

Museum Visit with Smart Watch



Sketching User Interfaces

CSCI 3002 – Fall 2018

Project update

- Groups will be assigned tomorrow (with rest of week to refine)
- First group deliverable will be a project plan due on Oct 9

Finishing up: Research methods & observation

Research methods

Asking people

- Interviews
- Focus groups

Capturing everyday experiences

- Diary study
- Experience sampling
- Cultural probes

Observation

- Contextual inquiry
- More on observation

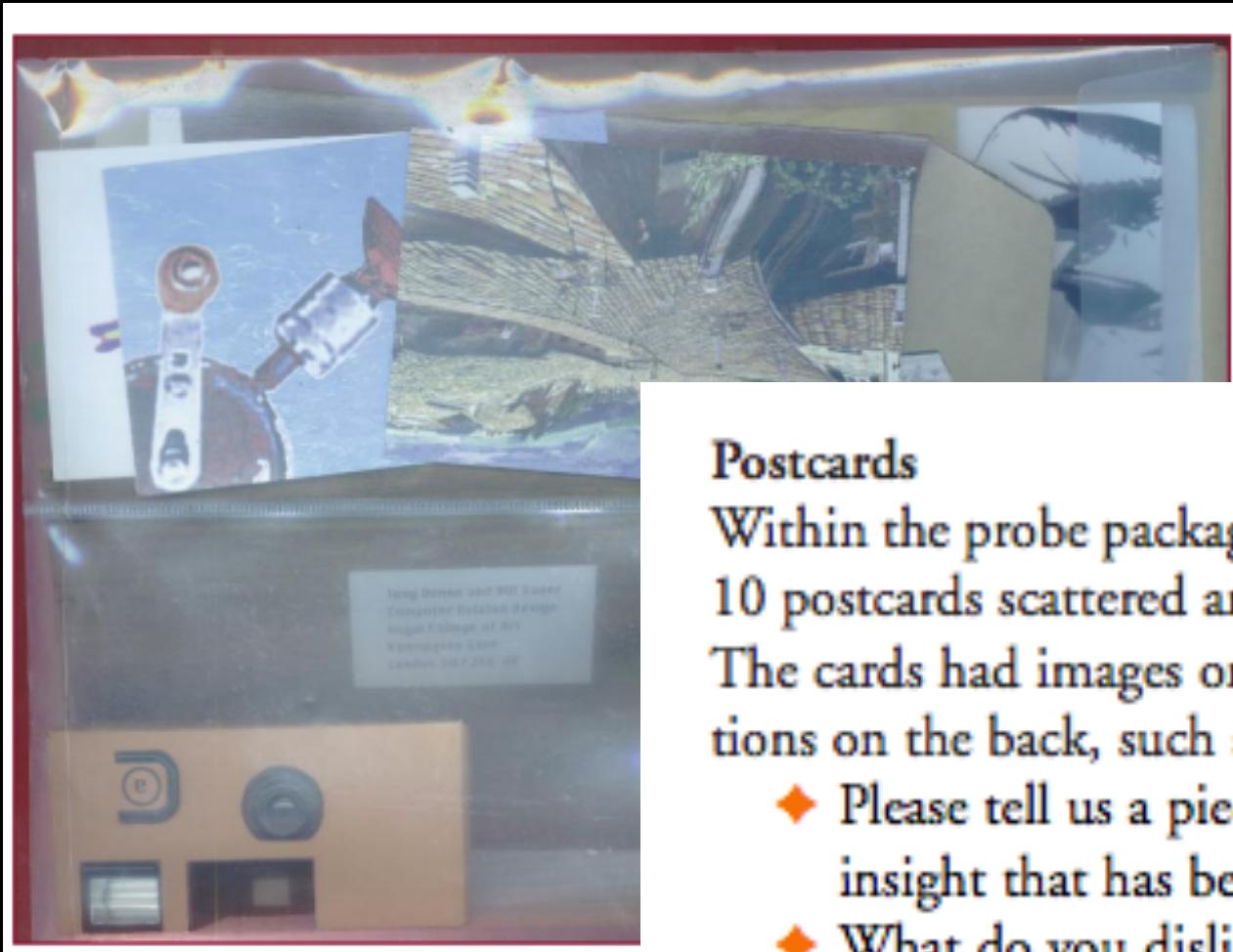
Cultural probes

- Rather than asking questions of informants, give them tasks to do
- Provide informants with a way to document their everyday experiences
- Make interesting activities to motivate people to do them
- Often delivered as a *kit* of assorted activities

The cultural probe package



The cultural probe package



Postcards

Within the probe packages, people found 8 to 10 postcards scattered among other materials. The cards had images on the front, and questions on the back, such as:

- ◆ Please tell us a piece of advice or insight that has been important to you.
- ◆ What do you dislike about Peccioli?
- ◆ What place does art have in your life?
- ◆ Tell us about your favorite device.

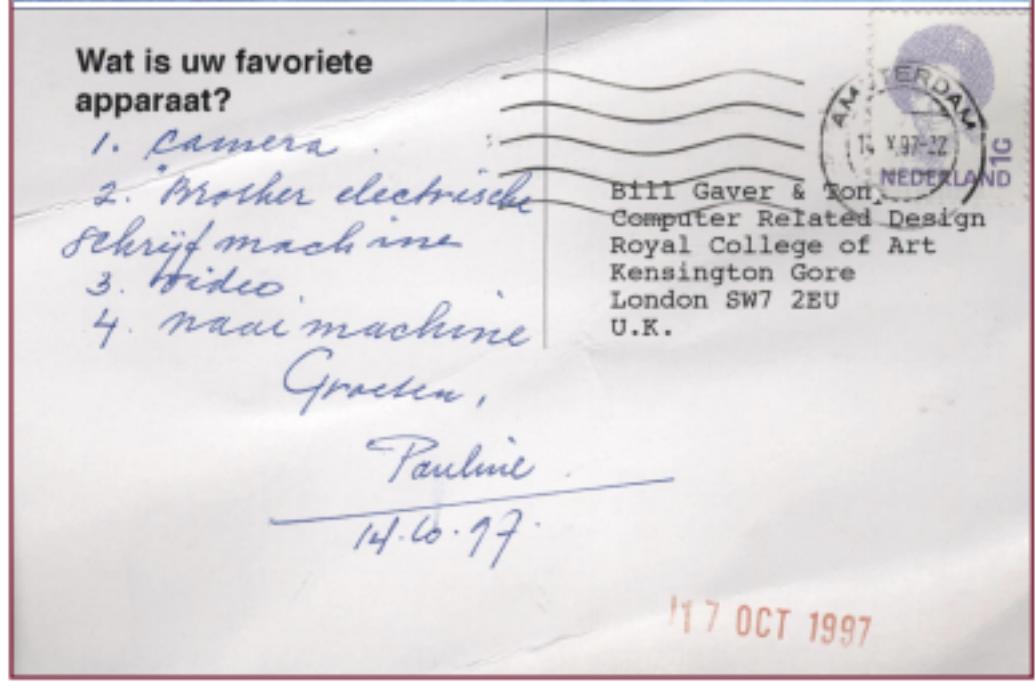
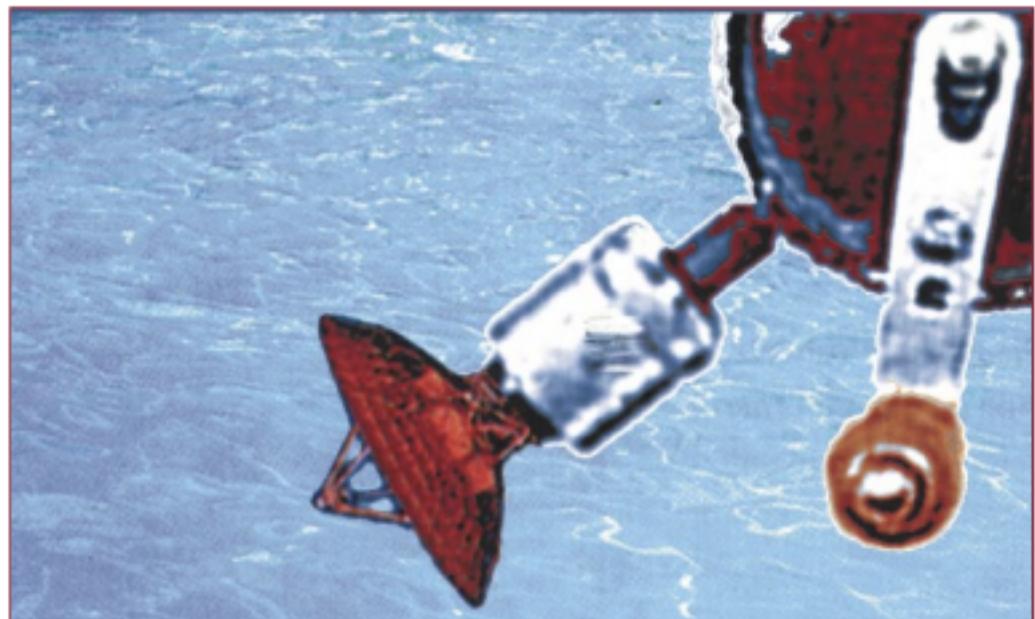


Figure 2. A postcard ("what is your favorite device?")

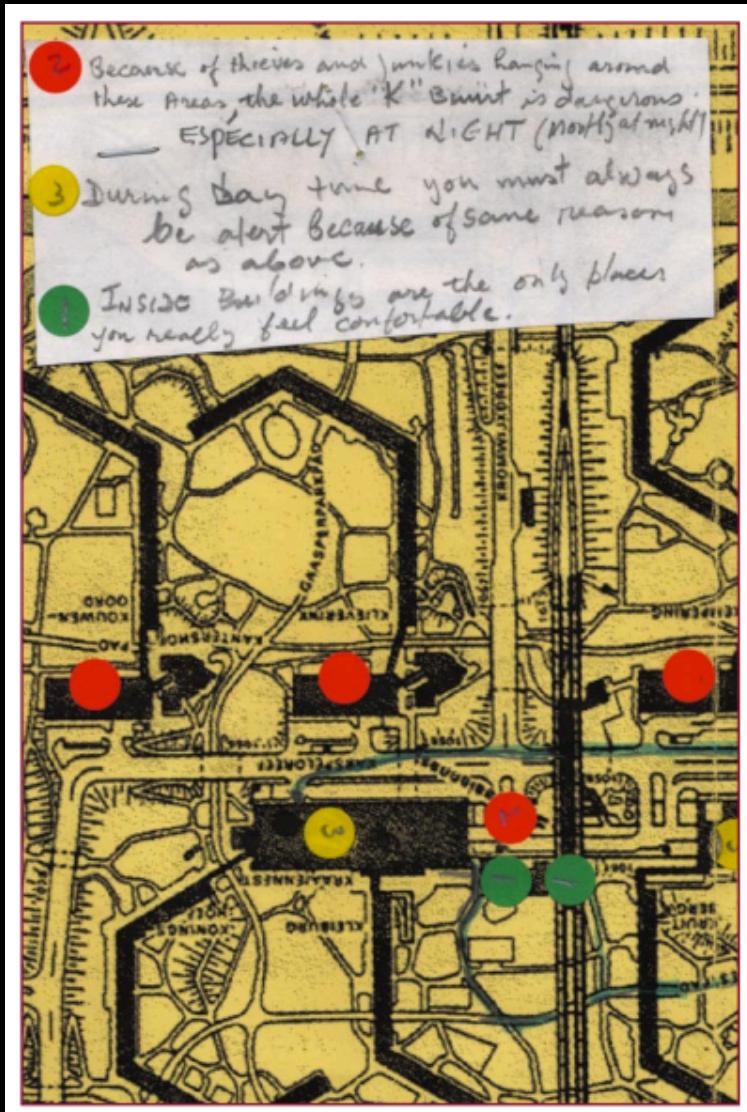


Figure 7. A returned map showing zones of safety and fear in the Bijlmer.

Cultural probes for CU students

- Make a photo diary of everything you eat this week
- Every time you sit down, sketch a mini map of the people around you
- Mark the CU campus map with areas that feel **nearby**, **far away**, **really far away**



Cultural probes

- + Rich, interesting data
- + Engaging for participants
- May be difficult to draw conclusions

Examples:

<https://www.youtube.com/watch?v=EJqpUG4pJIc>

Gaver, B., Dunne, T., & Pacenti, E. (1999). Design: cultural probes. *interactions*, 6(1), 21-29.

Observation as user research

- **On the surface:** watch stuff happen, notice problems and report them
- If we put in some time, we'll either see the problems or know there aren't any

Observation as user research

- **On the surface:** watch stuff happen, notice problems and report them
- If we put in some time, we'll either see the problems or know there aren't any
- **In reality:** we need to carefully choose the conditions of observation, what to look for
- Must make sense of what we see and apply it to the problems we care about

What can we learn from observation?

- Can observe problems even when end users are not aware that they're happening
 - e.g., notice that supermarket shoppers frequently forget to take their receipt
- Can observe tensions and trade-offs that may not feel like problems, but are relevant
 - e.g., notice that shoppers who take a hand basket put things back when their basket is full
- Can observe human behaviors in context
 - e.g., notice that most shoppers arrive alone or in pairs
- Learn the structure of tasks

Where to start

- What are people using?
- What are people doing? (tasks, multitasking)
- Patterns of interactions (where people sit, how people group, predictors)

How to observe well

- Choose appropriate location and setup
- Have a sense of the topic you wish to observe, so you know what to look for
(may require multiple sessions)
- Learn to spot tasks, errors, obstacles, workarounds
- How people use devices, work alone or in groups
- Also, practice

Failure modes for observation

- Observe without planning → end up with a bunch of data but don't know what to do with it
- Assume that not seeing anything interesting means that nothing interesting is there
- Fail to process and synthesize your findings
- Read too much into behaviors without triangulating; incorrectly assuming motive
 - research often leads to more research

Analyzing observational data

- Who are the subjects?
- What are they doing?
 - What are their goals?
 - Tasks?
- What do we know about their context?
 - Are they multitasking? Carrying stuff?
 - Environmental distractions e.g. noise?
- What steps do they follow in completing a task?
- Did they run into any problems?
- If so, what did they do about it? (workarounds)

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- Across all of these, were there groups, patterns?

Synthesizing observations

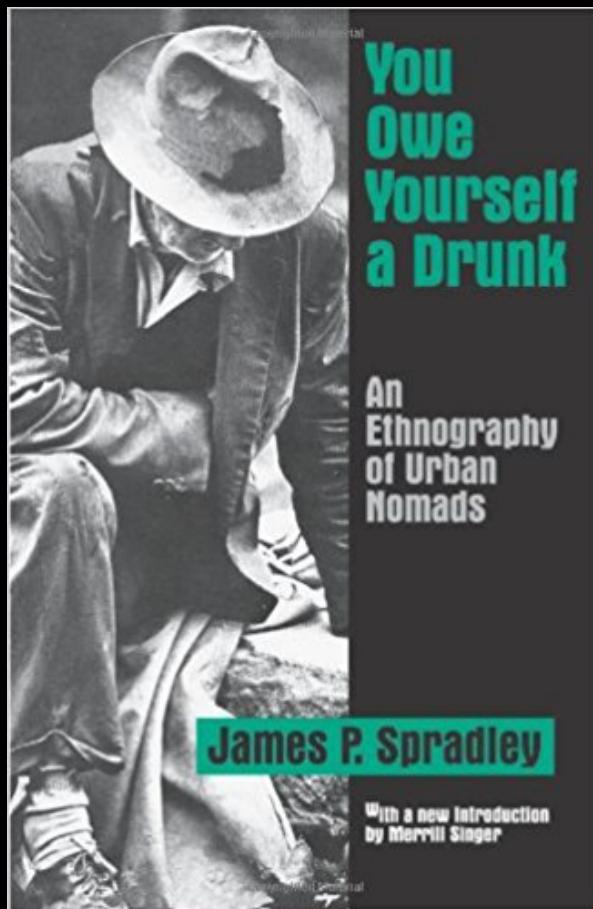


TABLE 3.3 COMPONENTIAL DEFINITION OF TRAMP DOMAIN

	<i>Mobile</i> ¹⁰	<i>Mode of travel</i>	<i>Home base</i>	<i>Livelihood</i>
Working stiff	Yes	Freight Commercial	Job	Specialized— Works
Mission stiff	Yes	Commercial	Mission	Specialized— Missions
Bindle stiff	Yes	Freight	Pack	Generalized
Airedale	Yes	Walk	Pack	Generalized
Rubber tramp	Yes	Car	Car	Generalized
Home guard tramp	No	Ø	Town and Kinsmen	Generalized
Box car tramp	Yes	Freight	None	Generalized
Ding	Yes	Freight	None	Specialized— Begs



Figure 5: Photo showing the three spaces of activity

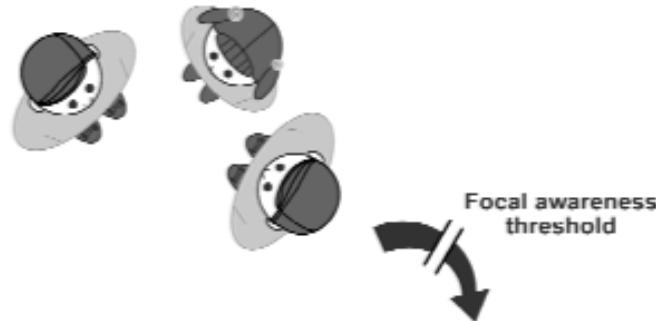


Figure 6. Parallel use

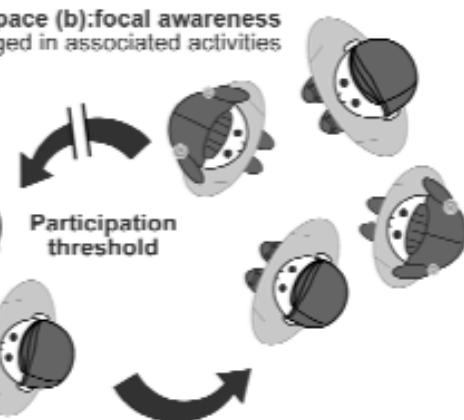


Figure 10. Pondering grip vs. grandiose gestures

Space (a): peripheral awareness of display,
engaged in unrelated activities



Space (b): focal awareness
engaged in associated activities



Space (c): direct interaction
with display

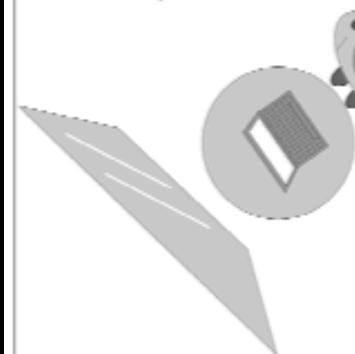


Figure 6: A diagram showing a model of public interaction flow across thresholds

Assignment: Observation

- Your task will be to observe in a public place and take notes
- Previous examples
 - Observing list use in the supermarket
 - Observing crossing behaviors on Pearl St
 - Observing use of the automated supermarket gadget
- Due Monday Oct 8 at 11:59pm

10,000 foot view

- Before: concepts, understanding users, user research
 - Who are users? What do they want?
- Now: exploring design ideas
 - “Low fi” sketching, prototyping
 - Starting to consider overall of your project
 - Start to make design decisions

Sketching

Sketching

- Why sketch
- Tips on sketching
- Storyboarding

What is sketching?

- Representing early ideas outside of your brain
- Many forms: block diagrams, drawings, storyboards, text
- Early ideas at a level of detail that is easy to work with

Why sketch

- Capture ideas before you forget them
- Feed the creative part of your brain
- Try out ideas quickly (and discard bad ones)
- Prevent yourself from getting distracted by details

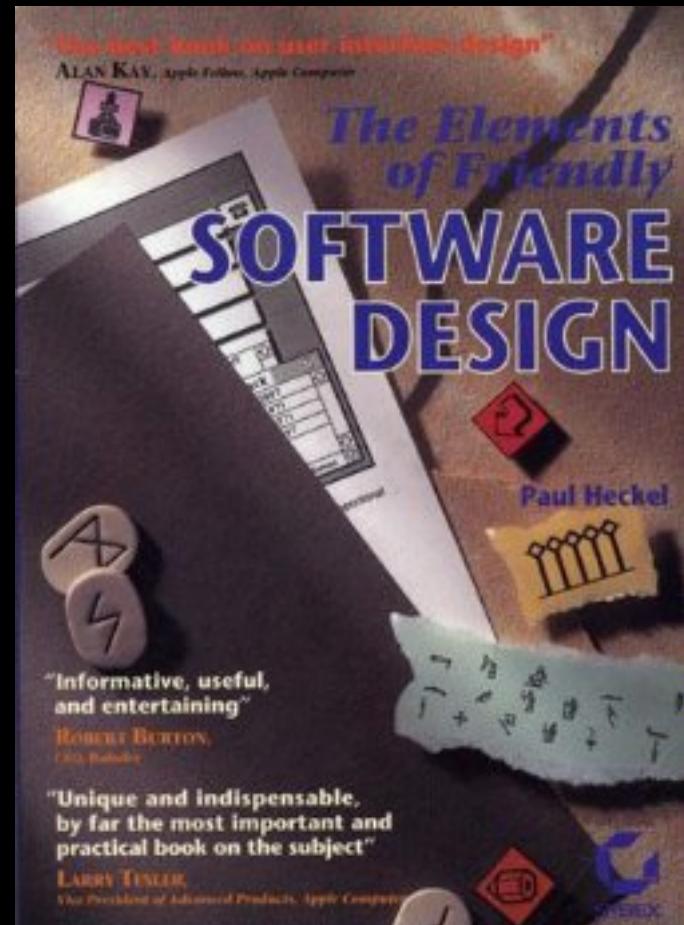


“The whole essence of good drawing – and of good thinking, perhaps – is to work a subject down to the simplest form possible and still have it believable for what it is meant to be.”

–Chuck Jones

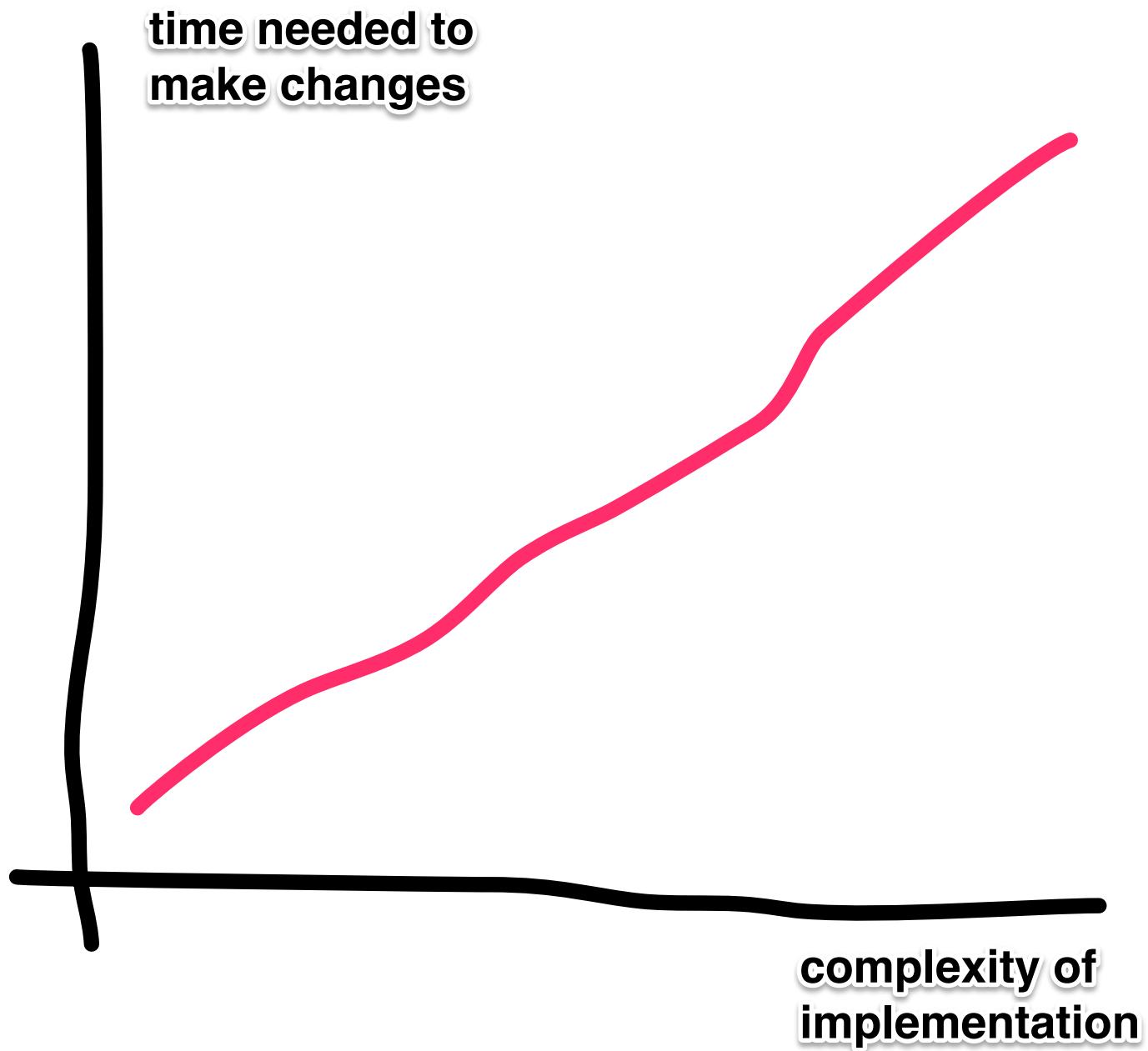
“If Ernest Hemingway,
James Mitchener, Neil
Simon, Frank Lloyd Wright,
and Pablo Picasso could not
get it right the first time,
what makes you think that
you will?“

— Paul Heckel



Myths about sketching

1. I can't sketch!
2. I need to be an artist to sketch
3. I'll save time by going straight to my dev environment



Sketching tools

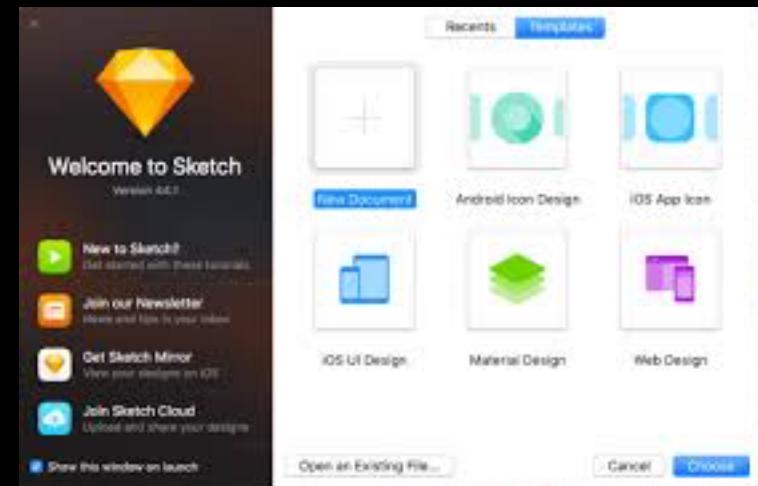
- Skitch: <http://evernote.com/skitch/>
- Balsamiq: <http://balsamiq.com/>
- Many apps, e.g. Paper <http://www.fiftythree.com/paper>

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- But really, start with paper
(get fancy notebooks/pens if it helps)

Sketching vs. dragging stuff around

- It's important to **be able to** start from a blank sheet of paper
 - Shows that you have an understanding of what you're working with
 - Demands attention to detail
 - Ability to break rules to try new things



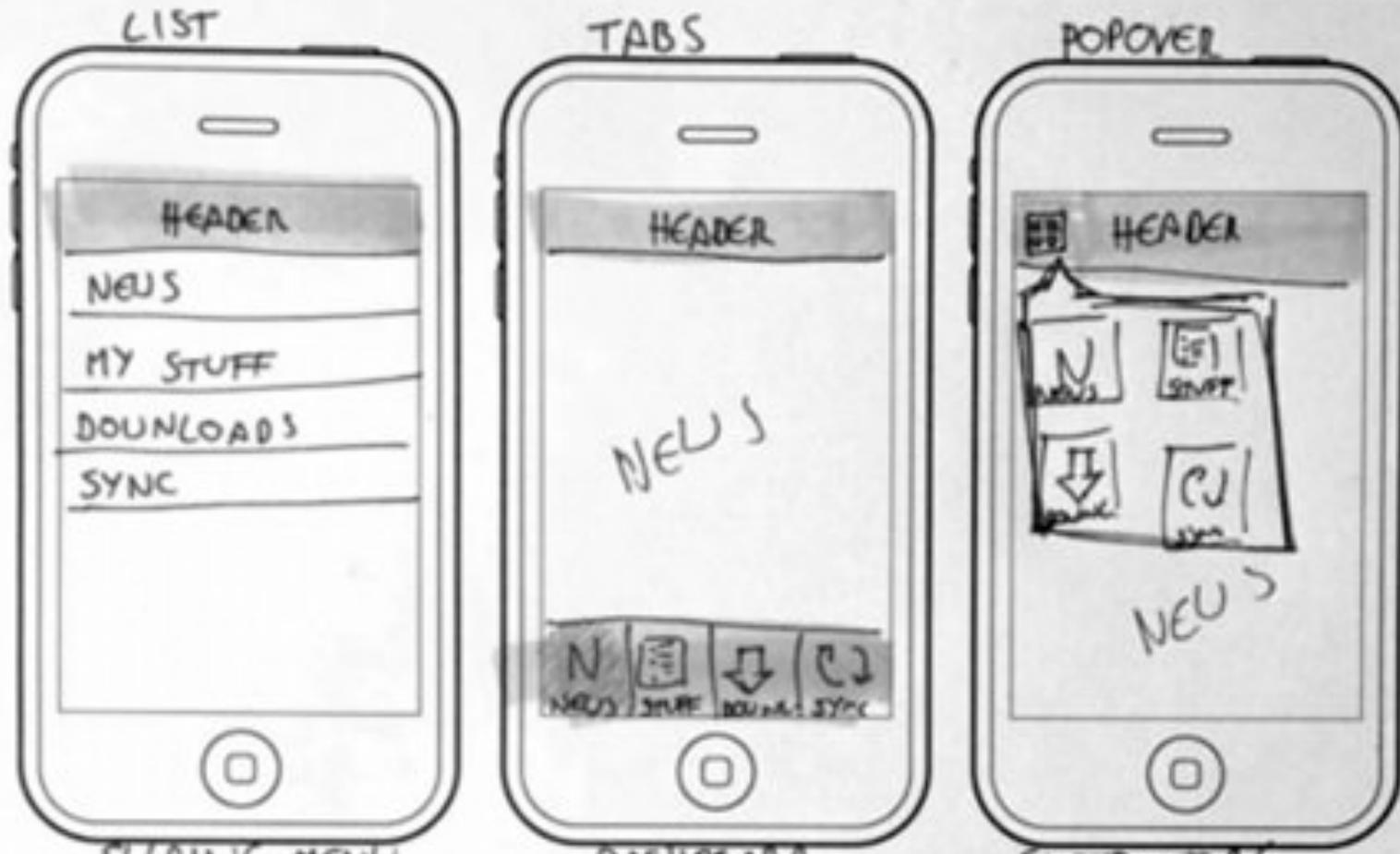
Sketching process

- Divergent sketching
 - Explore possible ideas
- Convergent sketching
 - Get the details right
- Iterative process

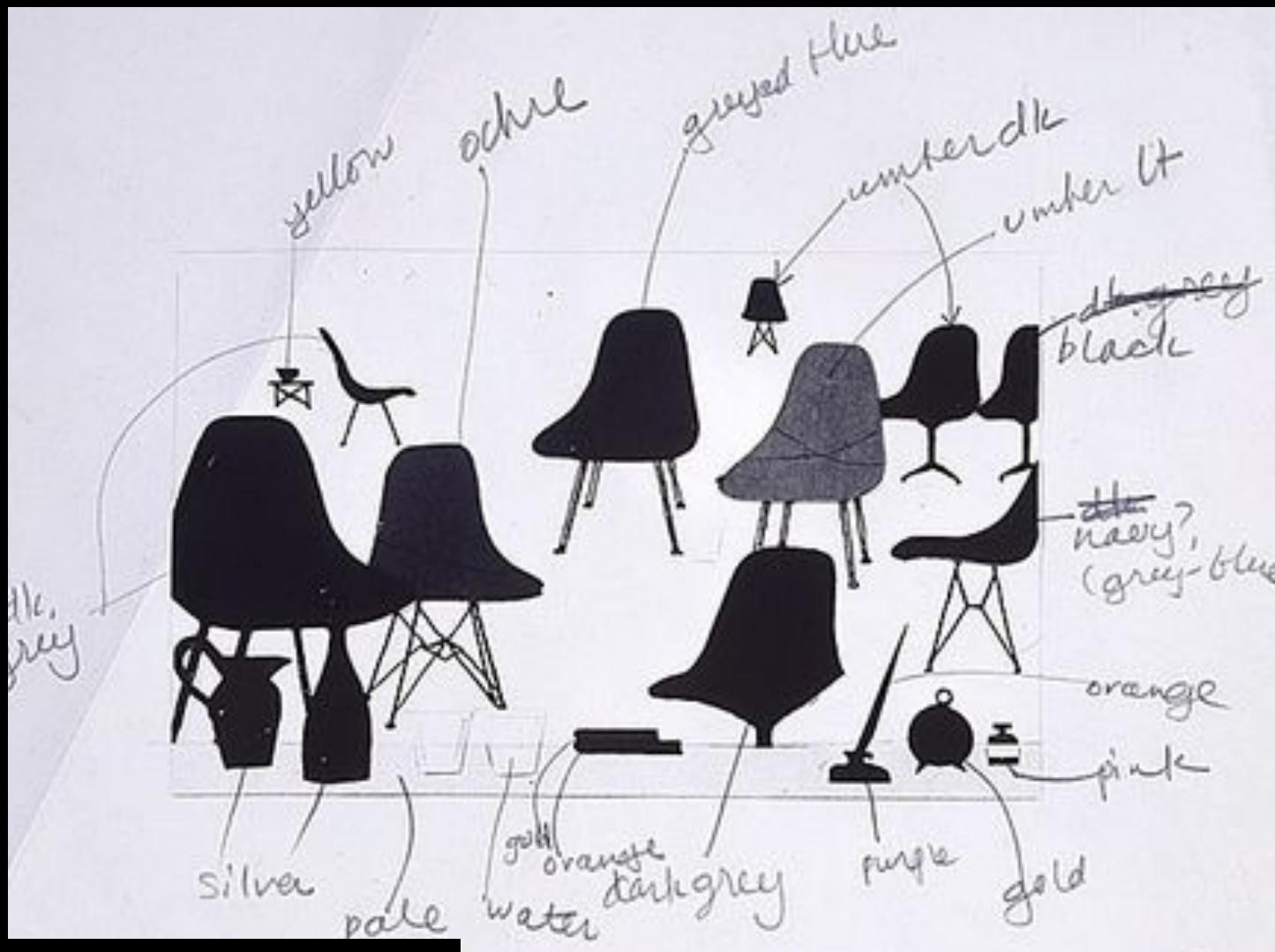
Divergent sketching

- Force yourself to represent the same thing multiple ways
 - Break away from your first idea / the default way of doing things
 - Consider what different aspects of the UI are actually doing
 - “Why are we sorting by alpha?”

Divergent sketching



Convergent sketching

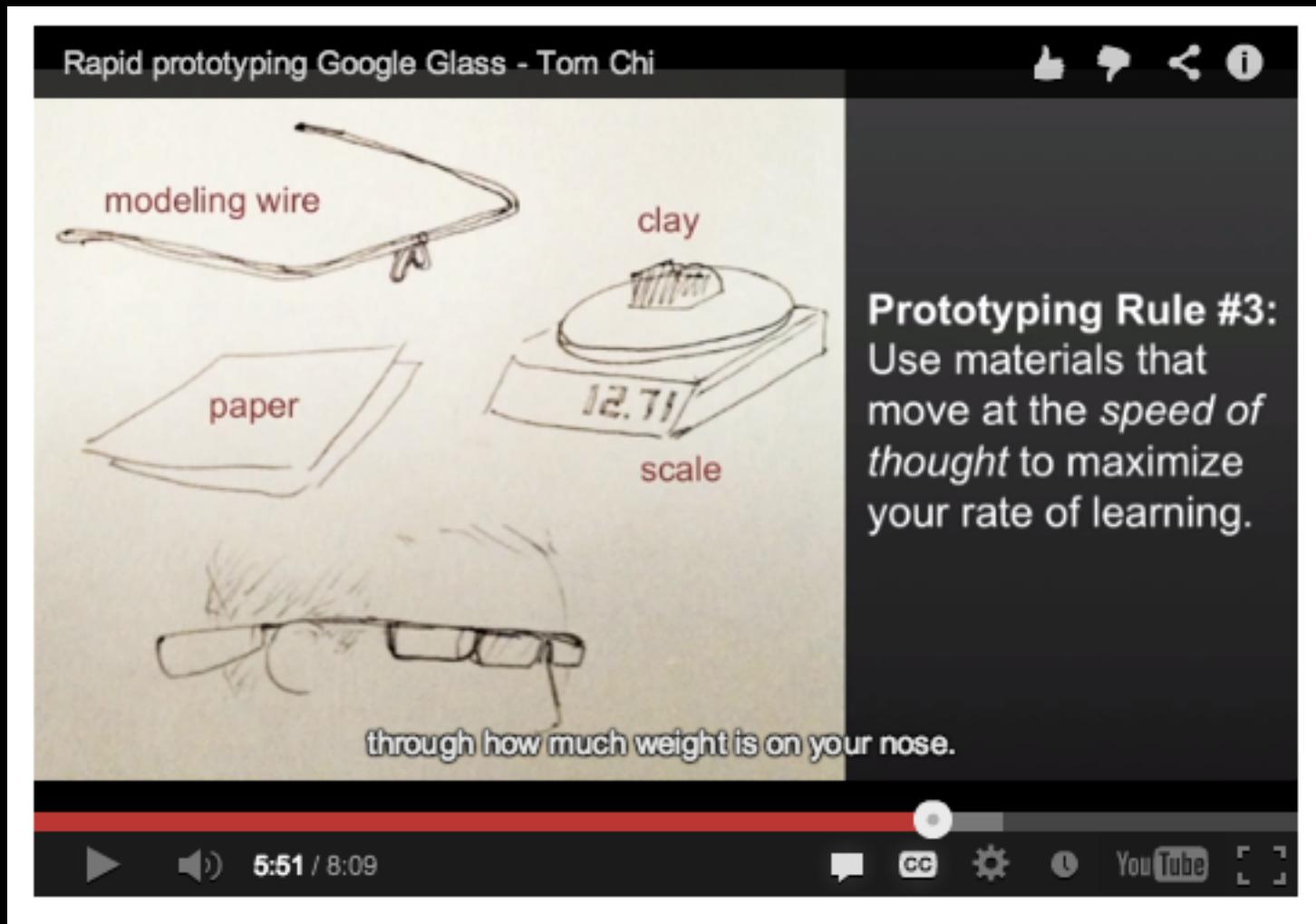


Sketching physical objects

- Jeff Hawkins' (Palm) block of wood



Google Glass in chopsticks



Sketching for user interfaces

- Different foci
 - “On screen” only
 - Hand holding device
 - Person interacting with device
- Next time we’ll practice storyboarding
 - Sequential interactions

Sketching for user interfaces

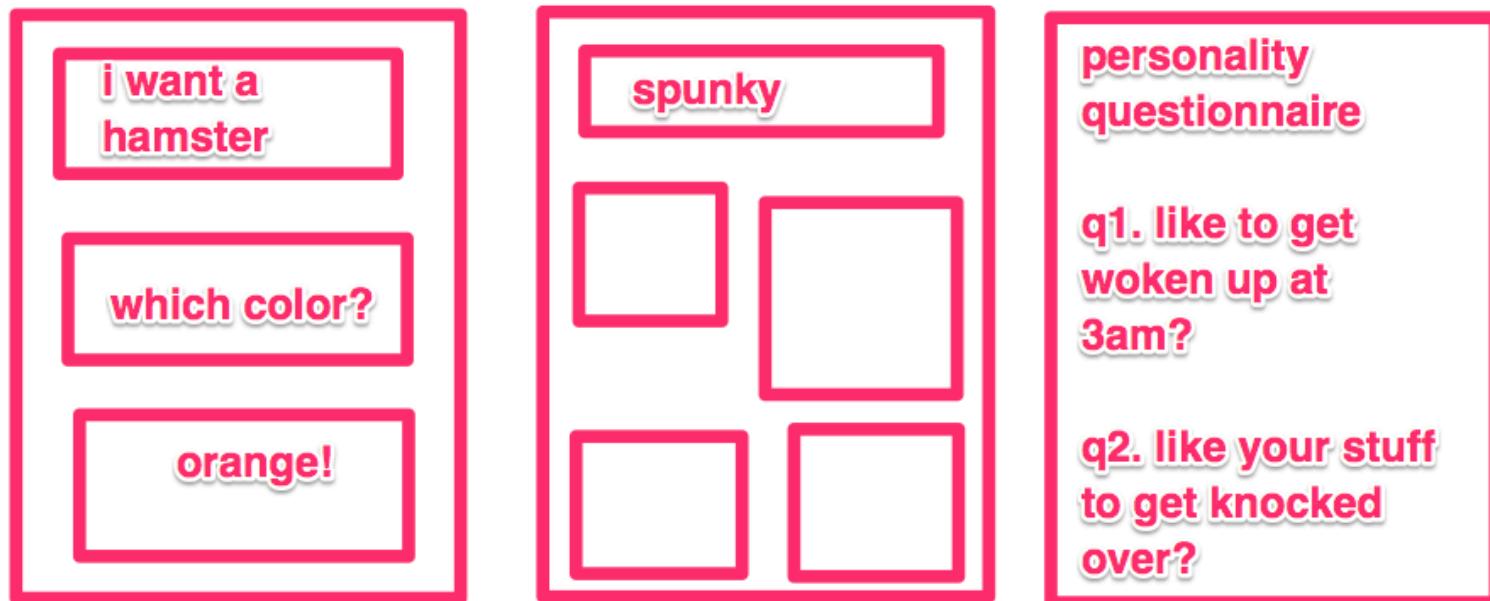
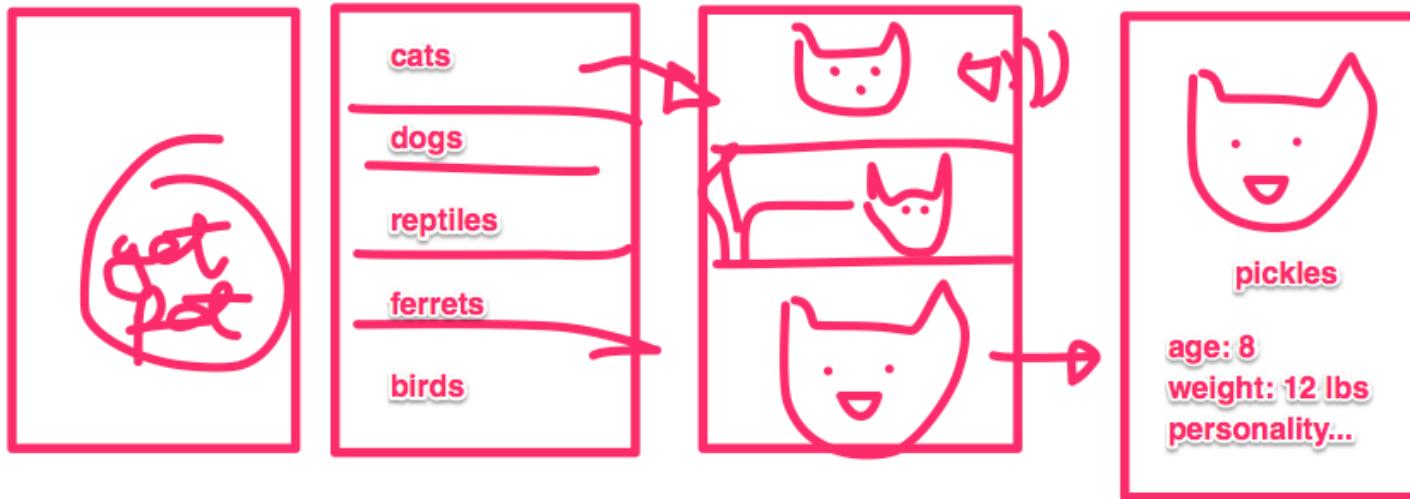
- Goals
 - Lay out the user interface
 - Figure out what fits or doesn't fit
 - Set high level “structure” of the interaction

Divergent sketching

- It's often difficult to come up with multiple perspectives on a single idea
- Easy to get “locked in” on a single perspective
- Really need to force yourself to consider other perspectives

Example

- Let's sketch out an app for adopting pets
- What different perspectives can we consider?



**keyword based
(pinterest + 8tracks)**

You try it

- Design a mobile phone app for buying textbooks
- Come up with at least 3 designs
 - Show major interactions
- Sketch them large (we'll show them off)

Other factors

- Speed – how can we accomplish the task as quickly as possible?
 - Don't ask things you don't need to know
 - Guess when you can
 - Ask the most discriminating questions first
- Make it fun – how can we make interaction itself fun or enjoyable

Convergent sketching

- Now, refine your design
 - Clean up sketch
 - Clarify relationship between elements
- May combine elements from different divergent sketches

Tips for sketching

- Make LOTS of sketches
- Hang them on the wall
- Sketch neatly, so you can go back to your sketches later (and share them)
- OK to take shortcuts (trace images, reuse elements across sketches)

Star people

