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
    QUANTIFIER every/some/no PREDICATE 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

QUANTIFIER PREDICATE

every/some/no human mortal

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?

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

∀x:PositiveNumber(x){Precedes(0, x)}

(x = 0) v Precedes(0, x)

∀F[F(x) ≡ F(0)]

ιy:NumberOf[y, {z: ~(z = z)}]

Ancestral:Predecessor(0, x)

... ... ... ...

the constituents of Fregean Thoughts are massively *relational*
Zero precedes every positive number
\[ \forall x: \text{PositiveNumber}(x) \{ \text{Precedes}(\text{Zero}, x) \} \]

- We *introduce* relational concepts like \text{NumberOf}[x, F]. But we can imagine thinkers who use such concepts to *introduce* \text{Number}(x) and \text{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*  
  Al is blue, and Bo is green  
  Al saw Bo, and Cy heard Di  
  A dog barked, and every cat ran  
  Someone fell, and Al saw Bo  
  Big new ideas emerge rarely

  *you can also think that*  
  Al is green, and Bo is blue  
  Di saw Al, and Bo heard Cy  
  Every cat barked, and a dog ran  
  Al fell, and Bo saw someone fall  
  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 combinability.

\[
<\text{Prelexical Concept}, \text{Pronunciation}> \\
\downarrow \\
\text{LEXICALIZER} \\
\downarrow \\
<\{\text{Prelexical Concept, Lexical Concept}\}, \text{Pronunciation}>
\]
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.)
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.
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THANKS