Constituency

The basic units of sentence structure
Meaning of a sentence is more than the sum of its words.
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a. The puppy hit the rock
Meaning of a sentence is more than the sum of its words.

a. The puppy hit the rock

b. The rock hit the puppy.
Meaning of a sentence is more than the sum of its words.

a. The puppy hit the rock
b. The rock hit the puppy.

c. The + puppy + hit + the + rock ≠ the + rock + hit + the + puppy.
   (cf. 2 + 3 = 3 + 2)
Meaning of a sentence is more than the sum of its words.

a. The puppy hit the rock

b. The rock hit the puppy.

c. The + puppy + hit + the + rock ≠ the + rock + hit + the + puppy.
   (cf. 2 + 3 = 3 + 2)

This fact is captured by the notion that sentences have *internal structure*
Another argument for structure: Yes/No questions
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Yes/No questions

Yes/no questions can be answered by “yes” or “no” or “maybe”
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Yes/No questions

Yes/no questions can be answered by “yes” or “no” or “maybe”

Bear with me, I’m going to run this using the scientific method, and I have a particular set of hypotheses to run through!
Another argument for structure:
Yes/No questions
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Remember: The S.M. requires that we always go with the *simplest* hypothesis consistent with the data we have. (Occam’s razor)
Another argument for structure: Yes/No questions

Remember: The S.M. requires that we always go with the *simplest* hypothesis consistent with the data we have. (Occam’s razor)

Let’s start with the assumption that there is no structure, and sentences are just a linear string of words. Now consider the following pair of sentences.
Structure
Consider the following sentences:

a. Dave can’t eat chocolate covered almonds.
b. Can’t Dave eat chocolate covered almonds?
Consider the following sentences:

a. Dave can’t eat chocolate covered almonds.
b. Can’t Dave eat chocolate covered almonds?

**Hypothesis #1**

To form a yes/no question move the 2nd word to the front of the sentence.
Structure
Structure

Hypothesis #1
To form a yes/no question move the 2nd word to the front of the sentence
Structure

Hypothesis # 1
To form a yes/no question move the 2nd word to the front of the sentence

Problem:
  a. The TA can’t eat chocolate covered almonds.
  b. *TA the can’t eat chocolate covered almonds?
Structure

**Hypothesis #1**
To form a yes/no question move the 2nd word to the front of the sentence

**Problem:**

a. The TA can’t eat chocolate covered almonds.
b. *TA the can’t eat chocolate covered almonds?

**Hypothesis #2**
To form a yes/no question move the verb to the front of the sentence
Structure
Structure

**Hypothesis # 2**
To form a yes/no question move the verb to the front of the sentence.
Structure

Hypothesis # 2
To form a yes/no question move the verb to the front of the sentence.

Problem:

- a. The TA ate chocolate covered almonds.
- b. *Ate the TA chocolate covered almonds.
Structure

*Hypothesis #2*
To form a yes/no question move the verb to the front of the sentence.

*Problem:*
  a. The TA ate chocolate covered almonds.
  b. *Ate the TA chocolate covered almonds.

*Hypothesis #3*
To form a yes/no question move the auxiliary to the front of the sentence
Structure
Structure

Hypothesis #3
To form a yes/no question move the auxiliary to the front of the sentence
Structure

Hypothesis #3
To form a yes/no question move the auxiliary to the front of the sentence

Problem:
  a. The TA has been eating chocolate covered almonds.
  b. *Been the TA has eating chocolate covered almonds?
**Structure**

*Hypothesis #3*

To form a yes/no question move the auxiliary to the front of the sentence

**Problem:**

a. The TA has been eating chocolate covered almonds.
b. *Been the TA has eating chocolate covered almonds?*

*Hypothesis #4*

To form a yes/no question move the first auxiliary to the front of the sentence
Hypothesis #4
To form a yes/no question move the first auxiliary to the front of the sentence
Structure

Hypothesis #4
To form a yes/no question move the first auxiliary to the front of the sentence

Problem:
a. The TA who is here can eat chocolate covered almonds.
b. *Is the TA here can eat chocolate covered almonds? 
c. (cf. Can the TA who is here eat chocolate covered almonds?)
Hypothesis #4
To form a yes/no question move the first auxiliary to the front of the sentence

Problem:
  a. The TA who is here can eat chocolate covered almonds.
  b. *Is the TA here can eat chocolate covered almonds?
  c. (cf. Can the TA who is here eat chocolate covered almonds?)

What’s the problem here?
  The first auxiliary is part of the subject of the sentence: [The TA who is here] can eat chocolate covered almonds
Structure
Hypothesis 5
To form a yes/no question move the first auxiliary after the subject to the front of the sentence
Structure

Hypothesis 5
To form a yes/no question move the first auxiliary after the subject to the front of the sentence.

We require a notion where there is *internal structure* to the sentence: We need a notion of what the subject is: which words are in the subject and which words aren’t.
Structure

**Hypothesis 5**

- To form a yes/no question move the first auxiliary after the subject to the front of the sentence.

- We require a notion where there is *internal structure* to the sentence: We need a notion of what the subject is: which words are in the subject and which words aren’t.

- There is an alternative hypothesis (move the main clause auxiliary to the front) but this again requires a notion of internal structure: we need to be able to distinguish which words are just in the main clause from those in relative clauses.
Internal structure is represented by the notion of Constituent
A **Constituent** is any unit of internal syntactic structure.
(i.e., a group of words functioning as a unit)

[The TA who is here] can eat chocolate.

Bracketing (as above) is one of two notations for representing, or marking, constituents. (The other is tree notation, which we’ll formally cover next week).
Constituents represent semantically related material
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In the sentence:
Constituents represent semantically related material

In the sentence:

The elephant snorted a bowl of peanuts
Constituents represent semantically related material

In the sentence:

The elephant snorted a bowl of peanuts

There is the intuition that the & elephant are more closely related than peanuts and snorted.
Constituents represent semantically related material

In the sentence:

The elephant snorted a bowl of peanuts

There is the intuition that the & elephant are more closely related than peanuts and snorted.

This intuition is captured with constituency
Constituent
Constituent

Constituent is a group of words that functions as a unit.
Constituent

Constituent is a group of words that *functions as a unit.*

The elephant *snorted* the bowl of peanuts
Constituent

Constituent is a group of words that *functions as a unit*.

The elephant *snorted* the bowl of peanuts
Constituent

Constituent is a group of words that functions as a unit.

The elephant snorted the bowl of peanuts.
Constituent

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The elephant snorted the bowl of peanuts
Constituent

Constituent is a group of words that *functions as a unit*.

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The elephant snorted the bowl of peanuts
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Constituent is a group of words that functions as a unit.

The elephant snorted the bowl of peanuts
Constituency Tests: Modification
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If one word modifies (limits the meaning of) another, then they are probably part of the same constituent.

I bought a red balloon

‘a’ and ‘red’ both modify ‘balloon’ so they are all part of the same constituent: [a red balloon]
Constituency Tests: Movement
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If you can move a group of words, they are functioning as a unit—and are a constituent:
Constituency Tests: Movement

If you can move a group of words, they are functioning as a unit—and are a constituent:

- **Clefting**: It is/was ___________ that …
Constituency Tests: Movement

If you can move a group of words, they are functioning as a unit—and are a constituent:

- **Clefting**: It is/was ____________ that …
  
it was [a brand new car] that he bought
Constituency Tests: Movement

If you can move a group of words, they are functioning as a unit—and are a constituent:

- **Clefting**: It is/was __________ that …
  It was [a brand new car] that he bought

- **Preposing**: [Big bowls of beans] are what I like.
Constituency Tests: Movement

If you can move a group of words, they are functioning as a unit—and are a constituent:

- **Clefting**: It is/was ___________ that …
  
  It was [a brand new car] that he bought

- **Preposing**: [Big bowls of beans] are what I like.

- **Passive**: [The big boy] was kissed by the slobbering dog.
Constituency Tests: Movement

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- **Clefting**: It is/was ___________ that …
  It was [a brand new car] that he bought

- **Preposing**: [Big bowls of beans] are what I like.

- **Passive**: [The big boy] was kissed by the slobbering dog.

*There are other kinds of movement!*
Constituency Tests: Replacement
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If you can replace a group of words with a single word (keeping the meaning roughly the same) then they form a constituent:
Constituency Tests: Replacement

If you can replace a group of words with a single word (keeping the meaning roughly the same) then they form a constituent:

I’ve always loved [the man in a natty suit]
Constituency Tests: Replacement

If you can replace a group of words with a single word (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
- I’ve always loved [John]
Constituency Tests: Replacement

If you can replace a group of words with a single word (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
- I’ve always loved [John]
- I’ve always loved [him]
Constituency Tests: Pro-form Replacement
Constituency Tests: *Pro*-form Replacement

If you can replace a group of words with a pro-form (pronoun, pro-verb, pro-adjective etc.) (keeping the meaning roughly the same) then they form a constituent:
Constituency Tests: *Pro*-form Replacement

If you can replace a group of words with a *pro*-form (pronoun, pro-verb, pro-adjective etc.) (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
Constituency Tests: Pro-form Replacement

If you can replace a group of words with a pro-form (pronoun, pro-verb, pro-adjective etc.) (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
- I’ve always loved [him]
Constituency Tests: *Pro*-form Replacement

If you can replace a group of words with a pro-form (pronoun, pro-verb, pro-adjective etc.) (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
  - I’ve always loved [him]
- Susan [bought a truck with mag wheels]
Constituency Tests: *Pro*-form Replacement

If you can replace a group of words with a pro-form (pronoun, pro-verb, pro-adjective etc.) (keeping the meaning roughly the same) then they form a constituent:

- I’ve always loved [the man in a natty suit]
  - I’ve always loved [him]
- Susan [bought a truck with mag wheels]
  - Susan [did (so) too]
Constituency Tests: Ellipsis
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This is a special constituency test for a constituent called a Verb Phrase (VP). If an item is a VP, then it can be deleted under (near) identity with another VP.
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This is a special constituency test for a constituent called a Verb Phrase (VP). If an item is a VP, then it can be deleted under (near) identity with another VP.

Bill [found a gold nugget in the stream] but I don’t think John will [find a gold nugget in the stream]
Constituency Tests: Stand Alone
(sentence fragment)
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(sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?
Constituency Tests: Stand Alone (sentence fragment)

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Constituency Tests: Stand Alone (sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
Constituency Tests: Stand Alone
(sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]
Constituency Tests: Stand Alone (sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]
Constituency Tests: Stand Alone
(sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]

Q: What did Heidi do at the fleamarket?
Constituency Tests: Stand Alone
(sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]

Q: What did Heidi do at the flea market?
A: [Buy some cheap T-shirts]
Constituency Tests: Stand Alone
(sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]

Q: What did Heidi do at the flea market?
A: [Buy some cheap T-shirts]
Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?
A: [A bag of moldy vacuum cleaner parts]

Q: What did Heidi do at the flea market?
A: [Buy some cheap T-shirts]

Q: Where did Heidi put them?
Constituency Tests: Stand Alone (sentence fragment)

Can the group of words serve as a sentence fragment in response to a question?

Q: What did Heidi buy at the flea market?  
A: [A bag of moldy vacuum cleaner parts]

Q: What did Heidi do at the flea market?  
A: [Buy some cheap T-shirts]

Q: Where did Heidi put them?  
A: [In the back of her car]
Constituency Tests: Conjunction
Constituency Tests: Conjunction

If the group of words can be coordinated (or conjoined) with another string, then it is a constituent of the same type:

[John] and [the man] went to the store

*[John] and [very blue] went to the store
Constituency Tests: Conjunction

If the group of words can be coordinated (or conjoined) with another string, then it is a constituent of the same type:

[John] and [the man] went to the store
*[John] and [very blue] went to the store

**LINGUISTICS GENERAL'S WARNING:** There are a *lot* of situations where the conjunction test will give you false results. Use it sparingly and with caution! (See textbook for details.)
Caution:
Caution:

The constituency tests are NOT fool proof. You should always apply at least two to any given string of words, just in case you have got false results for some reason.
John [eats at really fancy restaurants]
John [eats at really fancy restaurants]

Stand Alone?

- What does John do in his spare time?
- Eat at really fancy restaurants.
John [eats at really fancy restaurants]

Stand Alone?
- What does John do in his spare time?
- Eat at really fancy restaurants.

Replace by a Pro-form (pronoun, pro-verb)?
- John [eats at really fancy restaurants] and Bill [does (so) too]
John [eats at really fancy restaurants]

- **Stand Alone?**
  - What does John do in his spare time?
  - Eat at really fancy restaurants.

- **Replace by a Pro-form (pronoun, pro-verb)?**
  - John [eats at really fancy restaurants] and Bill [does (so) too]

- **Move?**
  - Eating at really fancy restaurants, that’s John’s favorite pastime.
  - I told John to eat at really fancy restaurants, and [eat at really fancy restaurants] he will!
John [eats at really] fancy restaurants
John [eats at really] fancy restaurants

Stand Alone?
- What does John do in his spare time?
- *Eat at really.
John [eats at really] fancy restaurants

Stand Alone?
- What does John do in his spare time?
  *Eat at really.

Replace by a Pro-form (pronoun, proverb)?
- *John [eats at really] fancy restaurants and Bill [does so too] fancy restaurants
John [eats at really] fancy restaurants

Stand Alone?
- What does John do in his spare time?
  *Eat at really.

Replace by a Pro-form (pronoun, proverb)?
- *John [eats at really] fancy restaurants and Bill [does so too] fancy restaurants

Move?
- *Eating at really, that’s John’s favorite pastime.
- *Eating at really is what John does fancy restaurants.
Constituents are hierarchically organized

The man eats at fancy restaurants.
Constituents are hierarchically organized

The man eats at fancy restaurants.
Summary: Constituency
Summary: Constituency

**Constituent**: A group of words that functions as a unit.
Summary: Constituency

Constituent: A group of words that functions as a unit.

Captures judgments about the relatedness of words, and about the hierarchical structure of sentences
Summary: Constituency
Summary: Constituency

Constituency tests:
- Modification
- Movement
- Replacement (single word & *pro*-form)
- Ellipsis (for VPs)
- Stand Alone (Sentence Fragment)
- Co-ordination/Conjunction
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- Modification
- Movement
- Replacement (single word & *pro*-form)
- Ellipsis (for VPs)
- Stand Alone (Sentence Fragment)
- Co-ordination/Conjunction

Tests are NOT infallible. Use more than 1!