

# **Structure of Meaning or Meaning of Structure**

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Nizhny Novgorod, Russia  
April 8, 2021

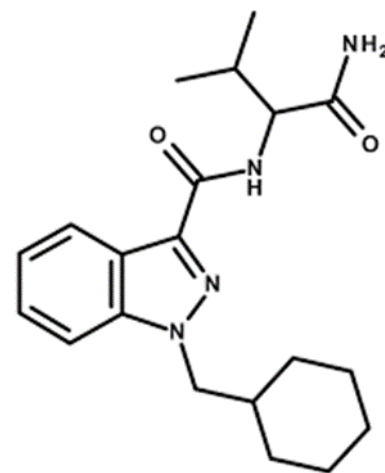
# Roadmap

- What is meaning and what is structure?
- Can meaning be structured?
- Can a structure prompt a certain meaning?

# What is meaning and what is structure?

what is meant by a  
word, text, concept,  
or action

relation between parts  
or constituents  
of something complex



СТОЛ  
*100-Л*

# Word meaning

table

*concrete*



love

*abstract*



# Word Meaning and Word Referent

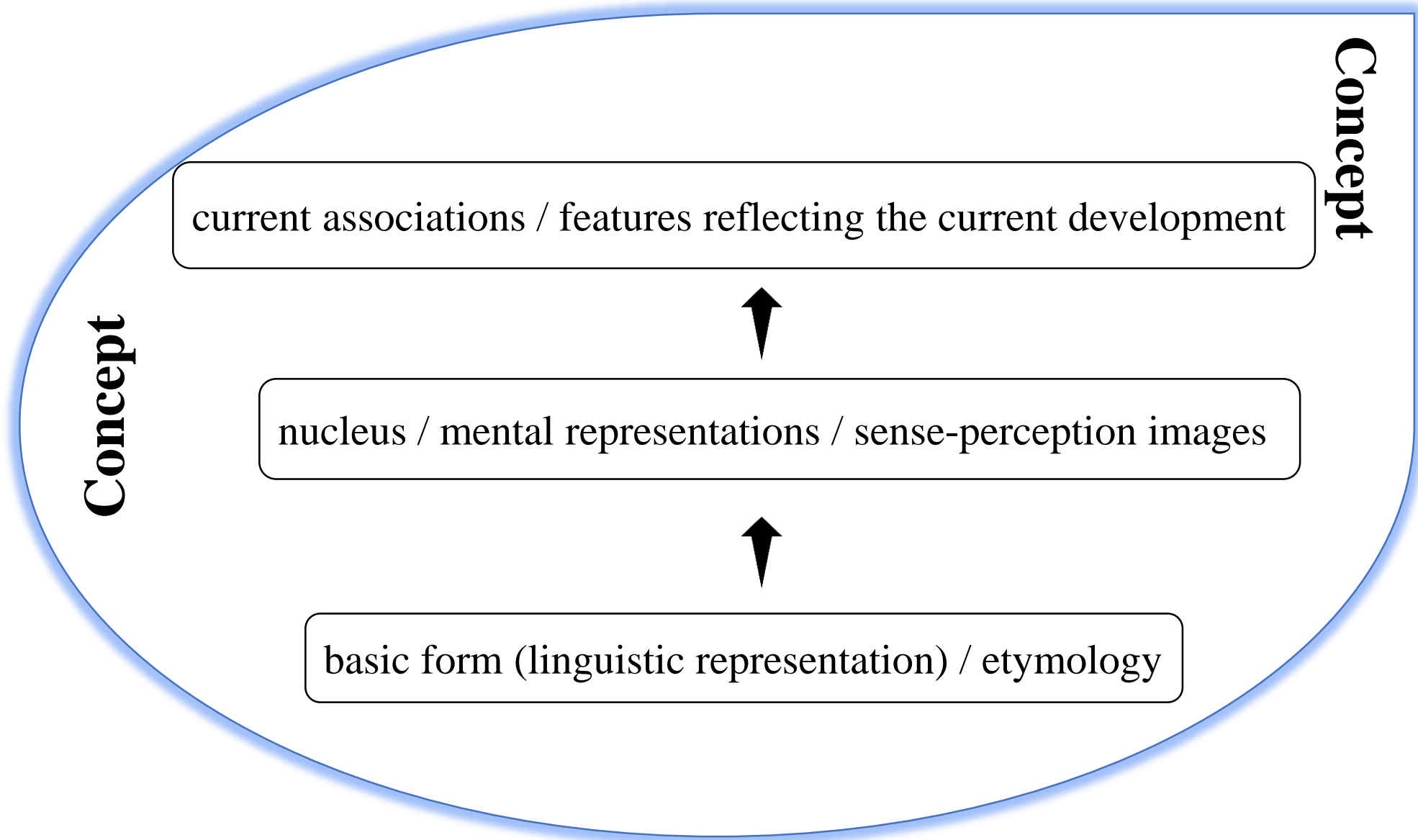


Are they all tables?

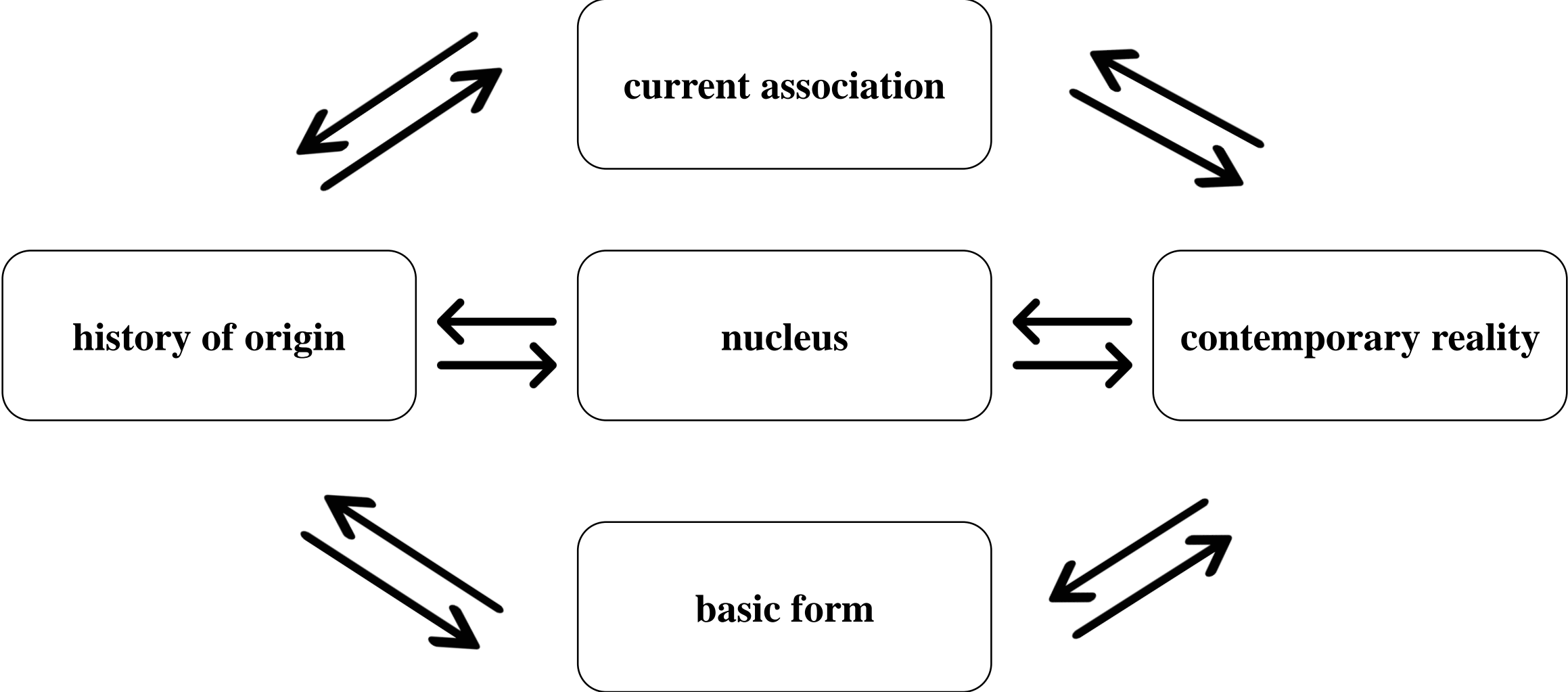


Is it the same table in all three pictures?

# Cognitive Concepts (Boldyrev 2001, Stepanov 1997, 2004, among others)

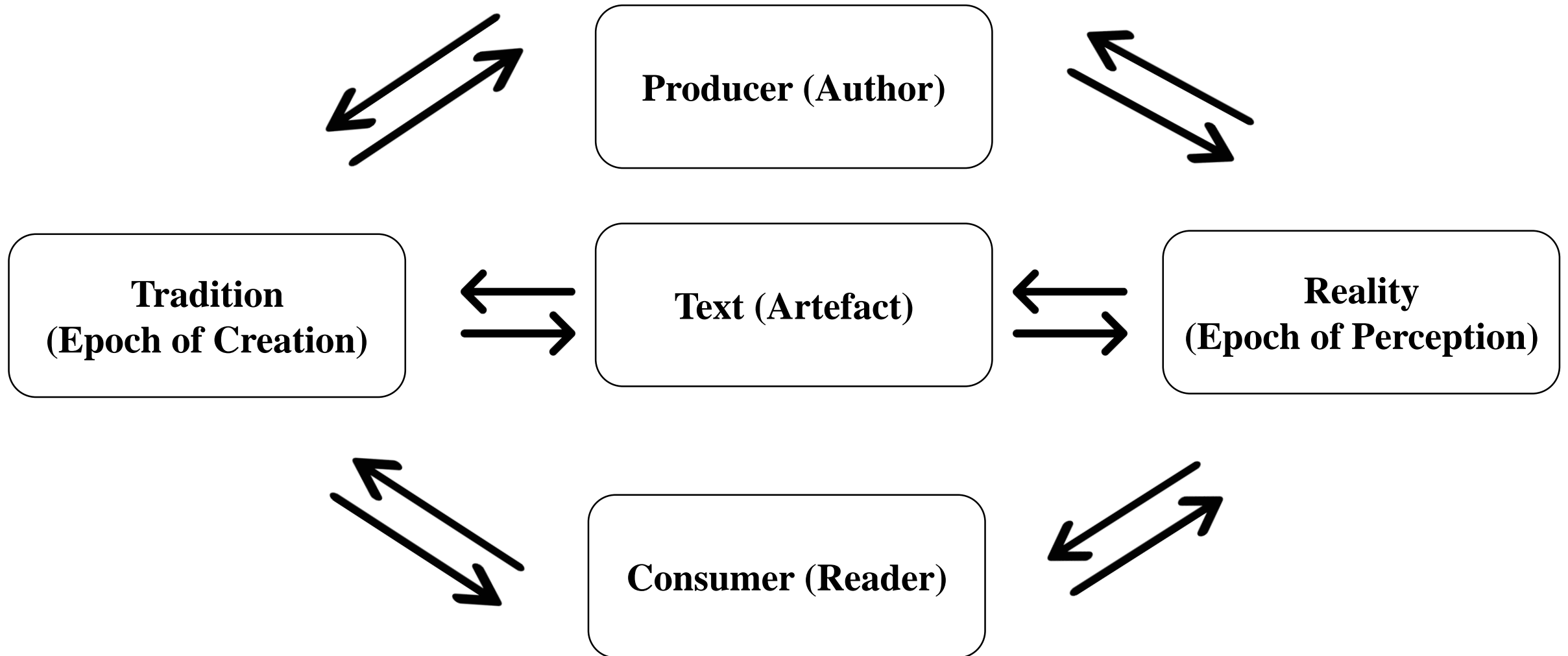


# Cultural Concepts (Zinchenko, Zusman, Kirnoze, 2007)



# Cultural Concepts: Literary Text

(Zinchenko, Zusman, Kirnoze, 2007)





# Word Meaning and Word Referent

- there are different ways to name the same thing
  - a student in this group = Maria
- why are we not confused?
  - sense and denotation (Friedrich Ludwig Gottlob Frege (1848-1925))
    - a morning star and an evening star = the same planet – Venus
- what if there is a sequence of words?
  - *she in the after on tomorrow*
  - does it have to be meaningful?

# Meaning of Sentence

Some man loves every woman

- *Meaning 1*: There is a man such that he loves all women
  - some > every (direct scope)
- *Meaning 2*: For every woman there is at least one man who loves her
  - every > some (inverse scope)

Many students don't understand syntax

- *Meaning 1*: There are many students who do not understand syntax
  - many > not (direct scope)
- *Meaning 2*: It is not the case that many students understand syntax = not many students understand syntax
  - not > many (inverse scope)

# Meaning of Sentence (2)

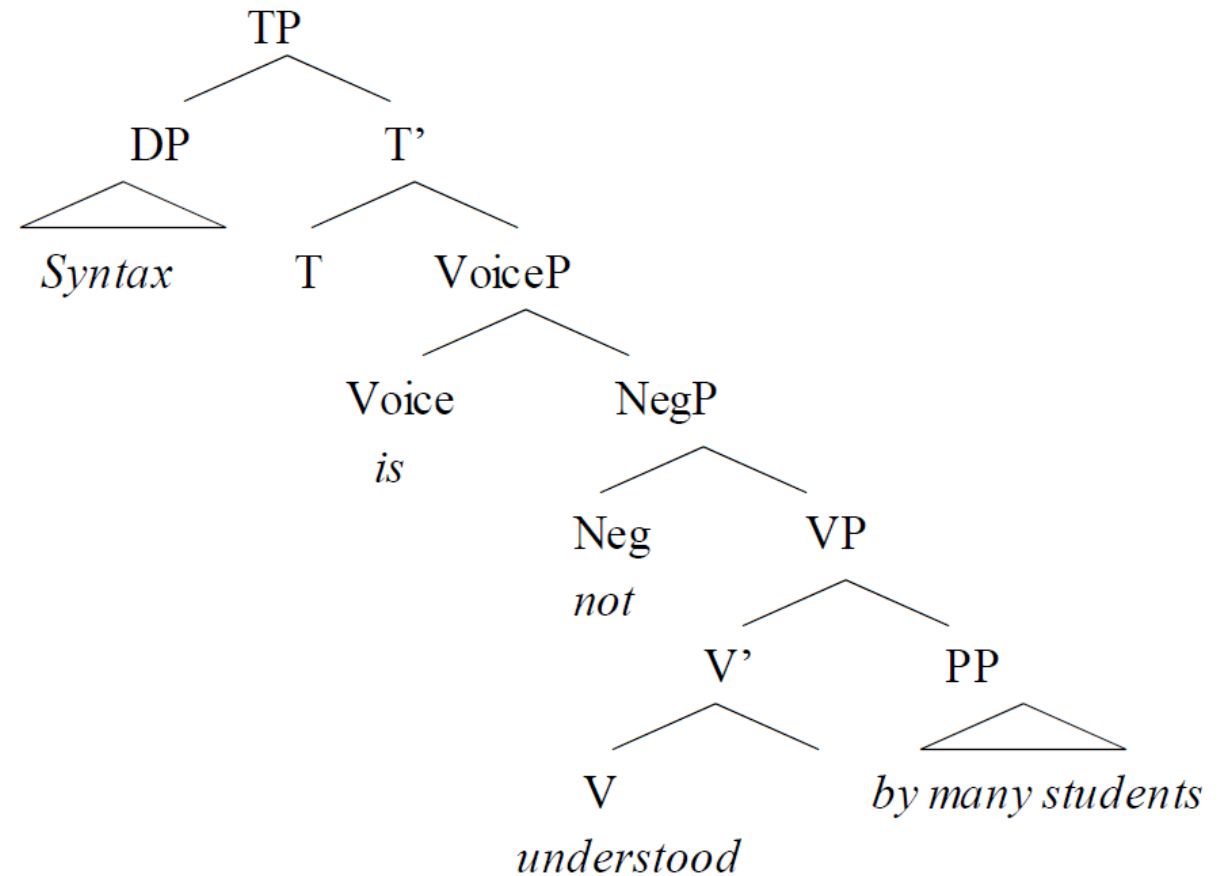
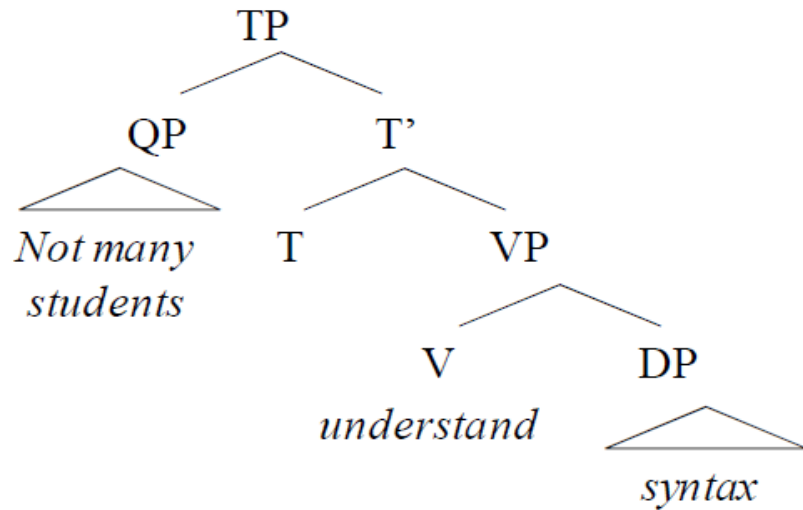
Many students don't understand syntax

Syntax is not understood by many students

- *Meaning 1*: There are many students who do not understand syntax
  - *Meaning 2*: Not many students understand syntax
- 
- Are the same two meanings possible?
  - Are the two sentences identical?
    - subject?
    - predicate?
    - verb?

# Meaning is Structure

Many students don't understand syntax = Syntax is not understood by many students



# Attempts to teach languages to animals

- Sound language

- Dogs: Chaser (John W Pilley, Professor of Psychology, Wofford College)  
<https://www.youtube.com/watch?v=omaHv5sxiFI>
  - learnt a new name and mapped it to a new toy (Darwin)

- Sign Language

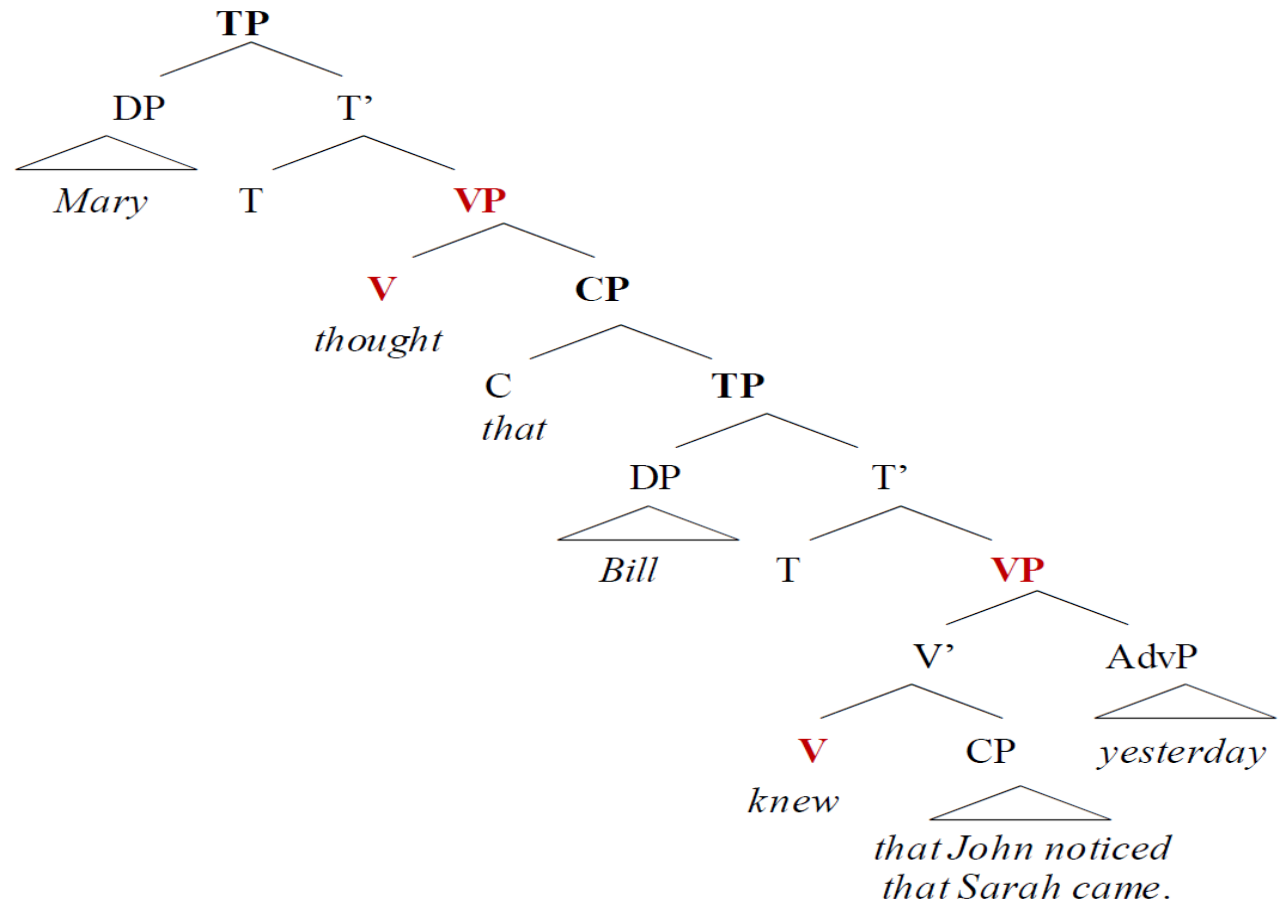
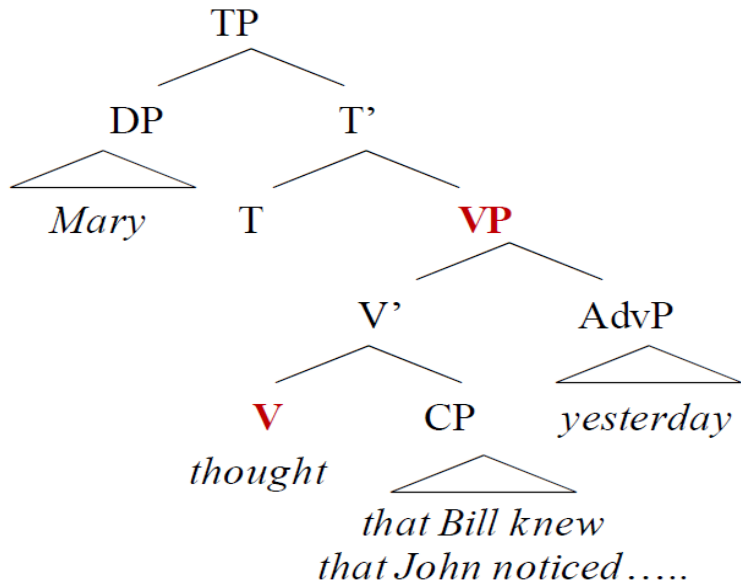
- Dolphins: Akamai (Adam A. Pak and Lou Herman, the Dolphin Institute with Kewalo Marine Lab) <https://www.youtube.com/watch?v=jz3sQsTE5tA>
  - learnt word order (person circle fetch // circle person fetch)
  - takes very long time, whereas, children master it very fast
- Chimps: Nim Chimpsky (Herbert S. Terrace and Thomas Bever, Columbia University)
  - mimicked symbols of American Sign Language
  - did not understand ASL
  - no sentence created

# What is so human about the language?

- Animals cannot develop but children have it innate:
  - sense for a hierarchical structure of the language
    - There is a hat and a banana on the table. They are for us to play.
    - There is a hat and a banana on the table. It is in the hat.
    - Give me the hat and mom the banana.
- How can such a huge thing – the language – be acquired so fast?
  - language is recursive by nature
    - a finite set of rules accounts for the infinite number of sentences in the human language
      - *Mary thought **that** Bill knew **that** John noticed **that** Sarah came.*

# Meaning of Sentence: Ambiguity

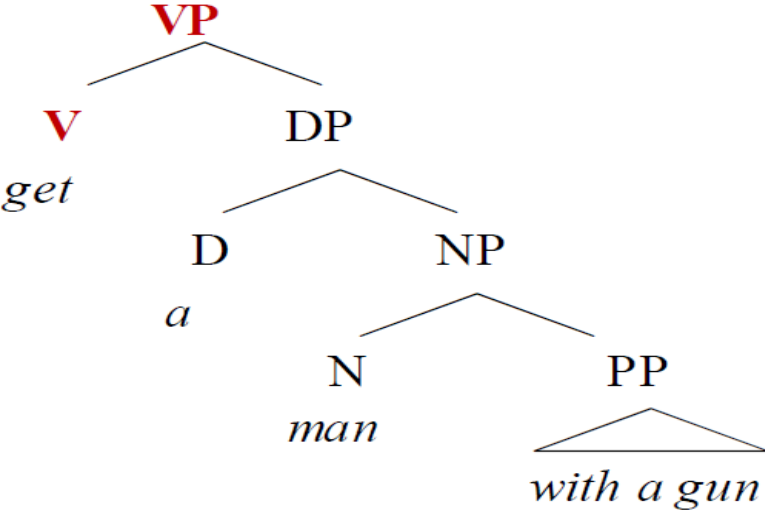
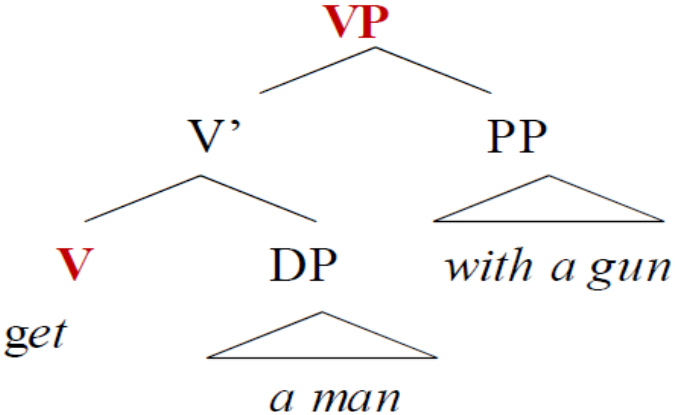
*Mary thought **that** Bill knew **that** John noticed **that** Sarah came yesterday.*



# Meaning of Sentence: Ambiguity

You cannot **get a man with a gun**

(from the musical “Annie Get Your Gun” [https://en.wikipedia.org/wiki/Annie\\_Get\\_Your\\_Gun\\_\(musical\)](https://en.wikipedia.org/wiki/Annie_Get_Your_Gun_(musical)))





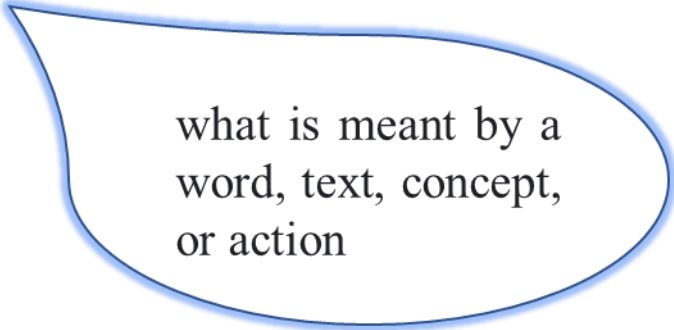
# Take home message

Students understand syntax vs. Syntax is understood by students

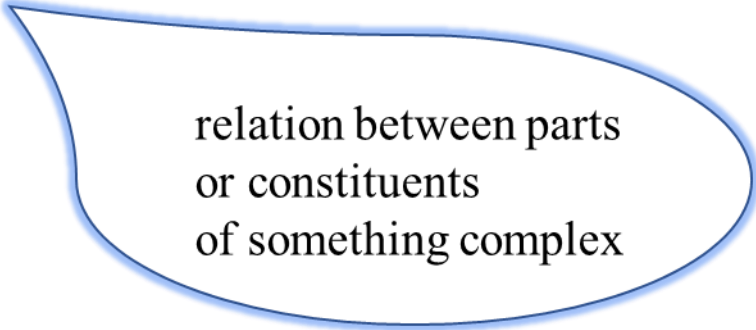
- same meaning different structure
  - what exactly is different
    - subject = students / syntax (*as shown in the tree structure*)
    - agent = students // patient = syntax
- If we have time:
  - SVO or Subject Predicate Object
    - the destruction of the city by Godzilla
      - agent = Godzilla // patient = the city // operation = destruction
    - predicate is function (operation):  $X + Y = Z$

# Take home message (2)

What is meaning and what is structure?



what is meant by a  
word, text, concept,  
or action



relation between parts  
or constituents  
of something complex

- *Meaning*: sense, denotation, compositionality, ambiguity
- *Structure*: recursive hierarchical organization of constituents

Can meaning be structured?     *Yes*

Can a structure prompt a certain meaning?     *Yes, meaning is structure*



**THANK YOU FOR YOUR  
ATTENTION!**

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