CS 160: Lecture 18

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Social Psychology

Why study it?

It helps us understand human collaboration, which is one of the most difficult areas of HCI.
Mere presence effects

- Simply being near others can lead to improved performance, e.g. Triplett’s fishing observations.

- Unfortunately, this isn’t always the case. Sometimes the opposite happens.
Mere presence

1. Stress, anxiety or stimulation increase physiological arousal, and arousal speeds up behavior.

2. The presence of others pushes these buttons...

3. But increased speed can also increase errors, so it can be bad on difficult tasks.
Mere presence

- Increased arousal generally helps learning

- But, it also heightens response to well-learned stimuli (Zajonic and Sales):

  It says “alpha helix”
Mere presence

- Mere presence isn’t quite the right idea.
- The presence of a blindfolded subject didn’t increase arousal, and didn’t affect performance.
- The presence of others evaluating or competing with us is what matters.
Mere presence – Design Implications

Increasing the level of group “awareness” should increase mere presence effects:
* Heightened arousal
* Faster performance
* Increased learning
* More errors

Examples:
* High awareness - video conferencing, phone
* Medium - Instant messaging
* Low awareness - Email
Attribution

How do we attach meaning to other’s behavior, or our own? This is called attribution.

E.g. is someone angry because something bad happened, or because they are hot-tempered?
Attribution: ourselves

- Let's start with ourselves, how good are we at figuring out our emotions?
- Schacter: it depends strongly on environmental and physiological factors, and others near us.
- The bottom line is that we can feel strong emotion, but struggle to recognize it as happiness or anger.
Attribution theory

Attribution theory: was this behavior caused by personality, or environment?

Fundamental attribution error:
* When I explain my own behavior, I rely on external explanations.
* When I explain others’ behavior, I’m more likely to attribute it to personality and disposition.
* e.g. other drivers are either “lunatics” (faster than me) or “losers” (slower than me). Of course, they have the same model about you...
Attribution theory - design implications

To reduce attribution errors, it’s important to have as much context as possible.

E.g. room-scale video-conferencing, or ambient displays:
Social Comparison

We need to make comparisons to make judgements about people. Three rules:

* Limitation: qualities must be observable and comparable to be attributed.
* Organization: we use categories to describe and think about people; friendly, studious, careless etc.
* Meaning: categories of personality must make sense, e.g. friendly and cooperative go together, friendly and hostile do not.
Groups

- Groups are a strong influence on our behavior.

- A “reference” group is one we share a psychological connection with, e.g. a club or honor society we aspire to join.

- We compare our selves to reference groups to make self-assessments.
Groups give us value in several ways:

- They provide us norms for behavior (informational function)
- They satisfy interpersonal needs (interpersonal function)
- They provide us with concrete support, resources, help (material function)
Groups and Motivation

- Groups increase motivation in two ways
- First, the social interaction with the group intensifies individual motivation, and sometimes generates new individual motives.
- Second, the group can cause group goals and motives to be created. E.g. group maintenance is goal most groups have.
Group goals

- Goals can be either short-term or long-term.

- Long-term goals are harder to manage and maintain and generally have less effect on group behavior.

- Short-term goals are strong force in motivating and reinforcing group performance.
Group goals

The composition of the group can strongly affect its goals.

E.g. a group united by profession will tend to adopt goals related to the profession’s methods.

Groups often have subgroups that wield influence over the main group. They need not be majorities.
Group experiences

- Previous experience affects goal-setting.

- Groups that have succeeded are more likely to raise goals, groups that have failed are unlikely to lower them.
Group experiences – design implications

- Normative data can be very helpful – how am I doing compared to a typical colleague?
  * Compute normative data automatically

- Set short-term goals, mark off successes – challenge to do this efficiently
  * PERT charts or Calendars
  * Daily software builds
  * Extreme programming
Summary

- Mere presence influences speed of performance, through evaluation and competition.
- Attributions of behavior causes have an actor-observer effect.
- Social comparison is how we make judgements.
- Groups influence our perception of self and others through norms (reference groups).
- Groups influence behavior as well.
Break
Livenotes: Collaborative in-class note-taking

- Small-group learning in large classes

- Uses pen tablets to allow students to mark up Powerpoint slides and communicate in small groups (4-7 optimal)
Livenotes: Motivation

1. Peer instruction is a potent facilitator of classroom learning
   * It is helpful for students to explain material to one another

2. Attention is a critical resource in classrooms
   * A student’s attention is enhanced through interaction with his or her peers

3. Learning takes place better in small groups
   * Promotes academic achievement, attitudes towards learning and student persistence

4. Can we foster small-group learning in large classrooms?
Background: TVI and DTVI

The TVI (Tutored Video Instruction) method was developed at Stanford. 
* A video recording is made of the lecture. 
* Students review the recording in a small group (4-7 students) with a tutor. 
* Students pause the replay, and discuss with each other. 
* There is a lot of interaction: 50% of students participate in 50% or more of the discussions.
DTVI is Distributed TVI. The lecture is webcast, and student interact with each other and the tutor using videoconferencing.
There have been many studies of TVI/DTVI.

One of the largest was a study of DTVI with Sun Microsystems. The results were remarkable:

* Students using DTVI received grades 0.2 to 0.8 std. deviations higher than students taking the same class live.

Group interaction by itself is a facilitator of learning (independent of salience).
LiveNotes Hardware

LiveNotes is a multithreaded C# program that runs on pen-based computers (Tablet-PCs) over wireless TCP/IP networks.

Tablet PCs received through MS’ RFP process.
LiveNotes Overview

- LiveNotes is used in small groups of students (5-7).
- Students start with skeletal lecture notes, or one member acts as scribe.
- Other members add their comments and notes to the shared transcript.
Measuring User Preference

How much users like or dislike the system
- can ask them to rate on a scale of 1 to 10
- or have them choose among statements
  + “best UI I’ve ever...”, “better than average”...
- hard to be sure what data will mean
  + novelty of UI, feelings, not realistic setting, etc.

If many give you low ratings -> trouble

Can get some useful data by asking
- what they liked, disliked, where they had trouble, best part, worst part, etc. (redundant questions)

You can have the test participants use the system for some time before you solicit their feedback

Or design the system to use as much existing conventions as possible

I see. Thanks!

Is there any way to reduce the bias from the novelty effect?
We plan to do a Livenotes study in this class, starting soon (probably next week).