Grammatical Logic

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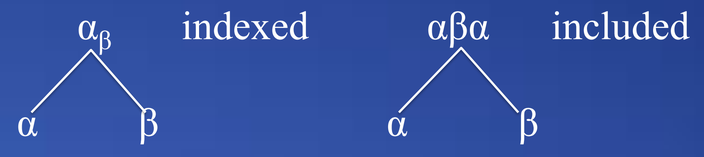
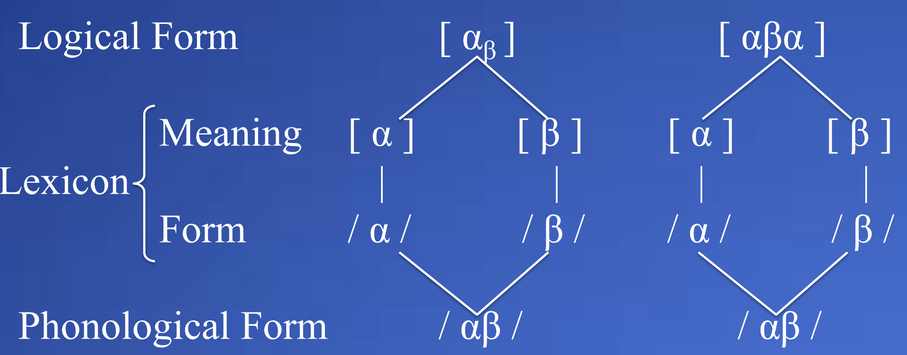
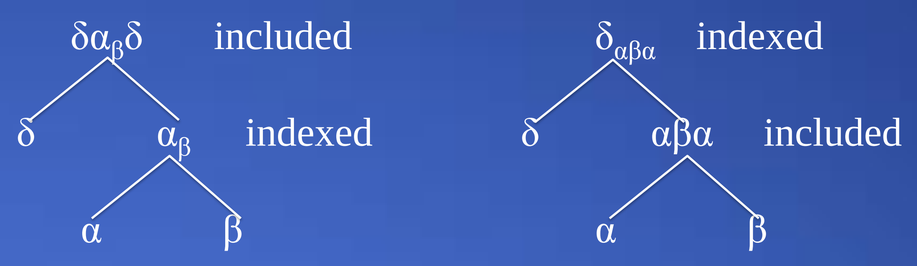
PROPOSAL

- Grammatical Logic is based on *output arrangements of input (primitive) content* (words)
- <u>One</u> input: α β <u>Two</u> outputs: α_β "indexed" output
  αβα "included" output (with copy)



- Input Condition: α and β must have a form and a meaning.
- System is recursive (output can be input of higher structure).





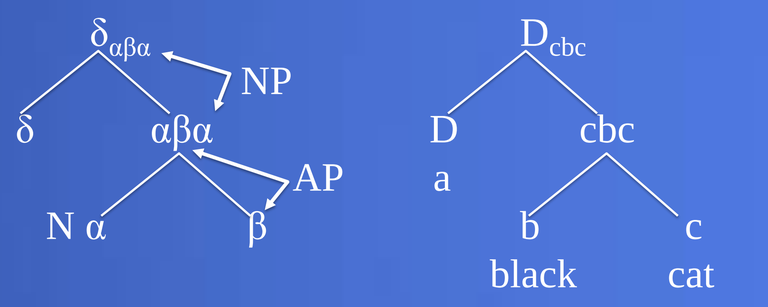
- Distinctions only exist on constituents (combinations)

CENTRAL CLAIM

<u>Only operations needed to account for distribution and interpretation of Nouns and Adjectives in sentential contexts.</u>

ECONOMY

- Distribution and interpretation without specific primitive (labels A and N, logical type)
- Preliminary definition Noun: α is an NP in β_α
  Adjective: α is an AP in βαβ
- NP-internal adjectival modification



- Inclusion: interpretation of dependent property
  - Output validity: if denotation of term compatible with value imposed by output configuration

GRAMMAR IS LOGIC

- Empirical evidence
  - With unique denotation in model (*red* = 650nm), logical values predictable by grammatical context

a. The red car is fantastic. (attributive adjective)
b. Jill's favourite car is red. (predicative adjective)
c. Jill's favourite colour is red. (specificational)
d. Red is Jill's favourite colour. (inversion previous)
e. In the fall, red is widespread. (mass reading)
f. In the fall, reds are spectacular. (plural generic)
g. Reds were splattered on the wall. (plural specific)
h. These are nice reds. (predicative plural)
i. This is a glossy red. (predicative singular)
j. The red I saw was glossy. (definite NP)

- Identity of denotation: evidence from anaphoric reference across categories/types
  a. The skin is <u>red</u> around the bruise. (adjective)
  b. The <u>red</u> is brownish. (nominal argument)
- Compositional semantics not driven by denotational model: rather, value imposed on denotation by combinational output
  - Denotation only relevant at level of discourse analysis, for validity, truth and full interpretation

ADEQUACY

- Dependencies between grammatical categories: attributive Adjective (NP-internal Adjective that can be paraphrased with predicative adjective)

a. the black cat → the cat is black
b. the future president → * the president is future

- Definition: α is an Attributive Adjective in βαβ if βαβ is an NP
- Grammatical distinctions: specific combinational of symbols; dependency between symbols means dependency between categories
- Traditional X-bar theory: symbols and structure are separate
  - Structures uniform: independent statement for dependency between categories must be given by UG

BASIC PATTERNS with COPULA

- Grammatical logic is based on temporal alignment of information presented linearly; differential alignments based on different expansion (EXP| α | = expansion of α); grammatical values = temporal signatures
  - Indexed output EXP| α | = EXP| β |; Included output EXP| α | > EXP| β |
- Input expansion: Substantive index EXP| x | = 0;
  Verb *be* EXP |( )| = 1; Determiner *a* EXP |{ }| > 1.
- Conditions: *is* -( )- is saturated by α iff Exp| α | >= Exp|( )|
  a -{ }- is identified by α iif Exp| α | = Exp|{ }|
- Temporal signatures of grammatical values
  - x is a predicative Adjective iff EXP| x | < 1
  - x is a proper Noun iff EXP| x | = 1
  - x is a mass Noun iff EXP| x…x | > 1
  - x is a count Noun iff EXP| x | > 1

		y			a *y*	
x is	*x*( )	*x*(*y*)	*x*( )*y*	*yx*( )*y*	{ *x*( ) }*y*	A
	x( )*x*	*x*(*y*)*x*	**x*( )*xy*	*yx*( )*xy*	{*x*( )*x*}*y*	B
an *x* is	{( )}*x*	{(*y*)}*x*	*{( )}*xy*	*y*{( )}*xy*	{{( )}*x*}*y*	C
	0	1	2	3	4	

	0	1	2	3	4
A	Jill is	Jill is tall	Clark is Superman	Venus is rock	Felix is a cat
B	Time is	Water is clear	* Rock is Venus	Beer is alcohol	Food is a pleasure
C	A God is	A cat is fun	* A cat is Felix	A pizza is food	A cat is a feline