

## Observation

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## Traditions for Research

- Rationalist approach
  - For example, Logical Empiricism (objectivist, positivist)
    - Individual level: Simon (decision-making) shows that individual rational behavior falls short
    - Language level: Language conveys information about an objective reality; carrier of information
    - Research level: scientific method

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## Research Traditions

- Other (humanist?) qualitative approaches
  - Phenomenology (interpretive, experience as presented to consciousness of a group of people)
  - Ethnomethodology (how people make sense of the world) – this is a form of Ethnography
  - Ethnography (importance of context, observable group behaviors in order to learn what it means to be a member of the group)

Recommended resource: Creswell, John W. *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. Sage, 1998.

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## Visual Information Processing

- <http://www.hhmi.org/lectures/webcast/1997.htm>
  - Watch Jeremy Nathans, *Neural Processing: Making Sense of Sensory Information*

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## Science

- Brain Info: A Primate Brain Info. System
  - <http://braininfo.rprc.washington.edu/mainmenu.html>
- Digital Anatomist Interactive
  - <http://www9.biostr.washington.edu/da.html>
    - Brain Atlas
    - Neuroanatomy Interactive Syllabus
- <http://info-center.ccit.arizona.edu/~cnl/links.htm>
  - Brain Facts: <http://faculty.washington.edu/chudler/facts.html>

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## Information Behavior



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## Types of Observation

- Direct (Reactive) Observation
  - Continuous Monitoring
  - Time Allocation (before subject sees you)
- Unobtrusive Observation
  - (example: Behavior Trace Studies: UA Garbage Project; Disguised Field Observation)
- problems of validity & ethics
- Variables: descriptive, inferential, evaluative

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## Field Experience

- Field Experience: A research method located in the time and space of the subject
- Participant observation: involve yourself in the activity of the subject by choosing a site of interest
- Overt or covert
- What is it you expect to find? You'll be surprised by "discrepancies" (also variables in next slide)

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## Field Notes

- Recording the experience
  - Describe the Setting, Actors; Specific, concrete, detailed (Levels of Units of analysis)
- Should you record during or after observation?
- Analysis of events should always be included (answers to the so what question)
  - Variables: descriptive, inferential, evaluative

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## The Theory Behind The Method

- Logical Positivism
  - rationalist tradition
- Ethnography (qualitative tradition)
  - culture (learned social behavior)
  - sociology of meaning through close field observation of sociocultural phenomenon
  - focus on a community
  - selects participants who have an overview on the community

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## In-Class Exercise

- Find a partner!
- Complete the exercise
- Rules:
  - Each of you take turns to role play as
    - 1) researcher and 2) participant.
  - Use SIRLS Lab computers
  - 10 minutes per role
  - Feel free to discuss before, after, etc.

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## Transition

- Purposive information seeking situation
  - What is the hippocampus?
  - Where can I find a picture of the hippocampus?
  - What is the relation of the *homunculus* to the *hippocampus*?

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## Categories for observation

- What is being observed:
- channels of communication - mixed use (oral, observation)
  - the distinctions between observing visually the physical eye and hand movements (seeing) vs. listening to verbal comments/talk-aloud protocols vs. writing/recording what's happening

## Sense data

- there are 5 senses; observation picks some combination of them to record as relevant to the object/behavior being studied (the five senses are hearing, seeing, smelling, feeling, tasting)

## Categories for observation

- cognitive processes (reading, learning, thinking; influenced by existing knowledge structures)
- affective processes (values, emotions, beliefs)
- psychomotor (moving mouse)

## Observation measures:

- duration or amount of time
- number of times
- key strokes or pages visited, etc.
- Search terms used
- Search strategies used
- Problems encountered

## Discussion (p. 124, Case)

- Q: What are channels of communication?
- Q: Are channels, sources, and medium the same? Or different?
- A: Channel (sociology): the way the message is delivered-whether face to face, in writing, on film, or in some other way.
- A: Channel (LIS): formal and informal channels of communication
- A: Channel (psychology): verbal and non-verbal; inter-personal

## Sources

- Slide 2: Information Behavior Model
  - <http://www.shef.ac.uk/~is/publications/infbehav/chap7.html>
- Information Research:
  - <http://informationr.net/ir/>
- Top 100 works in Cognitive Science
  - <http://cogsci.umn.edu/millennium/final.html>