## COGS 1: FALL 2018

### Section D

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Reminder: Piazza posting guidelines

1. Check to see if your question has already been asked/answered before posting.
2. If your question has anything to do with schedule (quiz, exam, readings, EC quiz, etc.), check the syllabus before asking.
3. Post questions publicly whenever possible (unless it’s a private matter) so other students can help answer and/or if other people have the same question they can see the answer.
4. Do not post answers to quizzes/exams. This is an academic integrity violation.

Side note: students have been sharing self-made study guides - TA’s do not review these and cannot guarantee the content/answers are reliable
Last Week’s Topics

- Lecture 8 | Distributed Cognition, Dr. Scott
- Lecture 9 | Midterm Review, Dr. Boyle
Lecture 8

Distributed Cognition, Dr. Scott
Lecture 8 | Review Questions

1. What is behaviorism? What are some of the main concepts and important figures of this approach?

2. What is cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from behaviorism?

3. How can computers be used to study cognition and think about it? What are the limitations of these methods?

4. What is post-cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from cognitivism?

5. From the reading: What is distributed cognition? How is the way we think about memory influenced by distributed cognition?

6. From the reading: What does “Society of mind” mean?

7. From the reading: What are cognitive artifacts?

8. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?
1. What is behaviorism? What are some of the main concepts and important figures of this approach?
2. What is cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from behaviourism?

**Behaviorism**

thinking == behavior

**Cognitivism**

thinking != behavior
2. What is cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from behaviourism?

**Some Major Players**

- **George Miller**: Working memory limits (7+/-2)
- **Noam Chomsky**: Universal grammar
- **Allen Newell**: Artificial Intelligence (for example Logic Theory Machine)
3. How can computers be used to study cognition and think about it? What are the limitations of these methods?

Cognitivism

YOUR BRAIN IS A COMPUTER

But!
Interaction between the brain and the body+environment is necessary for cognition to arise.

For example, think back to prev. lectures:
- Voytek - tool use in cognition
- Nunez - thinking about time depends on one’s culture/language
- Boyle - embodied “simulation” in understanding language
4. What is post-cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from cognitivism?

<= Input/output, a body is necessary

You need a human body to create cognition.

Cognition arises out of an interaction between the brain and the body

Human cognition doesn’t arise w/o:

- Artifacts
- Culture & Language
- Embodiment
4. What is post-cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from cognitivism?

Traditional Cognitive Theories

- User’s mind
- External representations
- Other people
- Past, Present, Future

Distributed Cognition

- User’s mind
- External representations
- Other people
- Past, Present, Future

Units of analysis can be larger

Cognition is built “outside in”
4. What is post-cognitivism? What are some of the main concepts and important figures of this approach? How does it differ from cognitivism?

Some Major Players

Don Norman: Design of everyday things
Edwin Hutchins: Cognition in the wild
Jim Hollan: Helped develop DCog theory, HCI
5. From the reading: What is distributed cognition? How is the way we think about memory influenced by 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.
5. From the reading: What is distributed cognition? How is the way we think about memory influenced by distributed cognition?

How do we remember things?
6. From the reading: What does “Society of mind” mean?

Minsky:

- The mind is a “society” of experts or agencies that work together in various configurations to get things done.
- e.g. areas for face recognition, movement detection and language all work together when you see a friend pass by you and you holler at them.

Vygotsky

- The mind internalizes the practices of the culture surrounding her, and later they appear as internal mental processes
- e.g. inner speech is internalized outer speech
Cognitive artifacts can be parts of the material environment that are used to simplify a cognitive problem.

Examples - calculator, writing board, ruler,

Another example: Calculating the speed of a ship using nomograms
Cognitive artifacts can be internal.
8. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?

Cognitive ethnography = the study of cognition “in the wild”, i.e. in natural contexts where it usually occurs (so outside of the lab, for example)

Cognitive ethnography = cognitive method + ethnographic method

- **Ethnography:**
  - Study and documentation of the 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.
8. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?

But we need to be careful - are minds are adapted to systematically **NOT** see details of the world

For example:

Which penny is the real one?
8. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?

Manifestations of the seeing-not-seeing problem:

- Don’t attend to routine details
- Fill in gaps and ignore the background in visual scenes
- Don’t usually notice disfluencies in people’s speech
- Remember the gist, but not the exact words
- We understand the world through cultural models that make some things obvious and make other things impossible to think
- We have expectations for how people should behave & what they should do, and sometimes ignore evidence that doesn’t fit those expectations
8. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?

Solution:
Quiz time!

- No talking, signing, or communicating of any kind.
- Put *everything* away except a pen or pencil (make sure it’s a black pen and press hard with a pencil)
- When you get your quiz:
  1. Write your name in the “Name” box
  2. Write and bubble in your PID
  3. Sign the Academic Integrity Agreement
  4. Bubble in *this* section (regardless of which you’re assigned to)
- Please have your student ID out when you turn in your quiz!
5. Which of the following is the best example of an ethnographic study?

D. Creating a computational model of neural networks
Write and circle in your PID

Write down your name here

UC SAN DIEGO – DEPARTMENT OF COGNITIVE SCIENCE

STUDENT PID NUMBER

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Last NAME, First NAME

COURSE NUMBER

COGS 1

WINTER 2018

Dr. Mary ET Boyle

Quiz I

Oct 8 – Oct 12, 2018

Quiz VERSION

A B C D E F G H

Section you are taking this quiz:

[1] ○ Monday @ 3 Zoe
[2] ○ Monday @ 4 Lauren
[3] ○ Monday @ 5 Alexis
[4] ○ Monday @ 6 Kenny
[5] ○ Friday @ 9 Sandhya
[6] ○ Friday @ 10 Arturs
[7] ○ Friday @ 11 Subatha
[8] ○ Friday @ 12 Elizabeth

COGS 1: QUIZ I - Choose the best answer. Please bubble in your answers to the right →

ACADEMIC INTEGRITY

By taking this quiz, you agree that you will follow ALL UCSD ACADEMIC INTEGRITY policies. It is YOUR responsibility to know and understand all of the policies. Failure to follow all UCSD Academic Integrity policies could result in expulsion from UCSD.

Signature

Date

Your signature above certifies that you will follow and that you know that you will suffer the consequence for ANY academic integrity violation.

YOUR ANSWERS GO HERE

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Bubble in the answers

Bubble in the current section

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Lecture 8 | Review Questions

1. What are the various views on cognition? How do they differ? Who are the key players?
   a. Behaviorism
   b. Cognitivism
   c. Post-cognitivism
2. What does “Cognition in the Wild” refer to?
3. What are the insights about cognition that come from the distributed cognition approach?
4. What is Cognitive Ethnography?
   a. What is the BIG problem associated with studying cognition and how does it manifest?
   b. How can we overcome this problem?
Lecture 8 | Review Questions (1 of 2)

1. What is
   a. Behaviorism?
   b. Cognitivism?
   c. Post-cognitivism?
   What are the main concept and important concepts of each of the approach?

2. How do the following approaches differ:
   a. Behaviourism and cognitivism?
   b. Cognitivism and post-cognitivism?

3. How can computers be used to study cognition and think about it? What are the limitations of these methods?
4. From the reading: What is distributed cognition? How is the way we think about memory influenced by distributed cognition?
5. From the reading: What does “Society of mind” mean?
6. From the reading: What are cognitive artifacts?
7. What does cognitive ethnography study? What are the important aspects of how cognitive ethnography is conducted?