Today’s Goals

- How does “the social” impact individual cognition?

- How can the design of social software leverage social impacts on cognition?

- What are the implications of the “media equation” for the design of interactive systems?
Cognition. Social?
What is “Cognitive Performance”?

- Perception – are phenomena noticed?
- Memory & Learning – are perceptions remembered? How well?
- Decision Making – are “good” decisions made? How much “cognition” goes into the decision?
- Problem Solving – how well/quickly are problems solved? How many alternatives are considered?
Quick Review: Levine & Resnick

What are the impacts on cognition due to...

- the mere presence of others?
  - Social Facilitation
    - General arousal: helps familiar tasks, impedes unfamiliar tasks
  - Social Loafing
    - People slack off in a group
    - Effect is decreased when contributions are identified
  - Crowding
    - Impairs cognition
  - Group Composition
    - “Token” or minority members are more likely to be distracted from task
Quick Review: Levine & Resnick

- What are the impacts on cognition due to...
  - social roles, positions, and identities?
    - Social Roles
      - People adopt the perceived perspective of the assigned role
    - Social Positions
      - Performance affected by others’ assumptions
    - Social Identities
      - Internalization of social positions/roles: see yourself as others see you
What are the impacts on cognition due to...

- mental representations of others (who are not present)?
  - Role-Taking
    - People differ in their ability to assume new roles/walk in another’s shoes
  - Reference Groups and Individuals
    - People are influenced by others/groups they deem important
  - Social Comparison
    - People’s self judgments are affected by who they compare against
  - Anticipated Interactions with Others
    - Mental preparation differs according to expected interactions
Quick Review: Levine & Resnick

What are the impacts on cognition due to... social interaction?

- Conflict as a Source of Cognitive Growth
  - Disagreement leads to “intellectual growth” (quantity and quality of intellectual activity)

- Majority and Minority Influence
  - Majority influence: compliance
  - Minority influence: conversion

- Group Decision Making
  - Direct pressure from a group influences decision making
General Themes

- Impacts on cognition
  - Motivation and level of engagement
  - Self-efficacy and perceived abilities
  - Social pressure

- Factors governing impact
  - Mere presence
  - Roles, positions, identities, group composition
  - References, perceived others
  - Nature of interactions (past, present, future; conflict/agreement)
How this plays out

- Designing to support social interaction
- User interfaces as social actors
Facilitating Social Cognition: Webboards
Posting a problem to a web discussion board

What did you do before posting the first time? What was your emotional state?

How did you know how to shape the question?

What was the result of the exchange?

What was the cognitive impact on your problem solving?
• Answering a question a web discussion board
  • How did you decide to answer the first time?
  • How did you prepare your answer?
  • What was the outcome of your answer?
  • How did answering impact your cognition in that domain?
  • How did answering impact your relationship with the site?
Webboard considerations

- Social facilitation
- Social loafing
- Group composition
- Social Roles & Positions
- Reference Groups
- Social Comparison
- Anticipated Interactions
- Majority & Minority Influence
Webboard features: Member Status
Webboard features: Member Status
NEWPORTBAY
Posts: 140
11/23/02 9:11 A
MySparkPage
Send Private Message

I want to eat healthily and exercise because...
I want a long healthy life.
I want to break the cycle of diabetes in my family.

Check out my personal blog: www.absolutely-sharon.blogspot.com

current weight: 170.6

start 185
188.75 185.5
177.5 175

GROOMER
SparkPoints: 18,830
Profile Views: 11,886
Posts: 1,520
11/21/02 7:44 A
Community Task Agent
MySparkPage
Send Private Message

because nowadays, that is all that is necessary. All I have to do is want it and I can do it. I've already learned how and have all the tools I need.

If you are starting a diet thinking, I will only have to eat this way until I reach my goal you have already failed before you began.

TIA "RAINRUN"

LUCKYLADY777
SparkPoints: 15,927
Profile Views: 11,813
Posts: 86
11/21/02
MySparkPage
Send Private Message

Because when I get old I want to wear a two piece bathing suit ....... and I
Webboard features: Presence
Webboard features: Presence
Consider: Design Implications?

- Social facilitation
- Social loafing
- Group composition
- Social Roles & Positions
- Reference Groups
- Social Comparison
- Anticipated Interactions
- Majority & Minority Influence
What do you post where?

- Twitter
- Facebook
- si.all
- si.all.open
- Your blog
What do you post where?

- Twitter
- Facebook
- si.all
- si.all.open
- Your blog
- Reference groups and individuals
- Group composition
- Social roles and identities
- Social loafing
The Media Equation

How People Treat Computers, Television, and New Media Like Real People and Places

Byron Reeves & Clifford Nass
The Media Equation

Media = Real Life
Media = Real Life

“individuals’ interactions with computers, television, and new media are fundamentally social and natural.” (p.5)
A variety of social psychology findings have been replicated

Replace “other person” with “computer” (or TV, image, …)

Example: Politeness
A variety of social psychology findings have been replicated

Replace “other person” with “computer” (or TV, image, ...)

Example: Politeness
- When asked to evaluate computer performance, people gave
  - more negative responses to a different computer than to the same computer
  - More varied responses to a different computer than to the same computer

Grains of salt?
- Task: tutoring the user on statistical profiles of Americans
- Have mental models about computers changed with “the web world”?
It looks like you're writing a letter.

Would you like help?

- Get help with writing the letter
- Just type the letter without help
- Don't show me this tip again
People are polite to computers, so computers should be polite too

Grice’s Maxims

- Quality: say things that are true (and cooperative)
- Quantity: say no more and no more less than needed
- Relevance: say things related to the purpose of the conversation
- Clarity: obfuscate not
Considerate products
- Take an interest in you
- Are deferential
- Keep us informed
- Use common sense
- Anticipate human needs
- Are self-confident
- Fail gracefully
- Take responsibility for their actions
The procedure failed with the following error: The command completed successfully.

Not enough memory to display this dialog.

Error: Keyboard not found. Press F1 to continue.

Your mouse is not working, please click here to acknowledge.

Cannot delete tmp150_3.tmp: There is not enough free disk space. Delete one or more files to free disk space, and then try again.

Unexpected error, quitting.

An Internet error occurred. (Internet Explorer 4.0)

Windows has found an unknown device and is installing a driver for it.

Your system shell has changed. The Compaq software will work with your new shell, but the new shell will not work with your Compaq software. Do you wish to keep your Compaq software working? Click yes if you are unsure.

Error 0000: No errors found, restarting computer.

http://www.ezzell.org/Error%20Messages/Error_Frame.html
Friendly 404’s

Friendly 404’s

Friendly 404’s

Politeness isn’t the only way

404 ’d!!
FILE NOT FOUND

Boy, you sure are stupid.

Were you just making up names of files or what? I mean, I’ve seen some pretend file names in my day, but come on! It’s like you’re not even trying.

in closing, go away.
Chapter 9 of Media Equation

- Desert island survival task
- Users: strongly dominant or strongly submissive
- Computer: dominance/submissiveness expressed in definitive language and confidence scores

Results

- Users preferred similar personality
- Users enjoyed experience more with similar personality
Implications?

- It’s unclear how far to extend this
  - Are different websites perceived as different actors?
  - Do brands matter? Where do we attribute the agency?
  - Does it apply to more tool-like interactions?

- At least
  - Conversational interactions with users (text, voice, etc.)
  - Conversational agents
  - Robots
Many important “cognitive” tasks are performed by *groups*

- Cognition as Collaboration
  - Shared Cognition
    - Shared knowledge, norms, motivation: can increase performance, but can also lead to “group think”
  - Group Memory
    - Distributing roles, knowledge, information with good transactions among members improves performance
- Communication and Linguistic Interaction
  - Common ground: there are better and worse ways for knowledge transactions to occur
CSCW Findings

- Limited rational actor model (link to Information Processing)
- Social activity is fluid and nuanced
- Members of organizations have differing goals
- Exceptions are normal
- Awareness is important
- Visibility of exchanges and information leads to efficiency, harms privacy
- Norms of use are actively negotiated
- Critical mass is (generally) required
- People and systems co-adapt
- Incentives are critical
“Technically working” ≠ “organizationally working” (also “usable” ≠ “acceptable”)

There is a persistent gap between technical capabilities and social needs
  - Supporting social interaction is a *wicked problem*

Goal: strive for *good approximations*

Capabilities, rules, roles, etc. can become *resources* in larger interactions
Analyze our design exercise process (create as group, forum posting, comments, review)

- What are the cognitive activities being supported?
- How does the social aspect play a role with respect to individual activity?
  - Consider different impacts on social cognition from Levine, et al.
- What is the social process being replicated, and how well is it approximated?

Redesign the process (including both social and technical aspects) to better achieve the goals at the individual and group levels.