Welcome

PSYCHOLOGY 4145, Section 200

Cognitive Psychology

Fall 2001

Handouts

   Student Information Form
   Syllabus

NO Laboratory Meetings Until Week of Sept. 10
To Do List For This Week

Pick up reading assignment, syllabus, etc. in Lecture
Register on class e-mail list By Wednesday!!!!
Reply to my first e-mail to the CLASS!!!!

On your own in D346
   Familiarize yourself with the computing environment
   Introduction to StatView (Handout in class)
Read Schacter: Introduction and Chapters 1 and 2
Description of Course

Lecture (Content) and Laboratory (Methods)

Projects (Learning by Doing)

Topics

• Memory and Review of Other Topics in Cognitive Psychology
• Evolution of Cognition
• Creativity and the Nature of Talent
• Cognitive Engineering and the World Wide Web
• Methods, Data Analysis, and Research

Focus on Projects

VERY COMPLEX COURSE STRUCTURE

More on Wednesday
Reading

Memory and Review of Other Topics in Cognitive Psychology


Evolution of Cognition


Creativity and the Nature of Talent


Cognitive Engineering and the World Wide Web

Usable Web: Guide to Web usability resources
http://usableweb.com/

Methods, Data Analysis, and Research

Laboratory
Prerequisites

Psych 2145: Perception and Cognition Core

Statistics (Psych. 3101 or equivalent)

[Yes, I really mean it.]

See me after class....

Computing Skills

MAC or PC

Word Processor (MS Word)

Statistics Package (StatView)

E-mail ....

Surfing the Web...
Getting Ready for Laboratory

Be Sure You Have

  IdentiKey user name and pass word
  E-mail address

Introduction to StatView and MS Word..

Join class discussion list....

Send e-mail message to

listproc@psych.colorado.edu

from your preferred e-mail account....

One line e-mail message
subscribe psyc4145-200  your name here

Example
subscribe psyc4145-200  Peter Polson
What is Cognitive Psychology?
The Study of the Mechanisms Underlying Thinking
(i.e., Pinker’s *How The Mind Works*)

Attention
Pattern Recognition
Working Memory
Long Term Memory
Problem Solving
Complex Skills
Language
Decision Making

Content of Psyc 2145
Some Terms
(From Pinker’s *How The Mind Works*)

"Cognitive approach" =

Explain behavior through mental states
(beliefs, intentions, goals, desires, etc.).

Cognitive psychology =

*Experimental* study of language, memory, reasoning, perception

Cognitive science =

Combines cognitive psychology, artificial intelligence, linguistics, philosophy of mind, neuroscience, cognitive anthropology
How Can We Study Our Own Minds?

1) Study People Doing Complex Tasks (e.g., reading)

   Problems!!!
   - Complexity of these mechanisms
   - Speed of operation
   - Only aware of results

   From Pinker…
   - Arthur C. Clarke: "Any sufficiently advanced technology is indistinguishable from magic."

2) Compare Human Minds to Animal Minds

   Medical science
   Vision, motor control, ….
   Emotion and motivation
   Animal cognition
   “Language” in chimpanzees and apes
   Evolution of cognition

3) Compare Human Minds to Robot Minds…

   Information Processing Approach
   Artificial Intelligence
Compare Human Minds to Robot Minds. (From Pinker)

The robot gap:

Robots in fiction:
  • Speedy, Cutie, and Dave
  • Lost in Space
  • R2D2, C3PO
  • The Terminator
  • Mystery Science Theater 3000

Why not in real life?

First law of Artificial Intelligence: "The hard problems are easy, and the easy problems are hard."

The engineering problems of seeing, walking, common sense, speech production and understanding, …

Psychology as reverse-engineering.
More On Reverse-Engineering

In Real Life

- Get a Copy of a Competitor’s Product
- Figure Out What IT Does
- Take IT “Apart” to Figure Out How IT Works
- Build New System That Does the Same or Similar Things

As An Analogy to Cognitive Psychology

- Select a topic (system) (vision, language, problem solving)
- Figure Out What Systems Does
- Do Experiments to Figure Out How IT Works
- Build Model (Theory) That Does the Same or Similar Things

The Running Model is Test of Your Understanding