## COGS 1: Winter 2020

**Section F, Week 7**

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Available</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Boyle</td>
<td><a href="mailto:mboyle@ucsd.edu">mboyle@ucsd.edu</a></td>
<td>Friday, 2-4 pm</td>
<td>CSB 130</td>
</tr>
<tr>
<td>Tiffany</td>
<td><a href="mailto:tchokry@ucsd.edu">tchokry@ucsd.edu</a></td>
<td>Tuesday, 12:30-1:30pm</td>
<td>PC Theatre Lobby</td>
</tr>
<tr>
<td>Bora</td>
<td><a href="mailto:bmutluog@ucsd.edu">bmutluog@ucsd.edu</a></td>
<td>Wednesday 4-5 pm</td>
<td>PC Jamba Juice</td>
</tr>
<tr>
<td>Jon</td>
<td><a href="mailto:jahern@ucsd.edu">jahern@ucsd.edu</a></td>
<td>Tuesday, 2-3pm</td>
<td>CSB 114</td>
</tr>
<tr>
<td>Bryan</td>
<td><a href="mailto:blt010@ucsd.edu">blt010@ucsd.edu</a></td>
<td>Thursday, 1-2pm</td>
<td>Sequoyah 142</td>
</tr>
<tr>
<td>Corey</td>
<td><a href="mailto:yiz329@ucsd.edu">yiz329@ucsd.edu</a></td>
<td>Wednesday, 1-2pm</td>
<td>CSB 231</td>
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<tr>
<td>Meri</td>
<td><a href="mailto:myedigar@ucsd.edu">myedigar@ucsd.edu</a></td>
<td>Tuesday, 12:30 - 1:30 pm</td>
<td>PC 4th Floor</td>
</tr>
<tr>
<td>Ilmaa</td>
<td><a href="mailto:ilhaque@ucsd.edu">ilhaque@ucsd.edu</a></td>
<td>Monday, 4-5:30pm</td>
<td>Audrey’s Cafe</td>
</tr>
<tr>
<td>Ana</td>
<td><a href="mailto:achnaid@ucsd.edu">achnaid@ucsd.edu</a></td>
<td>Wednesday, 12-1pm</td>
<td>CSB 215</td>
</tr>
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Important Information

- **Midterm 1**
  - Grades have been released
  - See your TA/IA if you don’t see a grade

- **Extra Credit**
  - EC quizzes are based on assigned readings
    - Taken on Canvas
    - This week reading is on Dr. Matthew Fulkerson - Embodied Cognition
    - EC quiz will be posted by Monday at 4PM

- **Week 7 Quiz**
  - Online, don’t forget to do it
  - Opens Friday at 2pm
Last Week’s Topics

● Lecture 10 | Dr. Taylor Scott - Distributed Cognition & Cognitive Ethnography.

● Lecture 11 | Dr. Sarah Creel - Language Learning
Review Question (1 of 3)

1. *What is Behaviorism?*
2. *What is Cognitivism?*
3. *What is Post-Cognitivism?*
4. *What was the Cognitive Revolution?*
5. *What is ethnography?*
   - *What is cognitive ethnography?*
6. *What is distributed cognition?*
Review Question (2 of 3)

7. What are the “Big Problems” we went over in lecture?
8. What is the Cognito-Scope and what does it mean?
9. Why do we study developmental linguistics?
10. How does speech look as it develops?
   ○ What are the stages of speech in children?
   ○ What type of errors categorize each stage?
Review Question (3 of 3)

11. What are word boundaries? Why do they matter in developing language?

12. What can we learn from the developmental studies discussed in lecture?
   - Jusczyk, Houston & Newsome
   - Saffran, Aslin & Newport (1996)
   - Johnson & Jusczyk (2001)
   - Thiessen & Saffran (2003)
What is Behaviorism?

Behaviorism was the dominant approach to studying the human mind in the US in the early-middle 20th century

- Primary mechanism behind behaviorism was **classical conditioning**

**Pavlov’s Dog Experiment:**

- Dog associated bell sound with food (b/c of temporal contiguity) → when dog hears bell (stimulus) he salivates (response)
What is Cognitivism?

Cognitivism was an “all-out effort” to establish meaning-making as the central process of psychology.

- Rejected “thinking” as a behavior, but rather thought of it as its own object of study and theory.

One important difference is that behaviorists considered thinking a behavior, whereas cognitivists considered thinking a different type of process that requires its own separate study.
What is Post-Cognitivism?

Post-cognitivism argues that human cognition cannot be accurately or wholly described without taking context, environment, embodiment, culture, and artifacts into consideration.

- Cognition arises out of an interaction between the brain and the body.
What was the Cognitive Revolution?

- Movement that began in the 1950s as an interdisciplinary study of the mind and its processes
- Combined linguistics, psychology, anthropology, computer science, and neuroscience to create a well balanced approach to thinking about the mind
- Developed into what we know as Cognitive Science today
What is ethnography?

Cognitive Ethnography = cognitive method + ethnographic method

○ Ethnography:
  - Study and documentation of the lifeworld and interactions of members of some community

○ Cognitive:
  - Use the ethnographic method to study people’s cognition based on how they act and behave.

Cognitive ethnography is the study of cognition “in the wild”, i.e. in natural contexts where it usually occurs
What is Distributed Cognition?

Cognition is *distributed between the brain, the body, and the surrounding culture, environment and artifacts in time and space*

- Cognition emerges out of the interactions between those elements.
What are the “Big Problems” we went over in lecture?

- Our minds are adapted to systematically **NOT SEE** many aspects of organization of activity

  **Manifestations of the Big Problem**
  
  - We consider our daily lives to be **routine** so we don’t fill in the details
  - We rely on the world to **provide consistency** since we fill in the gaps of visual scenes
  - We ignore the **background in scenes** to focus on the **figure**
  - We don’t hear **disfluencies in speech** unless they are **overwhelming**
  - We **barely remember the gist** of what people say to us
  - We **understand the world through cultural models** that makes things obvious but makes other things impossible to see
  - We effortlessly process multiple sources of information, but **rarely attend to the relations among these sources**
What is the Cognito-Scope and what does it mean?

- **Cognito-Scope**: Tools and techniques used to overcome the manifestations of the seeing-not-seeing problem.

- In order to “tune” the Cognito-Scope you must:
  - Slow down
  - Be Honest
  - Think Small
Why do we study Developmental Linguistics?

- Helps us understand what people are learning when they are learning a new language
- Helps us develop language models used in things such as Google Translate, Cleverbot, and speech processing
How does speech look as it develops?

- Sequential
  
  ![Sequential Diagram]

- Overlapping
  
  ![Overlapping Diagram]
What are the stages of speech in children? (1 of 2)

Producing language

- **Speech sounds**
  - ~6-8 months: Babbling onset

- **Words**
  - 10-12 months: say first words

- **Grammar**
  - 18 months: “word spurt”

- **Social context**
  - This takes quite a while...
  
  A caution:
  Perception precedes production.
What are the stages of speech in children? (2 of 2)

Recognizing/comprehending language

- Speech sounds: By 10-12 months: Only sensitive to speech sound changes in your native language (mostly)
- Words: Older idea: you need to have a small set of sound “symbols” (kind of like mental letters) to be able to store words in the brain—otherwise, information overload
- Grammar
- Social context
What are word boundaries? Why do they matter in developing language?

Without having additional information, infant cannot tell word boundaries in fluent speech

- **Stress**
  - In *English*, most nouns are stress-initial
  - Ex: The | PREtty | BAby | WANTSa | BOTtle

- **Statistics**
  - Children track *probabilities* of sequential elements
    - Ex: The | PREtty | BAby | WANTSa | BOTtle
    - Given “ty” what’s likely to come next? vs. Given “ba”

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All Ques.

golabubidakutupiro
padotitupirobidakup
adotigolabubidakug
olabutupirogolabup
adotitupirobidakupa
dotibidakutupirogolabupadotibidakugola
bupadotibidakugolabutupiro...
What can we learn from the developmental studies discussed in lecture?

- Jusczyk, Houston & Newsome
- Saffran, Aslin & Newport (1996)
- Johnson & Jusczyk (2001)
- Thiessen & Saffran (2003)
Jusczyk, Houston & Newsome

- Infants’ recognition of word forms
- 7.5 months:
  - Stress-initial (kingdom) ✓
  - Stress not initial (guitar) ×
- 10.5 months:
  - Stress not initial (guitar) ✓
Saffran, Aslin & Newport (1996)

Statistical learning

• Play for 2 minutes
• Present kids with bidaku or piro.bi type words
• What do they listen to longer?
  bidaku < piro.bi
  – (novelty preference)
• At 8 months infants can segment words based on statistical cues

All Ques.

• Johnson & Jusczyk (2001)
  – 8-month-olds
  – Stress vs. statistics: Stress wins

• Thiessen & Saffran (2003)
  – Statistics wins @ 7 mos
  – Stress wins @ 9 mos