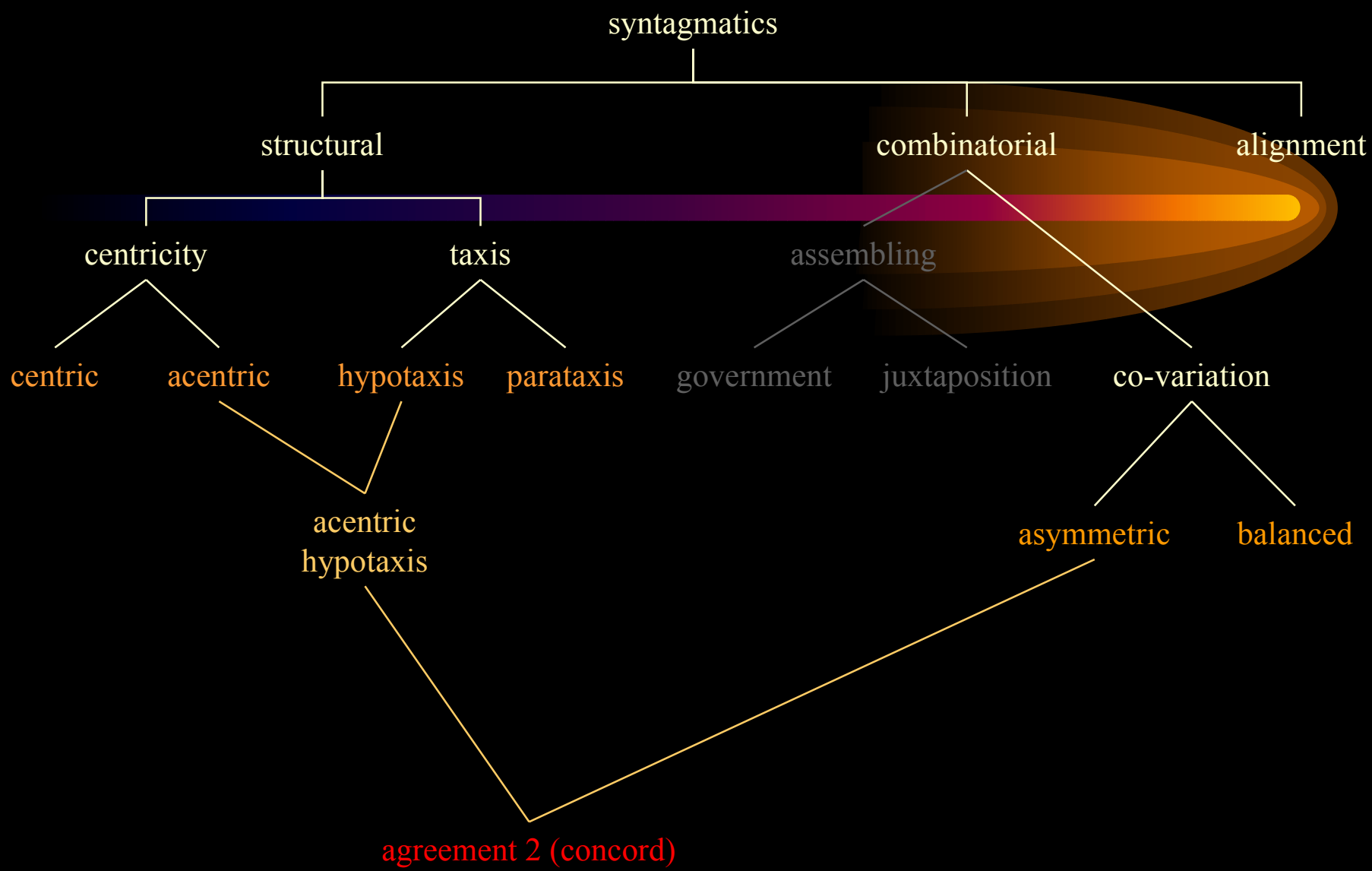
Russian (ex.1)



"She turned out a healthy child."

Bulgarian (ex.1)

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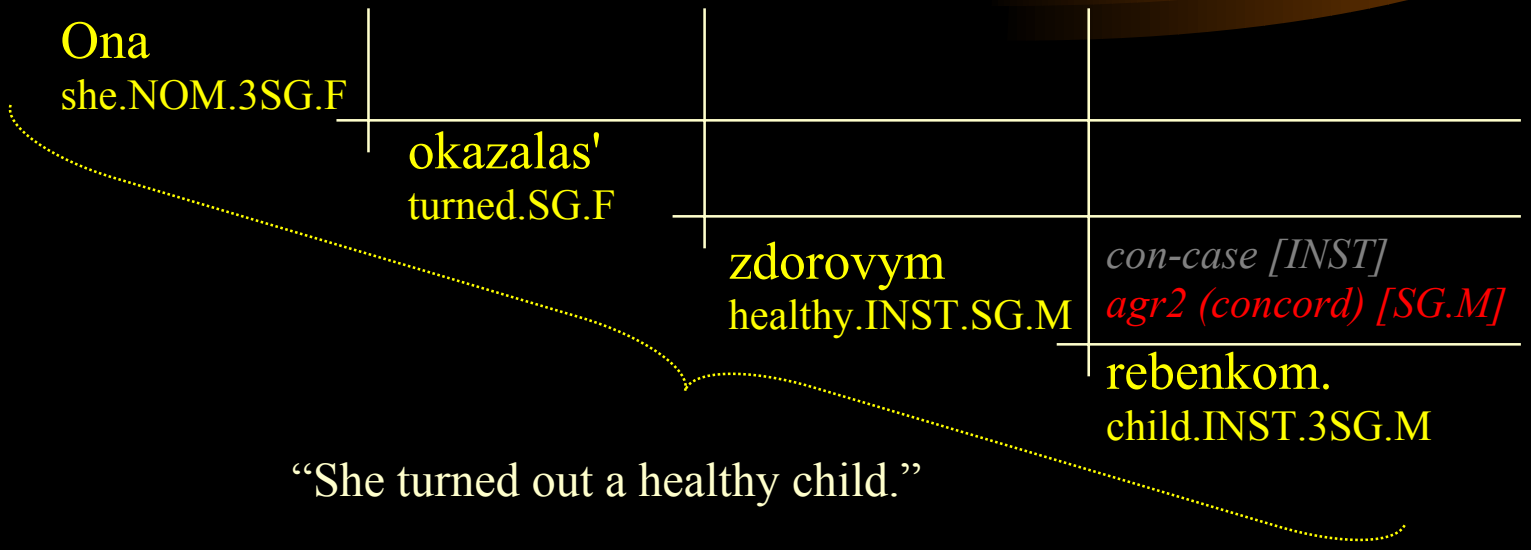
balanced
agreement 2 (concord)

Russian (ex.1)



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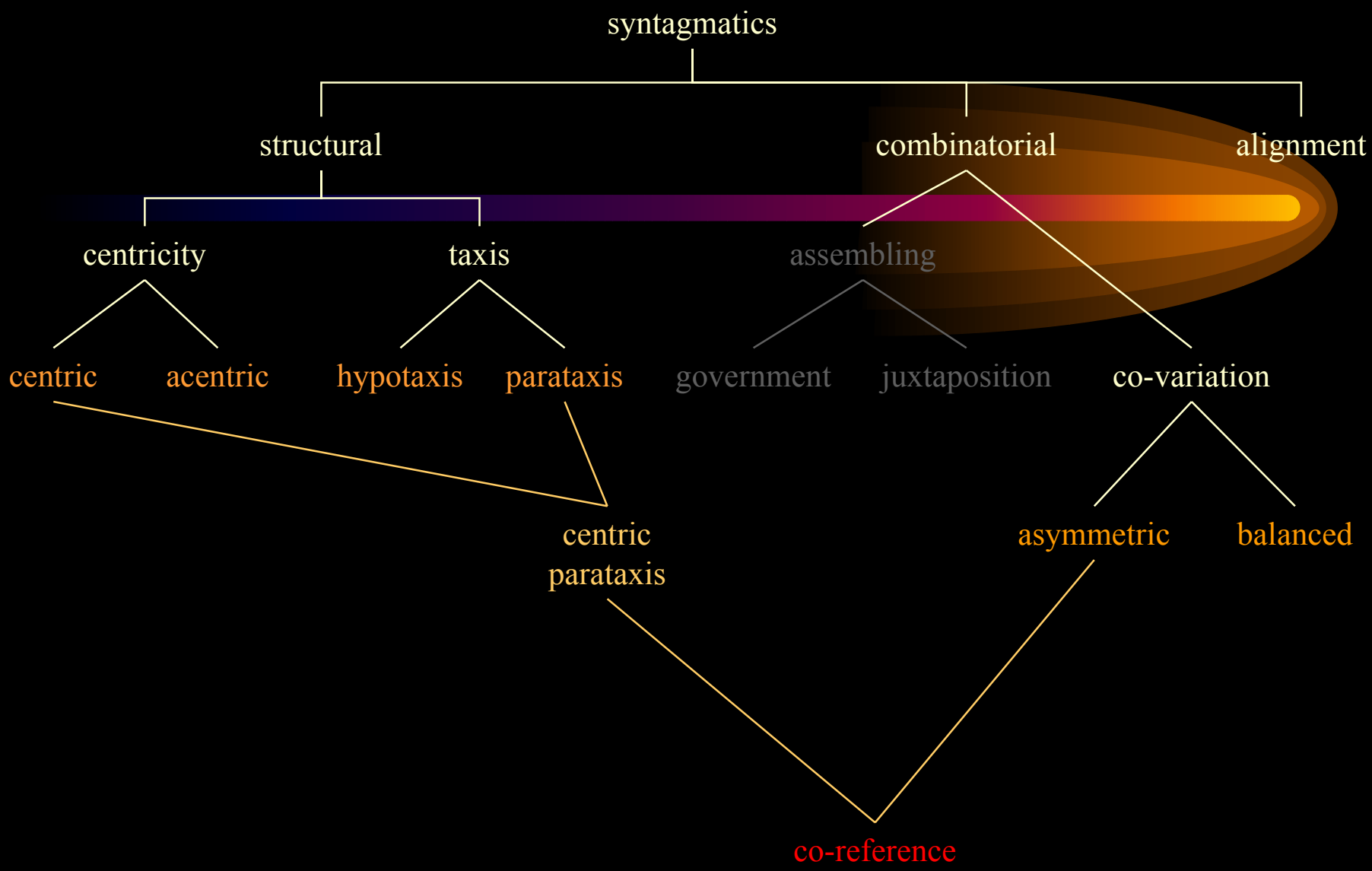
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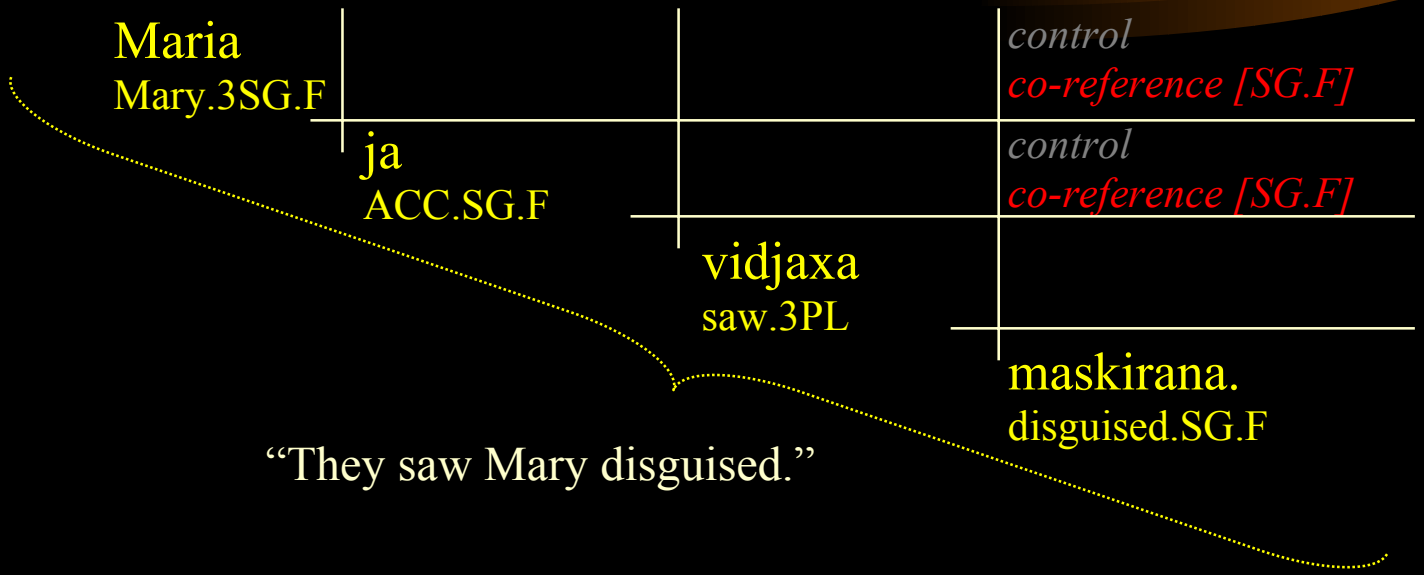

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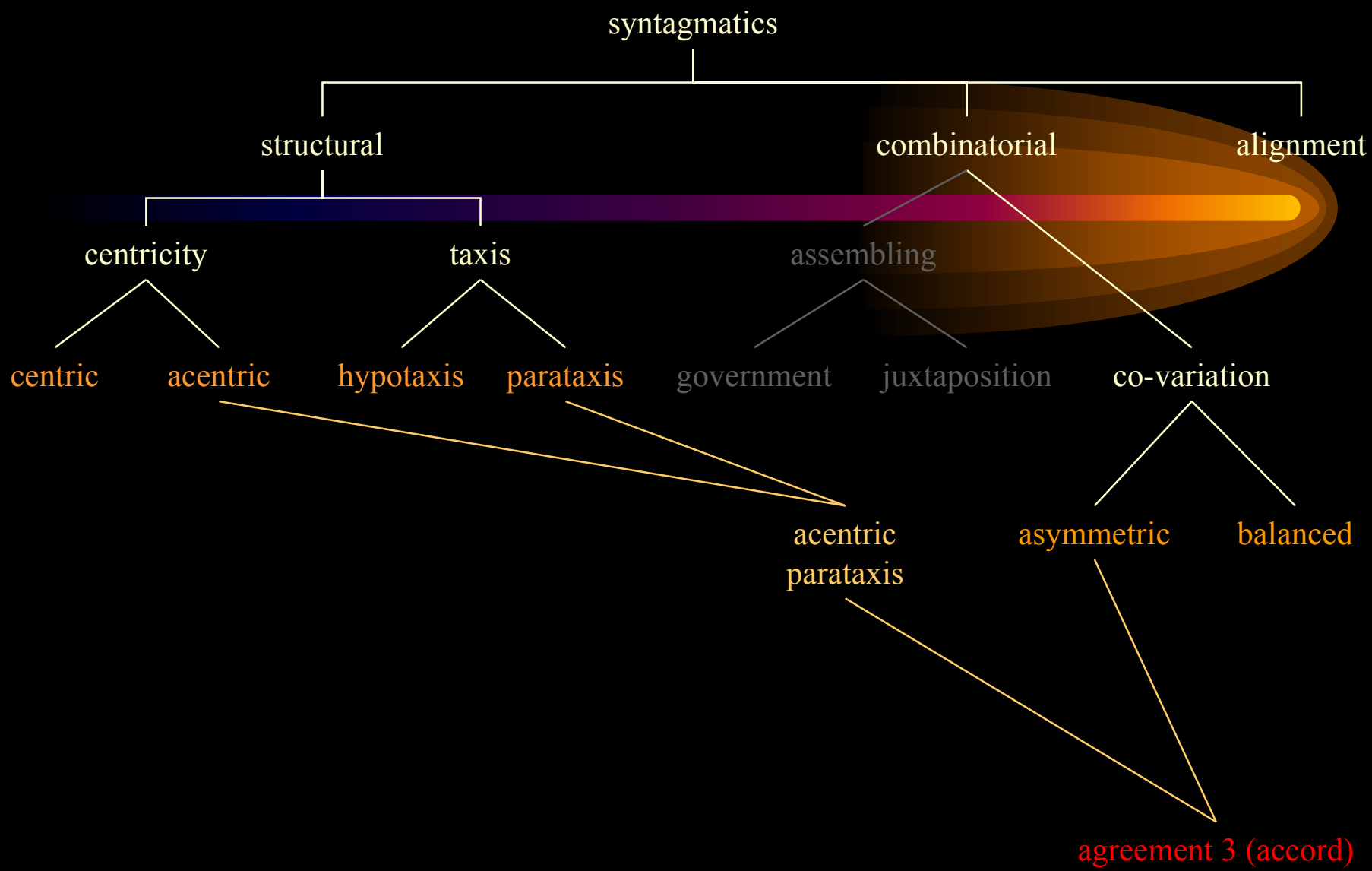
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agreement 3 (accord)

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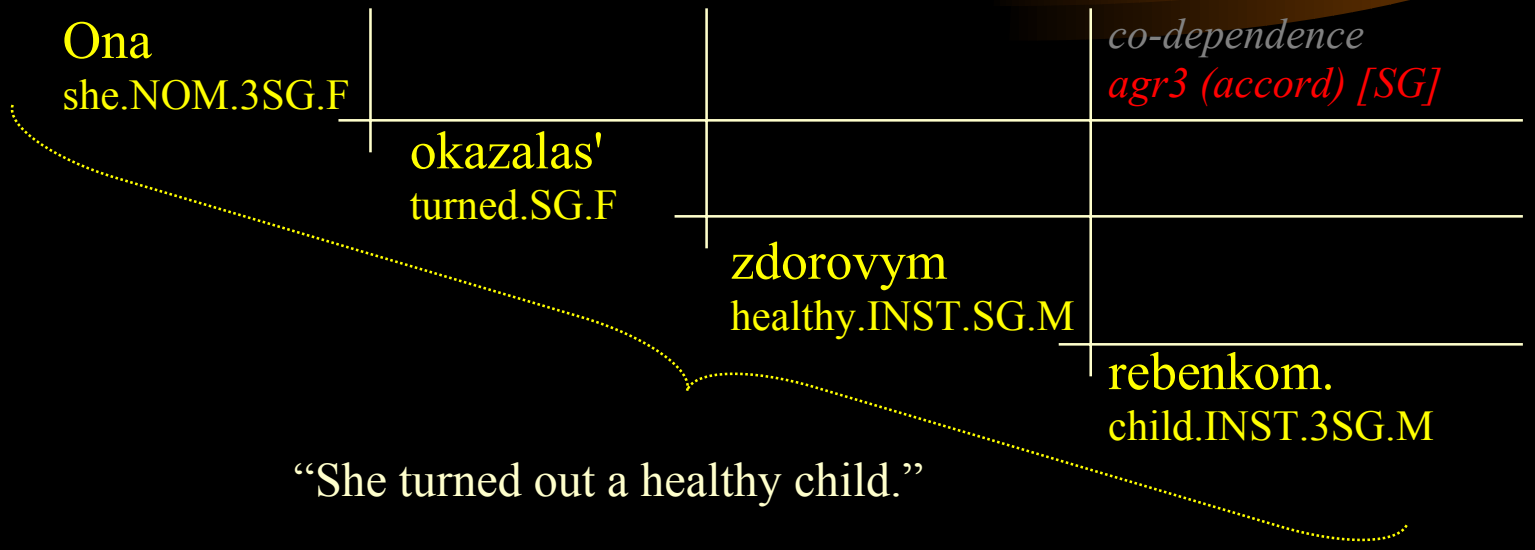

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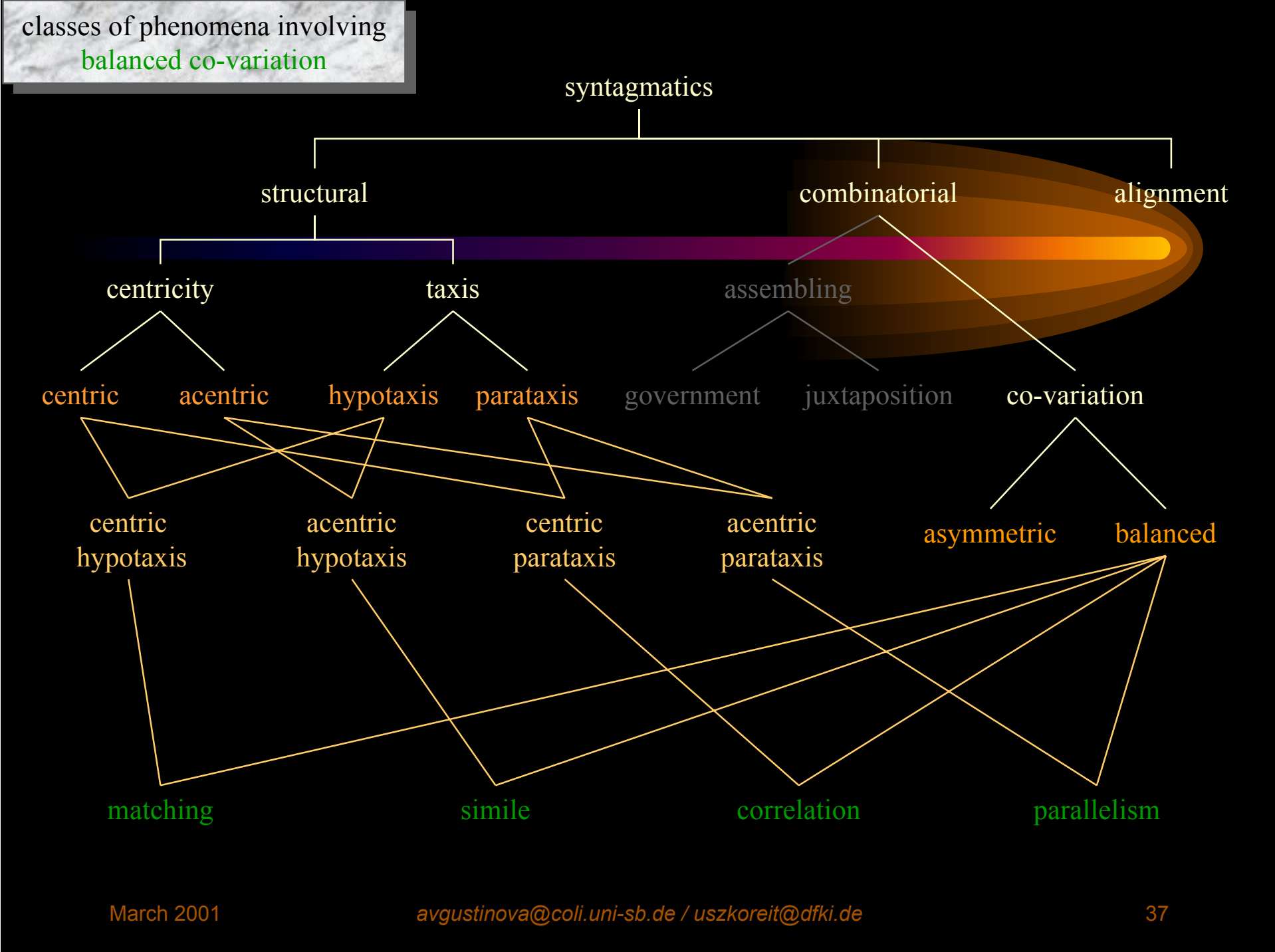
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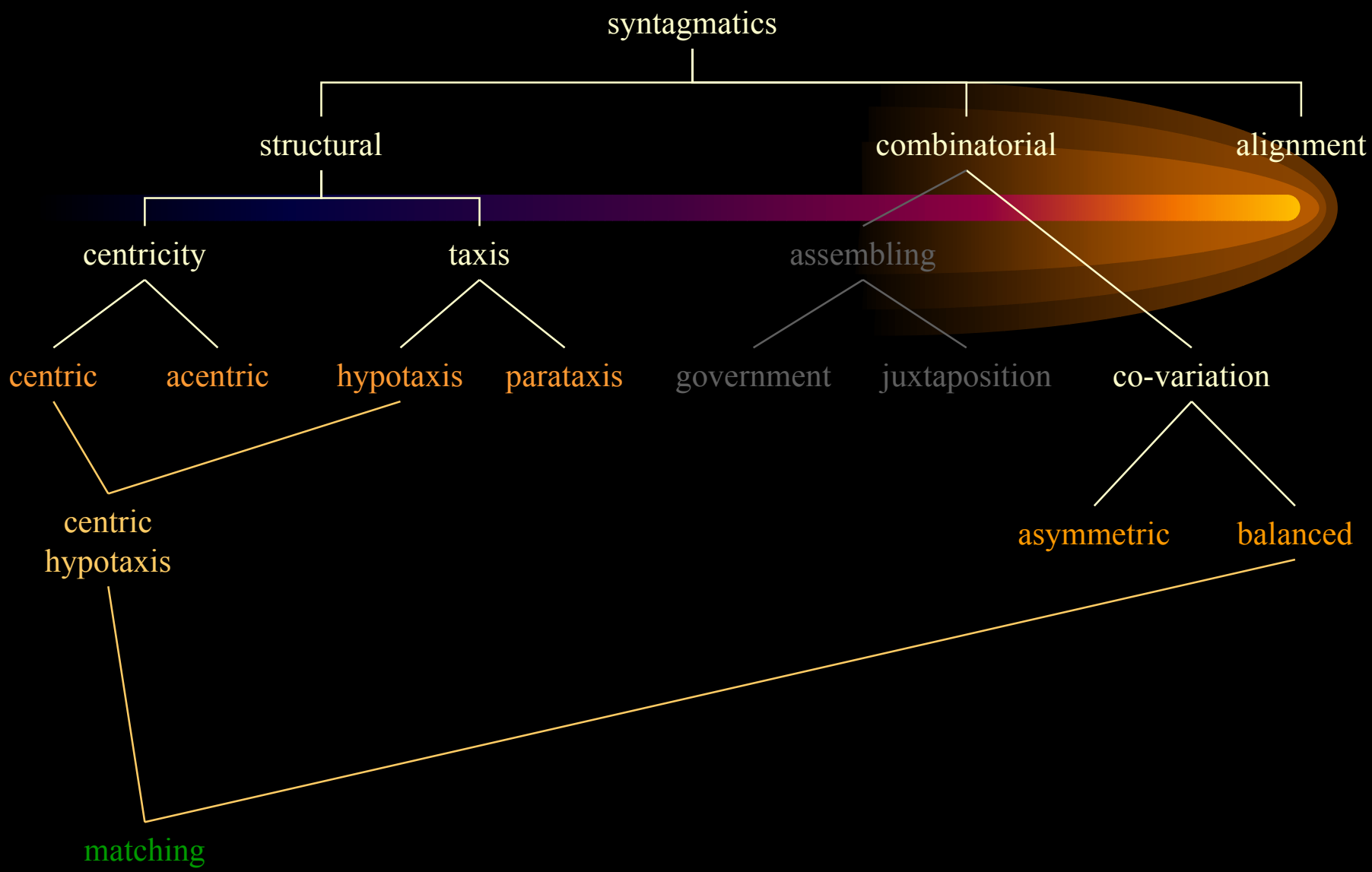
centric parataxis
acentric parataxis
asymmetric
balanced
matching
simile
correlation
parallelism

Instances of balanced co-variation

		balanced
centric hypotaxis *– endocentric –*		matching
acentric hypotaxis *– only hypotactic –*		simile
centric parataxis *– only centric –*		correlation
acentric parataxis *– exocentric –*		parallelism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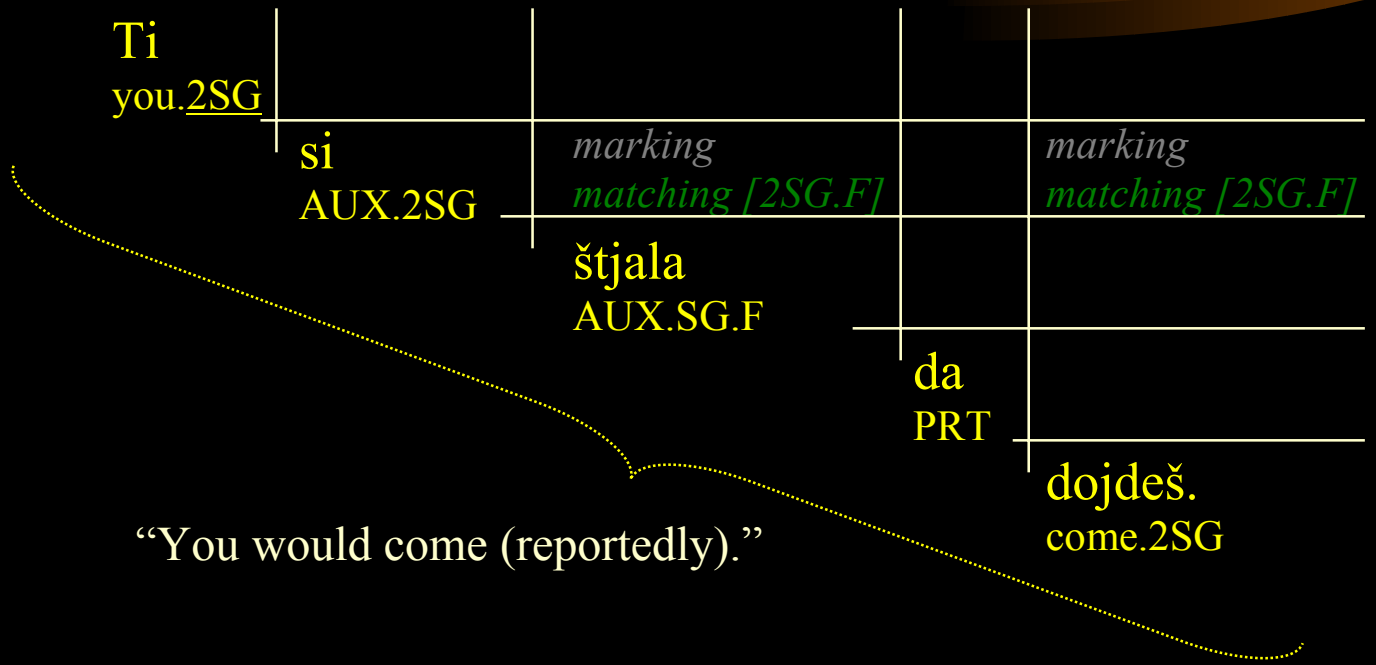
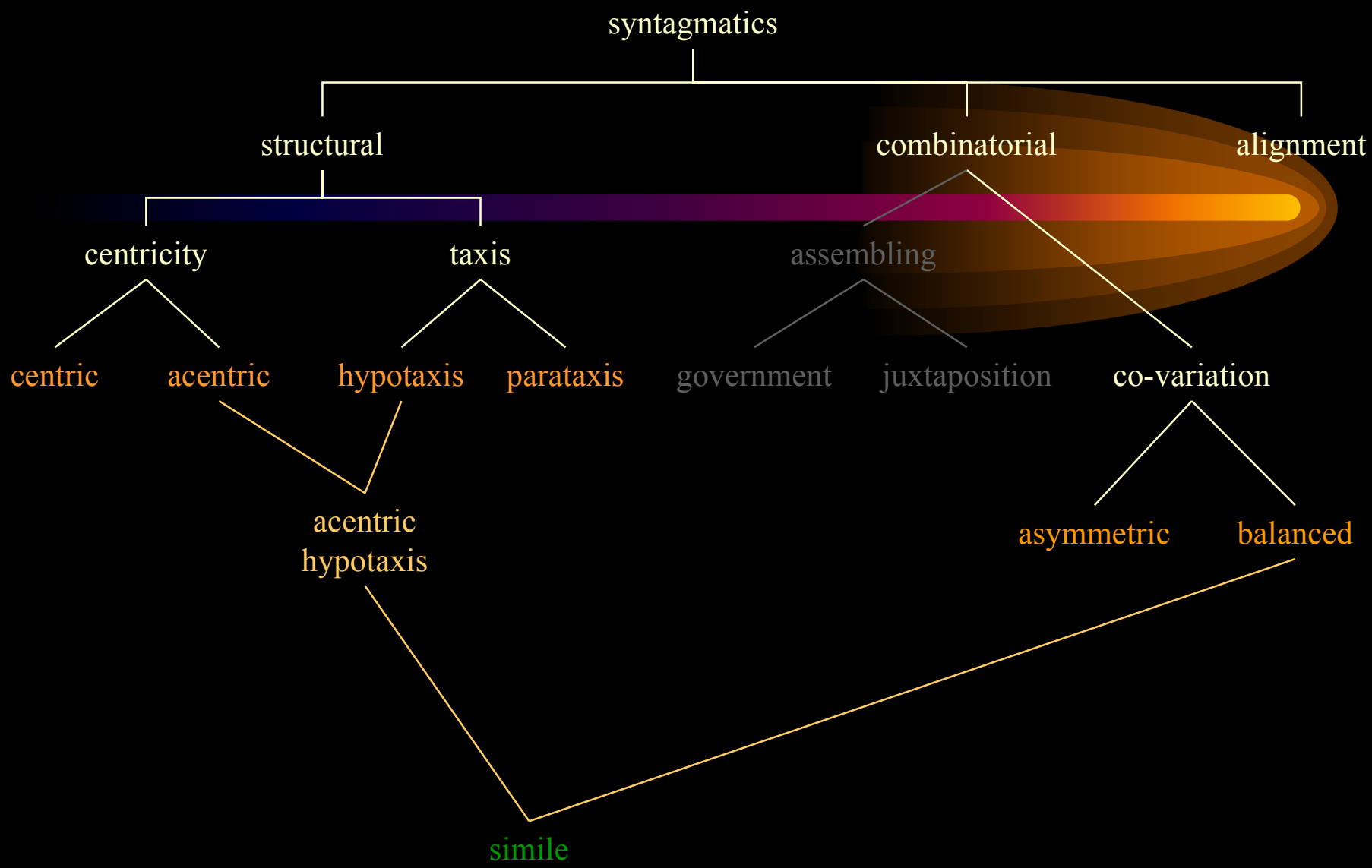
Bulgarian (ex.2)

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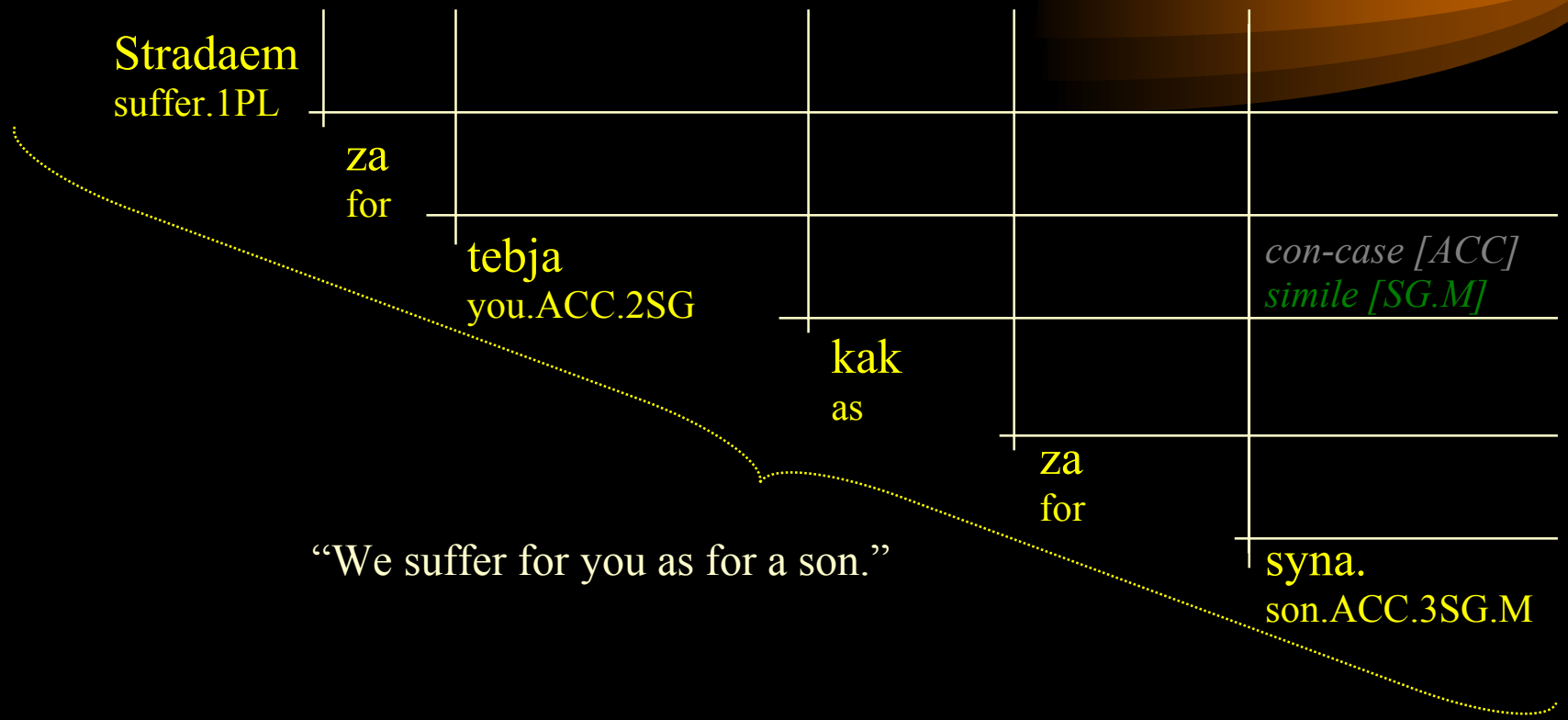
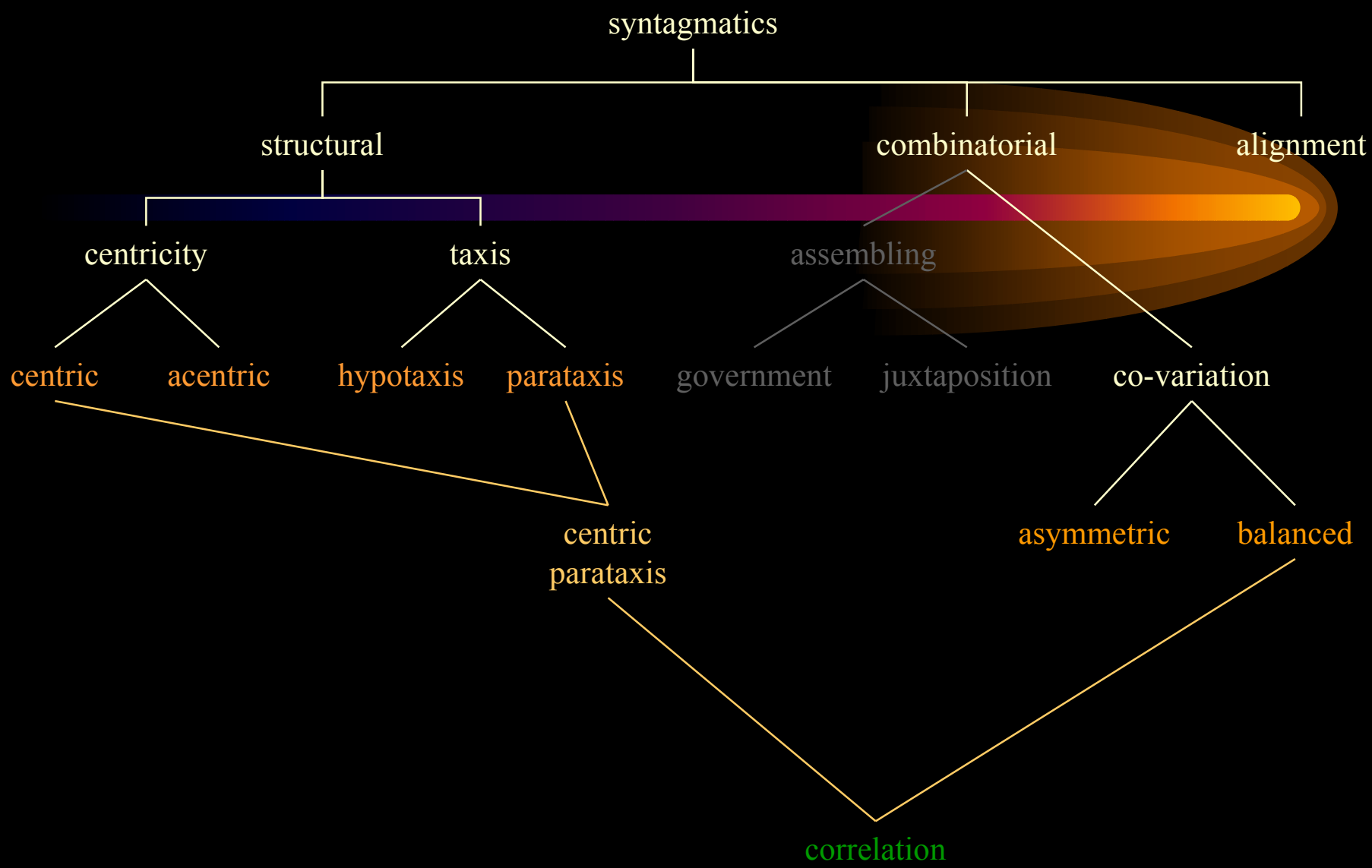
Russian (ex.2)



"We suffer for you as for a son."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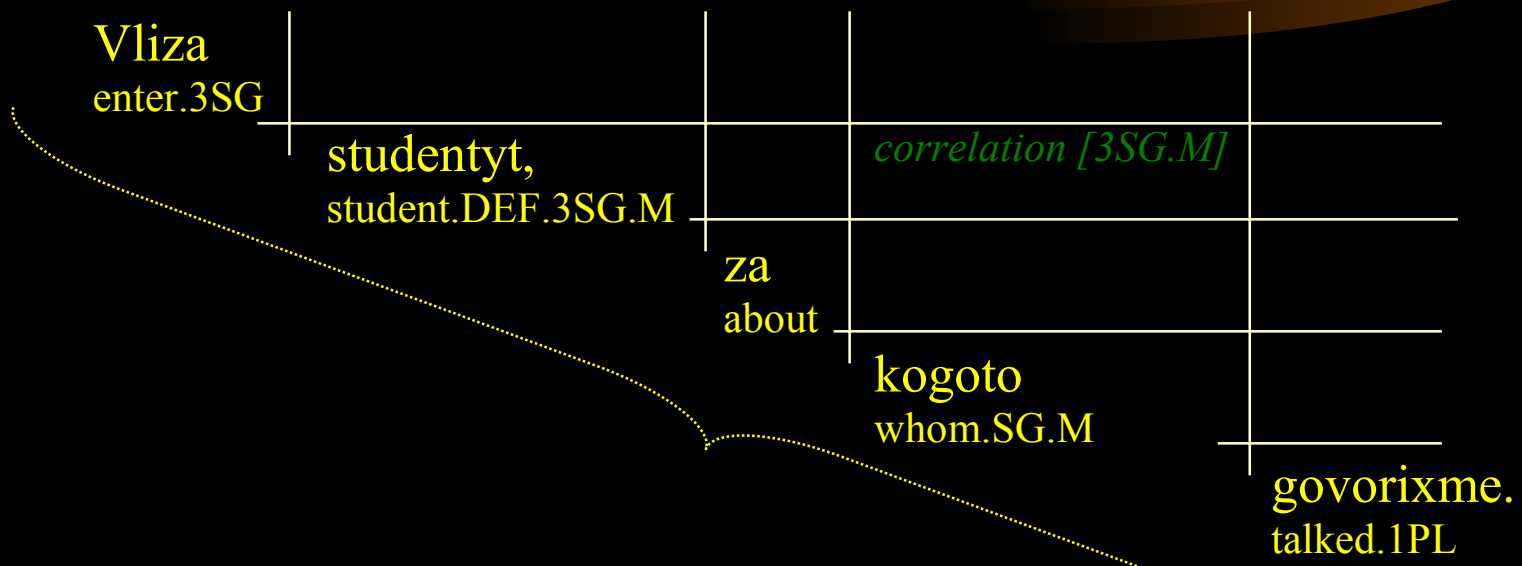
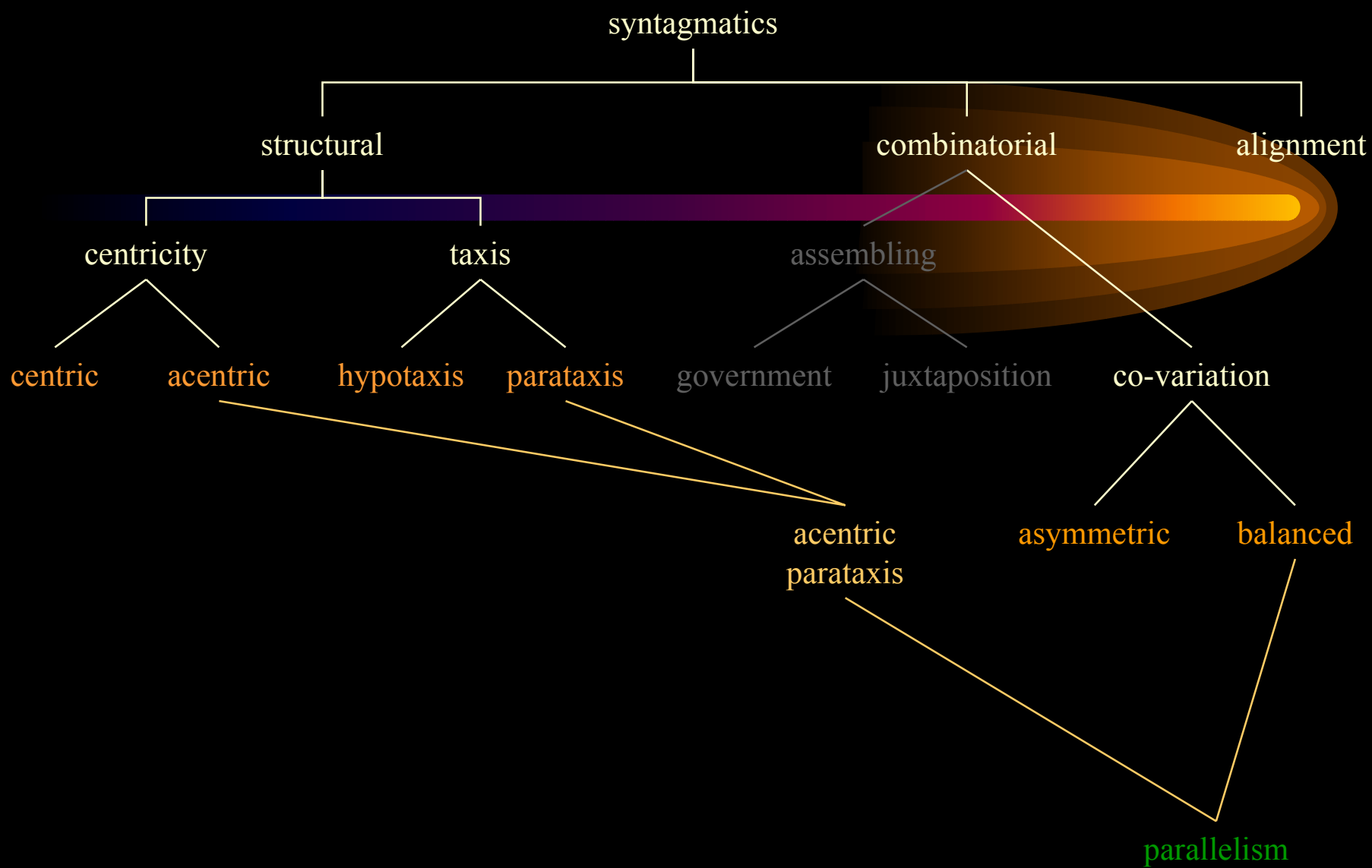
asymmetric
balanced
correlation

Bulgarian (ex.3)



"The student which we talked about comes in."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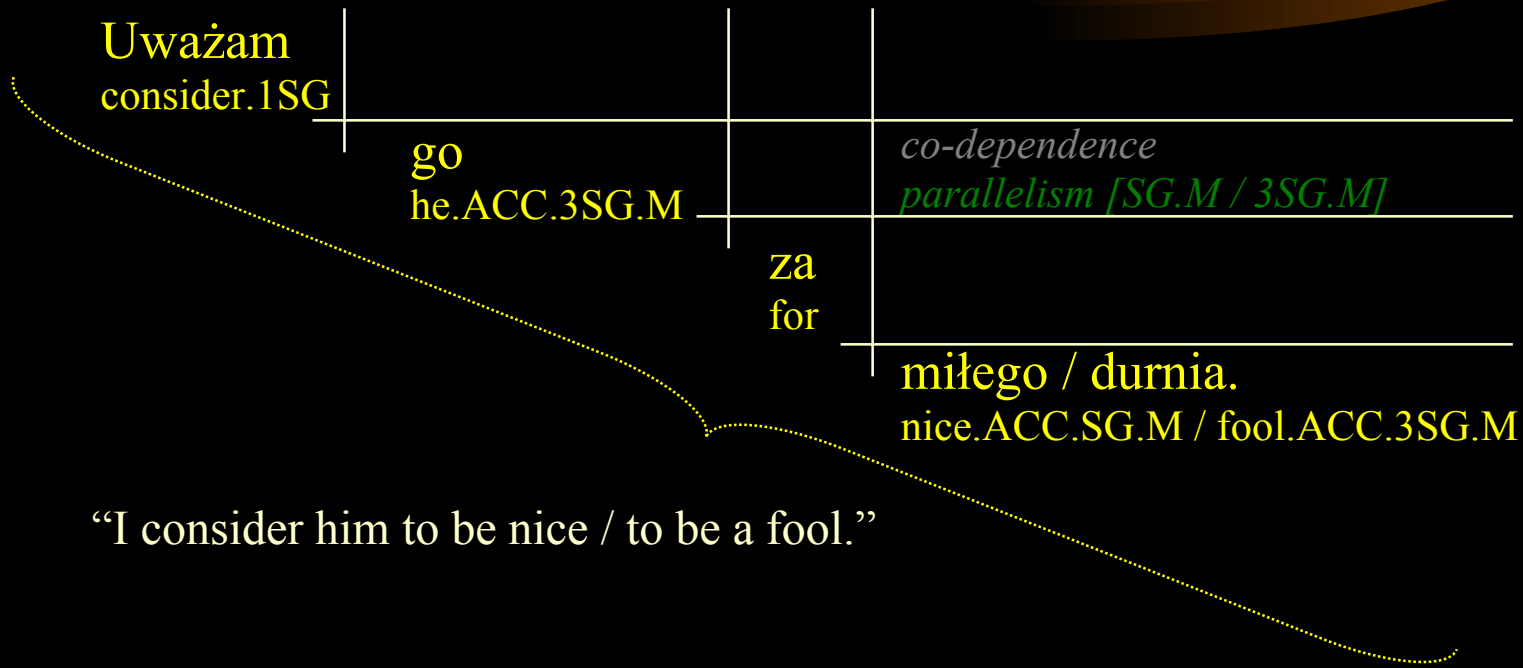
parallelism

Polish (ex.1)



"I consider him to be nice / to be a fool."

Structural syntagmatics externalised via co-variation

	asymmetric	balanced
centric hypotaxis *– endocentric –*	agreement 1	matching
acentric hypotaxis *– only hypotactic–*	agreement 2 (concord)	simile
centric parataxis *– only centric –*	co-reference	correlation
acentric parataxis *– exocentric –*	agreement 3 (accord)	parallelism

Assembling || co-variation affinity

- Markedness affinity

  "marked" combinatorial syntagmatics

  - government (marked assembling)
  - asymmetric co-variation (marked co-variation)

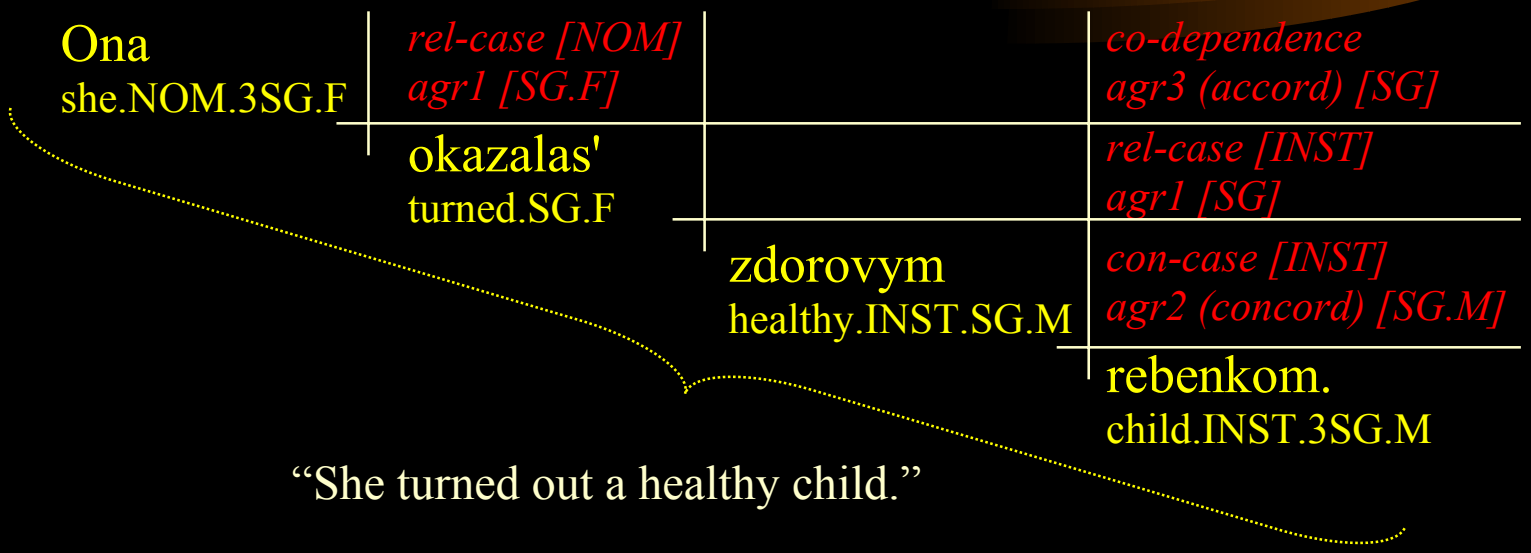
  "unmarked" combinatorial syntagmatics

  - juxtaposition (unmarked assembling)
  - balanced co-variation (unmarked co-variation)

- An observable tendency rather than regularity

Russian (ex.1)

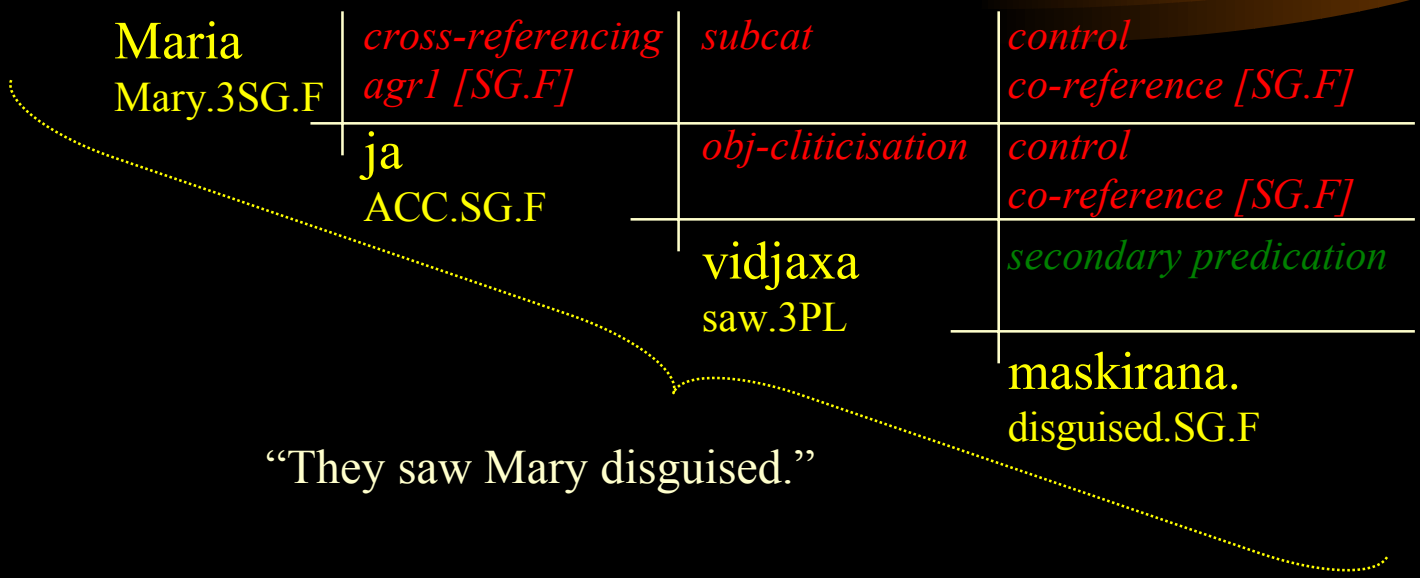
– complete relational chart –



"She turned out a healthy child."

Bulgarian (ex.1)

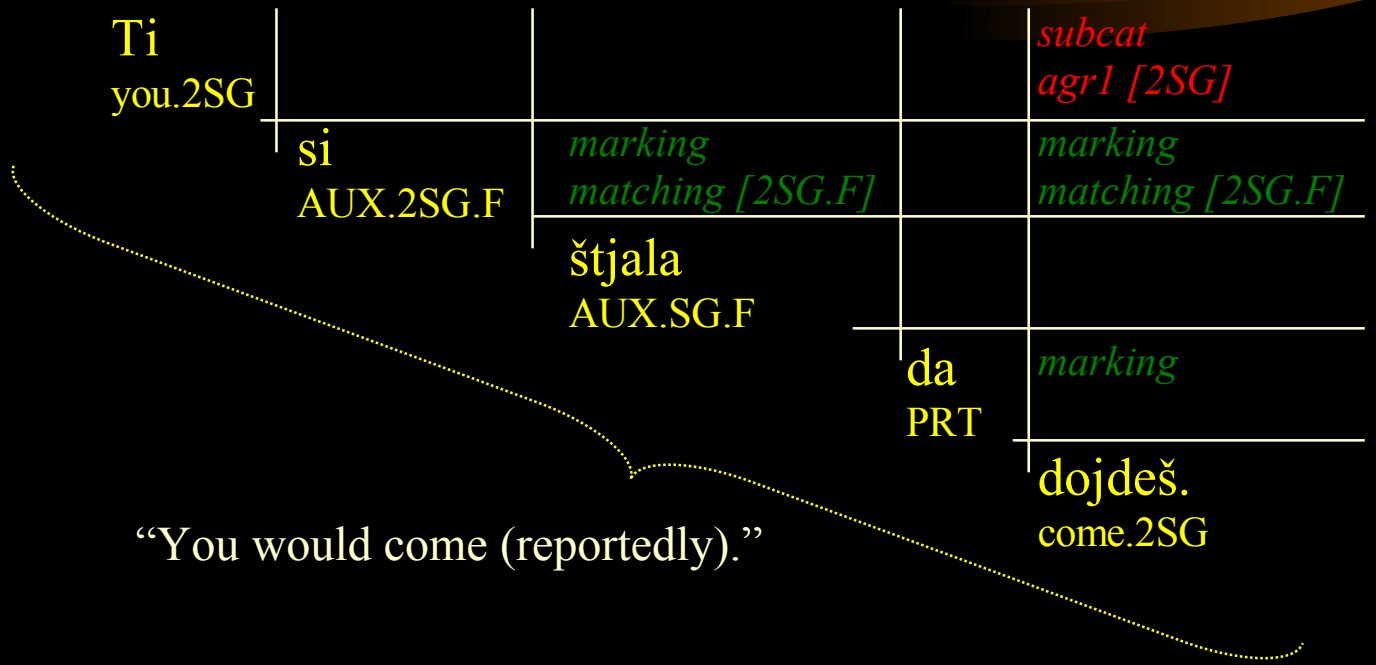
– complete relational chart –



"They saw Mary disguised."

Bulgarian (ex.2)

– complete relational chart –



Bulgarian (ex.3)

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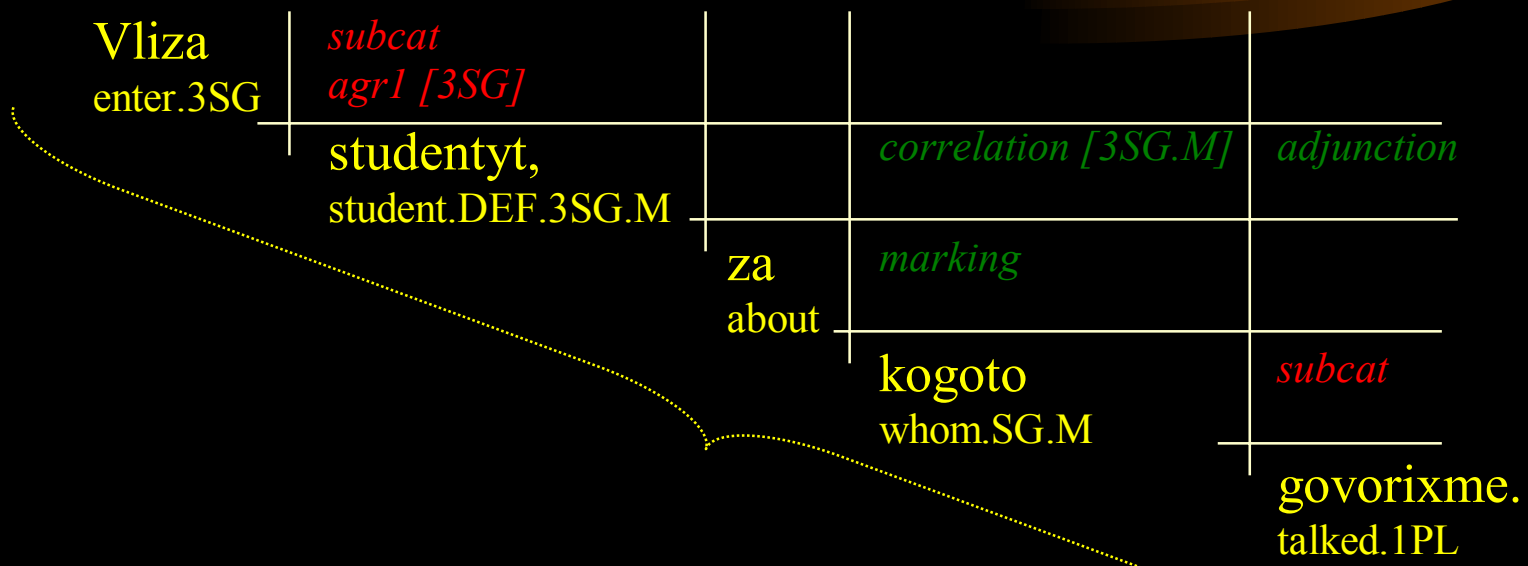
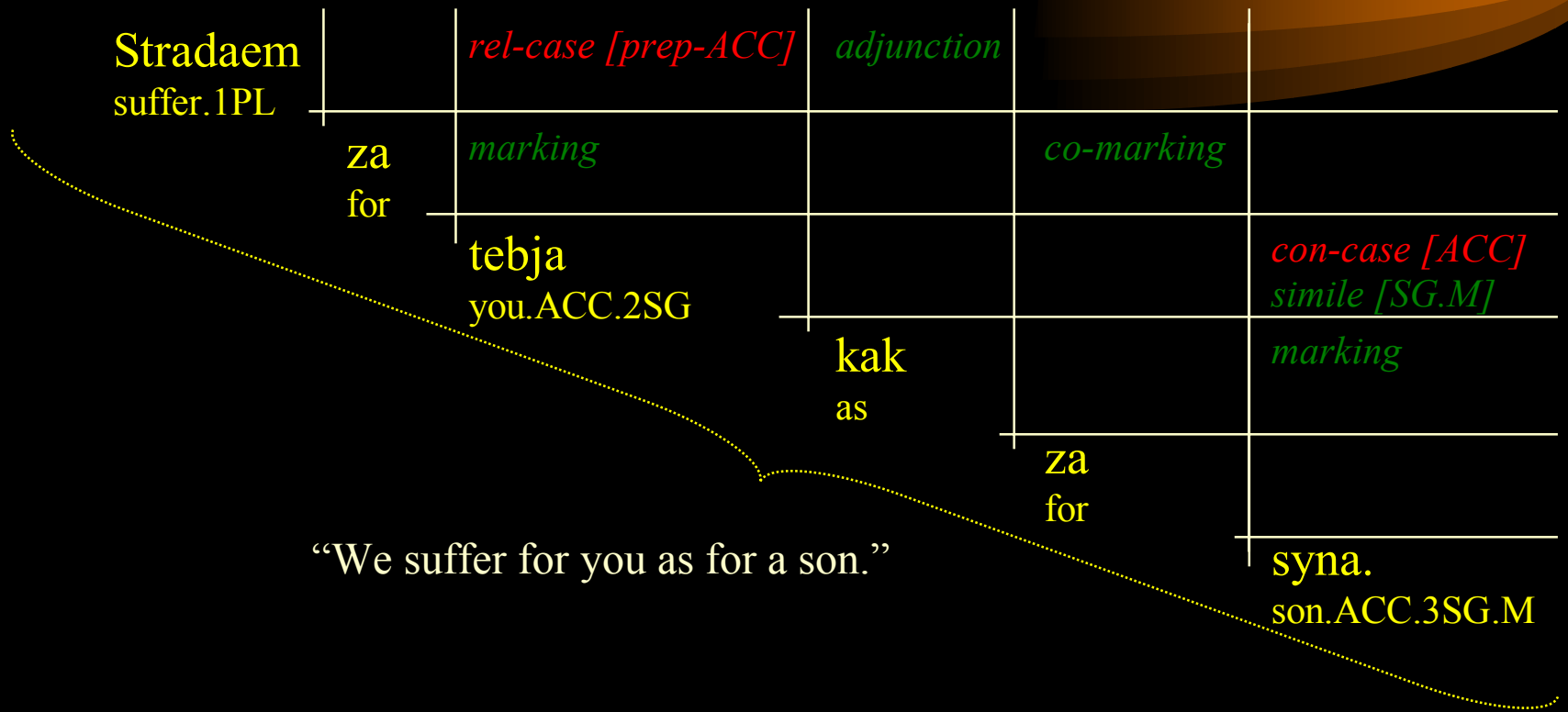


"The student which we talked about comes in."

Russian (ex.2)

– complete relational chart –



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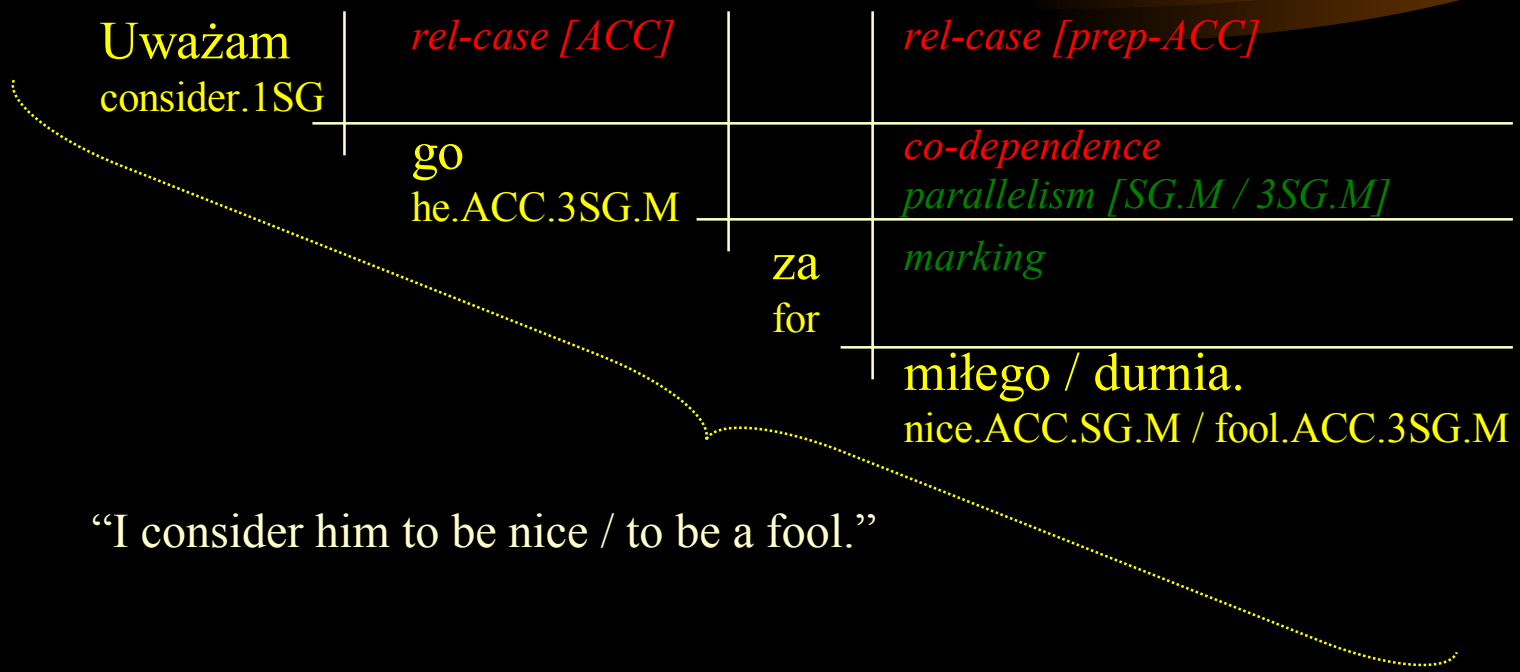
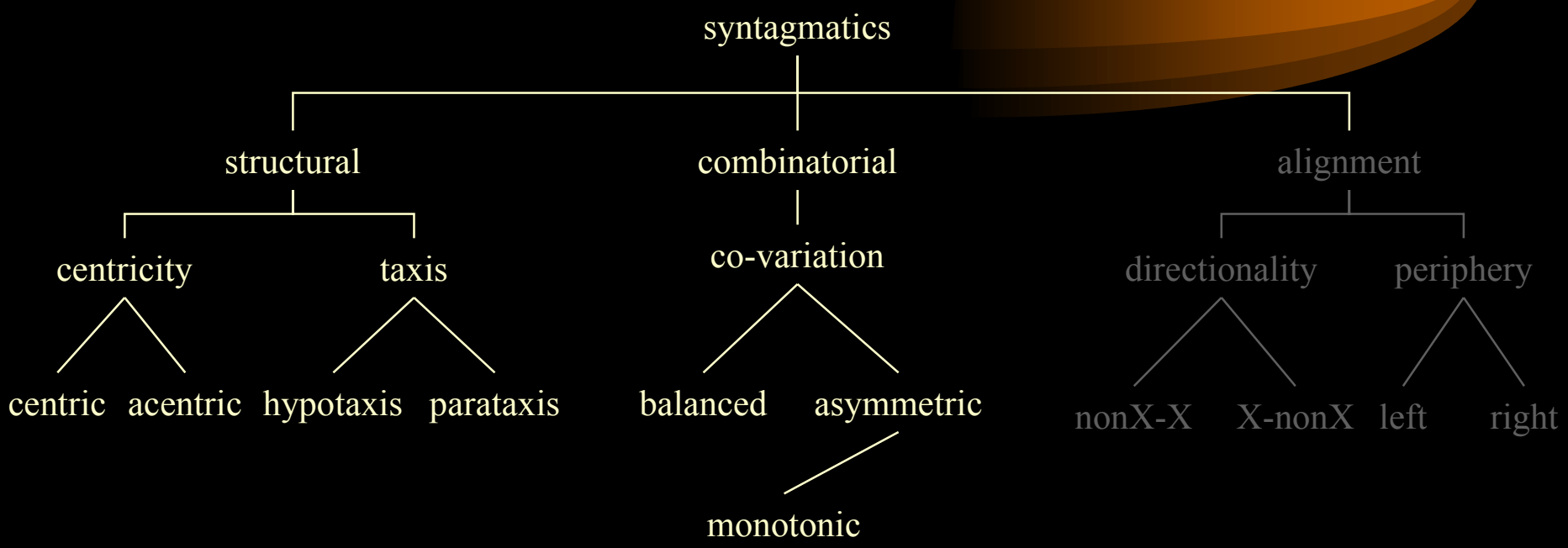
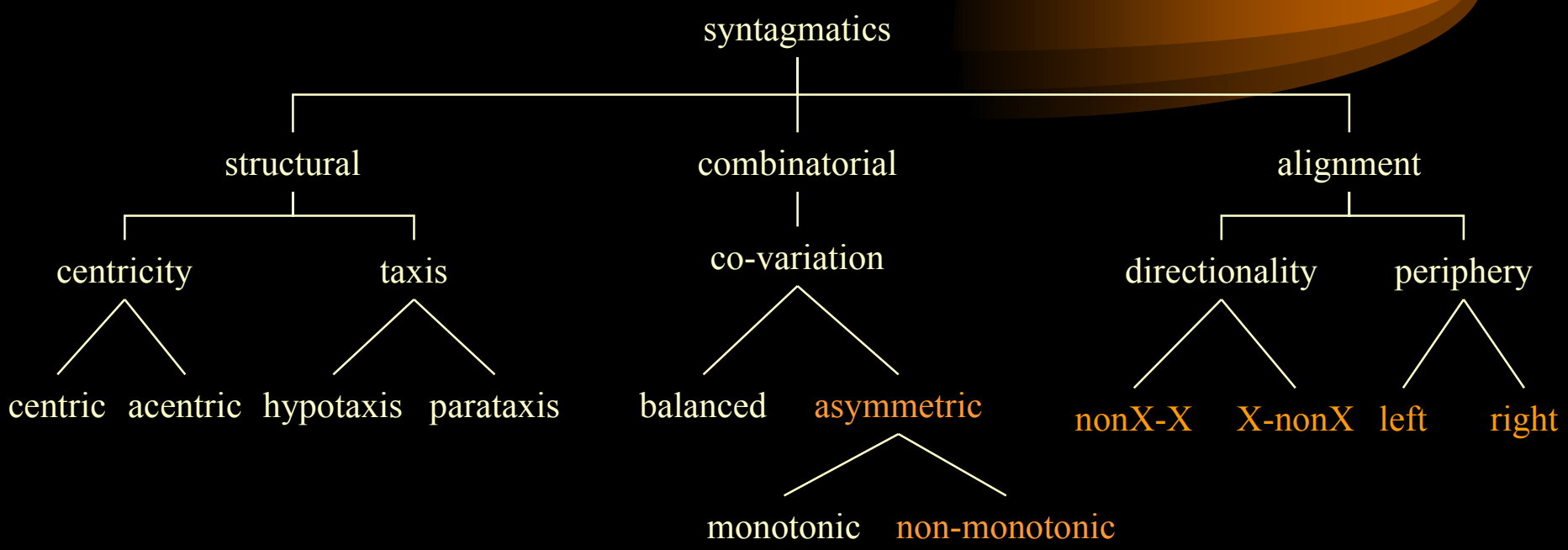


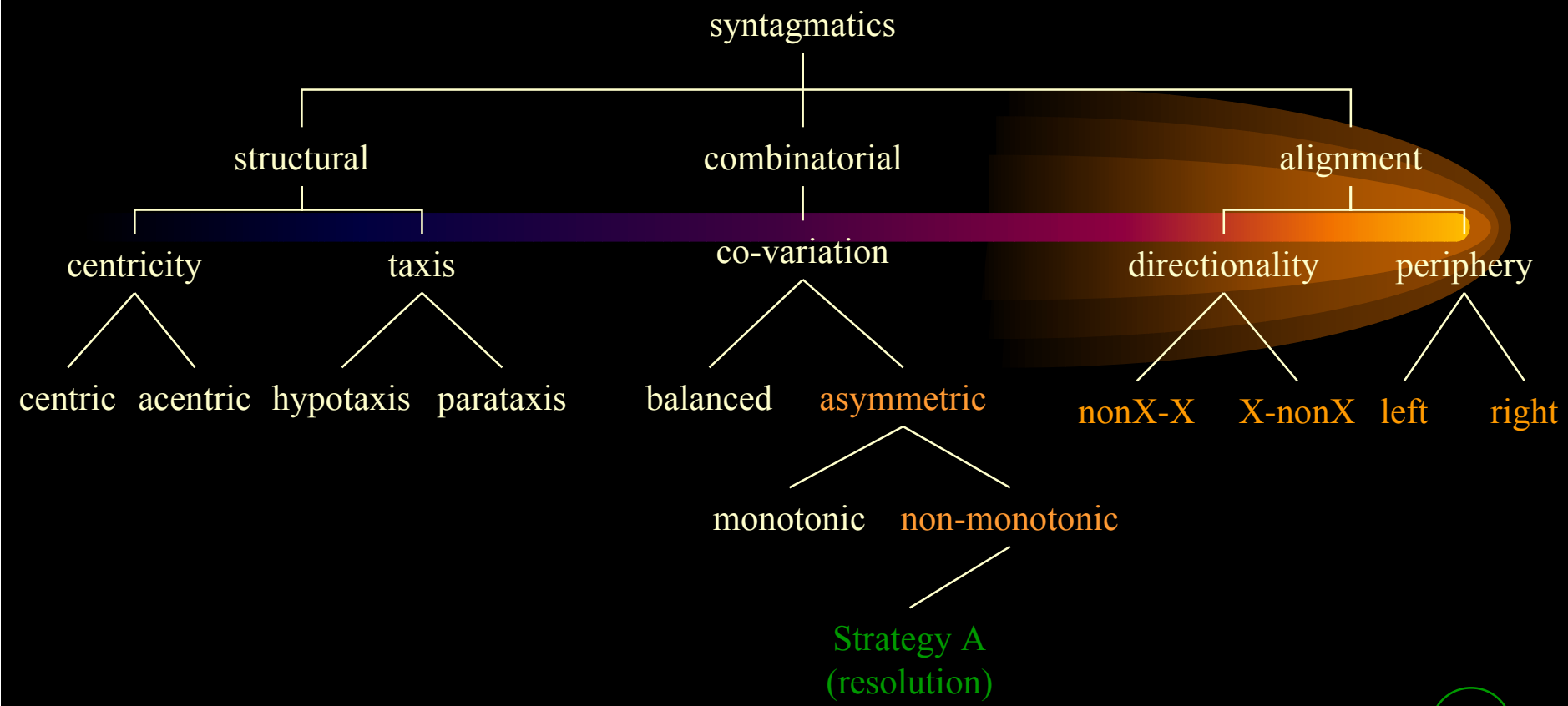
"I consider him to be nice / to be a fool."

Up to now ...

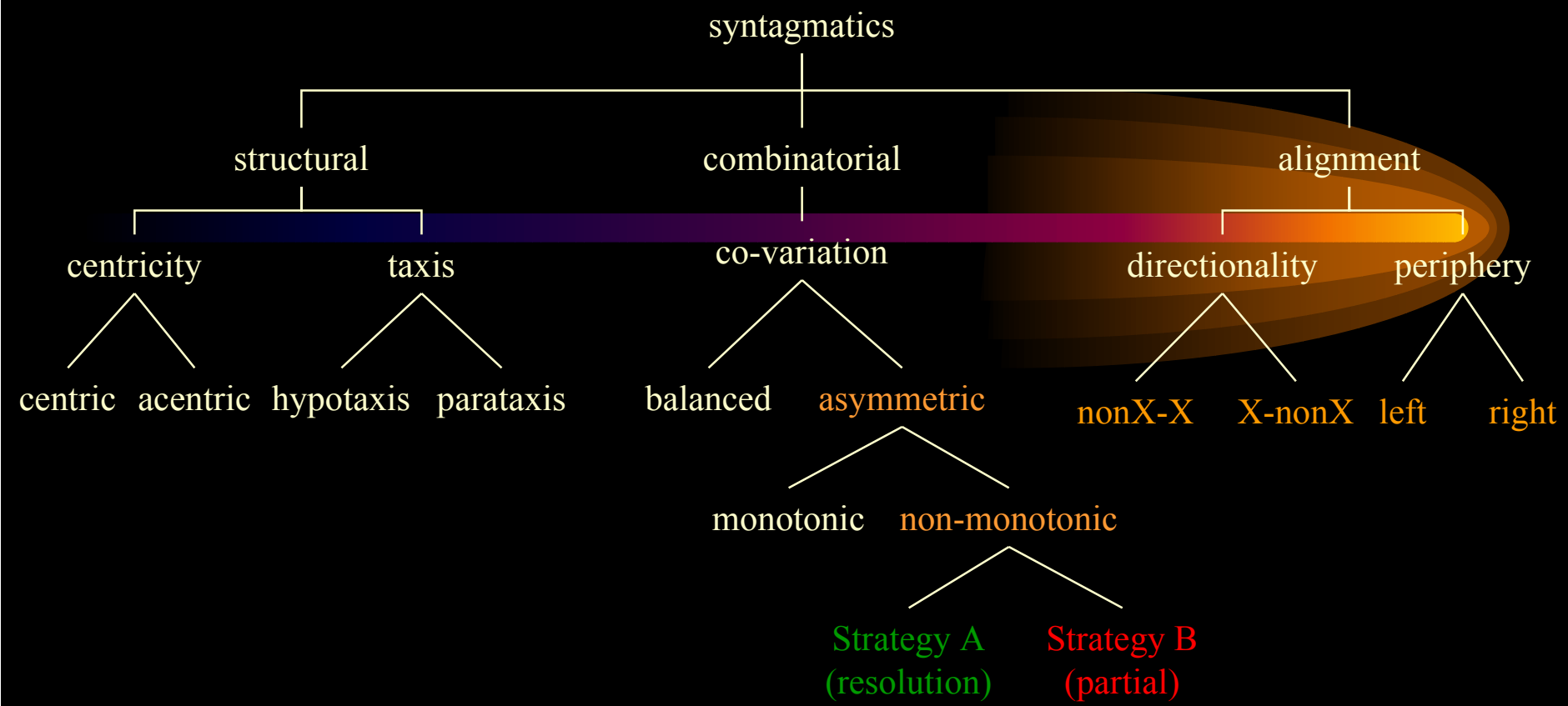

syntagmatics
structural
combinatorial
alignment
centricity
taxis
co-variation
directionality
periphery
centric
acentric
hypotaxis
parataxis
balanced
asymmetric
nonX-X
X-nonX
left
right
monotonic

A remark on non-monotonic co-variation





In establishing co-variation, conjoined noun phrases are treated as a semantically justified syntactic unit with a resolved index.



One of the conjuncts is favoured as decisive in establishing co-variation, mainly on alignment grounds.

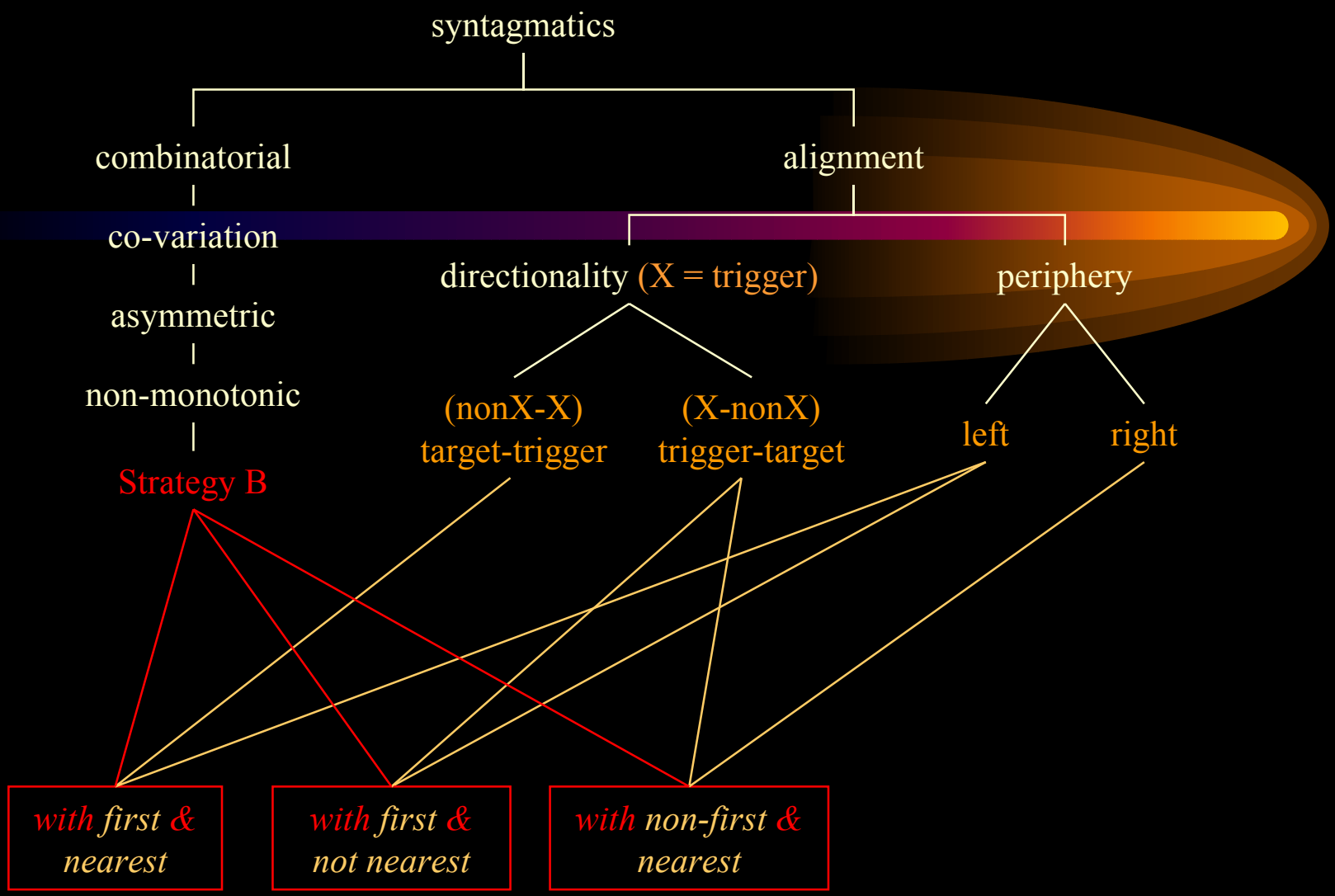
The two strategies exemplified on Czech

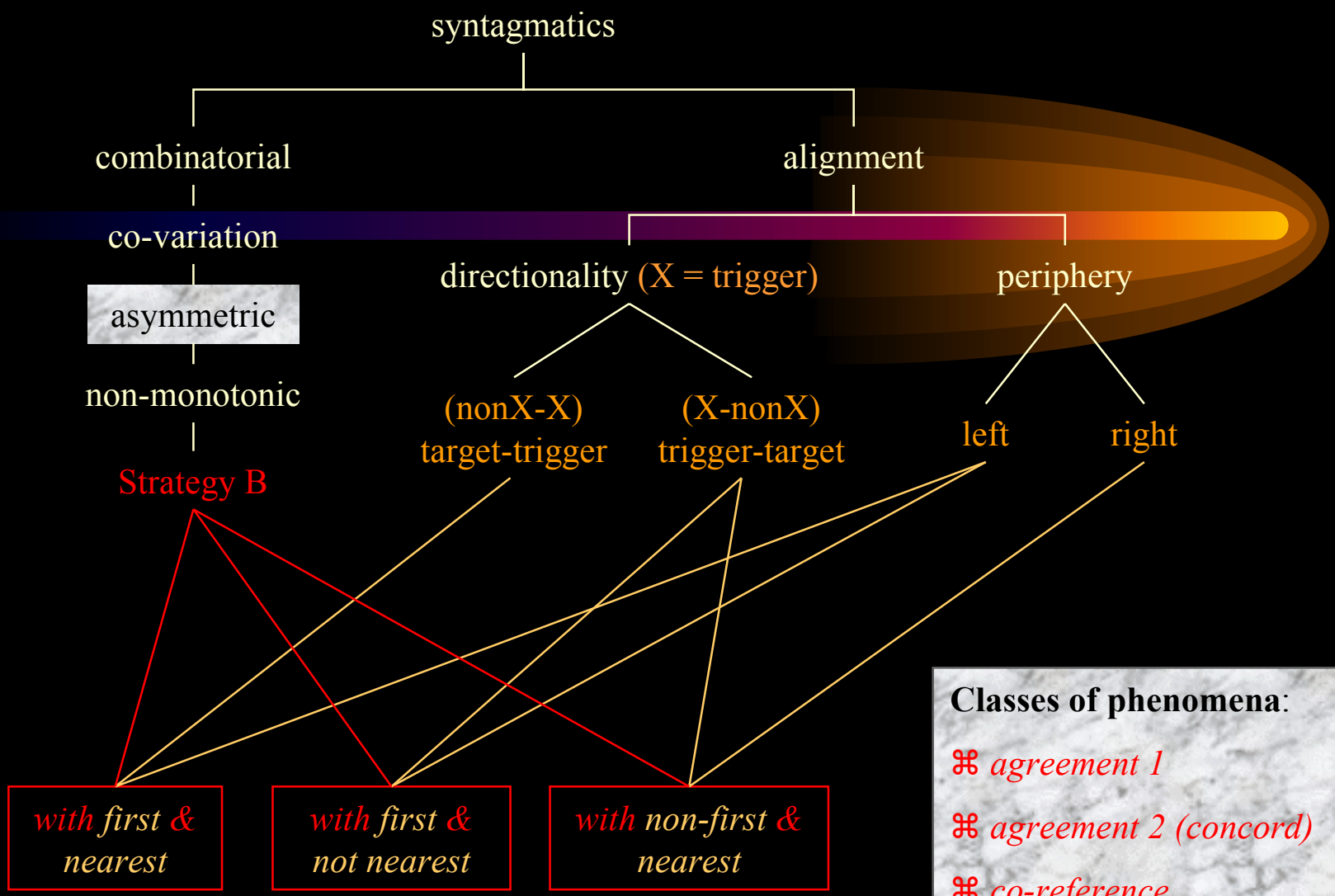
Tento	den	i	stát	jsou	v	našem
this.SG	day.SG	and	state.SG	are.PL	in	our

podvědomí	opředeny	mnoha	mýty	o	české
unconsciousness	wrapped.PL	many	myths	about	Czech

jedinečnosti.
uniqueness

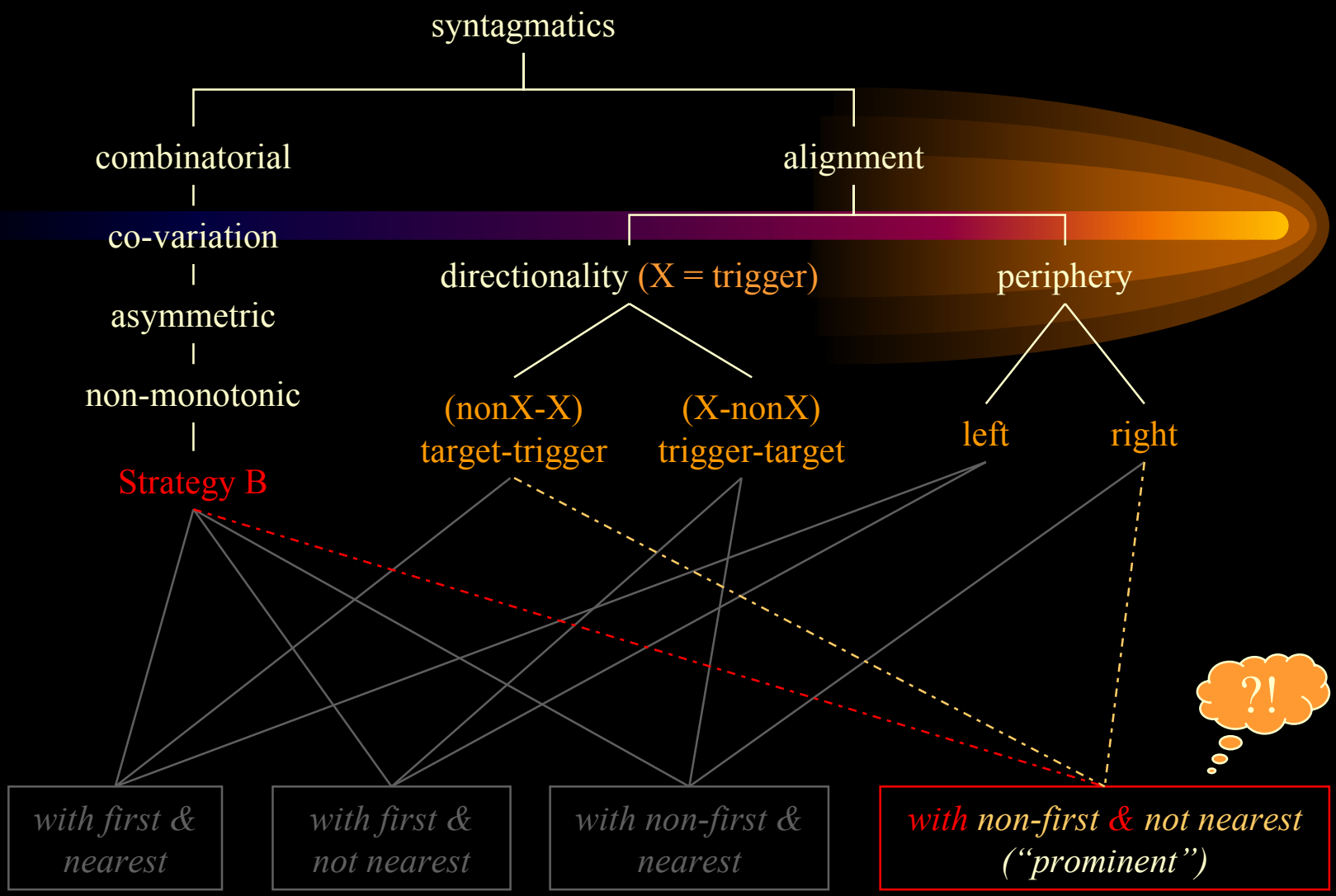
"This day and this state are surrounded in our unconsciousness by many myths about Czech uniqueness." (Lidové noviny, č.250/251, 1998)


syntagmatics
combinatorial
alignment
co-variation
directionality (X = trigger)
periphery
asymmetric
non-monotonic
(nonX-X)
target-trigger
(X-nonX)
trigger-target
left
right
Strategy B
with first & nearest
with first & not nearest
with non-first & nearest



Classes of phenomena:

- ⌘ *agreement 1*
- ⌘ *agreement 2 (concord)*
- ⌘ *co-reference*
- ⌘ *agreement 3 (accord)*


syntagmatics
combinatorial
alignment
co-variation
directionality (X = trigger)
periphery
asymmetric
non-monotonic
(nonX-X)
target-trigger
(X-nonX)
trigger-target
left
right
Strategy B
?!
with first & nearest
with first & not nearest
with non-first & nearest
with non-first & not nearest ("prominent")

Outline of the talk

- Introduction
  - motivation and preliminaries
  - syntagmatic relations
  - morphosyntactic assembling (government and juxtaposition)
- Main discussion
  - morphosyntactic co-variation
  - typology of agreement phenomena
- Conclusions and outlook

Conclusion

- Preliminary results
  - very few basic dimensions and minimal number of types
  - combinatorics yields a wealth of classes that all seem to be needed
  - relational charts are a suitable form of representing the array of systematic relations between any two items

- Contribution
  - to defining agreement in a clear and consistent way
  - separating it from allied but different phenomena

- Useful
  - comparative description of (closely related) languages
  - formalising language typology

Outlook

- Work on the configurational part of the ontology
  - rudimentary …
- Investigate possible mappings with ontologies of semantic relations
  - semantic motivation behind the particular phenomena …
- Formalisation
  - HPSG …

References

- Avgustinova, Tania (in preparation): *Shared grammatical resources for Slavic languages: selected topics in multilingual grammar design*. Habilitationsschrift, Universität des Saarlandes

- Avgustinova, Tania and Hans Uszkoreit (2000): *An ontology of systematic relations for a shared grammar of Slavic*. Proceedings of COLING'2000, Saarbrücken. Volume 1: 28-34

- Corbett, Greville (1998): *Agreement in Slavic (position paper).* Workshop on Comparative Slavic Morphosyntax. Indiana University. (http://www.indiana.edu/~slavconf/linguistics/download.html)