Psych 56L/ Ling 51: Acquisition of Language

Lecture 12

Development of Syntax & Morphology II

Announcements

Homework 2 due today

No office hours 11/13 or 11/18 (please email to set up an appointment if you need to see me)

From One Word to Many

Beyond Single Word Speech

Vertical constructions: before producing two-word utterances, some children utter successive single-word utterances that seem to be related to each other in meaning

Ex: little girl pointing to her infected eye: "Ow. Eye."

Why not a two-word utterance "Ow - eye!"? Intonation indicated these were single word utterances.

Often vertical constructions build on words previously said around/to the child.

"Your eye looks red, sweetie!"

"Ow. Eye."

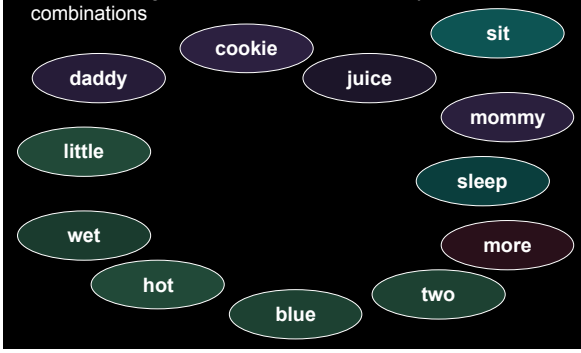
Beyond Single Word Speech

Unanalyzed combinations: most children have transitional forms that combine multiple words, but which the child doesn't realize are multiple words

Ex: "Iwant" (I want), "Idunno" (I don't know)

Productive Word Combination

Productive: being able to use known vocabulary in different combinations



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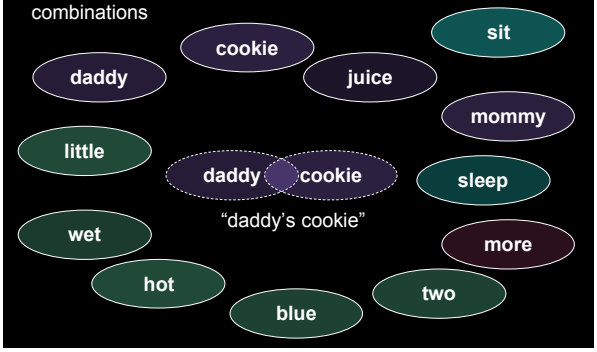

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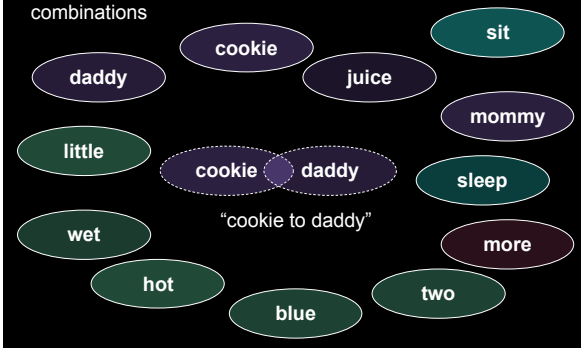

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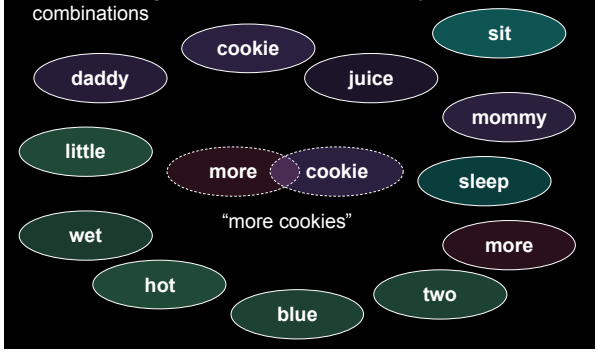

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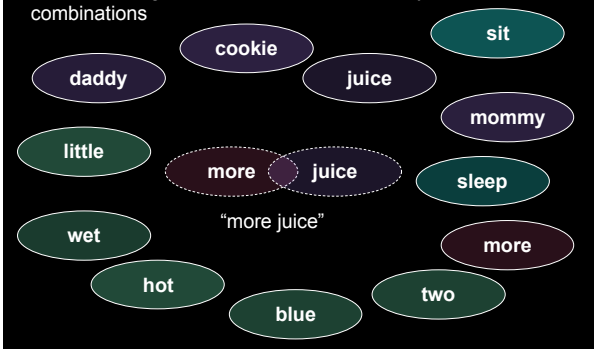

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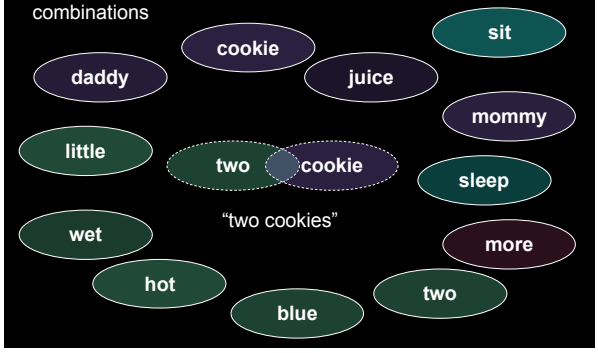

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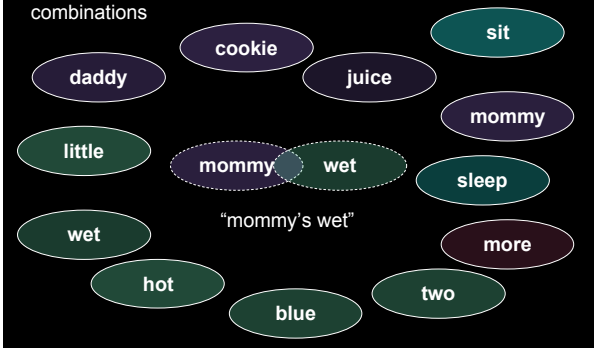

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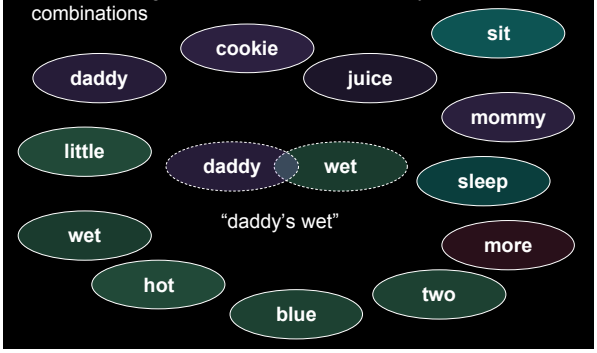

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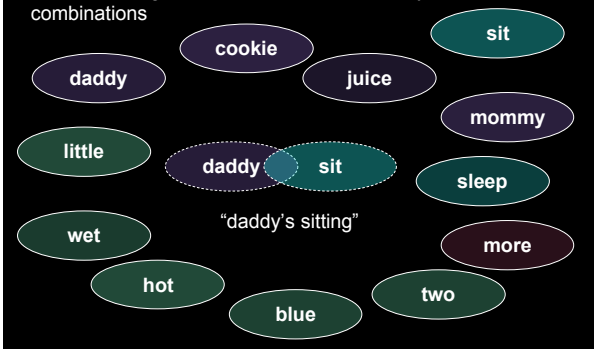


Meaning of Word Combinations

Although children can express a variety of meaning with two-word utterances, children's first word combination tend to be limited in their range of relational meaning.

relational meaning: referring to relation between referents

Ex: "my teddy" --> teddy belongs to me, relationship between me and teddy

Meaning of Word Combinations

Some types of relational meaning

agent + action	Daddy sit
action + object	drive car
agent + object	Mommy sock
agent + location	sit chair
entity + location	toy floor
possessor + possession	my teddy
entity + attribute	crayon big
demonstrative + entity	this telephone

Note how these differ from "Ow. Eye."

Beyond Two Words

Even when children produce multiword utterances, they still produce single word utterances. Point: children's development measured by the *maximum* number of words they produce in a given utterance.

When children start to put 3 words together, many are combinations of the relational meanings expressed in the two word stage.

"I watching cars" = "I watching" + "watching cars"
"Put it table" = "Put it" + "it table"

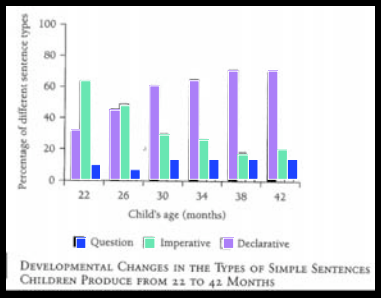
Beyond Two Words

Early sentences tend to be imperatives (commands), as well as affirmative, declarative statements. Questions and negations come later.

Imperative:
"Dance with them!"
Affirmative, declarative:
"I dance with them."

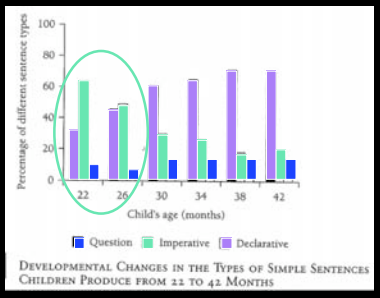
Question: "Can I dance with them?"
Negation: "I don't dance with them."

Beyond Two Words



Developmental Changes in the Types of Simple Sentences Children Produce from 22 to 42 Months

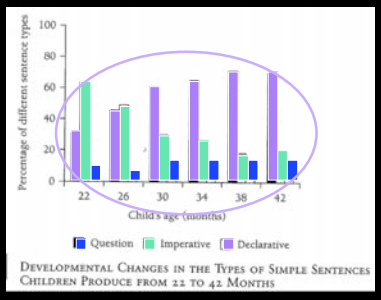
Beyond Two Words



Developmental Changes in the Types of Simple Sentences Children Produce from 22 to 42 Months

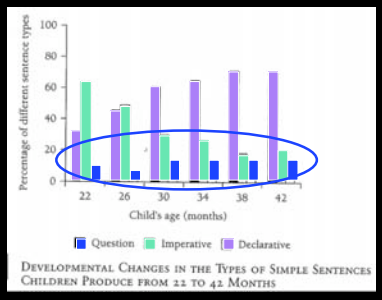
Imperatives dominate early on, then taper off.

Beyond Two Words



Declaratives always a fairly large proportion

Beyond Two Words



Questions always a fairly small proportion

Telegraphic Speech

Typical grammatical categories included in children's multiword speech: nouns, verbs, adjectives

Typical categories missing: determiners (the, a), prepositions (to, by, from), auxiliary verbs (am, are, was), bound morphemes (-s plural marker)

Basic division of meaning:

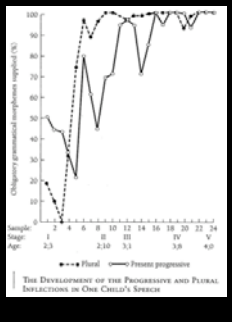
more contentful vs. more grammatical

You can communicate quite well without the more grammatical categories.

Morphological Development

Between 2 and 3 years old, children begin adding in the more grammatical categories - in particular the bound morphemes.

Usage of bound morpheme (either -ing progressive or -s plural) when required

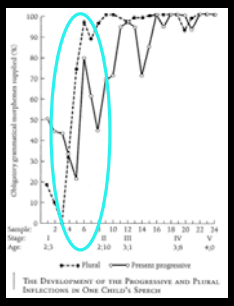


Morphological Development

Between 2 and 3 years old, children begin adding in the more grammatical categories - in particular the bound morphemes.

Usage of bound morpheme (either -ing progressive or -s plural) when required

Development is gradual, though there are large ranges - not all bound morphemes come in at the same time



Morphological Development

The order of acquisition for bound morphemes in English does appear to be similar across different children, however (even if their rates of development are quite different).

But what about development crosslinguistically? Remember, English is fairly impoverished morphologically when compared to languages like Hungarian.

English: "the goblin" = always the same form
Hungarian: "the goblin" may have up to 16 different forms, depending on what "the goblin" 's role in the sentence is

Morphological Development

Note: Morphologically rich languages are not necessarily more difficult for children to learn. Regular/predictable systems are easier for children to learn than languages that have multiple exceptions (like English often does).

Regularity vs. exceptions in English (ex: past tense):

We laughed.
We hugged.
We danced.
* We singed. (We sang.)
* We runned. (We ran.)

Morphological Development

Note: Morphologically rich languages are not necessarily more difficult for children to learn. Regular/predictable systems are easier for children to learn than languages that have multiple exceptions (like English often does).

Regular morphologically rich language: Turkish

Inflected forms seem no harder for Turkish children to acquire. In fact, they often produce inflected forms (equivalent to English "*laughed*") before they even combine words in multiple word utterances.

Morphological Development

Other factors that help make morphology easier to learn:

- high frequency (more frequent morphemes are easier)
- regularity in form (morpheme is always the same)
- fixed position relative to the stem (ex: morpheme always attaches to the end of the word)
- morpheme is easy to recognize as separate from the stem (ex: laugh + ed)
- rhythm of language makes morpheme perceptually salient (ex: receives stress)

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Negation: requires use of negative word and auxiliary verb

Stage 1: external negative marker
No wipe finger.
No the sun shining.
No mitten.
Wear mitten no.

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Negation: requires use of negative word and auxiliary verb

Stage 2: internal negative marker
I can't see you.
I don't like you.
I no want envelope.

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Negation: requires use of negative word and auxiliary verb

Stage 3: auxiliary constructions
I didn't did it.
Donna won't let go.
No, it isn't.

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Yes/No: Questions that can be answered with yes/no.
Usually require permutation of main verb and auxiliary verb, or insertion of dummy "do" in English.

Can we dance with all the goblins? (from "We can dance…")

We can dance with all the goblins

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Yes/No: Questions that can be answered with yes/no.
Usually require permutation of main verb and auxiliary verb, or insertion of dummy "do" in English.

Did we dance with all the goblins? (from "We danced…")

We did dance with all the goblins.
We danced with all the goblins.

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Wh-Questions: Questions that begin with "wh" words.
Require permutation of auxiliary verbs and use of "wh" word.

Who can we dance with? (from "We can dance with…")

We can dance with who
We can dance with all the goblins

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Stage 1: external question marker
Y/N
I ride train?
Sit chair?

Wh
What cowboy doing?
What a bandaid is?

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Stage 2: auxiliaries without inversion in wh

Y/N

Does the kitty stand up?

Did I caught it?

Wh

Where the other Joe will drive?

Why kitty can't stand up?

Development of Sentence Forms

Not all sentence forms are created equal - some are harder to get the hang of than others.

Questions: yes/no questions vs. wh-questions

Stage 3: auxiliaries with inversion in wh

Y/N

(N/A)

Wh

What did you doed?

What does whiskey taste like?

Development of Comprehension

Getting to Children's Knowedge

Clever comprehension strategies children use:

Use the order of words to predict who did what to whom.

Works really well for active sentences:
"The knight bumped the dwarf."

…but not so well for passives:
"The knight was bumped by the dwarf."

Getting to Children's Knowedge

Clever comprehension strategies children use:

Use the order of words to predict who did what to whom.

Works really well for sentences where order-of-mention is the order of action:
"Jareth threw off his disguise before Hoggle cowered."

…but not so well for ones where it's not:
"Hoggle cowered after Jareth threw off his disguise."

Getting to Children's Knowedge

Clever comprehension strategies children use:

Use world knowledge to figure out likely sequence of events.

Works really well for normal sentences:
"Jareth intimidated Hoggle."

…but not so well for ones where the events are not predictable from world knowledge:
"Hoggle intimidated Jareth."

Getting Around the Clever Strategies

Using indirect methods like preferential looking paradigm, we can test children's comprehension of multiword combinations even before they can only produce one word utterances themselves

Hirsh-Pasek & Golinkoff (1991): 13- to 15-month olds can comprehend improbable sentences with relational properties like "She's kissing the keys."

Hirsh-Pasek & Golinkoff (1991): 16- to 18-month olds can tell the difference between complex questions like "Where is Cookie Monster washing Big Bird?" and "Where is Big Bird washing Cookie Monster?"

Children understand more about structural relationships than they let on with their production!

Getting Around the Clever Strategies

Just because children don't use grammatical morphemes in their own speech doesn't mean they don't understand that adults use them and they should use them, too.

Shipley, Smith, & Gleitman (1969): children who are telegraphic speakers prefer to respond to full commands like "Throw me the ball" over their own telegraphic versions ("Throw ball")

Gerken & McIntosh (1993): children are particular about which grammatical morphemes occur where - they can tell the difference between "Find the dog for me" and "Find was dog for me"

General Points

Sequence of grammatical development that occurs in comprehension is like the sequence in production, but it occurs earlier.

Grammatical competence seems to be achieved fairly early. However grammatical rules are acquired, they must be acquired quickly. This places constraints on what kind of developmental theory can be proposed, because it must account for this acquisition data.

Another example of grammatical competence

Comprehension of complex sentences

(from J. de Villiers 1995)

"Once there was a boy who loved climbing trees in the forest. One afternoon he slipped and fell to the ground. He picked himself up and went home. That night when he had a bath, he saw a big bruise on his arm. He said to his Dad, "I must have hurt myself when I fell this afternoon."

Another example of grammatical competence

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When did the boy say he fell?

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When did the boy say he fell?	Ambiguous!
When did the boy say he fell?	In the afternoon.
When did the boy say he fell?	At night.

Another example of grammatical competence

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When did the boy say how he fell?	Unambiguous
When did the boy say how he fell?	*In the afternoon.*
When did the boy say how he fell?	At night.

Another example of grammatical competence

Comprehension of complex sentences

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Children as young as 3 years old have adult interpretations!

A cautionary note

Sometimes children's production is ahead of their comprehension.

Example: If-then statements

The may be able to say things like, "If I eat all my spinach, I can have ice cream for dessert" while still not understanding the full implications of if-then statements.

(In fact, many adults don't understand them either until they take a logic class.)

A version of if-then statements tends to appear on IQ tests:

If all As are Bs, and some Bs are Cs, then are all As Cs?

A cautionary note

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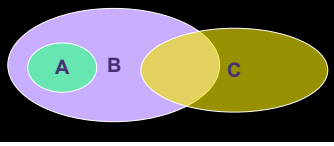
Example: If-then statements

The may be able to say things like, "If I eat all my spinach, I can have ice cream for dessert" while still not understanding the full implications of if-then statements.

If all As are Bs, and some Bs are Cs, then are all As Cs?

Not necessarily…



Syntax & Morphology Development: Recap

Children progress from single word utterances to multiword utterances, learning to combine items in their lexicon in a productive manner to express the meanings they want.

Children's developmental patterns tend to follow predictable paths, demonstrating their gradual acquisition of more grammatical knowledge.

Children seem to have acquired a very complex system of grammar at a very young age, though it is not necessarily the complete adult system.

Questions?