Week 4: Indirect mood assessment and learnings from your homeworks...
Positive & negative bias perception

(e.g., Halberstadt, Niedenthal, and Kushner, 1995; Bouhuys, Bloem, and Groothuis, 1995; Mayer and Salovey, 1993; Niedenthal and Kitayama, 1994)
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<th>Positive</th>
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Forgas & Moylan (1987)

After the movies: P asked to fill out a brief public-opinion-survey (13 questions)

– Political judgments
– Likelihood of future events
– Judging responsibility and guilt
– Satisfaction with personal and work life
Forgas & Moylan (1987)

Experimental design: Why are these important?

Experimenter blind to hypothesis
Check mood as LAST question (not sooner)
Check moods going in (separate study)
Age, gender, SES influences
Isen et al. Positive affect enhances creativity

Improves solving of Duncker’s Candle Task, leads to greater Remote Word associations; Isen, Daubman, and Nowicki, 1987; Isen, Johnson, Mertz, and Robinson, 1985

**Duncker’s Candle Task:** Affix the candle to the wall and light it, in such a way that it doesn’t drip on the ground. (20% -> 75%)
Isen et al. 1987 Methodology

- Why have them rate the pleasantness of unfamiliar words up front (but after the pos/neutral film shown?)
- Why include a “facilitative control?”
- Why did candy bar manipulation likely fail?
- Why include easy + moderate + hard items on Remote Associates Test?
Case study: can we tell if a new typography provides a better experience for the reader?

• Measure: speed of reading, ease of reading, reading comprehension, “do you like the appearance?”
  – These show no difference

• The experts *think* the “aesthetic experience” is better
  – Solution: Measure
    1. direct affective experience while reading
    2. results of having had a positive-affect experience
Case study: can we tell if a new typography provides a better experience for the reader?

Image courtesy of Stephen Coles on flickr. License CC BY-NC-SA.
Indirect measures hypothesized:
If you have had a positive experience,

Then you are more likely to underestimate the time spent on the task

Then you will be better at solving creative problems
We found (N=20) in comparing “good” typography to “bad”:

No difference in self-reported liking of the experience (questionnaires with Likert scales)

Significant underestimating of the time spent on the reading task for the “good” type

Better performance solving two kinds of creative problems for the “good” type
When is a good time for a mobile system to interrupt you?

Will empathetic response help if it interrupts at a bad time, or if you are stressed?

Fitsense EKG, Accelerometer and Location Sensors wirelessly talk to Cell Phone or HP IPAQ
Measuring frustration?

How many times does it seem like I've interrupted you today?

- more than 30 times
- 25-29
- 20-24
- 15-19
- less than 15 times

Calculate relative subjective count (rel. to Ziegarnik effect)

High RSC

Sorry for so many interruptions. It'd be great if you could give me feedback how to be less frustrating.

- Give feedback now
- Ask me later
- No thanks

Low RSC

Thanks so much for all your input today. I hope I wasn't too frustrating. See you tomorrow - bye.

- Give feedback
- Bye!

Give feedback now

Bye!
Goal: Technology learns patterns of activity, stress, good/bad timing & adapts to these

Challenge: Get LOTS of annotated data from people

Problem: Users HATE to be interrupted all day to ask for data.

“You can’t pay them enough to be a subject” – Lisa Feldman-Barrett

Solution: Empathy?
Each interaction can be initiated by user or by system:

If user initiates interaction to annotate, the interaction looks like this:
Each interaction can be initiated by user or by system:

When the system initiates interaction (interrupts user), the interaction looks like this:

• S: Morning, Jane!
• S: Do you have a minute?
• U: Yes.
• S: You know the drill -- feeling stressed?
• U: Its there - but not the worst.
• S: Thanks so much for all your input. I hope I haven't been too frustrating.
In “Empathetic” condition the dialogue also includes red text:

• S: Morning, Jane!
• S: Do you have a minute?
• U: Yes.
• S: You know the drill -- feeling stressed?
• U: Its there - but not the worst.
• S: Wish it was better.  Hope things start looking up.
• S: Thanks so much for all your input.  I hope I haven't been too frustrating.
“How many times does it seem like the system interrupted you today?” (N=10 subjects)

System 1: (empathetic)
Actual interruptions = 496, User estimate = 336
\[ \frac{336}{496} = 0.677 \]

System 2: (non-empathetic)
Actual interruptions = 295, User estimate = 292
\[ \frac{292}{295} = 0.989 \]

t(45), p = .0024 between these two “relative subjective counts”
WHY LOOK AT MOOD?

The World Health Organization (WHO) reports that one suicide happens every 40 seconds, and that suicide is increasing at a rate that is predicted **to be 1 suicide every 20 seconds by the year 2020**.

Major Depressive Disorder is the leading cause of disability in the U.S. for ages 15-44. (World Health Org. 2004)

Depression affects **30 million** adults in the U.S. (Kessler et al 2003)

41,149 suicides were reported in 2013 (CDC 2013)

“#1 Problem in Africa” (IBM Africa)
References


References cont.


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