

MLU

- Mean length of utterance
- A gross measure of language development
 - Does not include language complexity
 - Does not include grammatical complexity or appropriateness
- Correlates with age, but can vary wildly among children the same age

Rules for measuring MLU

- Collect 50-100 intelligible utterances
- If even a single word in an utterance is unintelligible, do not include that utterance
- Utterance = a sentence, or a shorter unit separated by a pause, pitch drop, or other indication of a new thought
- Count the number of morphemes per utterance.
- Sum these, and divide by the number of utterances

How to count morphemes

- Compound words count as a single morpheme
 - Railroad, baseball
- Ritualized reduplications count as a single morpheme
 - Choo-choo, night-night
- Proper names & diminutives count as a single morpheme
 - Big Bird, Oscar the Grouch, horsie, dollie
- Irregular past tense verbs & plurals count as a single morpheme
 - Took, went, geese, men

How to count morphemes, cont.

- Catenatives count as a single morpheme
 - Wanna, gonna, hafta
- Do not count fillers
 - Umm, err, uhhh
- -s plural counts as a separate morpheme
 - Cats = 2 morphemes
 - This is the case even if overregularized
 - mouses= 2 morphemes, even though mice = 1
 - Do not count the plural as a separate morpheme if the word never occurs as singular
 - Pants, clothes

How to count morphemes, cont.

- -ed past tense is a separate morpheme
 - Walked, counted & goed = 2 morphemes each
- -ing counts as a separate morpheme
- -s third person marker counts as a separate morpheme
 - He likes you = 4 morphemes
 - Exception: does is a single morpheme
- Possessive marker counts as a separate morpheme
- Contractions generally count as 2 morphemes
 - She'll, he'll, we've, can't
 - Exceptions: let's, don't & won't are treated as a single morpheme

How to count morphemes, cont.

- Ignore dysfluencies, except for most complete form
 - C-c-c-cookies

Practice example

- I want ball.
- That blue.
- Give it to me.
- Doggie's hungry
- Doggie eated.
- xxx wagon.
- I hafta go potty.
- She likes toys.
- He go he go bye-bye.
- The mice are sleeping.

<http://web.clas.ufl.edu/users/bwjohn/4004/Materials/MLU.htm>

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Practice example

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- The mice are sleeping. 3

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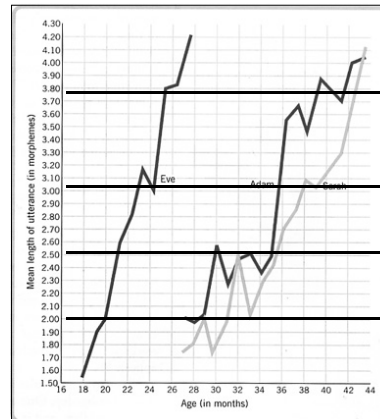
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Calculating MLU

- Sum: $3+2+4+3+3+4+5+3+5 = 32$
- # utterances = 9
- Average MLU = $32/9 = 3.6$

MLU development

- MLU 1.0 - 2.0 Stage I
 - 12-26 months
- MLU 2.0 - 2.5 Stage II - morphological development
 - 27-30 months
- MLU 2.5-3.0 Stage III - sentence form development
 - 31-34 months
- MLU 3.0 - 3.75 Stage IV - embedding of sentence elements
 - 35-40 months
- MLU 3.75 - 4.5 Stage V - Joining clauses
 - 41-46 months
- MLU 4.5 + Stage V+



MLU development

MLU & Language development

- Stage I (MLU 1.0-2.0, 12-26 months)
 - Includes 1-word stage & 2-word stage
 - Most words are single syllables
 - Word combinations occur with correct order
- Stage II (MLU 2.0-2.5, 27-30 months)
 - I, it, this, that; me, mine, my & you
 - Grammatical morphemes emerge
 - Elaborates NP in object position

MLU & Language development

- Stage III (MLU 2.5-3.0, 31-34 months)
 - You, your, yours, she, he, we, this, that, these, those
 - A few quantifiers
 - Elaborates NP in subject & object position
 - Vocabulary is about 1200 words
 - Auxiliary verbs appearing
 - Begin syntactic transformations
 - Bill is tall. --> Is Bill tall?

MLU & Language development

- Stage IV (MLU 3.0-3.75, 35-40 months)
 - They, us, his, her, hers, them
 - Only one element in front of noun
 - Vocabulary is about 1500 words
 - Start to use multi-clause sentences - **embedding**
 - Phrases
 - Prepositional phrases, participial phrases, infinitive phrases, gerunds
 - Clauses
 - Object complement clauses, wh- question clauses, relative clauses

MLU & Language development

- Stage V (MLU 3.75-4.5, 41-46 months)
 - Its, our, him, their, theirs, myself, yourself
 - Only one element in front of noun
 - Conjoins clauses with and
 - Understands superlatives (not comparatives)
 - Primitive tag questions
 - Embeds relative clauses in object position
 - Vocabulary is about 1900 words

How these match other milestones

- Stage I:
 - Child starts walking
 - By end, can run, pull off socks
 - By 24 months, starts to scribble in circles



How these match other milestones

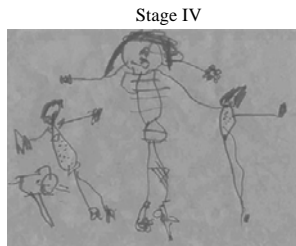
- Stage II
 - Can jump, pull off clothes
 - Can draw closed figures
- Stage III
 - Learns to ride a bike, hop on one foot, wash face
 - Starts to count



www.ling.umd.edu/Courses/Ling240/slides5.ppt

How these match other milestones

- Stage IV
 - Vocabulary is about 1500 words
 - Start to use multi-clause sentences
 - Can catch a ball, use scissors
- Stage V
 - Can catch a ball, use scissors
 - Learn mathematical notions



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Adult rule for forming negative sentences

- **Place the negative after the first auxiliary**
 - John is singing --> John is not singing
 - John has been singing --> John has not been singing
 - John could have been singing --> John could not have been singing
- If sentence has no auxiliary, add “do” to the sentence and place the negative after it
 - John **walked** home --> John **did** not walk home

Saying “no”

- Earliest negations are one-word utterances
 - No, allgone, etc.
- Two word negations: Negative + {noun, verb, adjective}
 - No bed, no truck, allgone milk

Saying “no”

- MLU 1.8 - 2.0 (stages I - II)
 - Attach “no” or “not” to the beginning of an utterance (neg + S)
 - No wipe finger
 - No a bad boy
 - No singing song
 - Not a teddy bear
 - Very rarely, S+neg
 - Wipe finger no

Saying “no”

- MLU 2.5 - 3; Stages II - III
 - Negatives appear after the subject NP and before the verb (NP + neg + VP)
 - I no want envelope
 - I not taste them
 - He no bite you
 - He not little, he big.

From Bellugi, 1967

Saying “no”

- Appearance of can't & don't
 - Don't wake me up again
 - Don't leave me
 - I don't 'member.
 - I don't want some soup.
 - I can't catch you.
 - She can't stand up, huh?

From Bellugi, 1967

Saying “no”

- MLU 3.4 - 3.6 (stage III-IV)
 - NP + AUX + Neg + VP
 - I don't like Boston.
 - You didn't get some water in there.
 - This doesn't work.
 - I'm not a turtle.
 - But he isn't there.
 - I won't ruin her hair.
 - I can't call the baby.
 - I didn't did it.

From Bellugi, 1967

Saying “no”

- Multiple negatives
 - He never won't scare me.
 - No one's not going to do what I'm doing.
 - Now, it's not no big job, look.
- MLU 4.0 (stage V)
 - Correct use of negative
 - He is not taking the walls down

From Bellugi, 1967

Adult rules for asking questions

- Y/N questions
 - Place the **first auxiliary in front of the subject NP**
 - John is singing --> Is John singing?
 - John has been singing --> Has John been singing?
 - John could have been singing --> Could John have been singing?
- Wh questions
 - Like y/n, but add wh-word to start of sentence
 - Wh words = who, what, where, when, why how
 - John is singing --> What is John singing?
 - John could have been singing --> What could John have been singing?
 - If there is no auxiliary, then add do to the sentence and place it in front of the subject NP
 - John sang. --> Why did John sing?

Asking questions

- MLU Stage I
 - Y/N questions indicated by rising intonation
 - See hole? Mommy milk?
 - Wh-questions are restricted in variety
 - What dat? Why not? Where doggie go?
- MLU Stages II-III
 - You can't fix it? See my doggy?
 - Why you see seal? What book name
 - Why not... me can't dance?

From Bellugi, 1967

Asking questions

- MLU Stage IV
 - Can't you fix it?
 - Isn't he hungry?
 - Is he sleeping?
 - Do I look like a baby?

 - Where my tiger?
 - Does turtles crawl?
 - What he can ride in?