Cognitive Design Studio

1. Encourage wild ideas
2. Write everything down
3. Lower than the horizon
4. Write down your assumptions and biases
5. Be visual
6. Trace and analyze the sketch
7. Prototype everything
8. Live from the archive
Schedule for Final Three Weeks

• This week:
  – Today go over exam, discuss writing, final papers, final presentations, and return exam
  – Thursday: former students working locally: Joseph Huang, Ankur Jalota, Kathy Semama, Dev Yamakawa, and (Cindy Chew)

• Next Week:
  – Tuesday: former students working in the Bay area: Ed Langstroth and Nate Bolt
  – Thursday: Project Triage
    Email issues you are facing by Tuesday

• Week 10:
  Final Presentations
Midterm Exam II

COGS102C: Cognitive Design
Second Midterm Exam
Spring Quarter 2010

Mean = 191.7 / 254 (76%)
Standard deviation = 20.3
Max = 229 (90.2%)
Min = 122 (48%)
Seeing as a Designer

Jane Suri + IDEO
thoughtless acts? book

Subtle and amusing ways that people react to the world around them

Reveal how people behave in a world not always perfectly tailored to their needs.

A real-world observational approach that can inspire designers

thoughtlessacts.com
thoughtless act assignment

• Before next Thursday’s class add a page under the thoughtless acts page on the wiki with an example of a thoughtless act. Include an image, brief description, and any design idea it generates for you. Be sure to also include your name.

• IAs will be the judges

• Prize for top three entries
Mikhail Stal: Painter's Tape as Pen Holder

This thoughtless act is one I found in my boss's office at the UCSD Recreation Department. My boss has an assortment of pens, markers, highlighters and even scissors and instead of keeping them in a normal office organizer he keeps them in an almost depleted roll of painters tape. This is convenient because if he needs to use the blue tape he just takes all the pens out in a bunch and plops them on the table. When he is done he picks the bunch up again and puts it in the roll of tape. I bet this can be a hassle if he were doing it everyday, but I don't think he uses the tape that often. The benefit of this is that he never loses his pens. The biggest bonus comes from him always knowing where his blue tape is if he ever needs to use it.

This doesn't inspire design ideas related to my project, but it does inspire a design idea related to pen / office supply holders. It seems as though people like multifunctional holders (some people use cups as holders too, some real supply holders even include mini notepads or calculators built in). Maybe designing an office supply holder that is tall and cylindrical in shape that allows rolls of tape to be put over it. Maybe it would be something painters would use.
Where do I need my hair ties the most? In the bathroom where I use them to hold my hair back while I wash my face and where I do my hair in the mornings. My lotion bottle is also in my bathroom and is the perfect shape to hold my hair ties.

They do have these jewelry/accessory trees to organize hair ties and jewelry, but I think my lotion bottle is way better since I don't like clutter on my counter.
I also found this online a couple days ago. It's extremely simple yet absolutely brilliant. Who ever did this simply recruited paper clips to hold extraneous cords at the end of the desk. The clips attach perfectly to the desk and are the perfect size to hold cords in place without letting them fall through.
I'm an old man of old manner, I am one who likes to be smarter than my phone and has yet to be tempted into the addiction of IPhones or Crackberrys. Neither do I have a dayplanner where I can write things down that I find interesting. But I do have a mobile phone, an ordinary flip phone. As I am getting older I more and more need to use technology (whether it's on paper or in digital form) to help me remember any good ideas I get or whatever interesting things I hear about. Sometimes I use a small notebook that I always have in my bag to jot things down, but mostly I find myself texting myself about the ideas I get. I always have my phone and I know that I will always go through my inbox every now and then to clear out old messages once the inbox gets close to its limits.

In the same way I often use my email to send myself emails of things I need to keep track of or if I happen to stumble upon a good site that I want to remember. I could just add the websites to my "favorites" in my browser, but then I wouldn't be able to reach them whenever on I'm on the run, but I can always log on to my Gmail account as long as I have access to the Internet.
Prizes

- Groups with winners as members get to select the day of their final presentation

- Additional small award
Importance of problem setting

One of my favorite heuristics: What more general problem is this problem an instance of?

Knowing in action

Reflection in action

Reflective conversation with materials

One cannot make a move that has only the consequences that one intends. Any move has side effects.

Backtalk
Brainstorming Fundamentals

With acknowledgements to the Stanford d.school
Brainstorming

- Visioning as discussed in the text is a form of “grounded brainstorming.”

- Great brainstorming is one of the most powerful and one of the most misunderstood methods in the designer’s toolbox.

  - It’s a special kind of collaboration with specific rules of behavior designed to maximize idea generation.

  - Many say they know how to brainstorm. Few do it really well. In some ways, brainstorming is like volleyball. If you know the rules, you might be able to survive a social game at the neighborhood picnic. But this is a far cry from the kind of volleyball you watch on TV. No matter what level you’re at, you can always up your game.
IDEO Brainstorming Rules

• **Defer judgment** – separating idea generation from idea selection strengthens both activities. For now, suspend critique. Know that you’ll have plenty of time to evaluate the ideas after the brainstorm.

• **Encourage wild ideas** – breakout ideas are right next to the absurd ones

• **Build on the ideas of others** – listen and add to the flow of ideas. This will springboard your group to places no individual can get to on their own

• **Go for volume** – best way to have a good idea is to have lots of ideas

• **One conversation at a time** – maintain momentum as a group. Save the side conversations for later.

• **Headline** – capture the essence quickly and move on. Don’t stall the group by going into a long-winded idea.
Writing Advice

Clear writing goes hand in hand with clear thinking

Improving either will improve the other

• One of the best examples of a reflective conversation with materials

• Purpose is not mere presentation of information, but rather its real communication
  • If the reader is to grasp what the writer means, the writer must understand what the reader needs
  • What matters is that your audience accurately perceives what you had in mind

• Write with the reader in mind

• Read and attend to good writers
Writing Advice

• Expectation and Context
  – Readers do not simply read; they interpret
    • We cannot succeed in making even a single sentence (even a single word) mean one and only one thing; we can only increase the odds that our readers will tend to interpret our discourse according to our intentions.
  – Structure is important in helping manage interpretation
    • Interplay between substance and structure
    • Information is interpreted more easily and more uniformly if it is placed where most readers expect to find it
  – Take care with the different levels of the units of discourse
    • Every unit has a purpose and a structure (at least a beginning and an end)
      • article - section - paragraph - sentence - clause – word
      • spend time thinking about each level
  – Part of learning to write (and read) scientific papers is learning the genre
Writing Advice

- At each level there is a topic position
  - For example, the information that begins a sentence establishes for the reader a perspective for viewing the sentence
    - Readers expect a unit of discourse to be a story about what shows up first
    - Readers also expect the material occupying the topic position to provide them with linkage (looking backward) and context (looking forward)
    - In reading, as in most experiences, we appreciate the opportunity to become familiar with a new environment before having to function in it

- Conflicts between writing and reading
  - One of the many reasons rewriting is important is that on initial writing you are often trying to get out a new thought and you naturally focus on the new information. This is the need of you as a writer.
    - The reader needs this new information to be tied to old and for a context to be built up to help them
Writing Advice

• Heuristics
  – From simple:
    • Follow a grammatical subject as soon as possible with its verb
    • Articulate the action of every clause or sentence in its verb
    • ...
  – To more complex:
    • Provide a context for the “new information” you want the reader to emphasize
    • Place appropriate “old information” (material already stated in the discourse) in the topic position for linkage backward and contextualization forward
    • Provide context for the reader before asking the reader to consider anything new
    • Try to ensure that the relative emphases of the substance coincide with the relative expectations for emphasis by the structure
    • ...
  – and many, many more heuristics
Writing Advice

• **Before You Write**
  – Put time and thought into your paper before you start a first draft
  – For your paper to be interesting and effectively communicate, you need to
    • Present a point of view
    • Interpret rather than merely summarize what you have read
    • Argue your position logically

• **Outlines**
  – Often a good idea
  – Useful when you get stuck

• **Writing from the Inside Out**
  – What are the main points you want to make?
  – What does the reader need to know to understand those points?

• **One Metaphor: Taking your readers on a trip**
  – Keep them from getting lost
  – Make the journey interesting

• **Know Your Reader**
Writing Advice

• Stages: Thinking, Drafting, Revising and Editing (multiple passes; many, many)
• Drafting
  – Draft is writer-centered; you are telling yourself what you know and think
  – This is often the most creative part
  – Concentrate on getting out the ideas and then explaining and supporting them
  – Don’t focus on low level details (spelling, word choice, …) at this point
• Revising
  – This is where most of your time should be spent
  – Become reader-centered; focus should be on readers’ needs and expectation.
    • What do you need to say to convince the reader?
    • Is the organization effective?
    • Do readers need to know X before they can understand Y?
    • Your job is to make the reader’s job easy and interesting
  – Focus on structure at each level; from overall argument structure, to section and paragraph structure, to sentence structure, to word choice
  – Make connections between ideas explicit and clear
• Editing
  – Check for grammar, mechanics, and spelling. Don’t forget to spell check your paper as the very last thing you do
  – Avoid low-level editing until late in the writing process
Writing Advice

- Writing is hard work but can be extremely rewarding
- Takes Time
  - Multiple sessions. Putting it aside is important
- Be Willing to Delete
- Get Feedback
  - You are often not the best judge of whether your draft is clear
  - Discuss aloud what you are trying to achieve
  - Read your paper aloud. Ears can pick up what your eyes miss
- Construct a Backward-Outline
  - Identify the main idea or ideas in each paragraph. Rank their importance in advancing your thesis. Consider connections between and among ideas
- Rethink Your Thesis
  - Consider how your argument can be restructured, how points might be reordered, how you can cut irrelevancies or redundancies, how you can add complications and implications
- Then Work on Introduction and Conclusion
  - Now you know what you want to say
  - Begin paragraphs with topic sentences
  - Link ideas in each paragraph to your thesis
- Proofread
  - Aim for precision and economy of language
  - Sometimes good way to get back into a paper but be careful
Final Presentations Week 10

Tuesday June 1 in class: 4 groups

Wednesday June 2 in CSB 003 at 5 PM: 5 groups

Thursday June 3 in class: 4 groups
Final Presentations

• What did you do?

• Why did you do it?

• What did you find out?

• What are the design suggestions?

• How did data drive design?

• Why should the audience be convinced?
Final Papers

• Final Papers due by time of final (Monday June 7 11:30AM)

• Suggest Group Binder: One copy of data, notes, models, prototype designs, shared figures, etc. All papers can refer to them

• Be certain to include signed human subject forms!
Papers

• Options: (1) individual papers, (2) papers by subsets of the group members (3) one group paper

• Writing one group paper is appealing but challenging

• Collaborative writing is difficult
  – Just as with other group activities rapidly increases in complexity with the number of people involved.
  – Think of how hard it is to get together for meetings.
  – Everyone's time is even more restricted as finals approach
  – Recommend smaller group or individual papers
  – Don't allow anyone to pressure you into joining them in paper writing

• For multiple author papers: an additional requirement is to specify each author's contributions.
Papers

Purpose is communication
Always think of audience

Format
Introduction
Motivate
Background Information
Brief description of Contextual Design Is appropriate

Methods
How you did what you did
Describe contextual interviews and observations
Goal is to allow others to duplicate

Results
Report the results
Models
Describe and point out significant results

Design Changes
What are they
How tied to data

Prototypes
Recursive treatment of methods and results

Discussion
Summarize significant findings and design recommendations
What to do next
Common Problems and Advice

Not Personal History of You or Group

Too Informal

Better Organization: Use Sections

Give Details About Methods, Participants, Interviews

Be Specific About Data

Report All Group's Data

Report Data Before Analysis Tell what it is before telling what it means

Use Effective Images

Analysis and Modeling: Highlight Significant Aspects of Data

Show How Data Motivates Design Changes

Describe Prototypes and Prototype Data Collection and Analysis

Appropriate to Include in Discussion Descriptions of Promising Future Directions
Group Member Contributions

individual assessment of all the members of your group (including yourself). Due with final papers on Monday June 7 by 11:30AM. Assessments should be turned in individually.

Assessment

1. In a few paragraphs describe the contributions of each member of your group. Include a description of your contributions.

2. Considering all the work your group did over the quarter, what percent of the total effort did each member (including yourself) contribute? This should add up to 100 percent.

3. Some contributions are more significant than others. Considering all the contributions that had really significant impact on your project, what percent of those did each member (including yourself) contribute? Again this should add up to 100 percent.
In a few paragraphs describe the contributions of all authors. Include a description of your contributions. Each of the authors of a group paper should turn in a separate assessment.

Considering all the work on the paper, what percent of the total effort did each author (including yourself) contribute? This should add up to 100 percent.

Some contributions are more significant than others. Considering all the contributions that had really significant impact on your paper, what percent of those did each author (including yourself) contribute?

Again this should add up to 100 percent.
Grading

Background and Motivation [5]

Methods [10]

Results/Models [10]

Analysis: Data-Driven Design Changes/Prototypes [10]

Overall Clarity [10]
Grading

• Participation: as documented in your wiki page, the judgment of TA's/IA's, and summary judgments of your and other group members participation. (25%)

• Midterm Exams (25%)

• Final Project Presentation to Class (25%)

• Final Paper (25%)