

# LANGUAGE SAMPLING & BILINGUALISM

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COMD570: Introduction to Language Development

# Sign(s) of the day

- Eat
- Food
- Drink (Verb)
- Drink (Noun)
- Sleep
- Sit
- Chair
- Stand

# Language assessment and sampling

# Methods of Data Collection



# Methods of Data Collection

- Structured
- Sampling/Observation (Unstructured)
- Pros & Cons of each of these

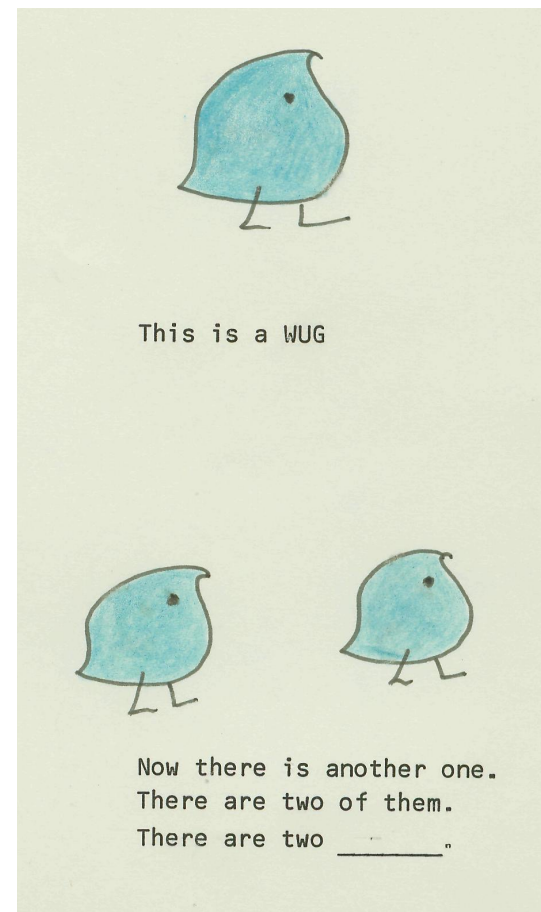
# Structured Collection

- **Online methods:**

- Measurement of perception/comprehension or production *as it is happening*
- Eye tracking, fMRI, EEG, Preferential Looking Paradigms

- **Offline methods:**

- Measure the endpoint or product of linguistic processes
- Answering questions, pointing to a picture, standardized assessments



# Sampling/Observation

- **Naturalistic language samples**
  - Recording of child producing “natural” speech, analyzed after the fact
  - Can be spontaneous or elicited/structured

# Pros and Cons?

- **Structured Approach**

- Can control confounding factors and isolate domain or variable of interest
- Highly standardized across individuals – enables effective analyses of group effects and individual differences
- Data do not necessarily reflect children's everyday language use
- Meta-linguistic: asking subject to understand the task as well as use language

# Pros and Cons?

- **Language Sampling**

- More accurate reflection of daily language use
- Influenced by many factors that are hard to control:
  - Child intelligibility/cooperation/mood
  - Environmental context
- Depending on your goal, you may need to sample across multiple days and contexts
- Doesn't tap into comprehension very well

# Language Sampling

- General Guidelines:
  - Best to have >100 utterances
  - Naturalistic (rather than artificial)
  - Representative of actual language use, rather than artificially tailored to that experimental context

# Mean Length of Utterance (MLU)

- How big are the utterances that children produce?
  - A *very* rough index of language development
  - Many other factors go into MLU besides the development of language abilities!
    - Can you think of some?
- MLU: can be measured in words or morphemes
  - In English, MLU in words and morphemes are highly correlated
  - In this class, we will measure MLU in morphemes

# MLU in Morphemes

- Derivational morphology and compounding DO NOT COUNT for purposes of MLU
- Only inflectional morphology counts
- Repeat: when counting up the number of morphemes in an utterance, you ignore derivational morphology and compounding.
  - Do not count a derivational morpheme as a separate morpheme from the root!
  - For compounds, count the entire word as a single morpheme

# MLU in Morphemes

- Take the following utterance:
  - *I delivered the patios to the worker on the houseboat*
  - How many inflectional morphemes are in that sentence?
  - How many derivational morphemes are in that sentence?
  - How many compound words are in that sentence?
  - How many total morphemes are in the sentence, excluding derivational morphemes and counting compounds as one morpheme?
    - **Use THIS number for your MLU calculations**

# MLU in Morphemes

- Take the following utterance:
  - *I delivered the patios to the worker on the houseboat*
  - How many inflectional morphemes are in that sentence? **2**
  - How many derivational morphemes are in that sentence? **1**
  - How many compound words are in that sentence? **1**
  - How many total morphemes are in the sentence, excluding derivational morphemes and counting compounds as one morpheme? **12**
    - **Use THIS number for your MLU calculations**

MLU and age  
are  
correlated

MLU	Age (months)
1.31	18
1.62	21
1.92	24
2.54	27
2.85	30
3.16	33
3.47	36
3.78	42
4.09	45
4.40	48
4.71	51
5.02	54
5.34	57

## For MLU in morphemes, these count as separate morphemes:

- The *–s* plural morpheme (e.g. *cat-s*, *dog-s*).
  - Count it even when used incorrectly on irregular plurals
- The *–ed* past tense morpheme (*walk-ed*, *play-ed*).
  - Count it even when used on irregular verbs (*go-ed*, *drink-ed*)
- The *–ing* present progressive morpheme (e.g. *walk-ing*, *count-ing*)
- The *–s* 3<sup>rd</sup> person regular tense marker (e.g. *he like-s sweets*, *Bob walk-s fast*)
  - Exception: *does* counts as one morpheme\*
- Possessive *'s* morpheme (e.g. *mummy's hat*, *boy's toy*).
- Contractions (e.g. *she's*, *he'll*, *they're*, *what's*, *she'd*, *we've*, *can't*, *aren't*) all count as 2 morphemes each
  - Exceptions: *let's*, *don't* and *won't*, are assumed to be understood as single units, therefore 1 morpheme\*

\*this is an oversimplification, like many things here!

# For MLU in morphemes, be careful:

- False starts, reformulations, or repetitions do not count
  - Unless the repetition is for emphasis (e.g., “[then] **then** [he go] **he went to the zoo**” is counted as 6 morphemes; “No. No! No!!!!” is counted as 3).
- Derivational morphology, reduplications, and proper names count as single words (e.g. *fireman*, *choo choo*, *Big Bird*).
- Irregular past tense verbs and irregular plurals count as one morpheme (e.g. *took*, *went*, *mice*, *men*).
- Diminutives (e.g. *doggie*, *horsie*, *dolly*) and catenatives (e.g. *gonna*, *wanna*, *hafta*) count as one morpheme
- Fillers do not count (e.g. *um*, *well*, *oh*, *um*, *hmm*).

# Language Sample Project – Part A

- Each student will get a total of FOUR (4) language samples
  - TWO (2) different children, TWO (2) samples for each child
  - One child will be Typically Developing (TD) and one will be a Late Talker (LT)
- Morphological analysis:
  - Count up the number of morphemes of each type and report in table
- MLU:
  - Calculate the mean length of utterance (MLU) for the entire sample
  - The average number of morphemes per utterance, using the above guidelines
- Ascertain which of Brown's stages the sample falls into & why
  - Will discuss this in a couple weeks under preschool development of language form
- Decide which child is TD and which one is LT & why

# Language Sample Project – Part B

- **GRADS ONLY**
- Additional Pragmatic analysis
  - For each utterance, identify its pragmatic function (will be discussed in preschool pragmatic development)
  - Count up the number of each pragmatic type and report in table
  - Briefly discuss the child's pragmatic development

# Language Sampling Demo

# Bilingualism

# What is bilingualism?

- Bilingualism: speaking two languages at some level of proficiency
  - The level of proficiency of a second language (L2) varies considerably, from minimal (e.g. high school/college) to fluent
  - First language (L1) proficiency is high unless there is some kind of disorder at play
  - Of course, people vary in their vocabulary and other aspects of verbal intelligence but all native/L1 speakers have acquired a full grammatical competence

# Multilingualism

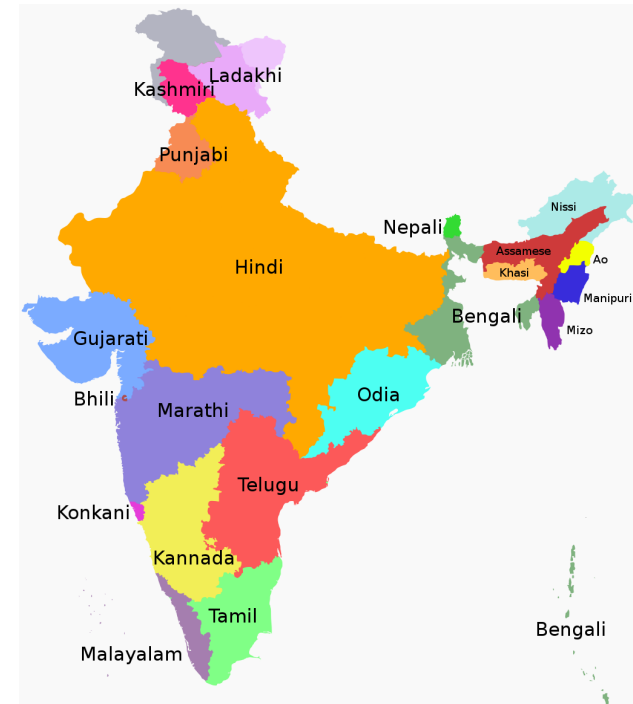
- **Multilingualism:** speaking two *or more* languages
  - **Polyglots:** individuals who are highly proficient at learning languages and speak at least three languages highly proficiently



# Multilingualism

- Most of the world is multilingual
  - ~56% of inhabitants of Europe are multilingual
  - In Asian and Africa, multilingualism is the norm
    - There are ~516 distinct languages in Nigeria, ~427 in India, ~200 in Brazil
  - ~20% of people in the U.S. are multilingual
- Most countries adopt a *lingua franca*:
  - Standard or universal language that is used for education, business and government

Language Families of India



# Order of acquisition

- Simultaneous vs. sequential bilingualism
  - **Simultaneous:** learn both languages from birth (parents with different native languages, some immigrants)
  - **Sequential:** begin learning a second language later (some immigrants, school)
  - L1: primary (native) language
  - L2: second language, acquired at some point after L1
    - Can be highly proficient in L2, but people tend to be more proficient in L1
    - However the opposite can still be the case; particularly if somebody immigrates and proceeds to use L2 for certain purposes, such as academic/professional work
- Levels of proficiency vary greatly
  - **Balanced bilinguals** (equal proficiency in both languages)
  - Minimal proficiency in a second language (e.g., learning a language in high school or college)

# Heritage Language

- **Heritage language:** a language learned and spoken at home, but not outside of the home
  - Happens in cases in which the language is only spoken by a small minority of the population
  - Typically happens with immigration
    - E.g., Speakers of Vietnamese moving to the United States in a community with few other speakers of Vietnamese
  - Can also happen with indigenous status (Native Americans, First Nations) or multi-ethnic societies, in which there is a long-standing very small minority
  - Language proficiency varies from full fluency to minimal use in limited contexts

# Heritage Language

- Overview by Maria Polinsky
  - [https://youtu.be/PKtSAirA\\_T8](https://youtu.be/PKtSAirA_T8)

# Code switching

- **Code-Switching:** the use of multiple languages/dialects *within* a single conversation or interaction
  - Common situations in the United States: ‘Spanglish’ (Spanish/English), switching between AAE (African American English) and SAE (Standard American English) in a professional setting
  - Different from using different languages in *different* contexts
  - Can alternate sentences expressed in different languages, or completing sentences beginning in one language and ending in a different one

# Code switching

- Different purposes of code-switching:
  - A speaker feels they can better express themselves in one language than another for various purposes
    - E.g., a speaker who learned English for college may use English to express technical notions rather than their native language
  - Expressing solidarity with a particular social group by using the associated language
  - Expressing one's attitude about the person you're interacting with – more formality, friendly, irritated, etc.

# Code switching

- Spanglish code-switching:
  - [https://youtu.be/6N8Zk\\_EY6G8](https://youtu.be/6N8Zk_EY6G8)

# Transfer effects

- Transfer effects: one language affects another language in a multilingual speaker
  - E.g., a bilingual Spanish L1/English L2 speaker might insert Spanish words into their English sentences and vice versa
  - E.g. a German/English bilingual might say something like “we need more informations”
  - Using ‘information’ in the plural is normal in German (*informationen*)


# Transfer effects

- Dual lexical activation
  - Hearing a word in one language causes the translation equivalent in the other language to be “active”
  - E.g., hearing *mesa* in Spanish causes *table* in English to be active
  - Can cause both **negative** and **positive** effects of transfer
- **Cognates**: words from different languages that have similar spellings, pronunciations, and meanings
  - An English speaker could correctly guess that *université* in French means *university* – positive transfer effect
- **False friends**: seem like cognates (i.e., have similar spelling/pronunciation), but have a different meaning
  - E.g. English *embarrassed* and Spanish *embarazada* 'pregnant'
  - Negative transfer effect

# Bilingualism and language development

- It used to be thought that bilingualism would inhibit language development
- However, bilingual children ultimately typically attain the same level of proficiency as monolingual children
  - There may be the appearance of a delay in vocabulary due to very limited vocabulary in early development, which is split among the languages that a child speaks

# The “Bilingual Advantage”

- The **bilingual advantage**:
  - The *hypothesis* that people who speak multiple languages gain some kind of cognitive benefit relative to monolinguals
  - Hypothesized mechanism: bilingual people use executive function resources to switch languages within or between settings
  - E.g., when thinking of the word for  a Spanish-English bilingual will need to suppress *gato* when speaking English and *cat* when speaking Spanish
  - The hypothesis is that this “works out” or “trains” your executive function resources
- <https://youtu.be/MMmOLN5zBLY>

# The “Bilingual Advantage”

- Not clear if these effects are replicable
  - Many other studies do not find evidence for a bilingual advantage, or even effects in the opposite direction
  - Might be an instance of the “file-drawer” problem: only publishing findings that support an interesting or exciting hypothesis, and not publishing findings that don’t support this hypothesis
- At this point, there is very limited and questionable evidence of a cognitive bilingual advantage
  - There are very clear cultural and social advantages to being multilingual, whether or not there is a cognitive advantage

# Recap

- Language sampling
  - Structured and Sampling/Observational (Unstructured) approaches
  - Language sampling project
    - Part A: everyone
    - Part B: grad students ONLY
- Bilingualism
  - Levels of proficiency
  - Order of acquisition
  - Heritage language
  - Code switching
  - Transfer effects
  - Bilingual language development
  - The “bilingual advantage”