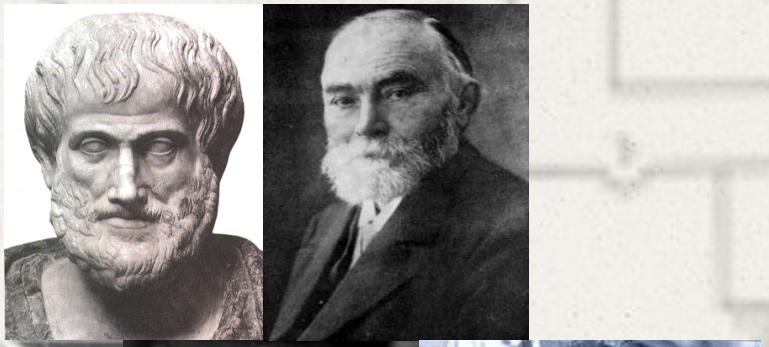
Subjects, Predicates, and Systematicity



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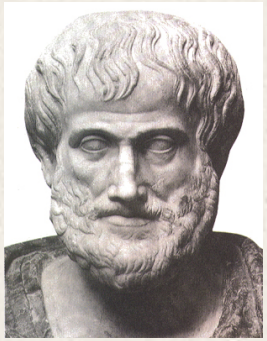
Origins of Propositional Thought

- What are Thoughts?
- What a Propositional (or non-Propositional) Thought?
- Origins?
- 35 minutes (Q&A included)?

Strategy

- Focus on two notions of "Sentential" Thoughts
  (1) thoughts that exhibit *Subject-Predicate* structure
  (2) thoughts composed of *Systematically Combinable* concepts
- Raise an "origin question" about each
- Speculate about a role for the Human Language Faculty

Where does *Subject-Predicate* structure come from?



THOUGHT/SENTENCE

SUBJECT (copula) PREDICATE

mortal

QUANTIFIER PREDICATE

every/some/no human

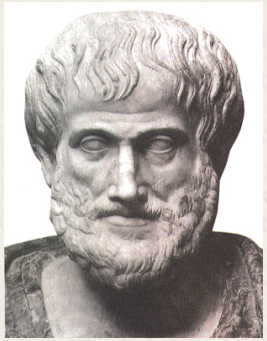
S ➔ NP (aux) VP

but 'Subject' is not a notion of Generative Grammar;

and neither is 'Sentence';

even NP-of-S was passé in the 1980s

Where does *Subject-Predicate* structure come from?



THOUGHT/SENTENCE

SUBJECT (copula) PREDICATE

mortal

QUANTIFIER PREDICATE

every/some/no human

Darcy is easy to please.

It is easy (for us) to please Darcy.

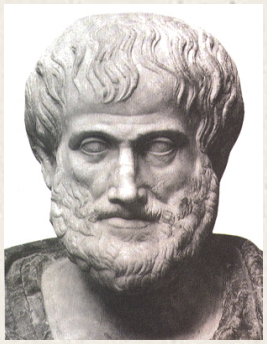
It is raining. There will be few people at the beach.

- ‘Subject’ is not a notion of Generative Grammar
- But human languages seem to really like *predicates*
  - every father is mortal
  - some big brown cow which they chased was from Texas

    compare: which [they chased ___]
    whonk [they _____ cows]

  - every Chris we know was between a Smith and a Jones
  - every chase is an event in which something is chased
  - some event was a
    stabbing of Caesar that was done by Brutus in March

Where does *Subject-Predicate* structure come from?



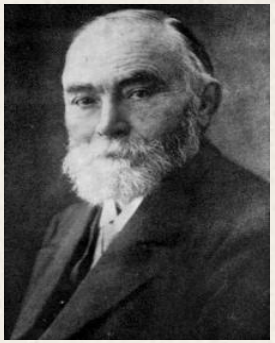
THOUGHT/PREMISE

SUBJECT (copula) PREDICATE

mortal

QUANTIFIER PREDICATE

every/some/no human



Thoughts (Gedanken) have *Function-Argument* structure

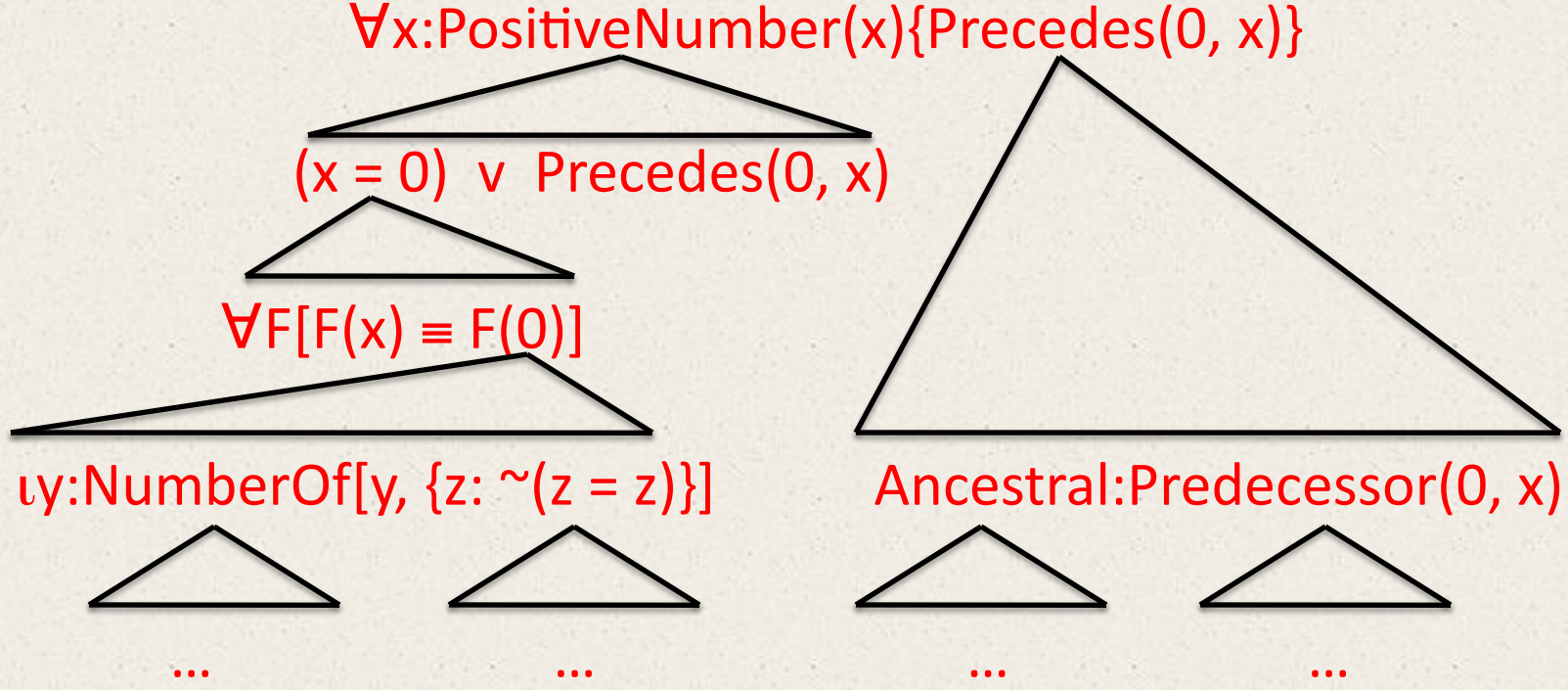
'Subject' is not a notion of Serious Logic;

and *unary* Functions are just special cases

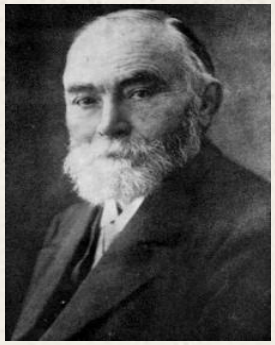
consider the Thought that

Zero precedes every positive number

Zero precedes every positive number

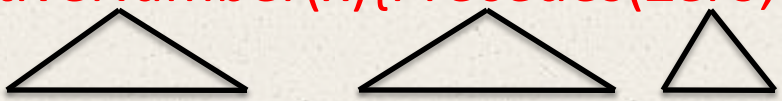


the constituents of Fregean Thoughts
are massively *relational*



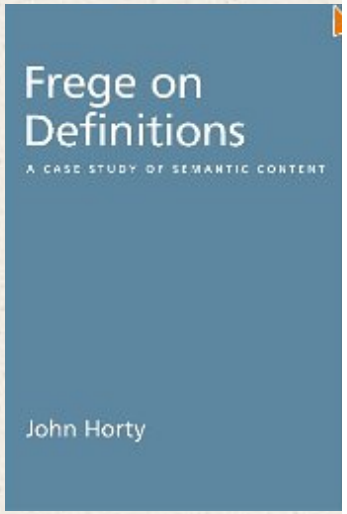
Zero precedes every positive number

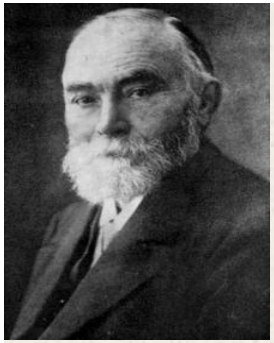
∀x:PositiveNumber(x){Precedes(Zero, x)}



- We *introduce* relational concepts like NumberOf[x, F].
  But we can imagine thinkers who use such concepts
  to *introduce* Number(x) and Zero.

- A good language is not just for *expressing* concepts;
  it lets you use old concepts to *introduce* new ones,
  and thereby re-present contents in a new *format.*





Origins of Propositional Thought

- The notion of a *Subject* seems to be rooted in *pre-linguistic* cognition, as opposed to Grammar or Logic (or Meaning)

- But human languages really like *predicates*,
  as Aristotle and the Medieval Logicians suggested,
  even if predicates are not essential to Thought/Logic

- A language can let you use old concepts to *introduce* new ones, and thereby re-present contents in a new *format*

Origins of Propositional Thought

- Minds house *modules*,
  whose characteristic representations
  exhibit *distinctive formats*.

- These "informationally encapsulated" cognitive systems
  provide inputs to at least one "central" system.

- Minds deploy *concepts* that are *systematically combinable*.

- But how did modular minds come to have such concepts?

Where do *Systematically Combinable* Concepts come from?

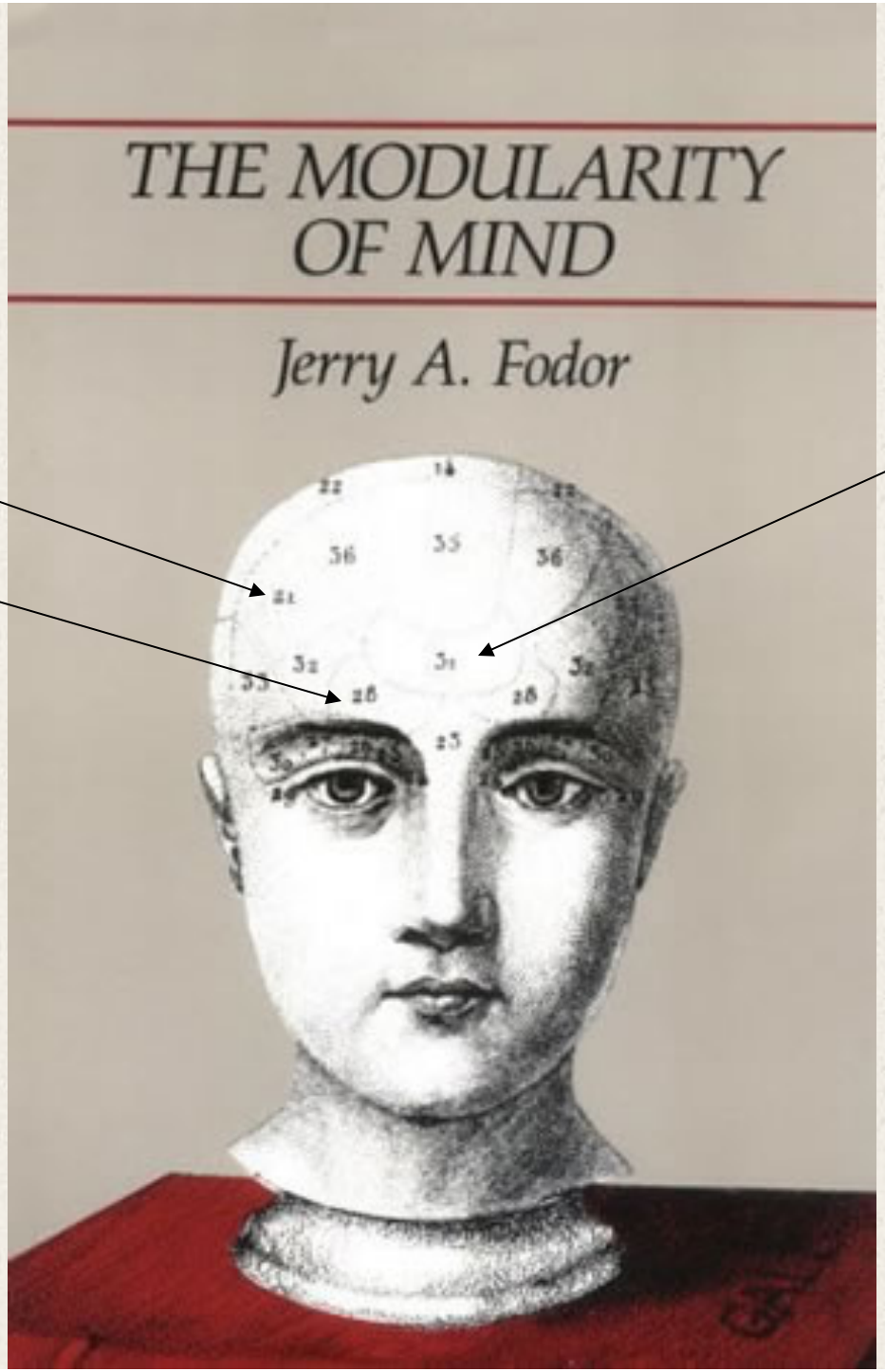
- Minds house modules that employ *proprietary vocabularies*.
- Minds deploy concepts that are *systematically combinable*.

if you can think that	*you can also think that*
Al is blue, and Bo is green	Al is green, and Bo is blue
Al saw Bo, and Cy heard Di	Di saw Al, and Bo heard Cy
A dog barked, and every cat ran	Every cat barked, and a dog ran
Someone fell, and Al saw Bo	Al fell, and Bo saw someone fall
Big new ideas emerge rarely	Colorless green ideas sleep furiously

- But how did modular minds come to have concepts (or words) that are as combinable as words?

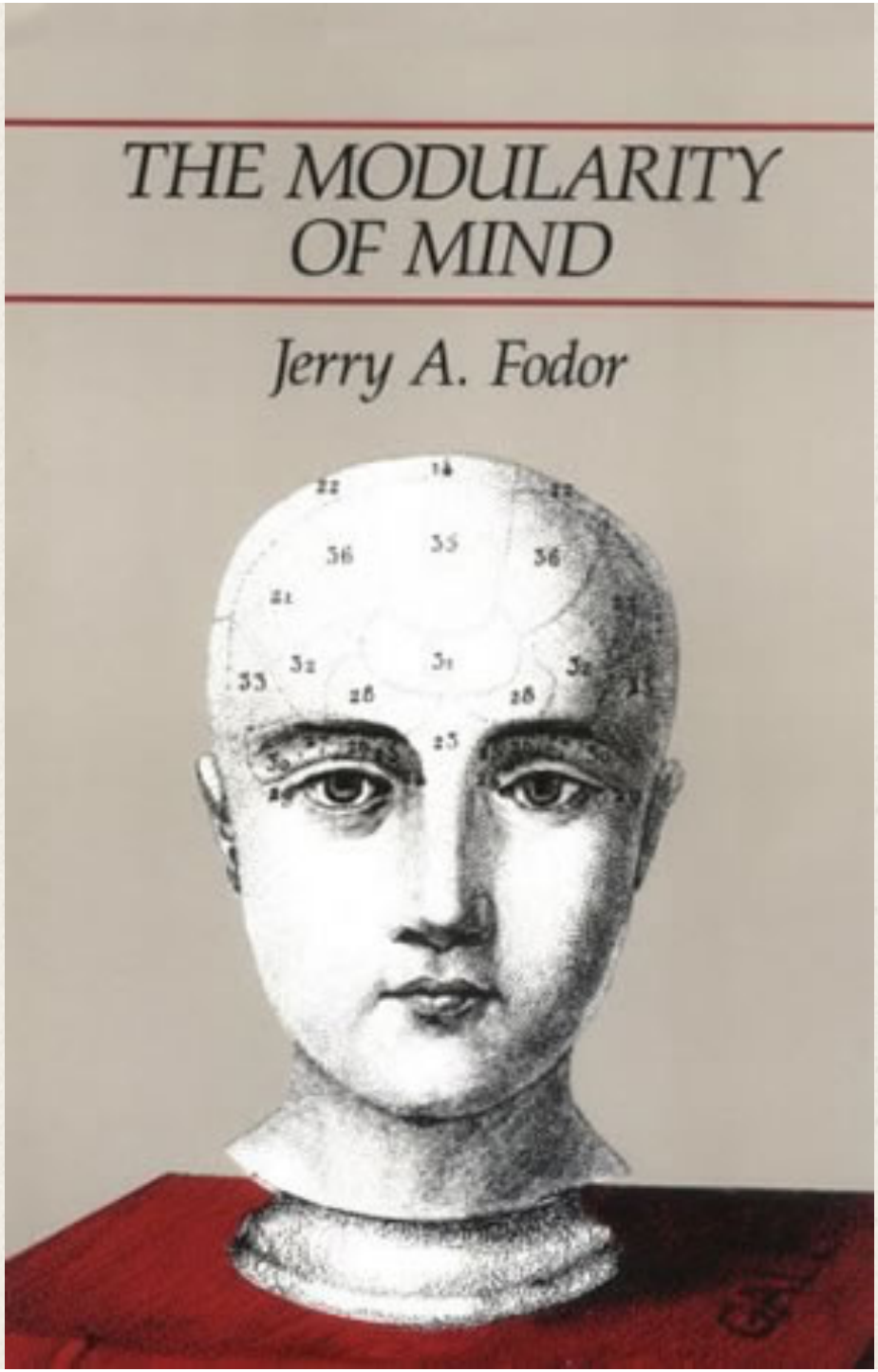
Putting the question crudely:

if modules 21 and 28 employ their own vocabularies …

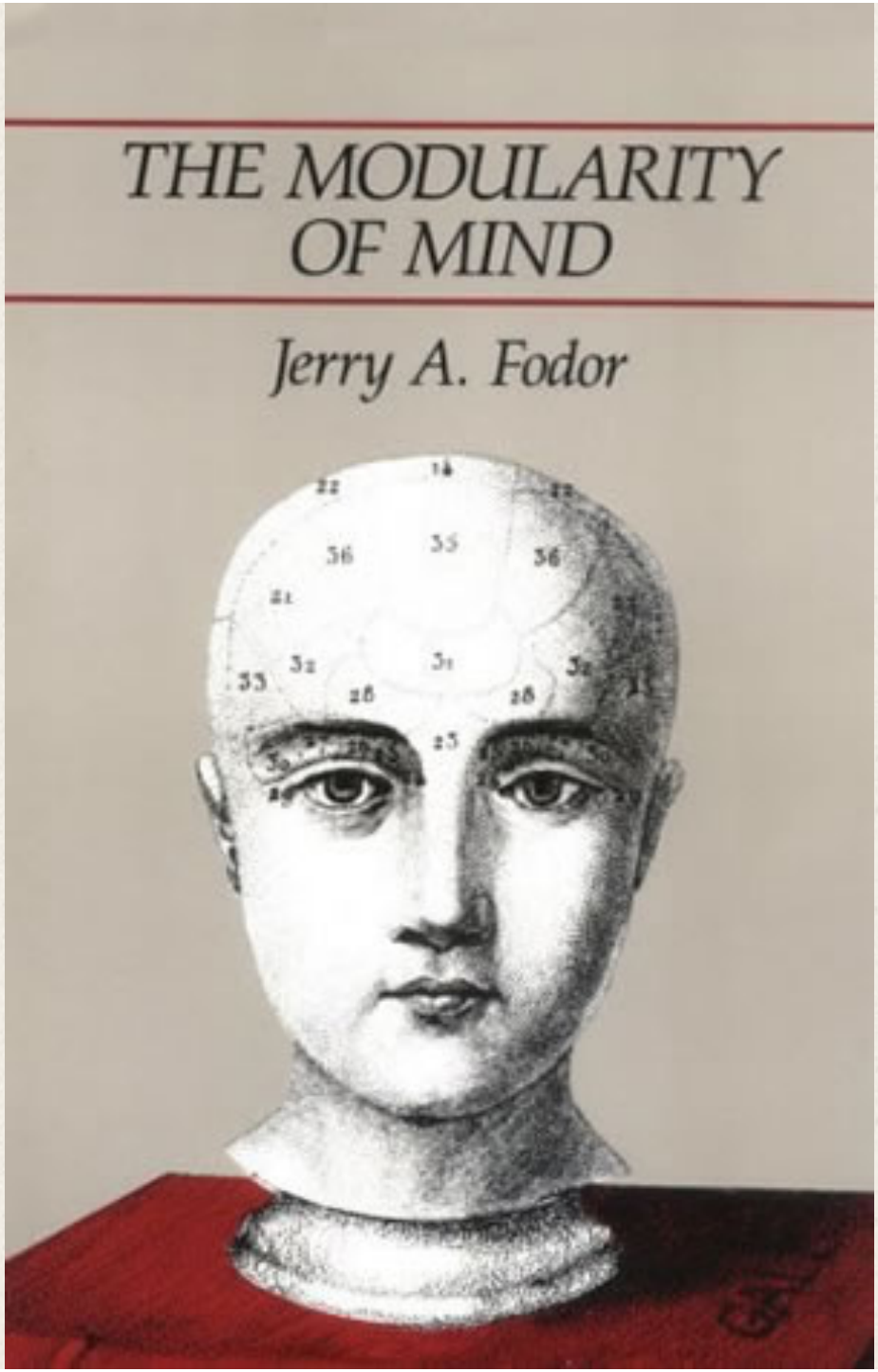


how does any central system—say, 31—support *both* productive combination (within the system) *and* interfaces with diverse modules?

How did there come to be a *network* of concepts that interface with disparate modules, and yet combine as freely as words?



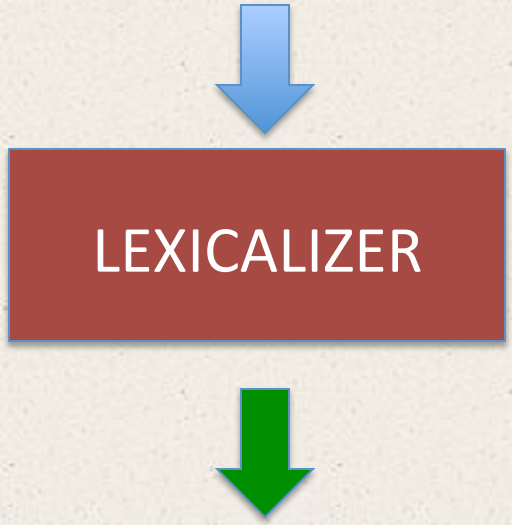
How did there come to be a *network* of concepts that interface with disparate modules, and yet combine as freely as words?



How did there come to be *lexical items* that are linked (via concepts) to disparate modules, and yet combine so freely?

Maybe a Human Language lets a child use Prelexical Concepts
(which may not be systematically combinable)
to *introduce* Lexical Concepts, which exhibit
a new *format* that supports systematically combinabilty

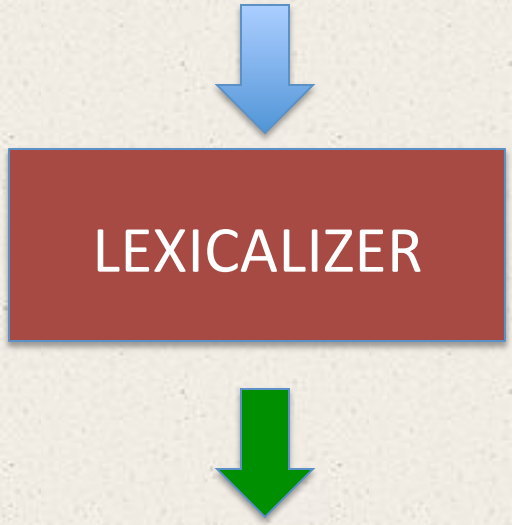
<Prelexical Concept, Pronunciation>



<{Prelexical Concept, Lexical Concept}, Pronunciation>

No guarantee that any particular concept is lexicalizable.
But many concepts can be lexicalized.
(*And on any plausible view, lexicalization is* not *merely a process of connecting concepts with pronunciations*.)

<Prelexical Concept, Pronunciation>



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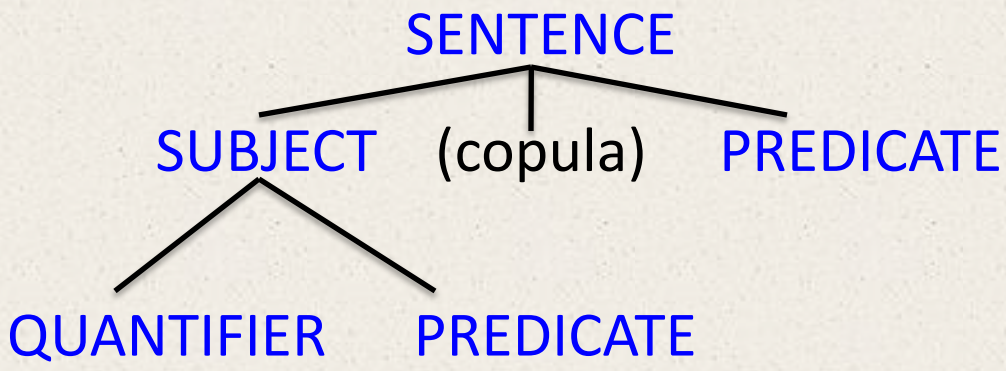
Origins of Propositional Thought



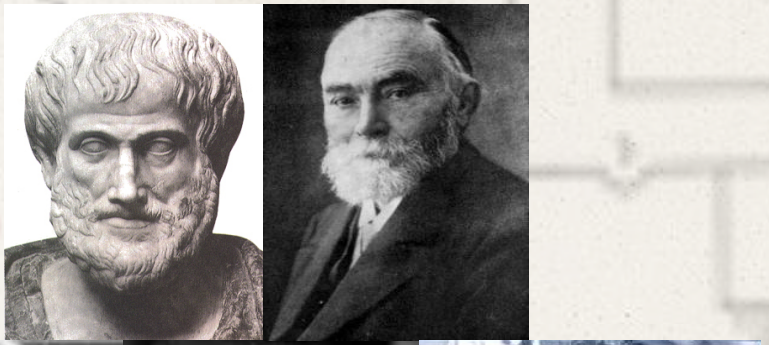
Maybe…

Subject-Predicate is an ancient form of *mental* sentence.

Our natural modes of relational thought are limited;
to combine relational concepts systematically,
Frege had to *invent* a language for this very purpose.

But humans acquire words that let us build *predicates* and thereby use an ancient form of thought more systematically.

Subjects, Predicates, and Systematicity



THANKS