

Sketching

Interaction design SoSe 2016

Goals of Today

1. Register for the exam
2. Get started with your sketchbooks
3. Sketch 20 ideas and decide on one for your storyboard

Exam

- Mo 07/25/16, 16-18
- Location: Geschwister-Scholl-Platz 1
- Room: *M 218*
- *Register via Uniworx until: Mo 07/18/2016, 10:00*
- *Closed-Book*

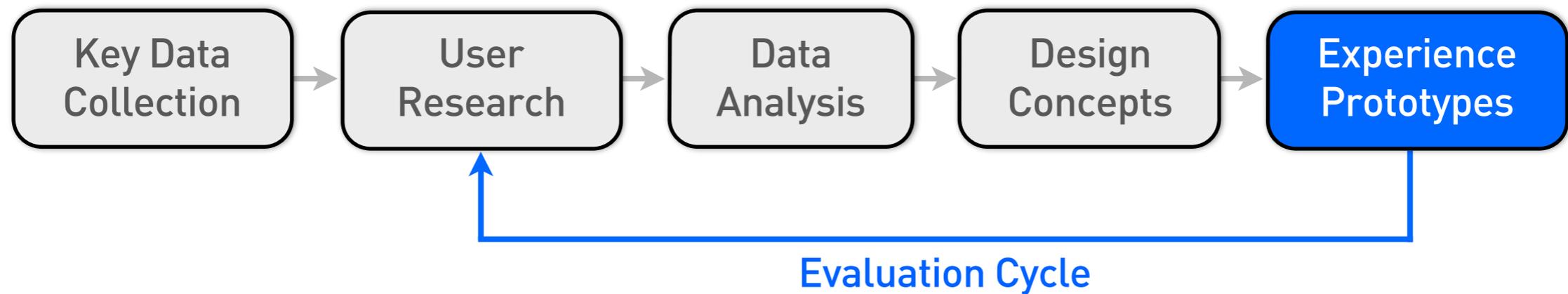
Design Brief

- Room 016: #1 good Apps make good neighbours
- Room 118: #2 lost in the crowd
- Room 112: #3 share your story
- Room 120: #4 Garage Sale Helper

Task

- Given a three month project deadline, what process would you use to approach this design problem? Break this process down into a schedule with an overview of activities for each phase.
- Who do you need for your team? How many man-days?

The Interaction Design Process

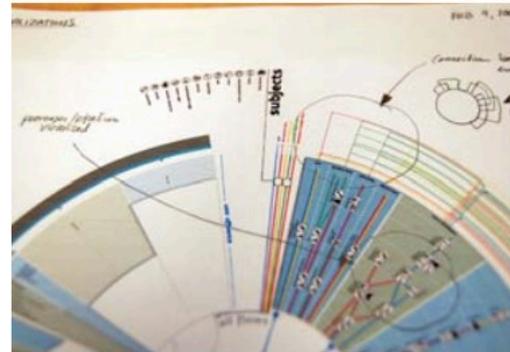
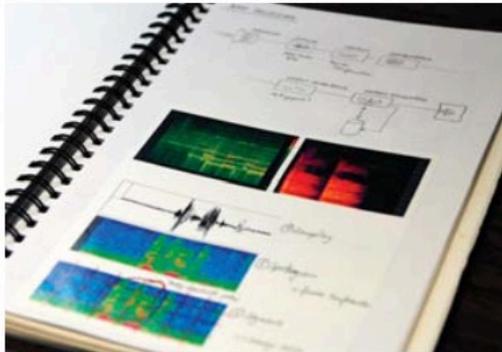
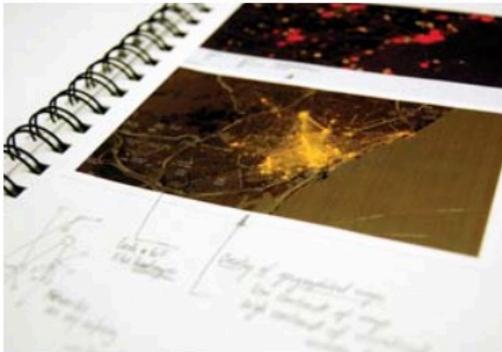
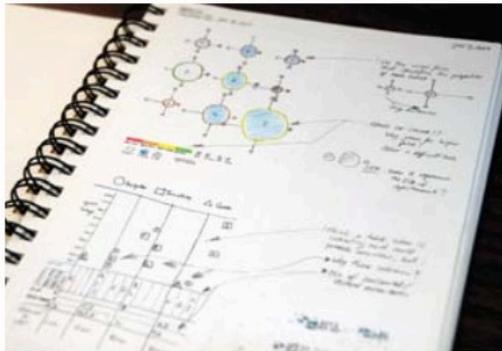
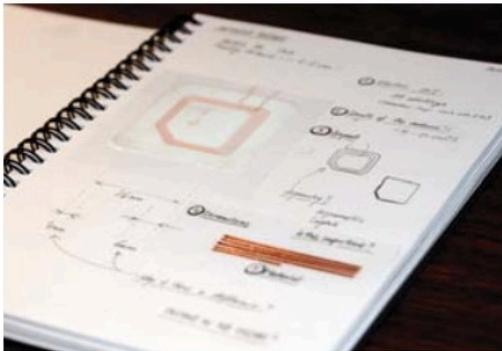
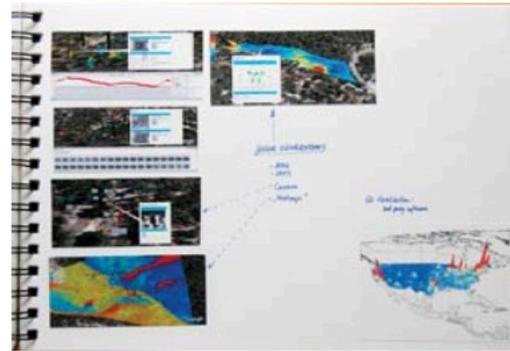
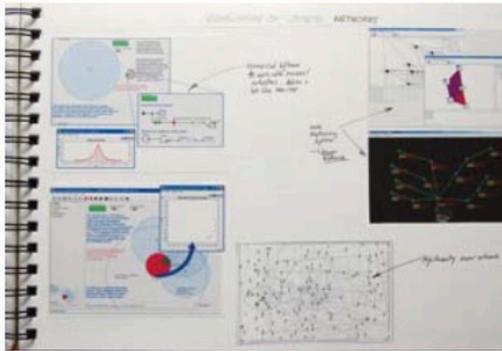
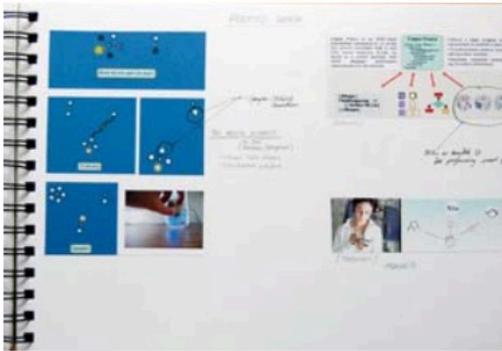


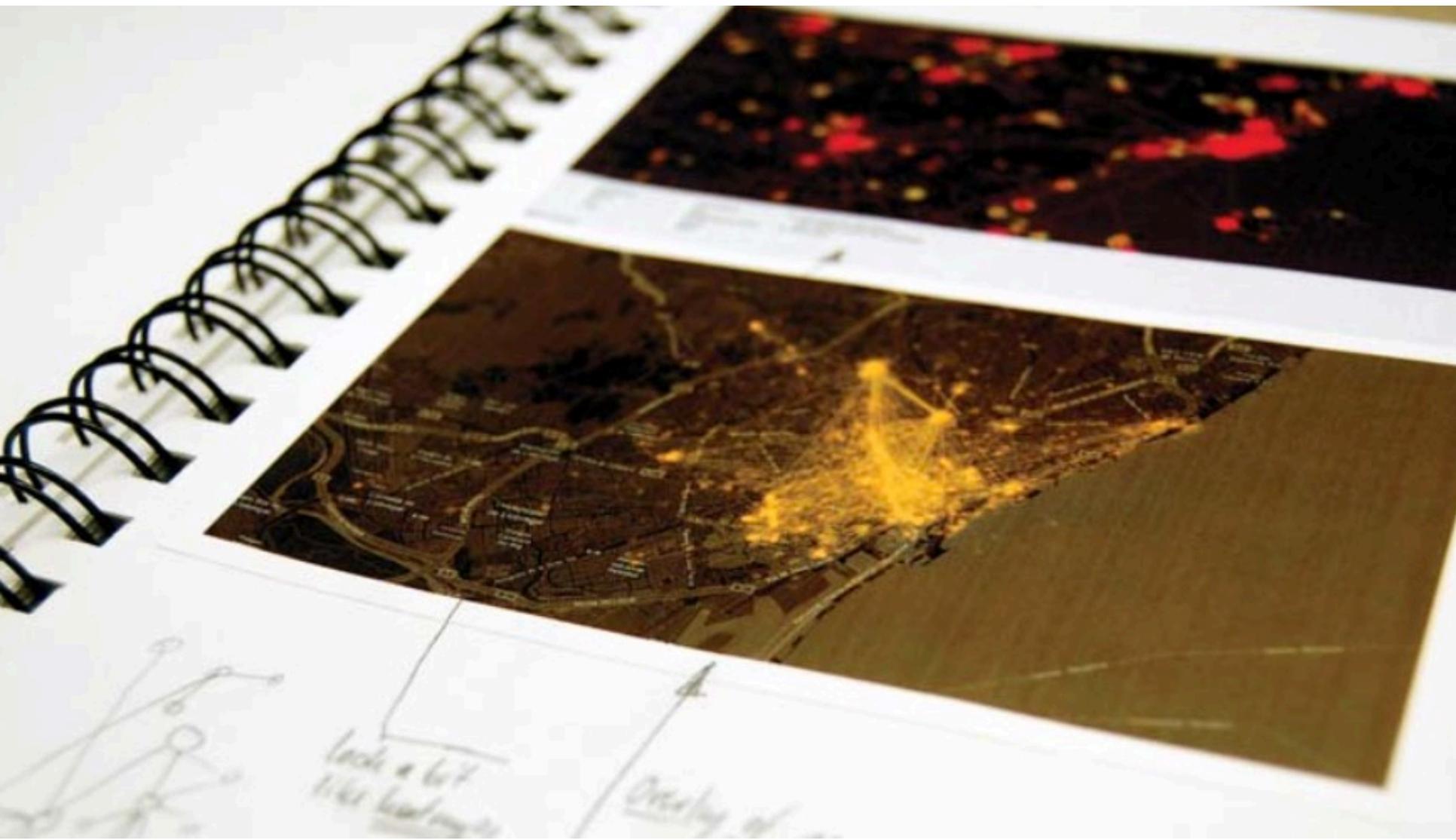
Sketchbook

- Bonus of 5% in exam possible if you hand in deliverable at the end
- deliverable: sketchbook with ideas inspired by lecture and documentation of project
- to be delivered at the end of the semester (at the last lecture)



Cambridge 2008 | 1
Nicola Marquardt





① CONTEXT VIEW

• like an aspect of an
application, like device
view

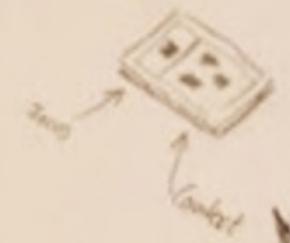
• mainly list of
objects, resources



② CONTEXT VIEW (realized)

• look at device (or focus aspect) and view the surrounding devices in this context

NEAR



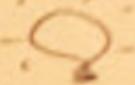
- Show possible associations, aggregates
- Show how to combine devices

④ FOCUS ON 2nd APPARATUS

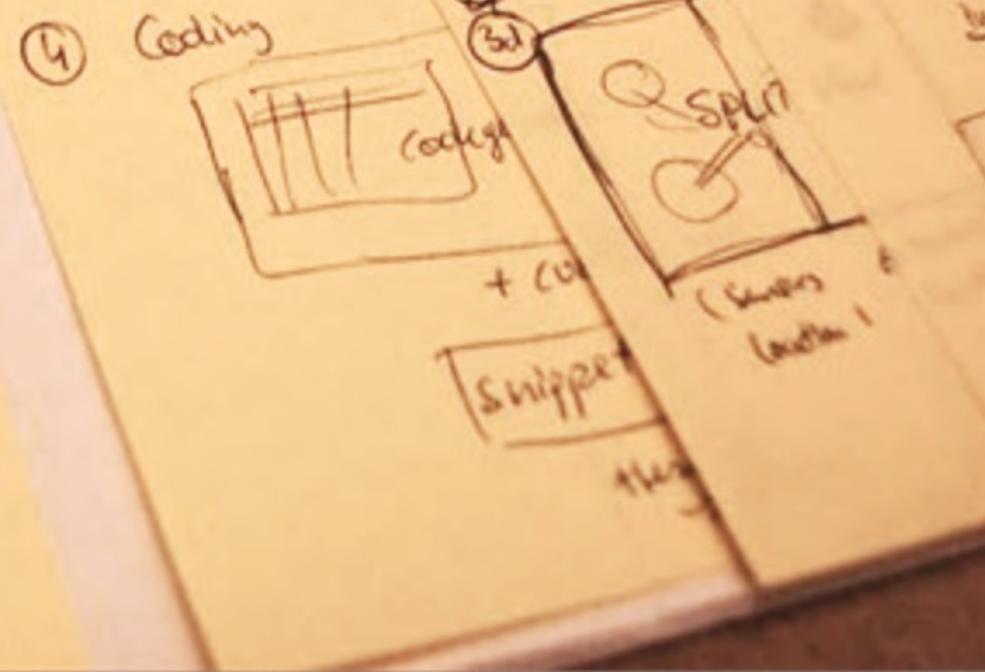
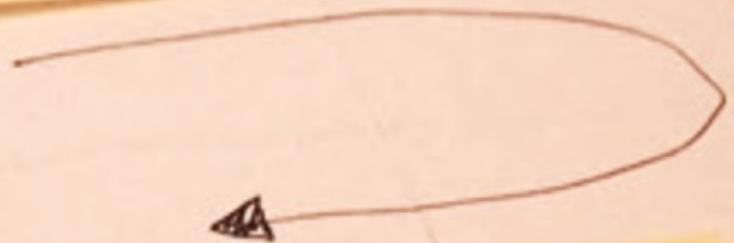
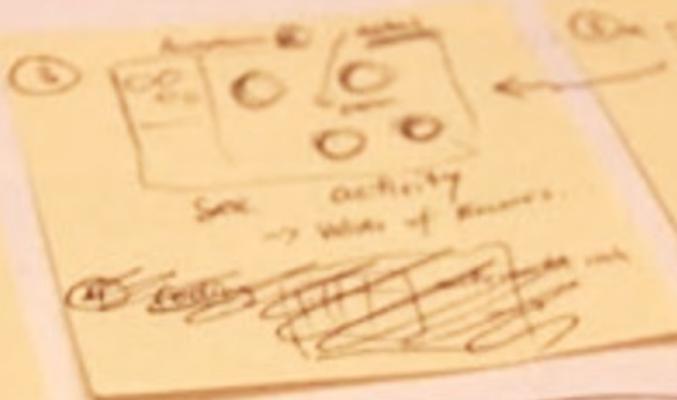
- focus on 2nd
- See possible connections
- "PICK AND CHOOSE"

CLOSE

Flow through work + details

① IDEA ! 

② Hardware → cables plug-in



But: “I can’t draw...”

“Sketches do not have to be pretty, beautiful, or even immediately understandable by others. However, you should be able to explain your sketches and ideas when anyone asks about them.”

Saul Greenberg et al.

Sketching USER EXPERIENCES



Saul Greenberg
Sheelagh Carpendale
Nicolai Marquardt
Bill Buxton



Introduction and warm-up activity

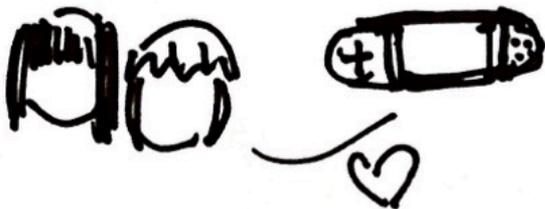
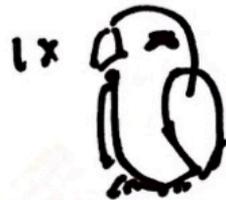
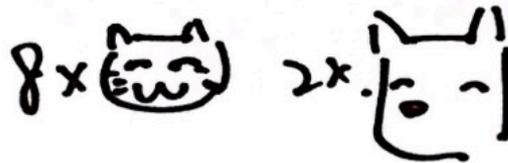
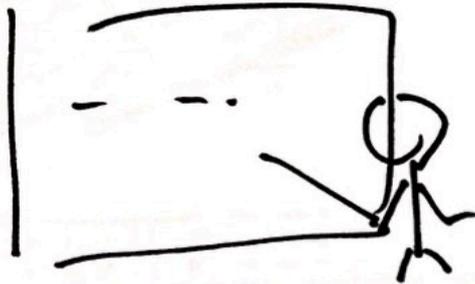
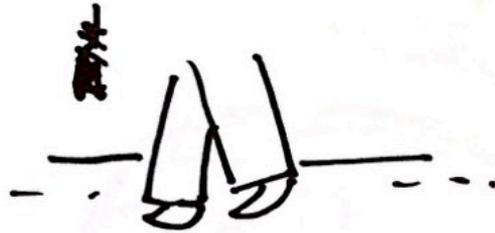
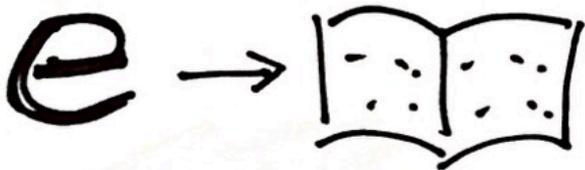
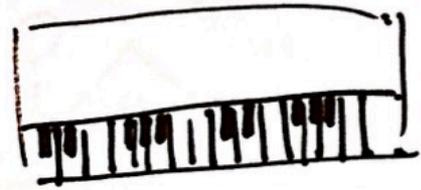


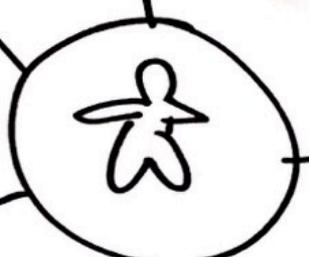
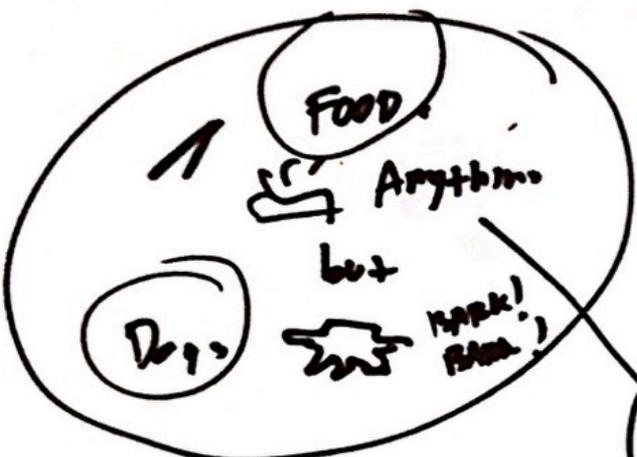
Introduce yourself to the person sitting next to you.

For 2 minutes, one of you is **introducing yourself**, the other person is **creating a quick sketch about** you while listening.

After 2 minutes you switch roles.

Handwritten scribbles





100 free chess



↑ complicated

↓ hate programming

3 years is enough!

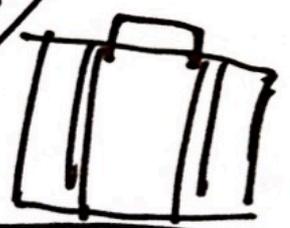


MEET TOM LEE

TRAVELLED FOR 5 YEARS



ONE OF JOBS TO FUND THE TRAVELING



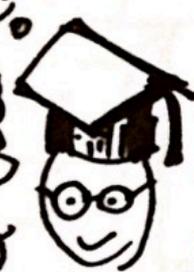
VISITED ALL

CONTINENTS

WANTS TO WORK WITH OLDER / ELDERLY PEOPLE AND UX



CAME BACK TO THE UK



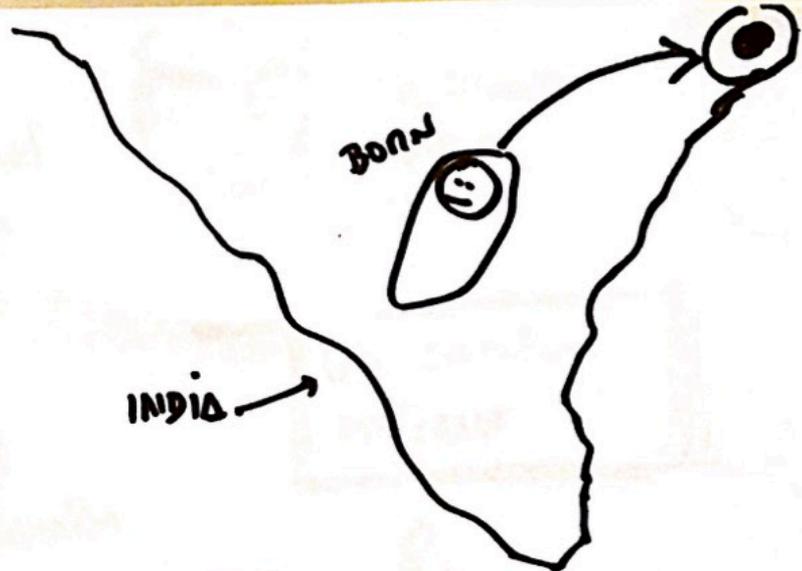
TOM STUDIED
PHILOSOPHY
RELIGION &
ETHICS

WORKED IN WEB DEVELOPMENT



ARINDRA

INDU GOD
SAVION



BACK GROUND



TELECOMMUNICATIONS



DESIGN
PRODUCT



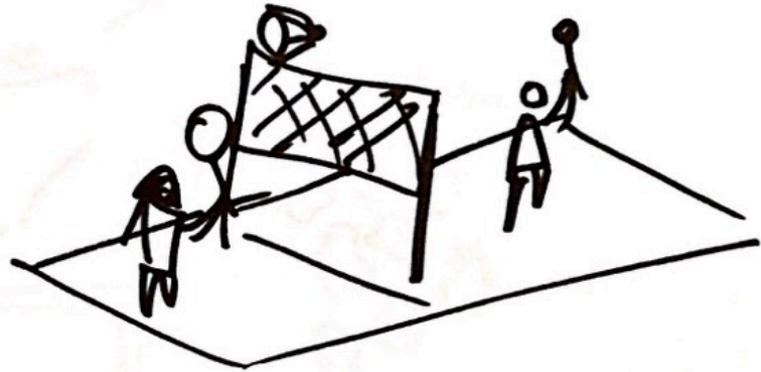
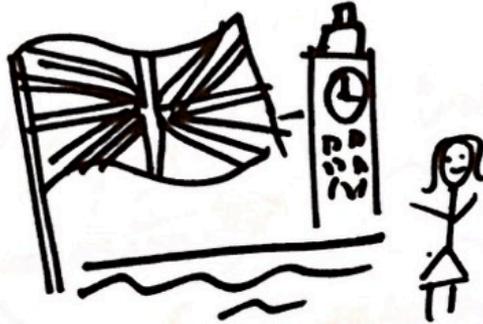
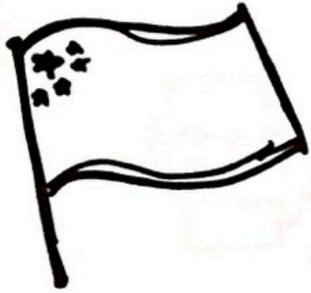
RUNNER.

STARTUP



<COMP>
<SCIENCE>
<...>

KEXIN LI ← ☺



STUDYING



Introduce yourself to the person sitting next to you.

For 2 minutes, one of you is **introducing yourself**, the other person is **creating a quick sketch about** you while listening.

After 2 minutes you switch roles.

Why is sketching useful?

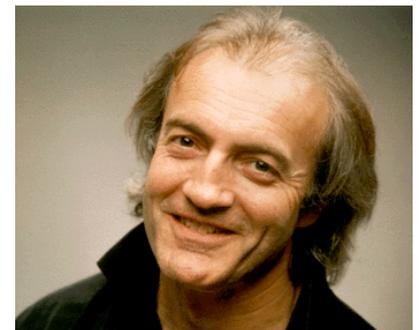
Why is sketching useful?

- Early ideation
- Think through ideas
- Force you to visualize how things come together
- Communicate ideas to others to inspire new designs
- Active brainstorming

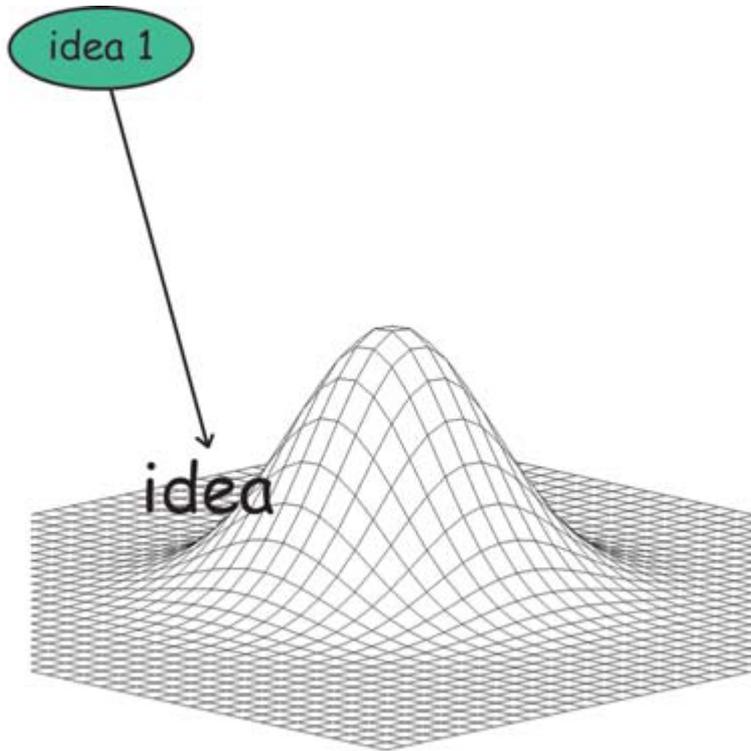
getting the design right vs. getting the right design

getting the design right vs. getting the right design

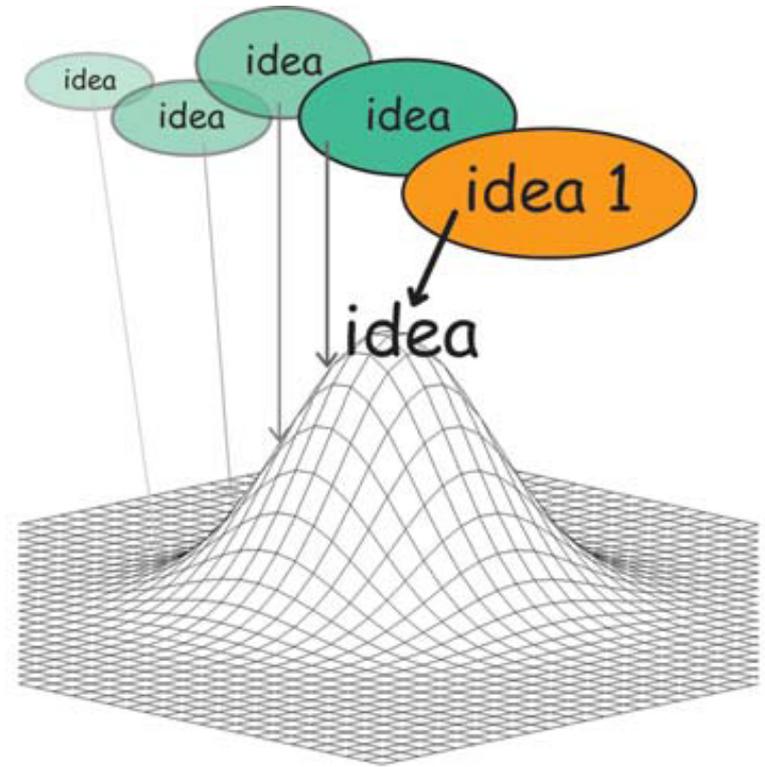
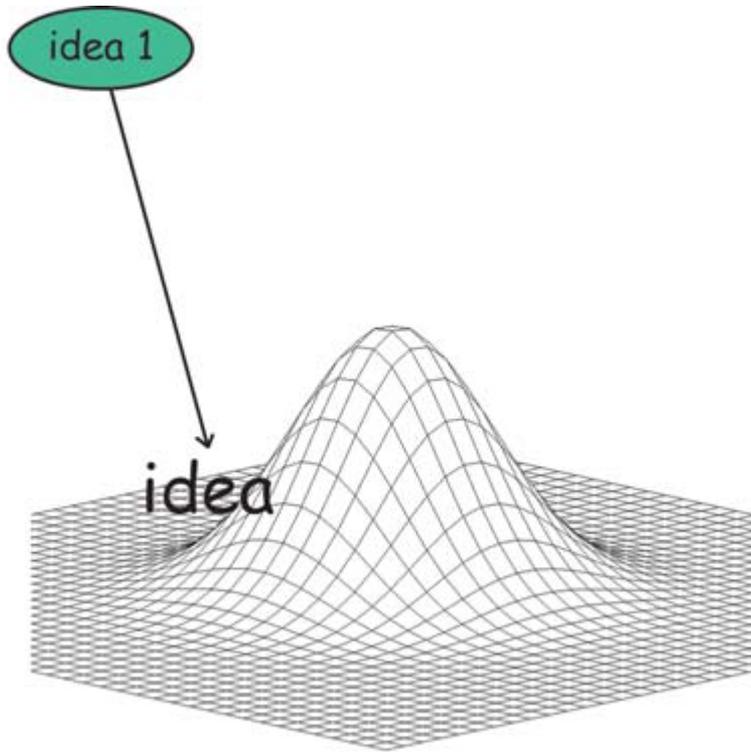
(Bill Buxton)



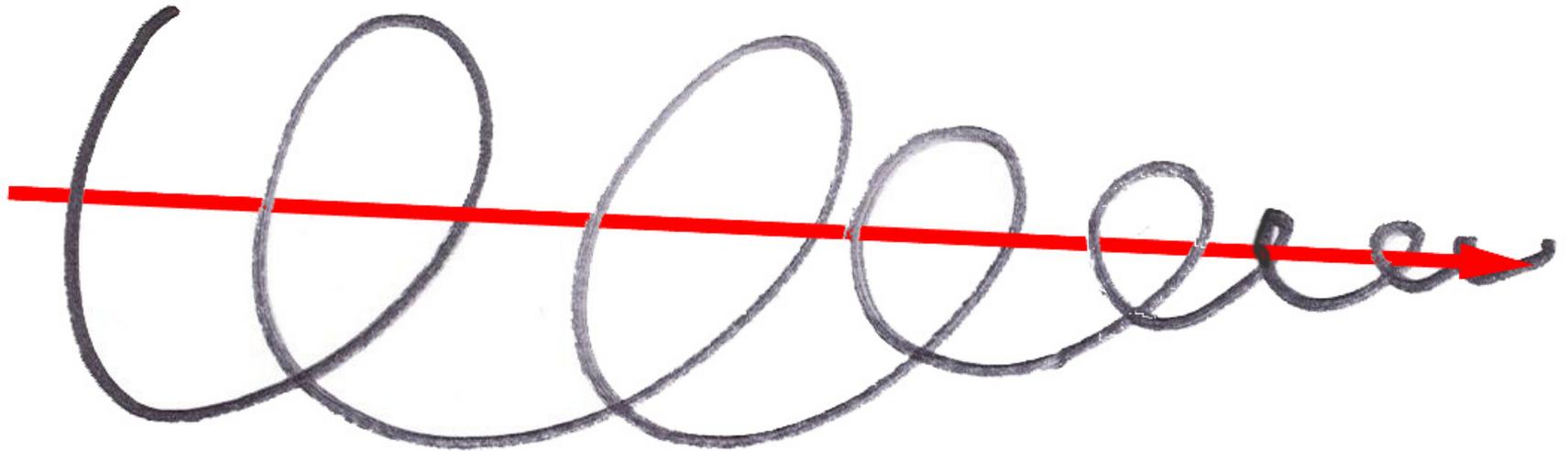
Buxton - getting the design right



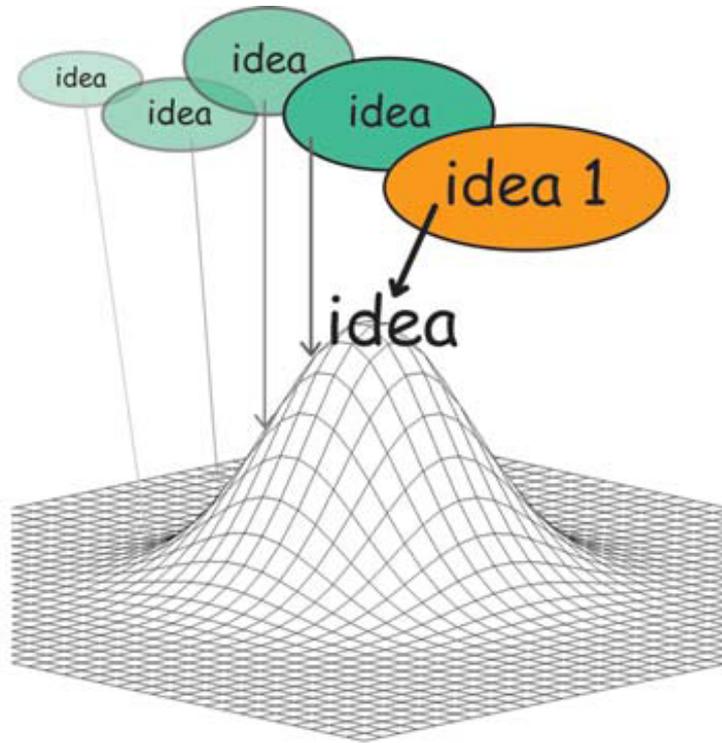
Buxton - getting the design right

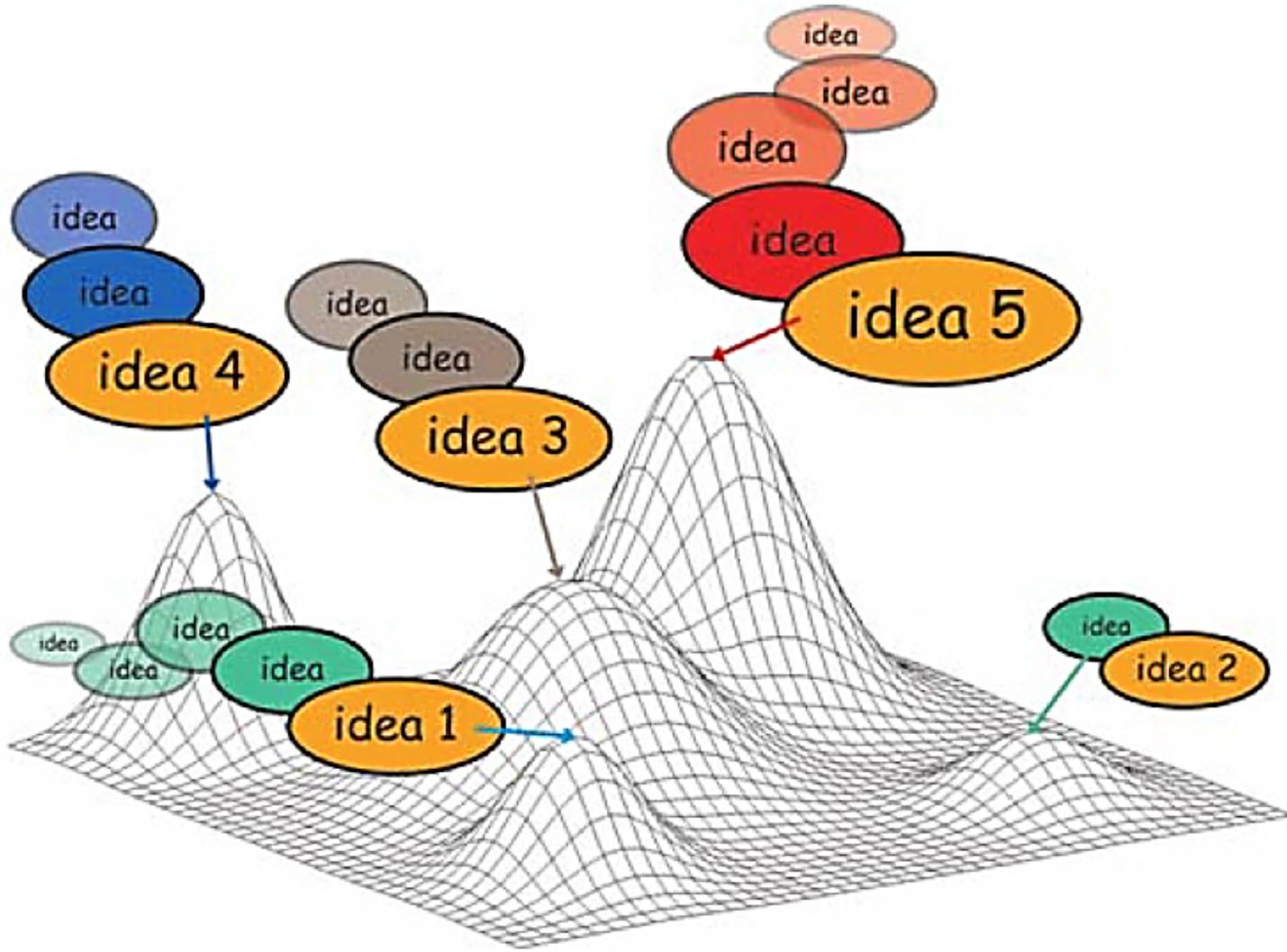


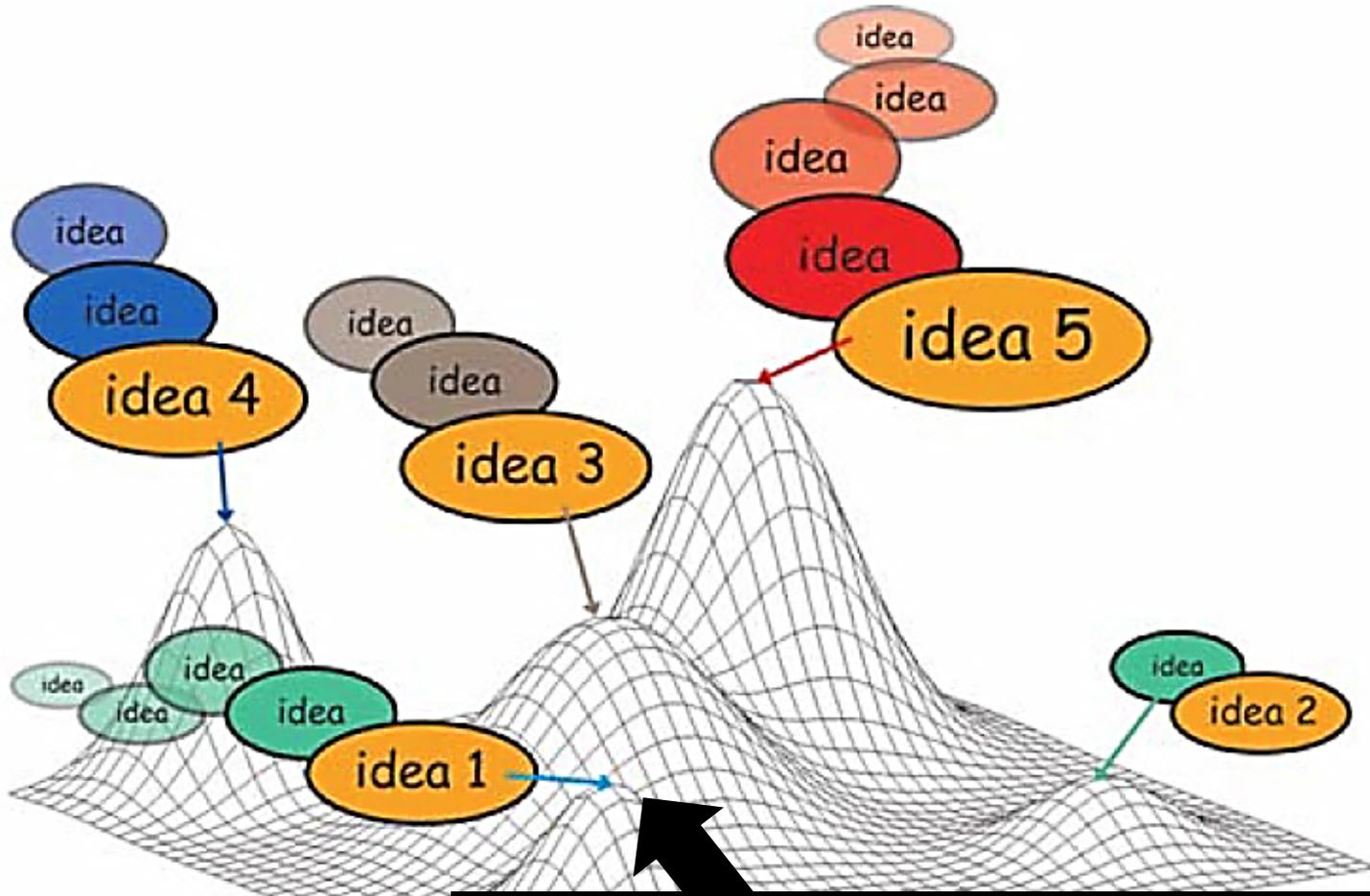
Buxton - getting the design right



Buxton - local versus global maxima

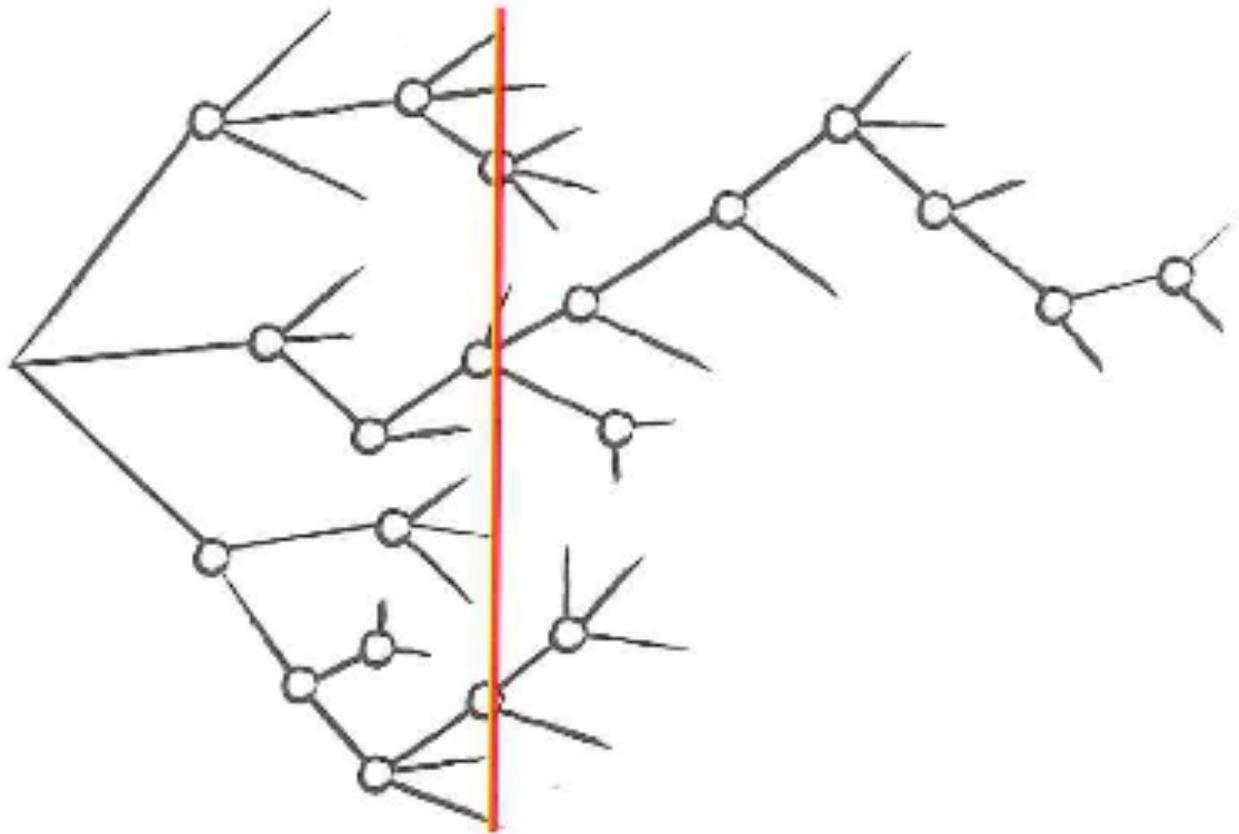






Problem: Local Hill Climbing

Instead: Getting the **right design**



Design is Choice

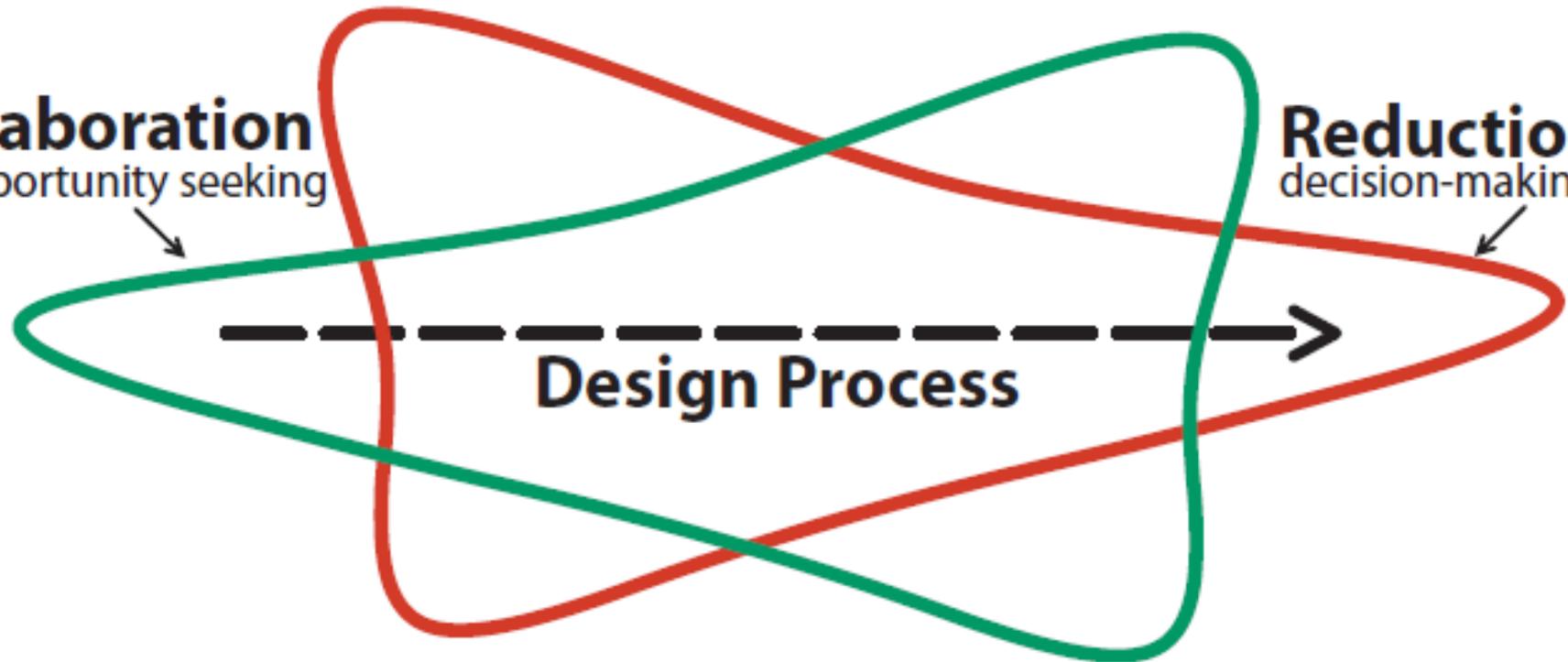
there are two places where there is room for creativity:

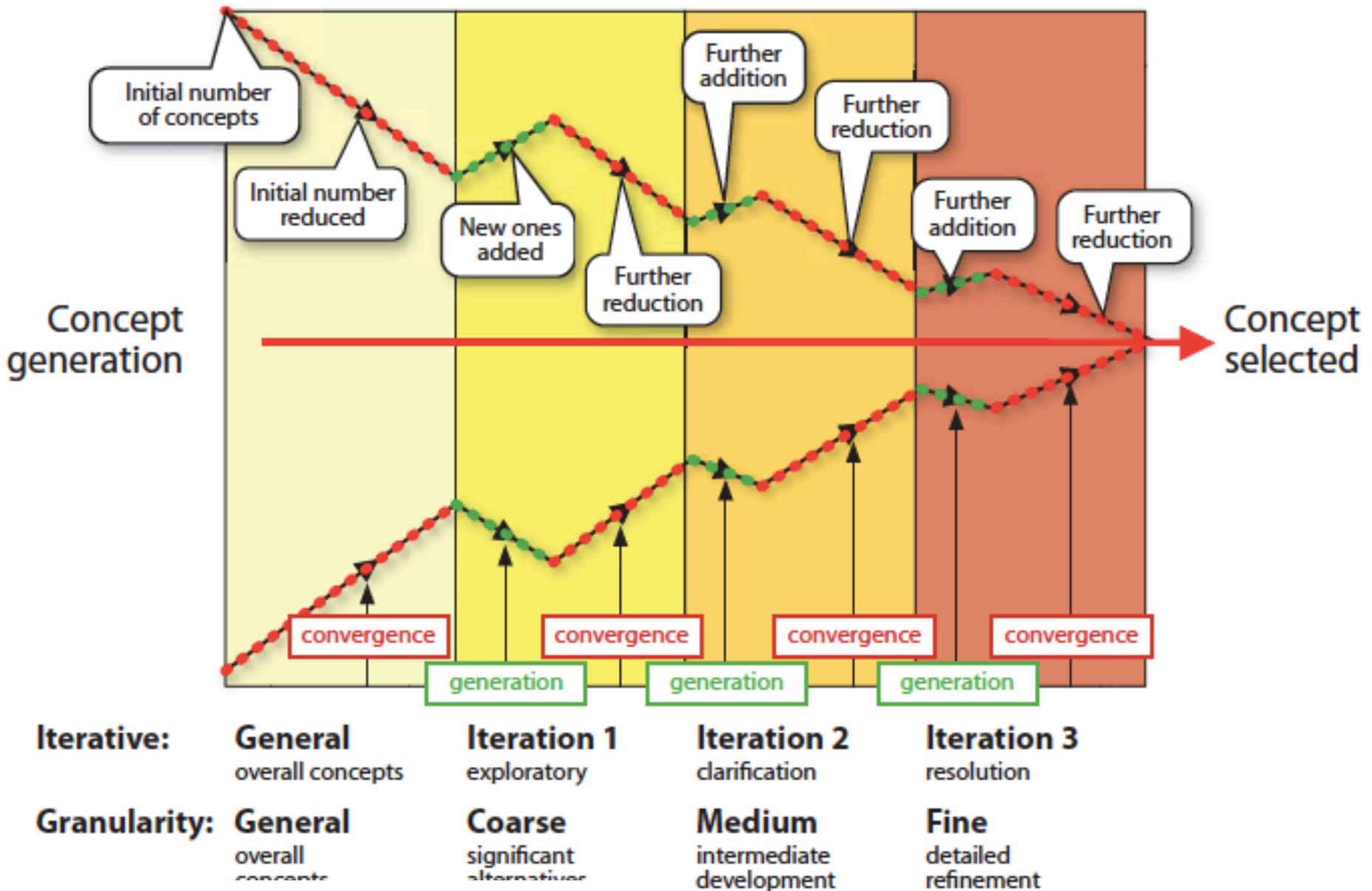
1. the creativity that you bring to enumerating meaningfully distinct options from which to choose
2. the creativity that you bring to defining the criteria, or heuristics, according to which you make your choices.

Bill Buxton

Elaboration
opportunity seeking

Reduction
decision-making







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Sketching Tips and Tricks

Sketching Tip 1:

Don't use pencils but pens and markers instead

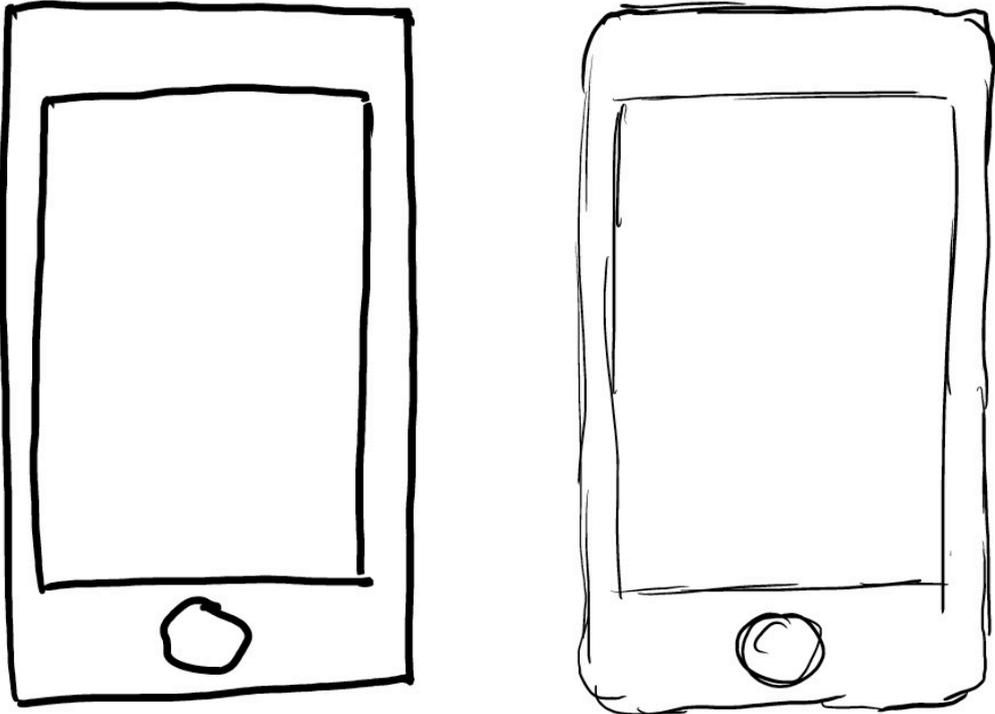


Sketching Tip 2:
Keep your mistakes,
just keep going

Sketching Tip 3: Imitate sketching styles you like

Sketching Tip 4:

Sketch with fast and long strokes
(needs some practice)



Sketching Tip 5:
Sketch *analog* (pen and paper)
before *digital* (tablet)

Sketching Tip 6:
Sketch in 2D –
three dimensions are not
necessary (most of the time)



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Drawing People



REALISTIC -----> ABSTRACT



PORTRAIT -----> IDEA

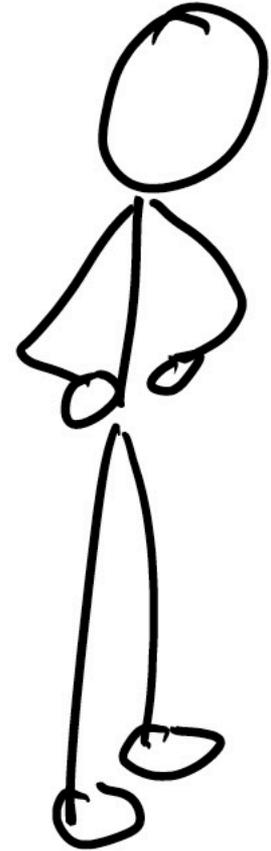
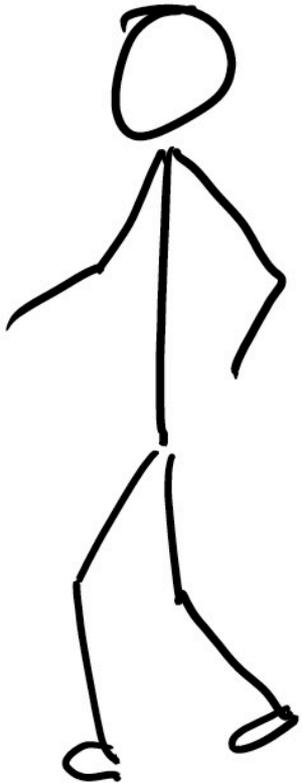
Drawing stick figures



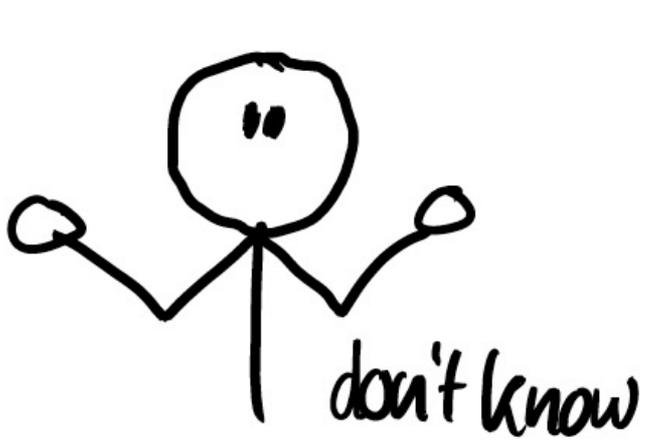
Drawing stick figures



Expressions



Expressions



Hands-on Sketching: Drawing people

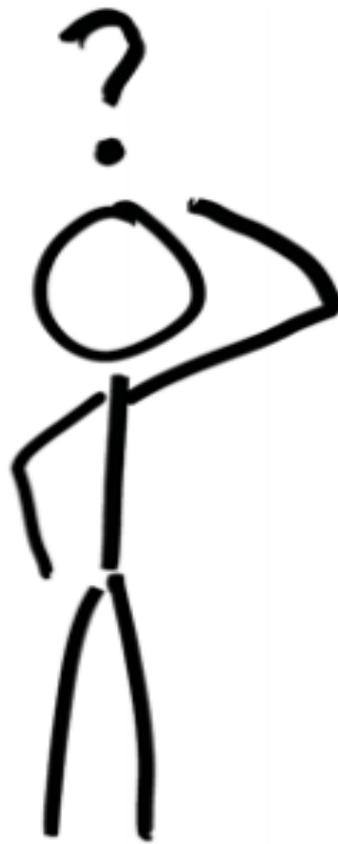
Quickly sketch 10 different stick figures:



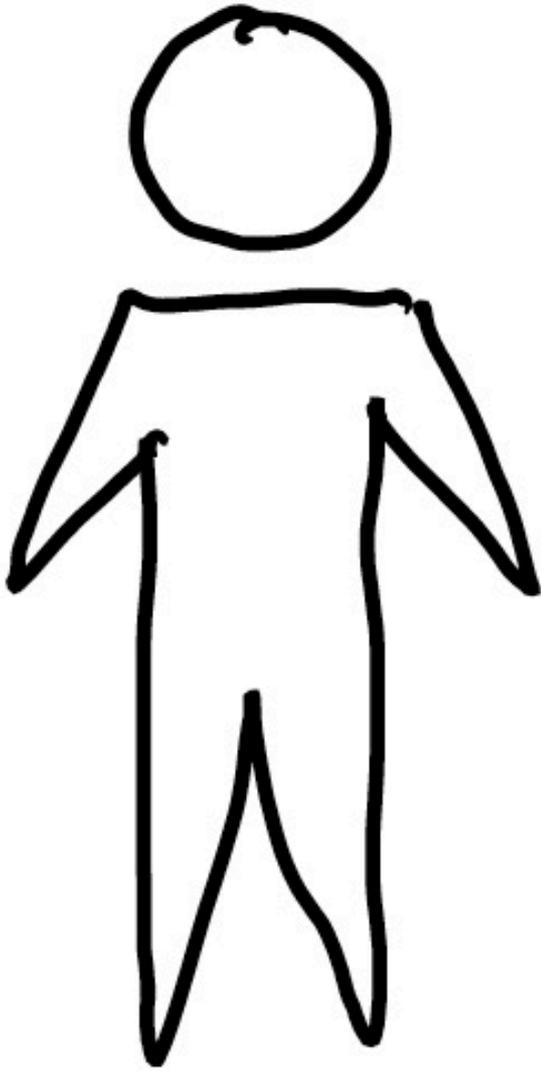
Share ideas about what to draw with your neighbor.

For example, draw a person pointing, running, picking up an object, ...

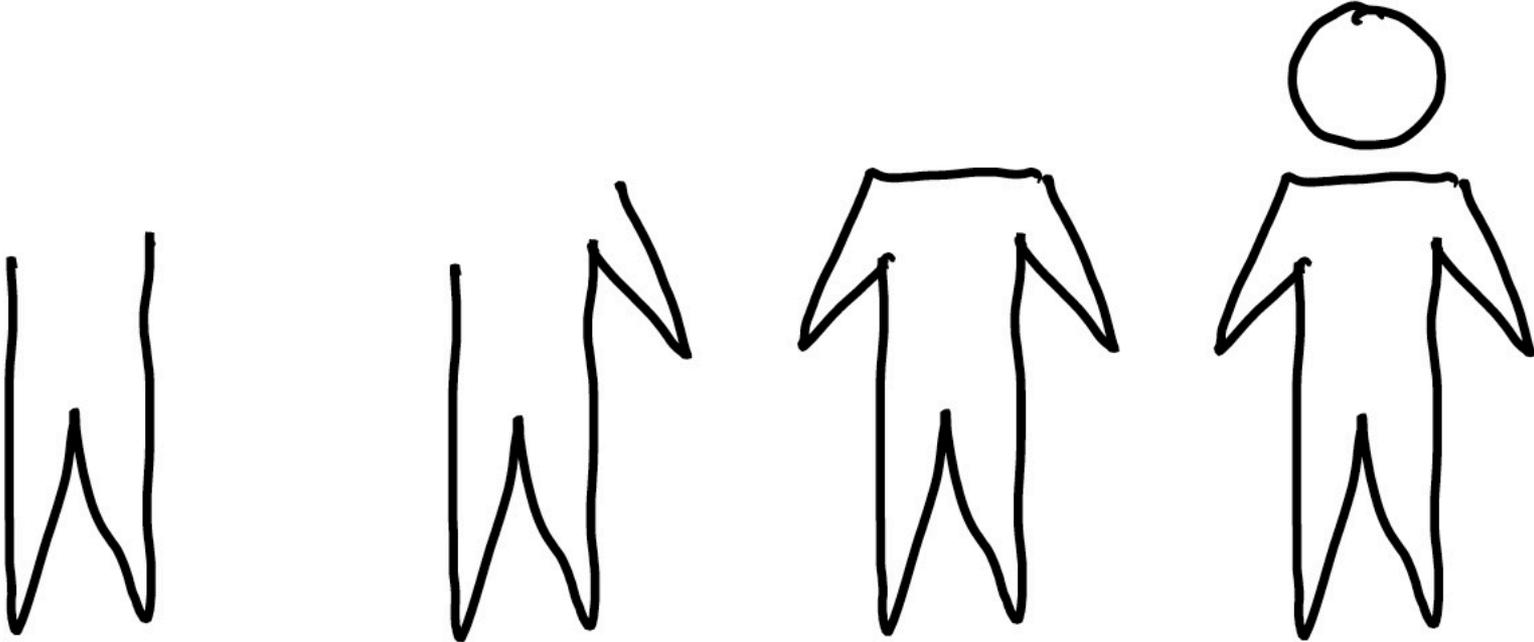




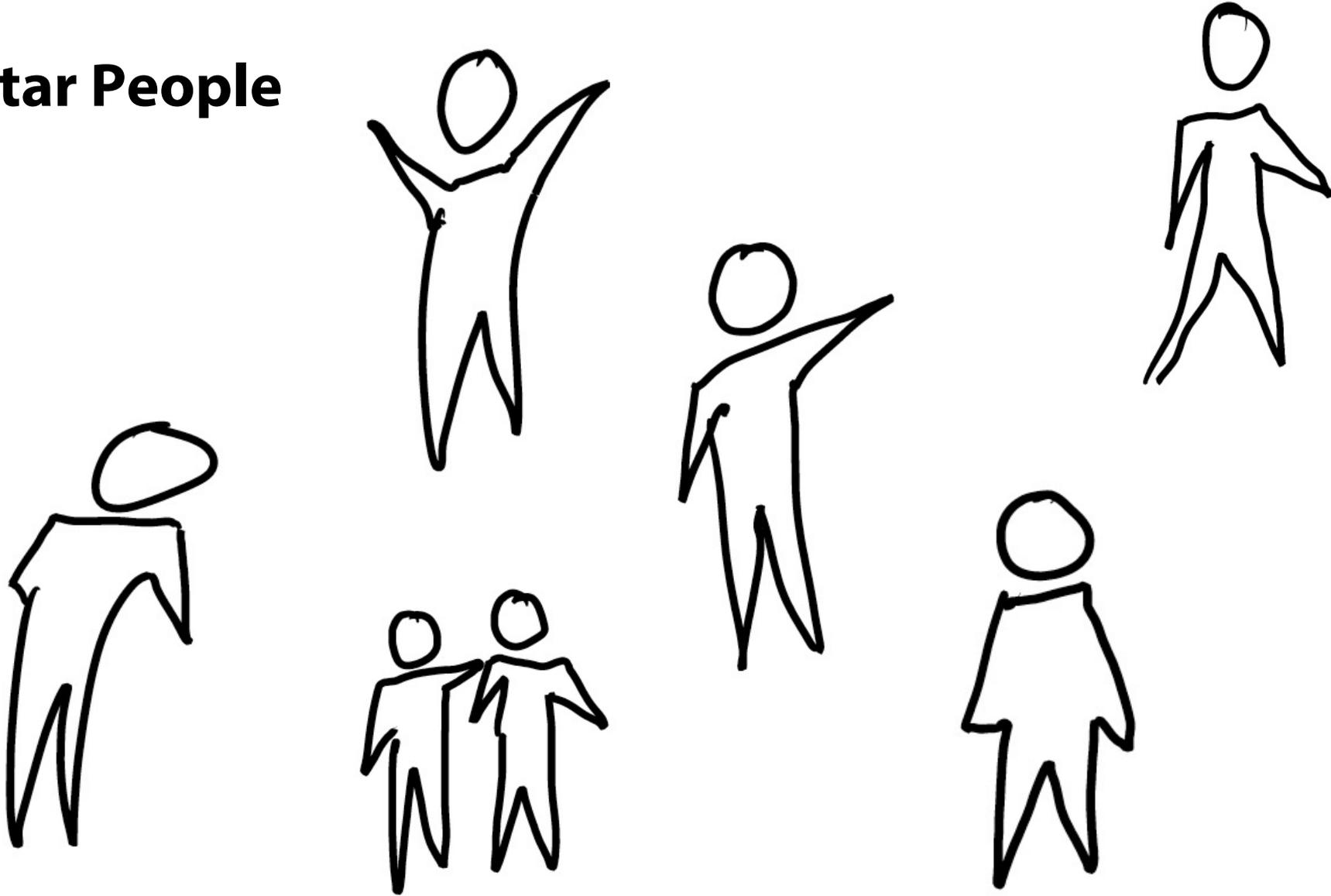
Star People



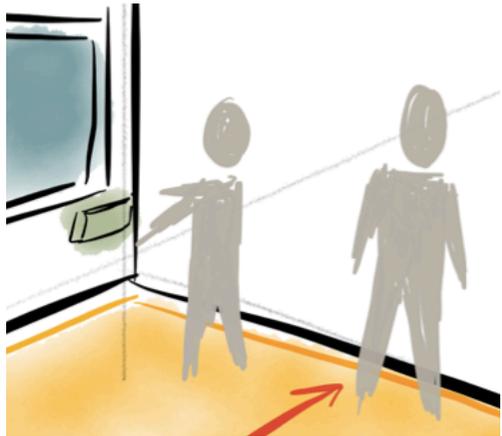
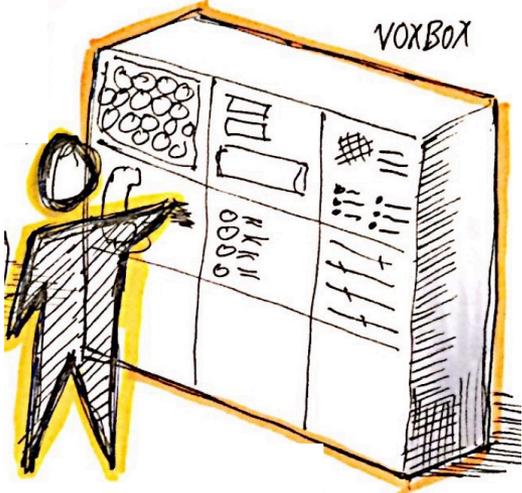
Star People

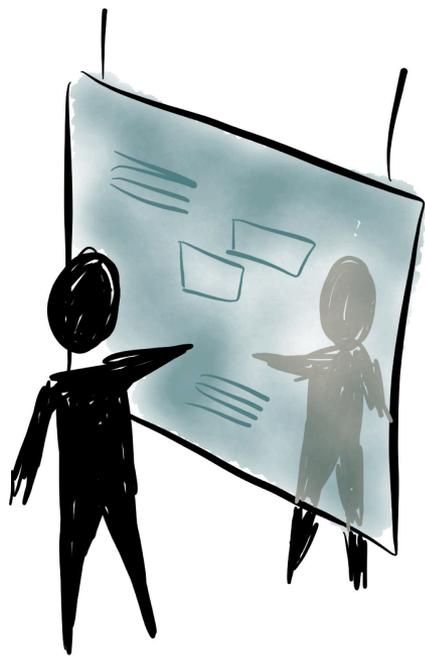
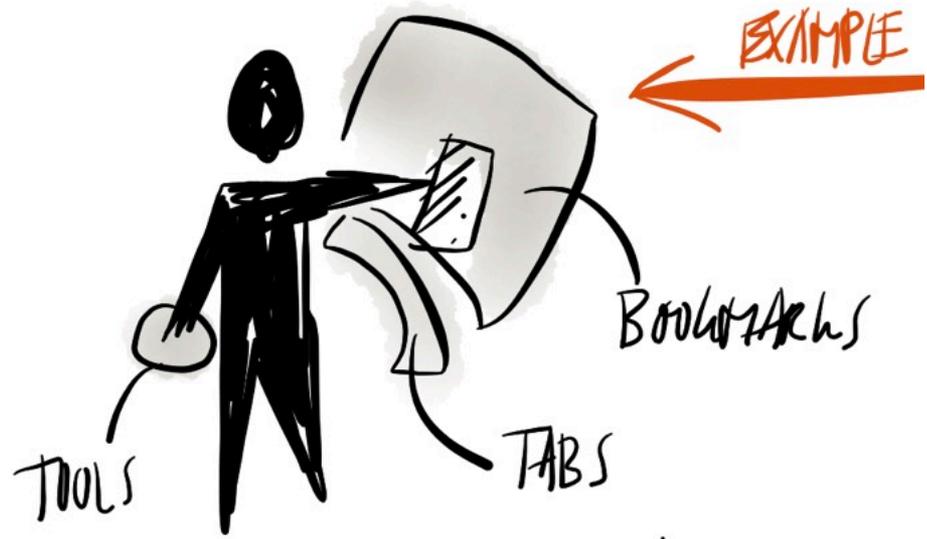
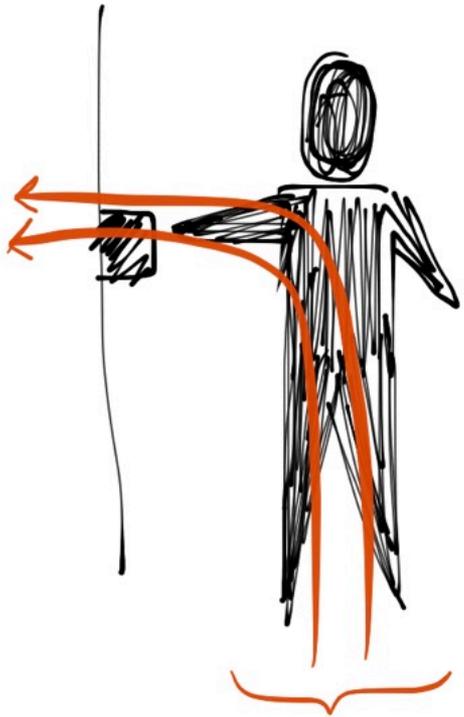


Star People



Star People





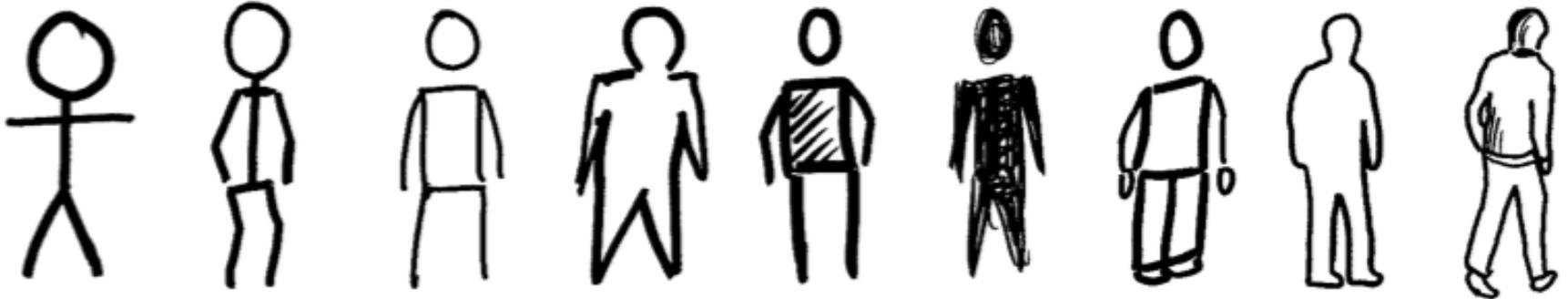
Sketch 10 star people:



Different positions,
actions, movements,
size, ...

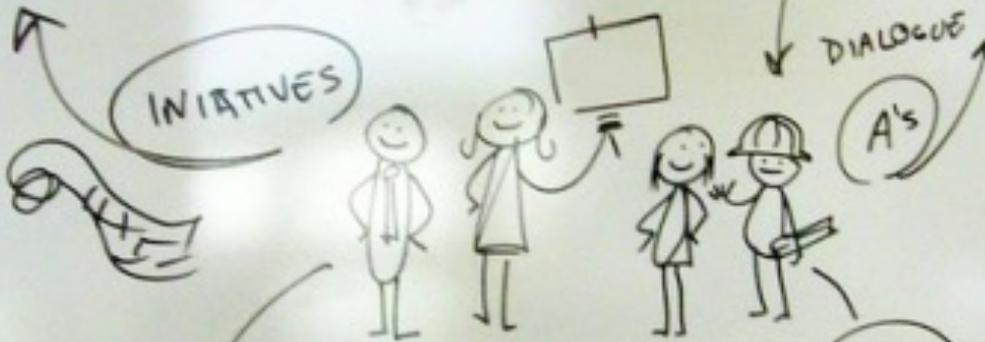








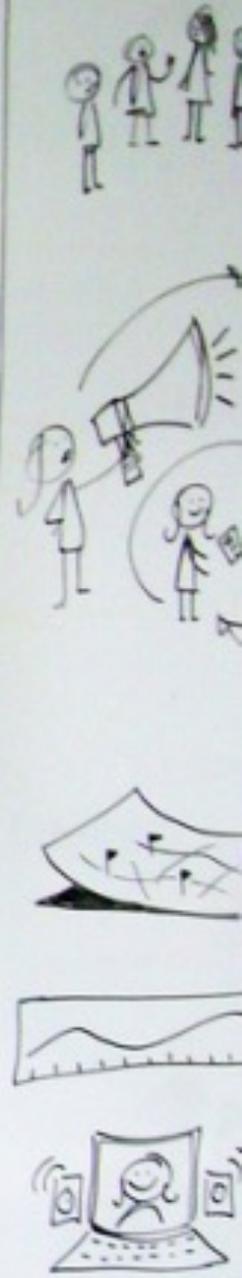
NEWS MEDIA



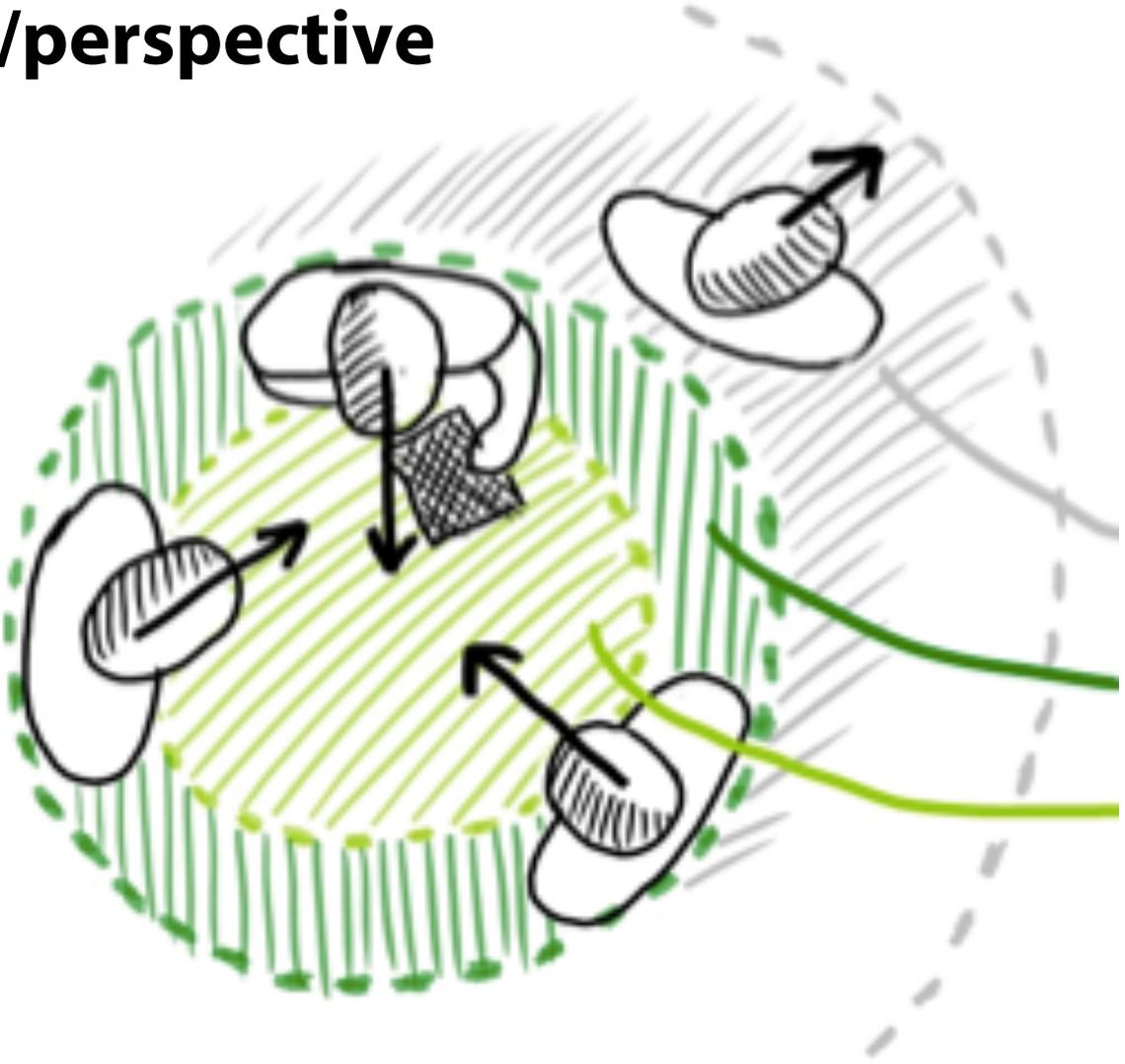
PUBLIC OFFICIALS
& COMMUNITY LEADERS

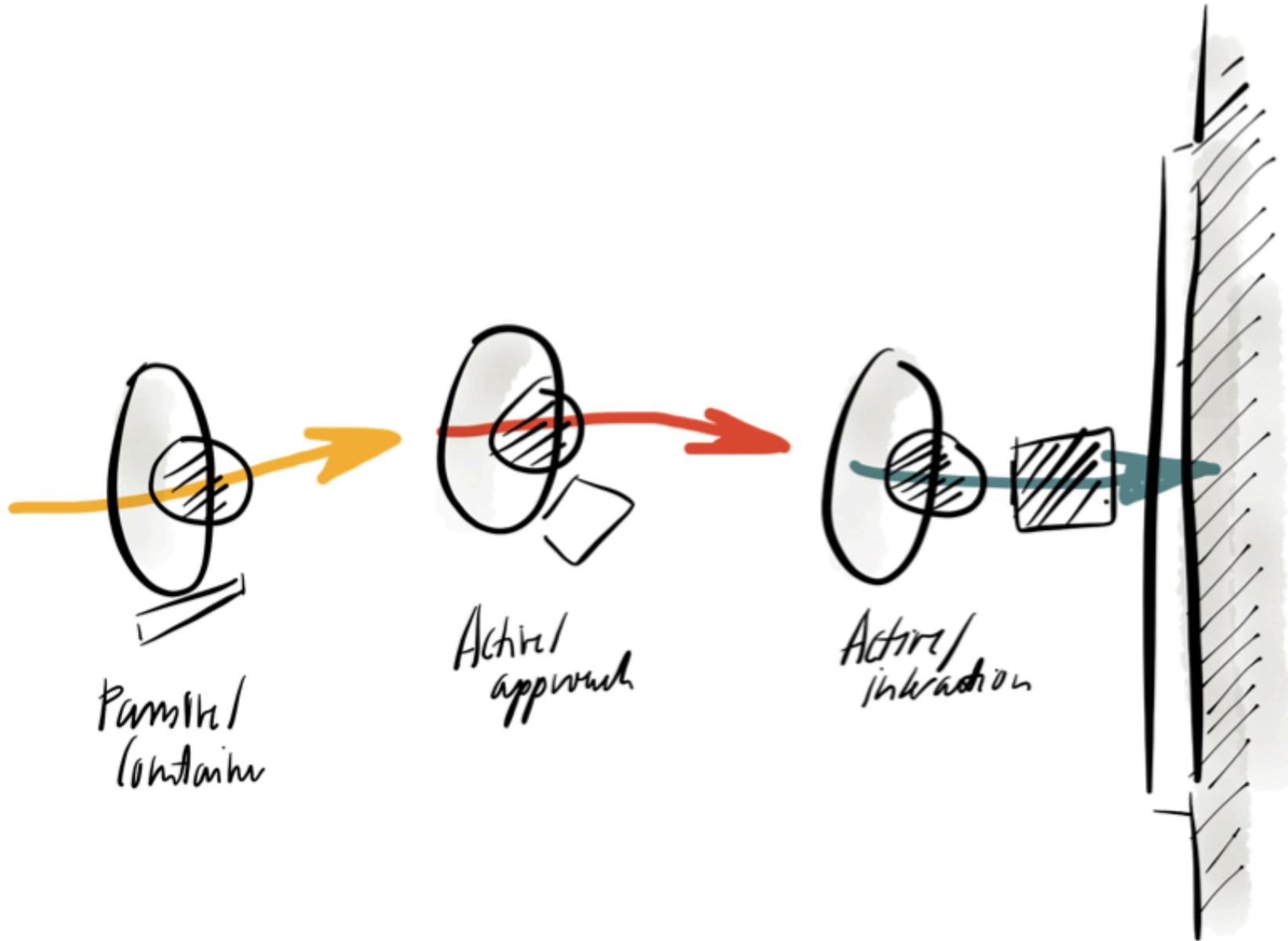


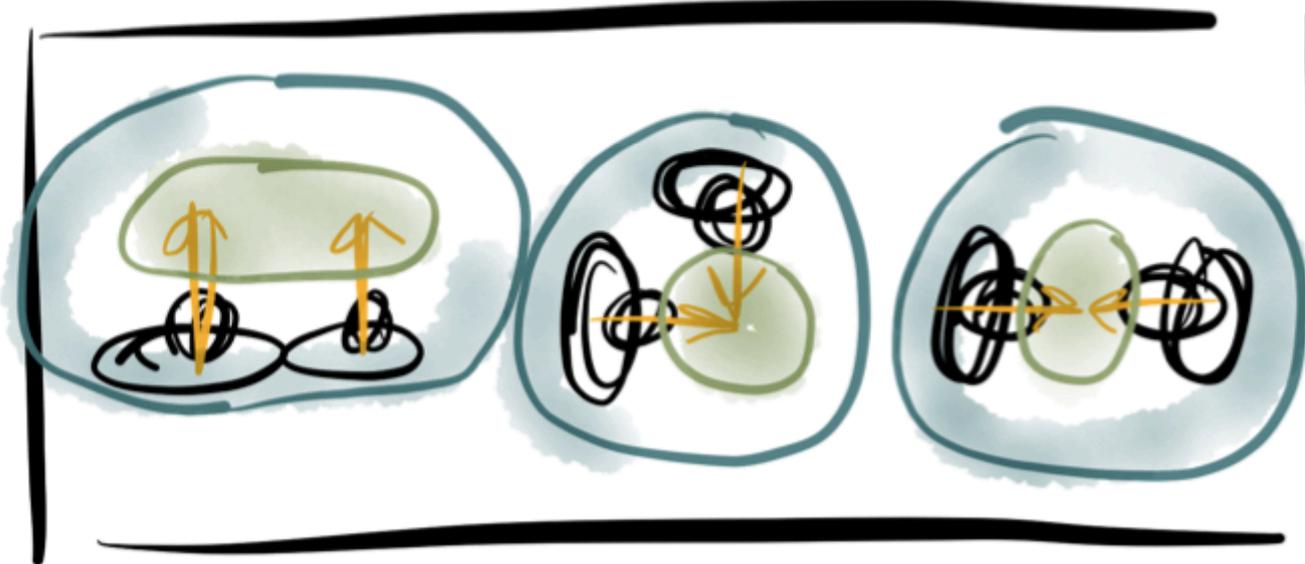
Full
Pkt.



Changing view/perspective

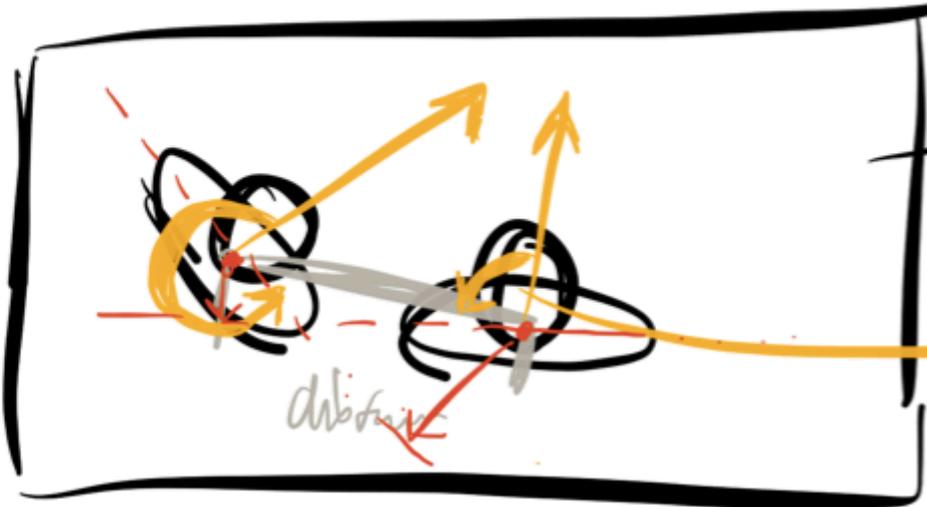






could be part of figure 2 (smaller!!)

detached formations



tolerance values

angles



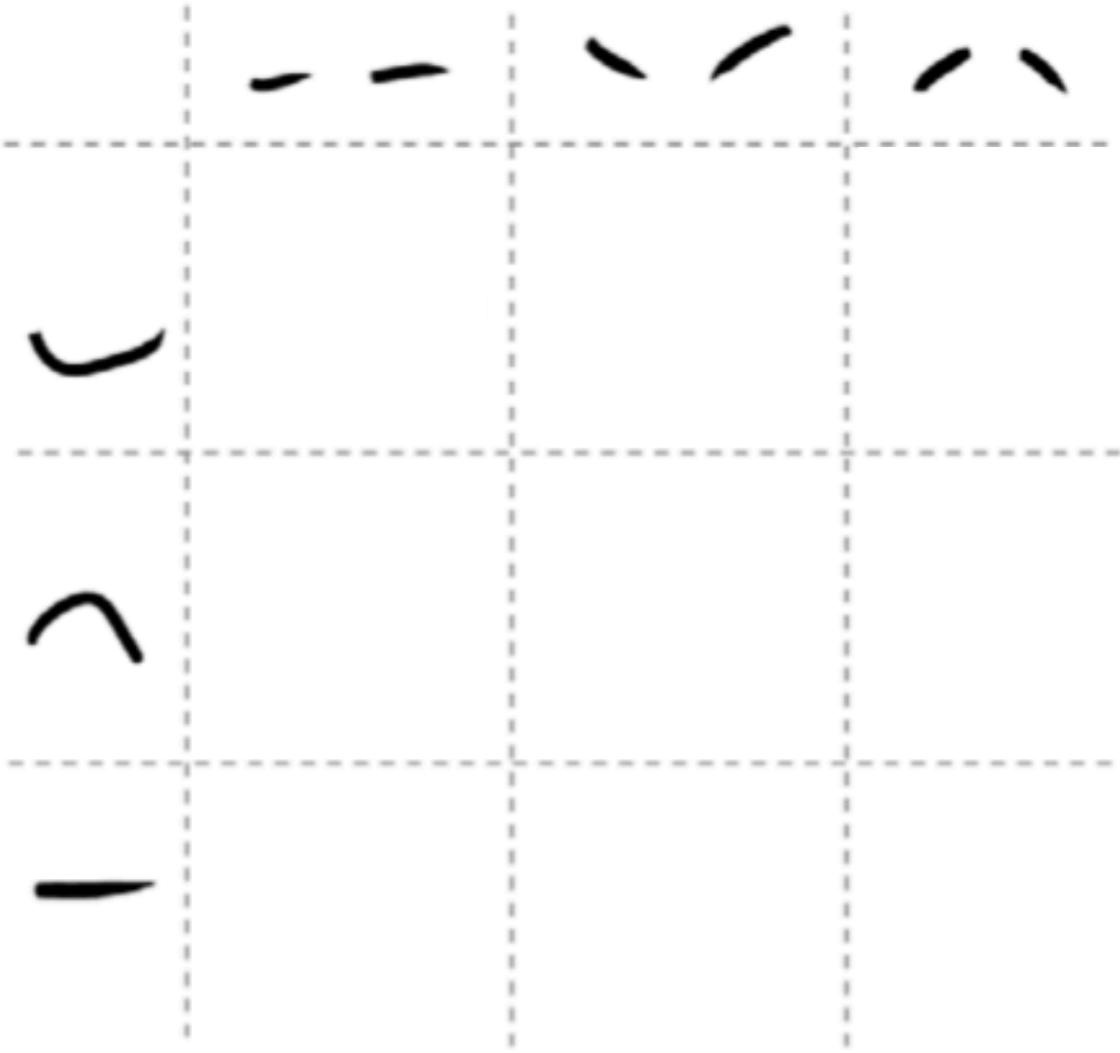
Sketching Faces and Emotions





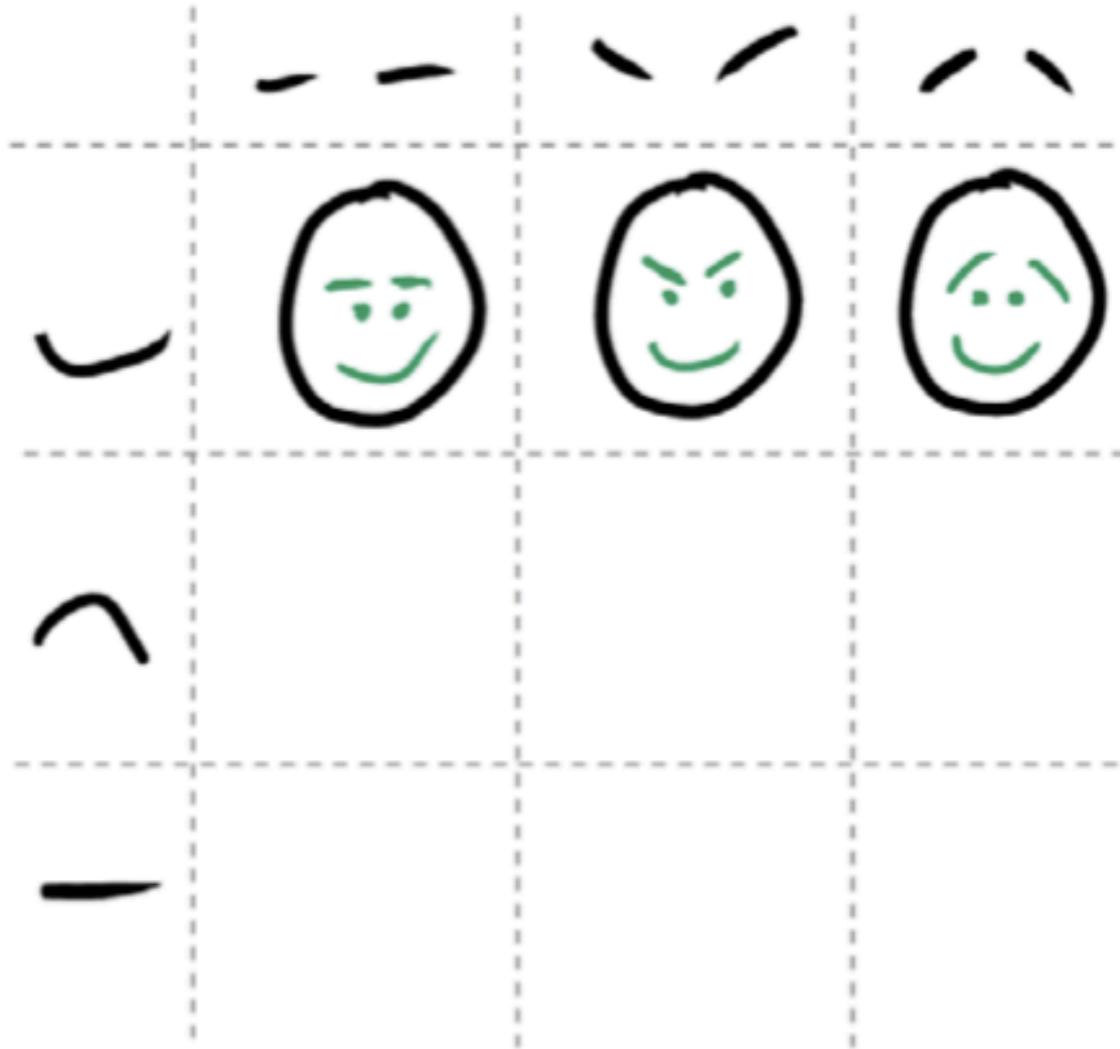
Eyebrows

Mouth



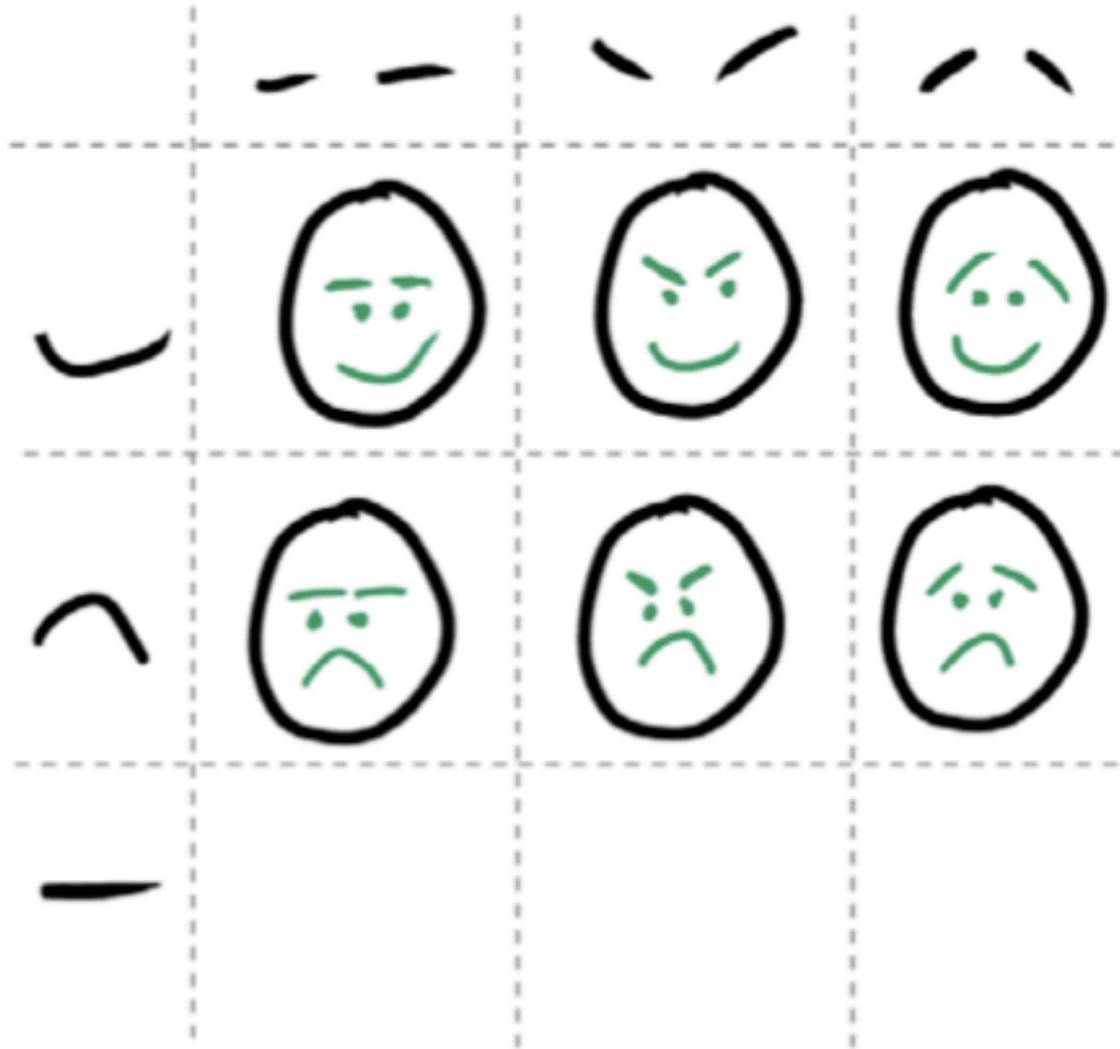
Eyebrows

Mouth



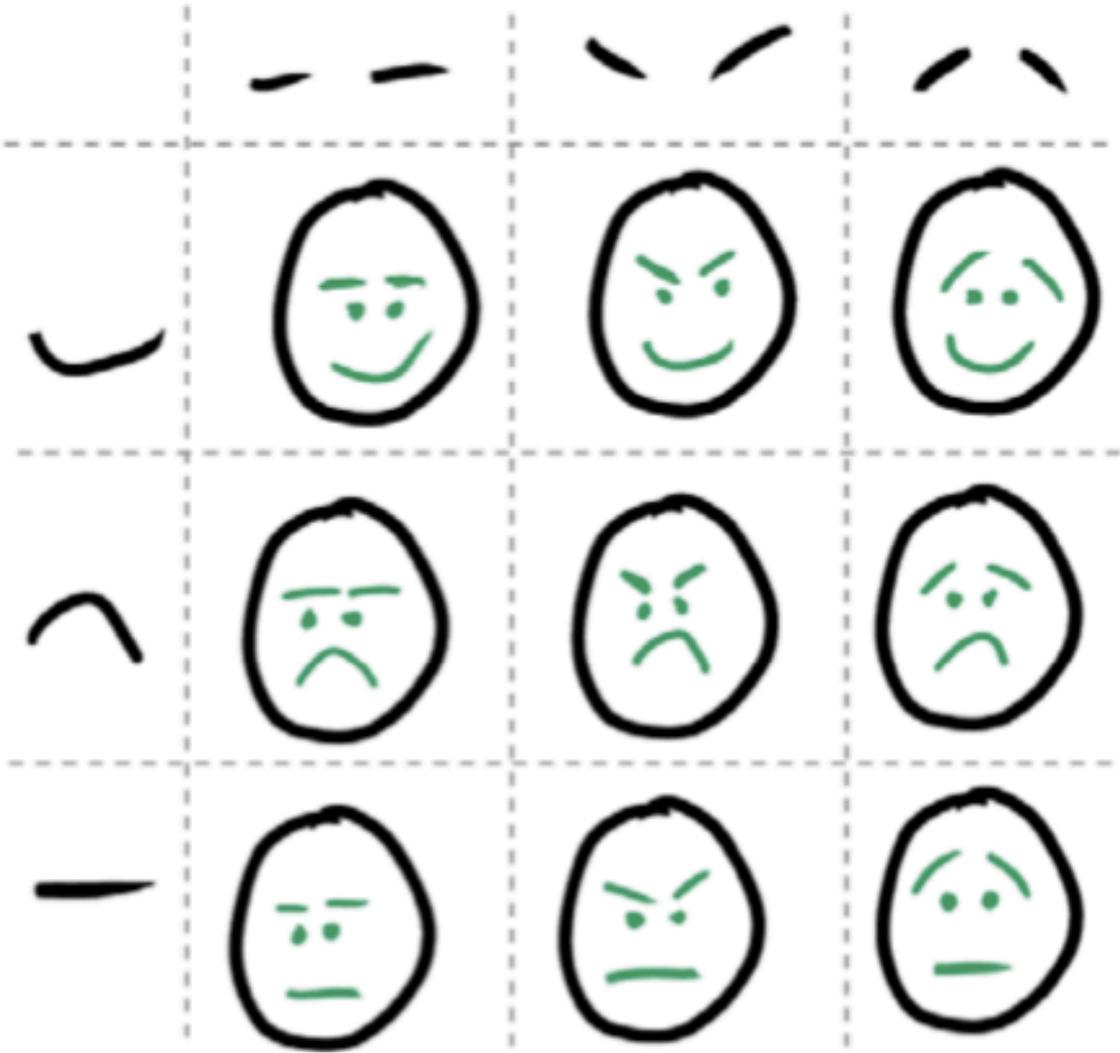
Eyebrows

Mouth



Eyebrows

Mouth



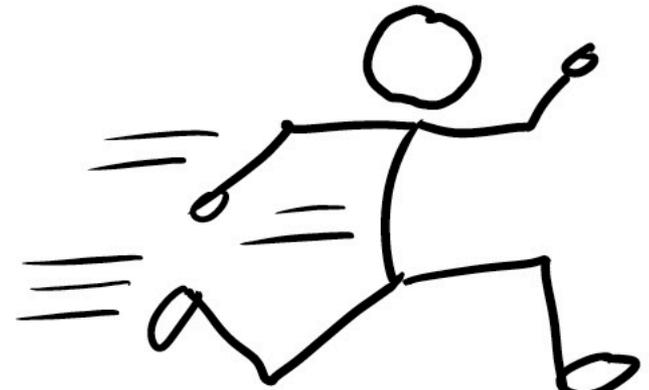
Sketching motion (1)



Arrows

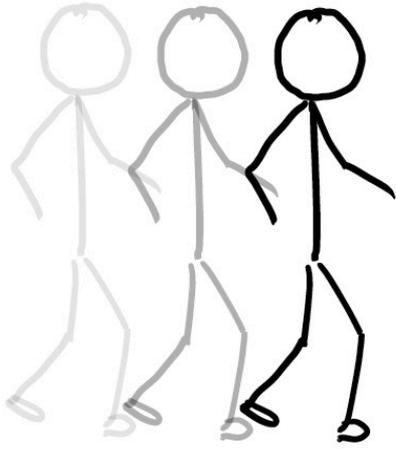
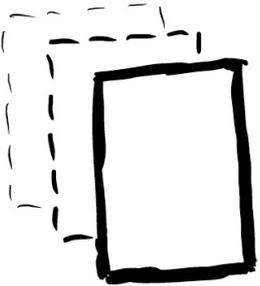
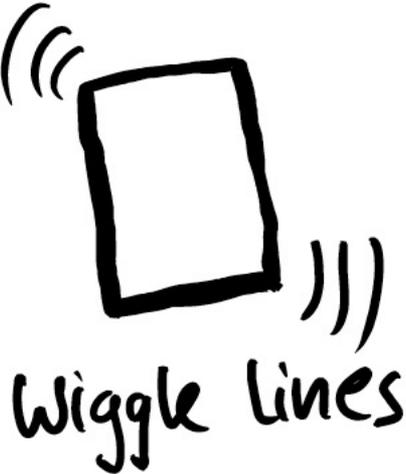


Motion path

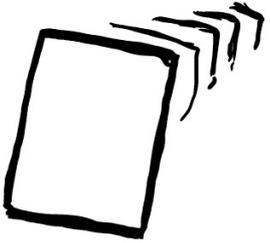


Motion lines

Sketching motion (2)



Ghosting



Hands-on Sketching:
Drawing people, actions,
emotions

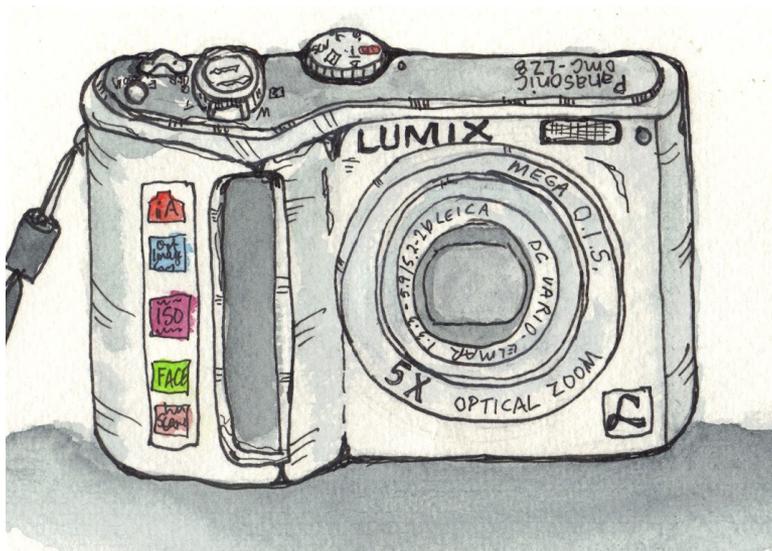
Sketch 2 situations involving people (use stick figures or star people, emotions, objects, actions).

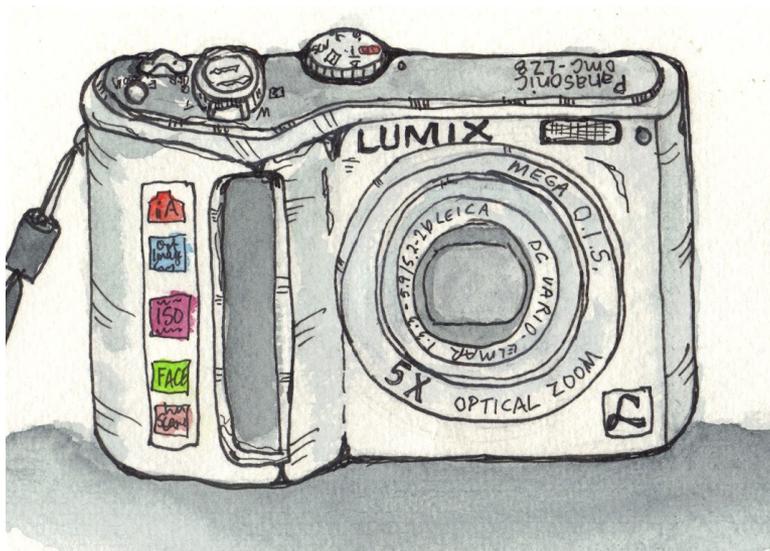
Pair activity: you tell your neighbor what situation to draw, then switch, then switch again, ...



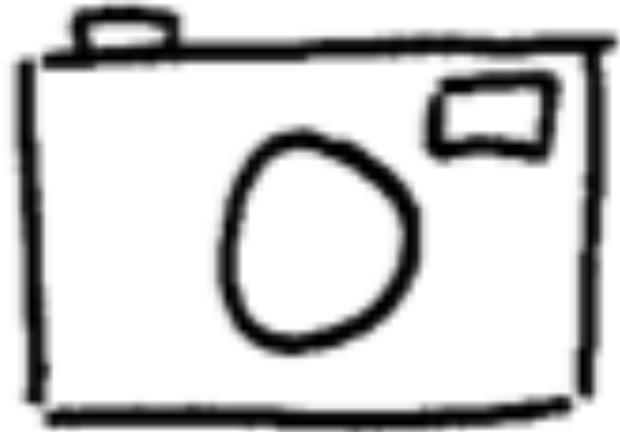
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Sketching Devices and Objects



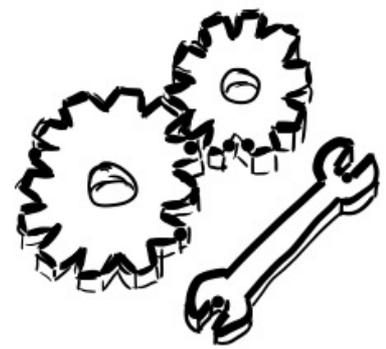
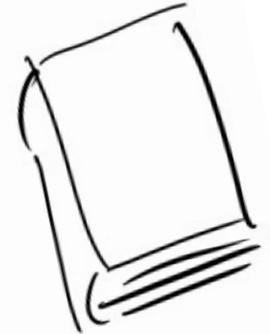
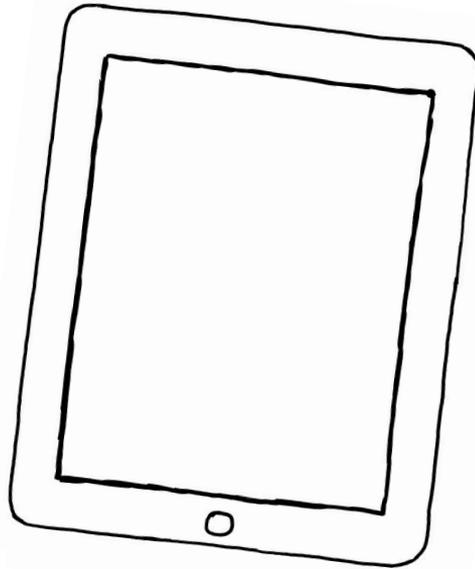


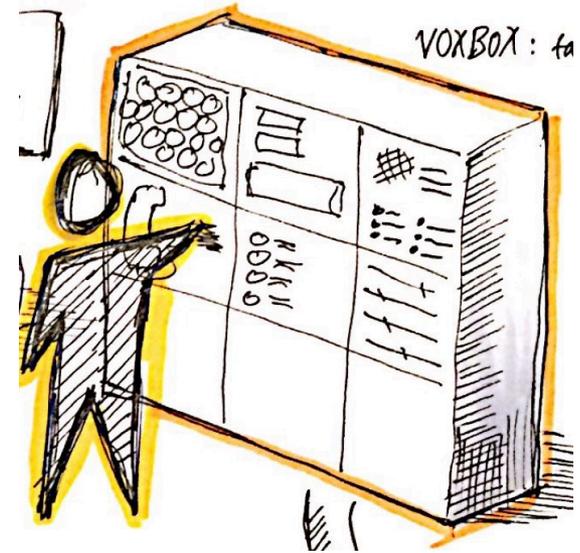
VS.

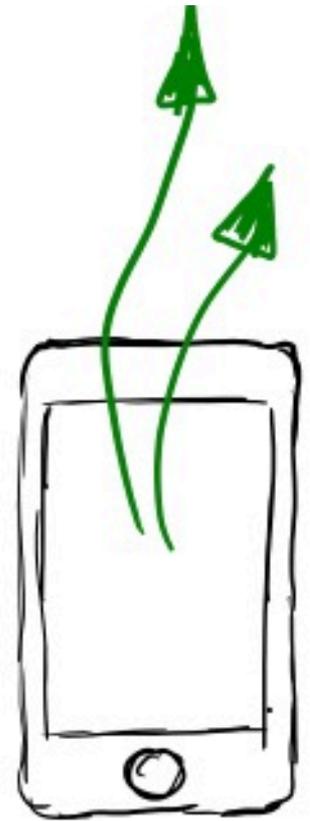
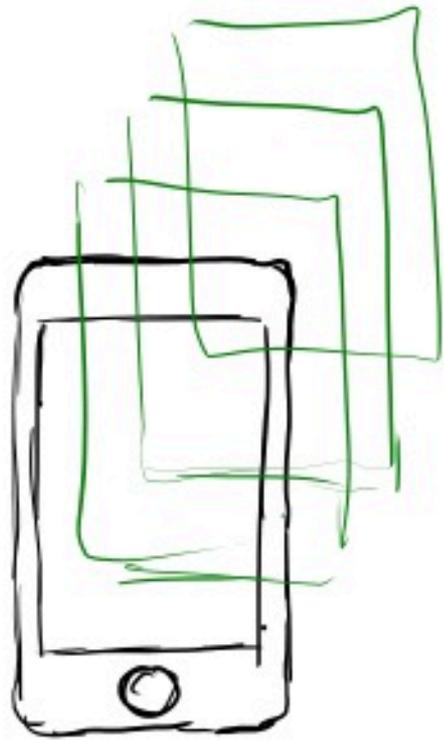
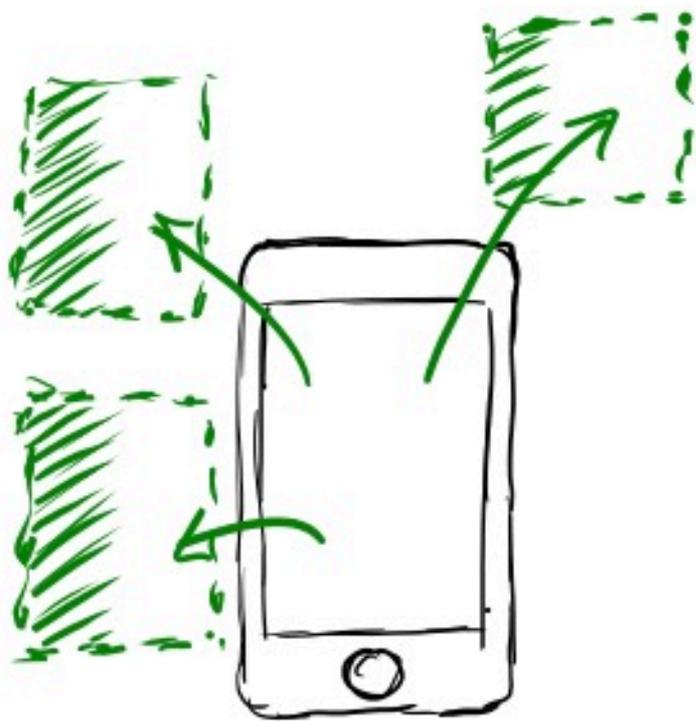




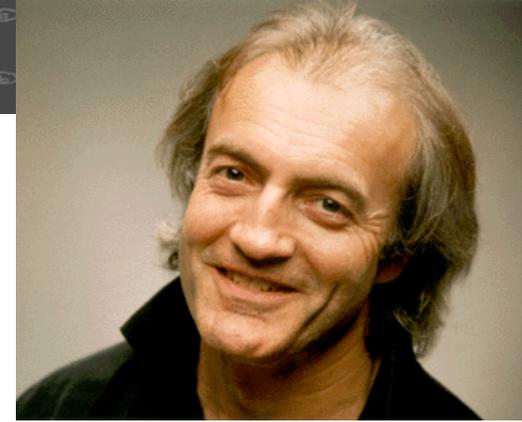




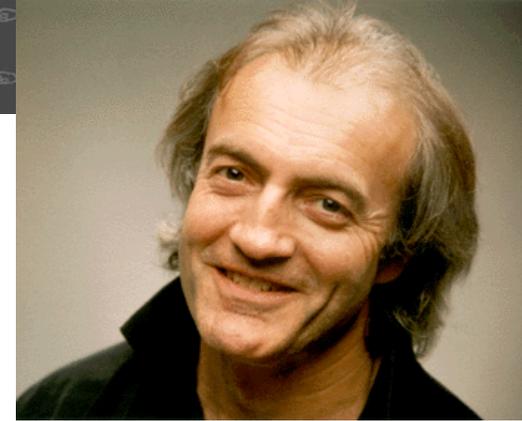








Characteristics of Sketches



Clear vocabulary

Plentiful

Suggest and explore rather than confirm

Quick and inexpensive

Timely, when needed

Disposable

Minimal detail and distinct gesture

Ambiguous

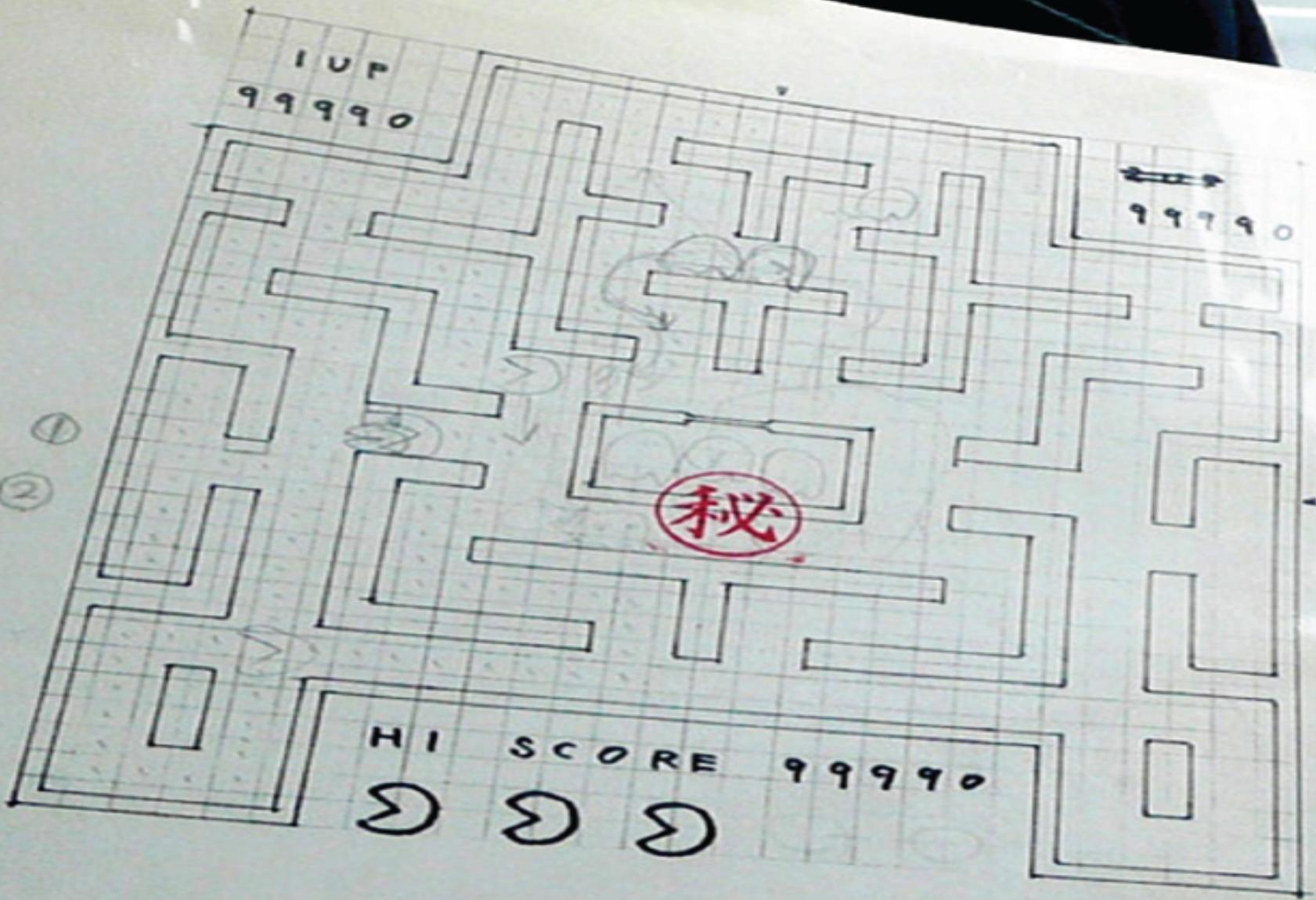
Appropriate degree of refinement

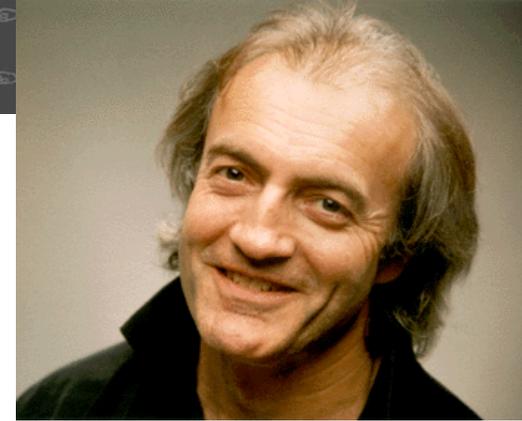


Toru Iwatani | Designer









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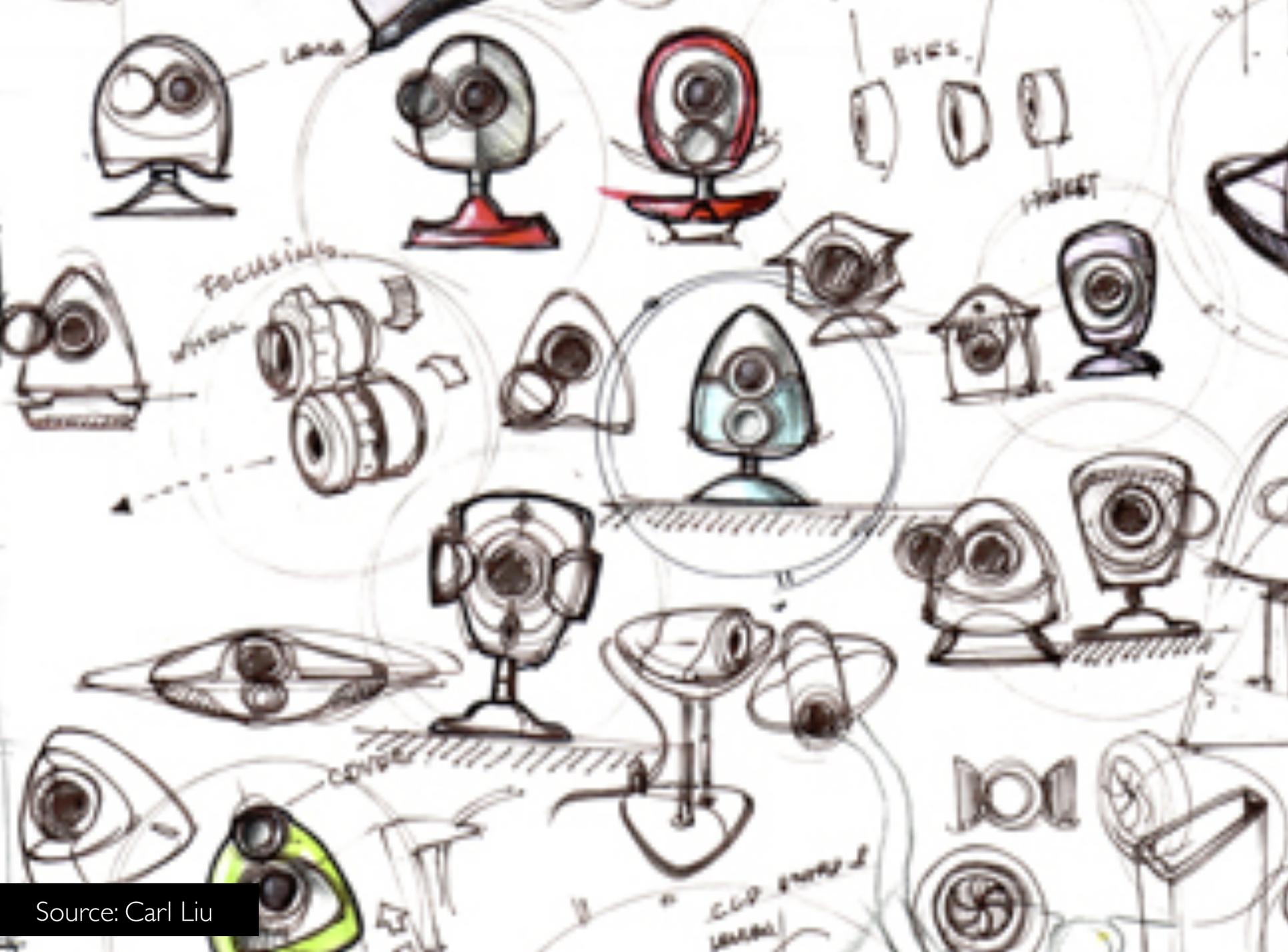
“The best way to have a good idea is to have lots of ideas.”

Linus Pauling



Carl Liu | Interaction Designer



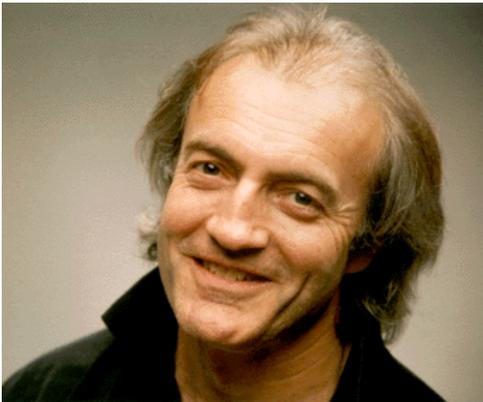




EXAMPLES.

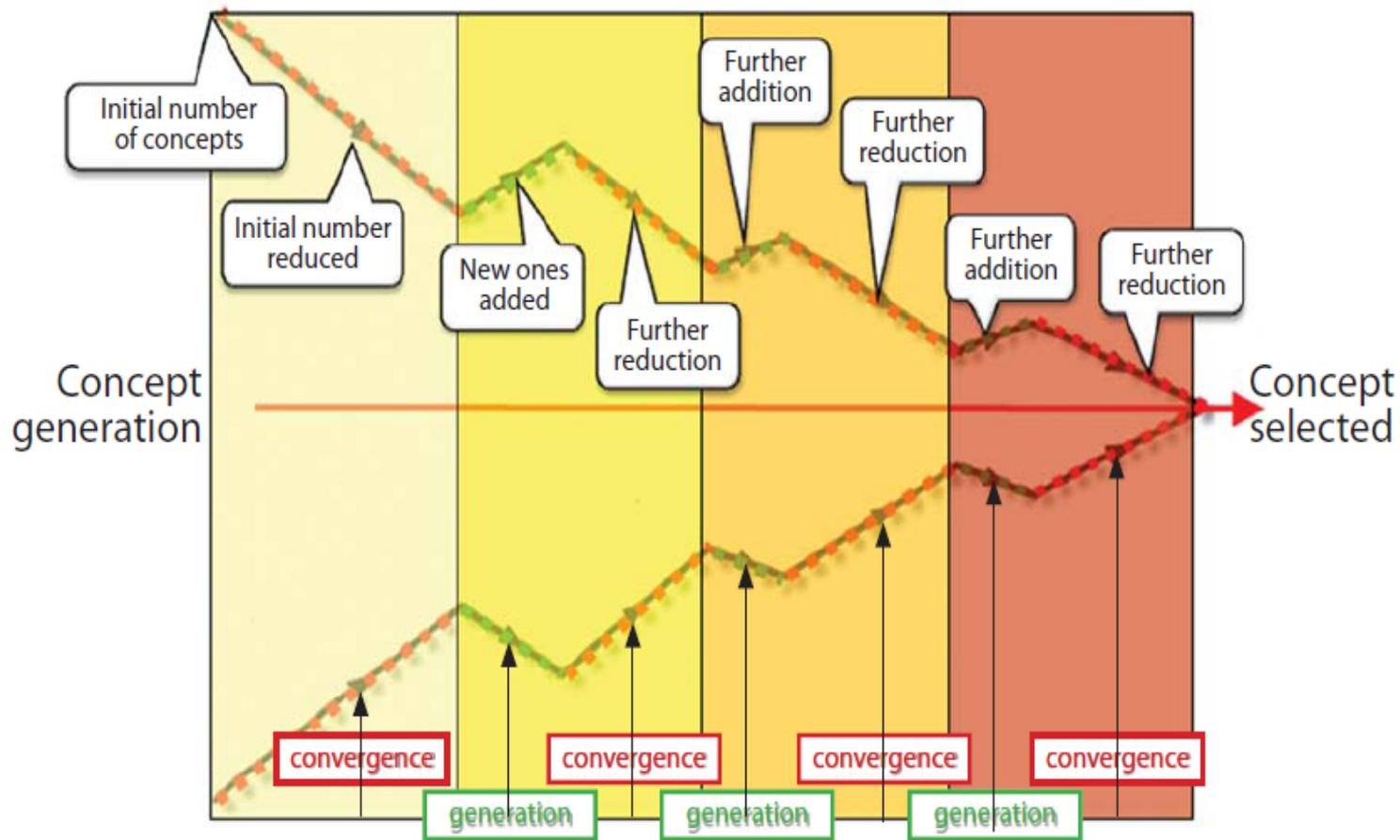


Quick, inexpensive
and disposable



Technique: 10 plus 10

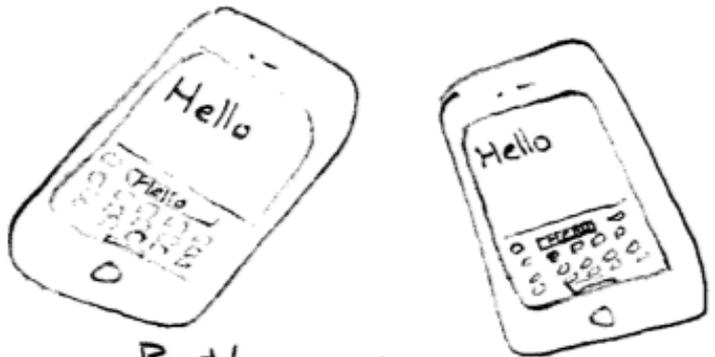
- 1) State the design challenge
- 2) **Generate 10 different designs** – as creative and diverse as possible
- 3) Reduce the number of design concepts
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- 5) **Sketch 10 details and/or variations of design concepts**
- 6) Present ideas to a group
- 7) As your ideas change, sketch them out



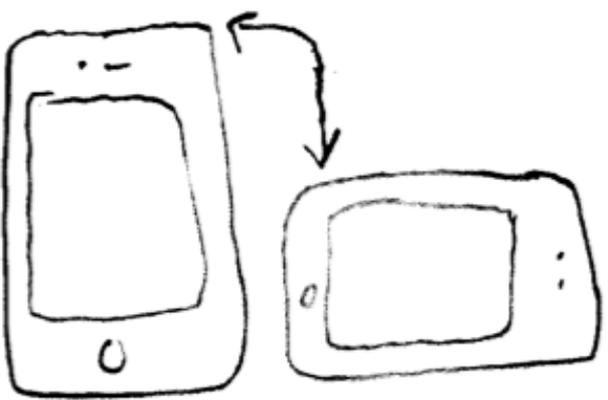
Iterative:	General overall concepts	Iteration 1 exploratory	Iteration 2 clarification	Iteration 3 resolution
Granularity:	General overall concepts	Course significant alternatives	Medium intermediate development	Fine detailed refinement

Technique: 10 plus 10 - Example

Technique: 10 plus 10 - Example

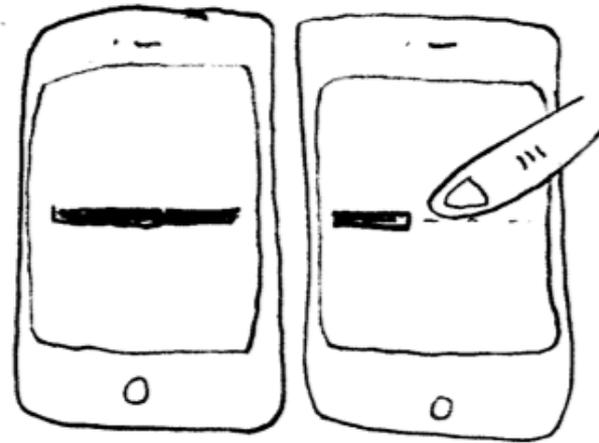


Both people type a word chosen by them

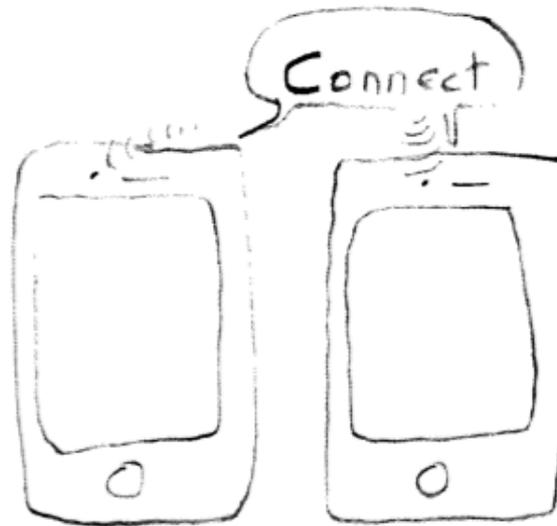


Rotate in a pattern, where other person has to mimic it (accelerometer)

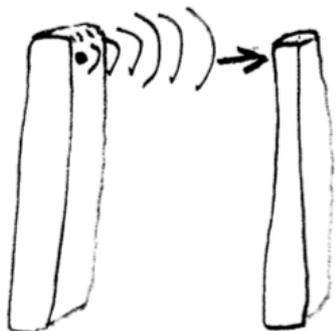




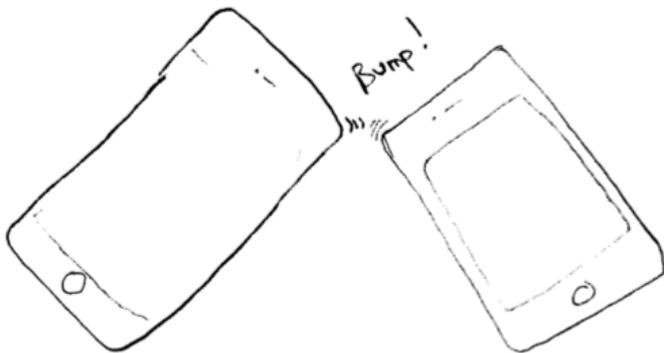
Synchronous gesture
Trace a line across both side by side devices as a single stroke



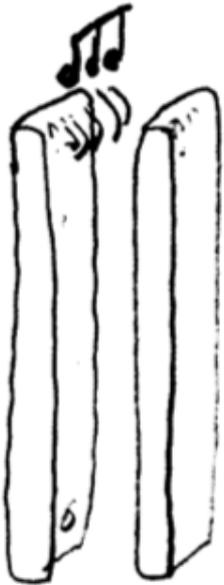
Microphones pick up spoken command at similar volume



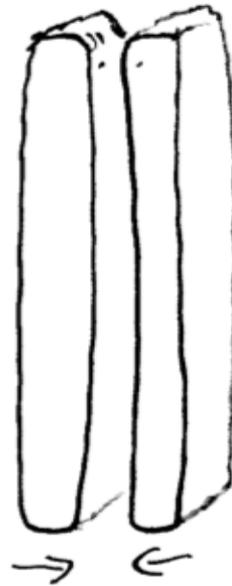
LED strobe
pattern captured
by camera



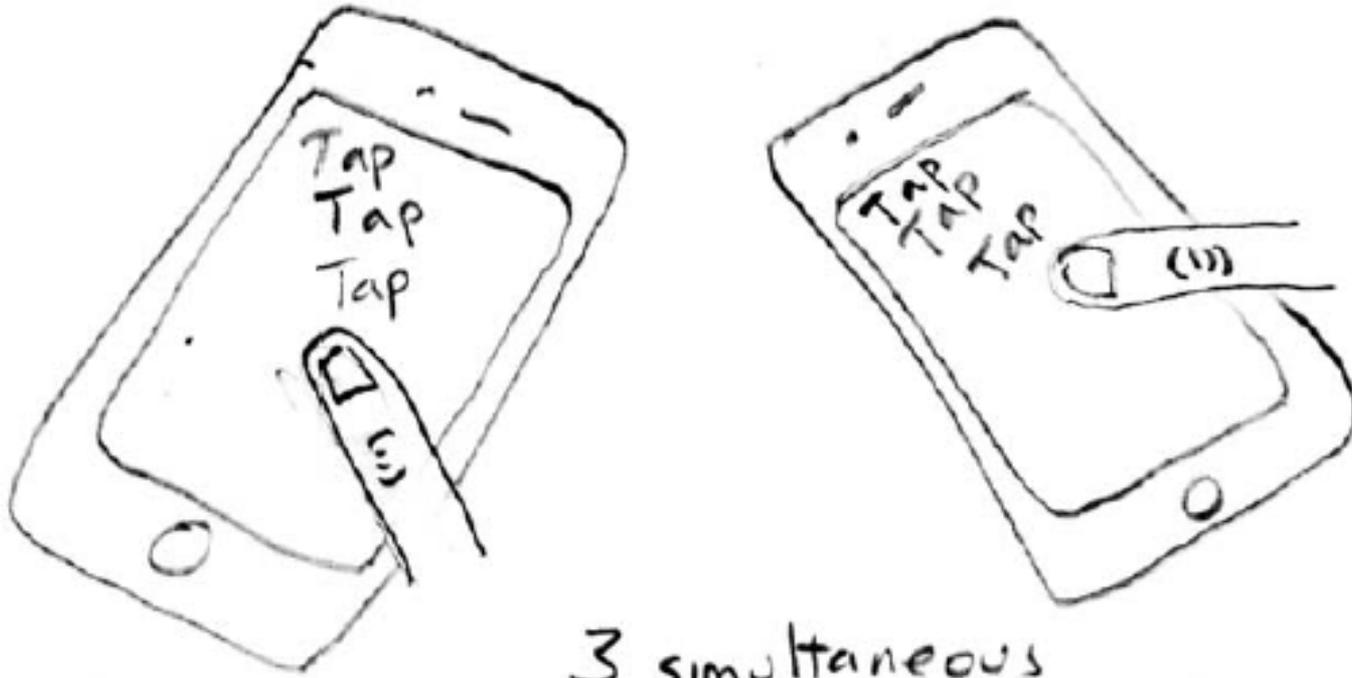
Bump. Accelerometer matches
bump vibrations



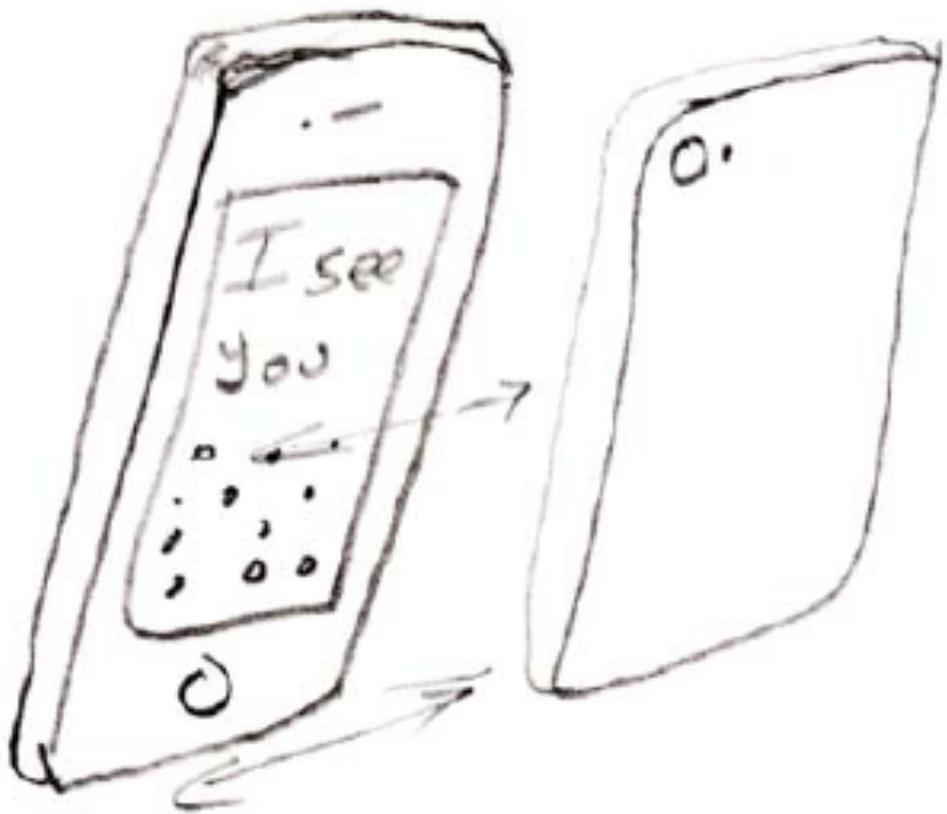
Faint musical
sound played
on one device
picked up by
the other
device



Ambient
light
sensor
Touch
surfaces
together
in a pattern;
Both detect
same light/
dark pattern



3 simultaneous taps on both phones



Mutual
Video/photos
captures
identifying
images such
as tags via
camera

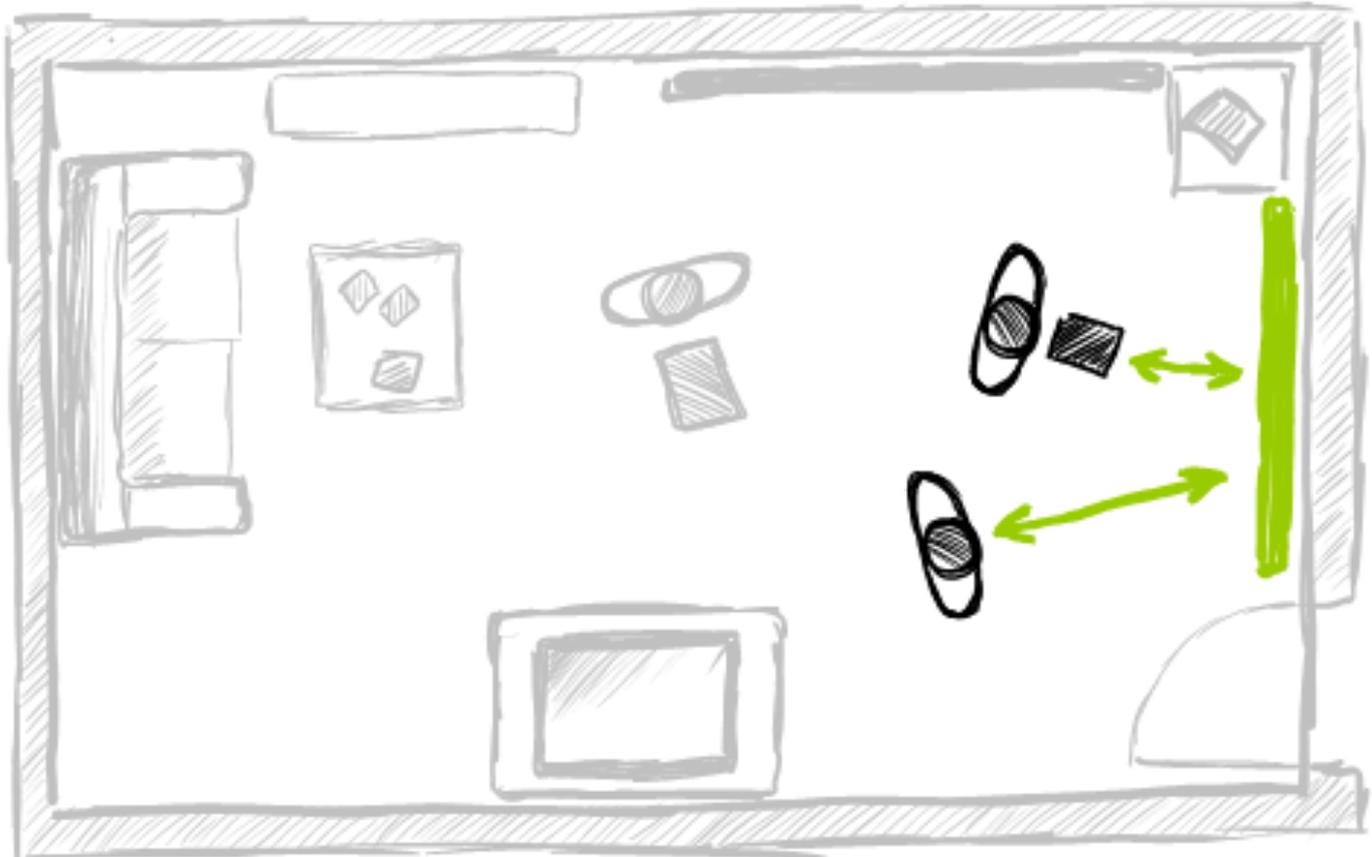
Technique: 10 plus 10

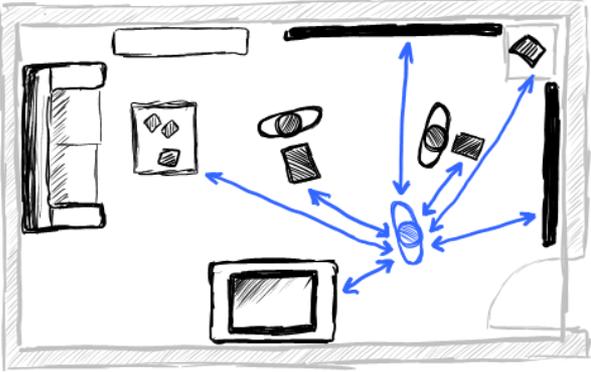
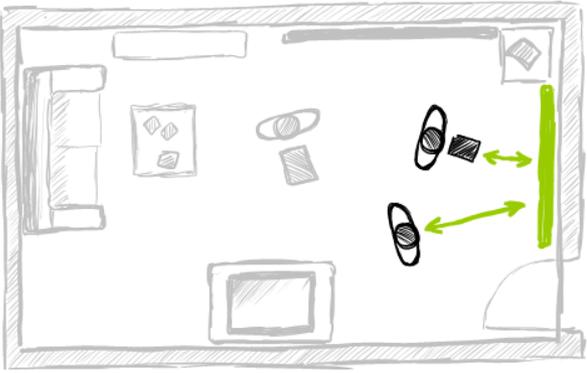
Then: Choose & Refine Sketches:

Choose the most promising designs as a starting point

Sketch 10 **details and/or variations** of design concepts

Another example of 10+10

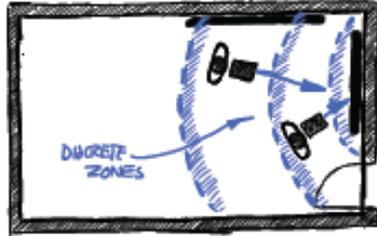






PERSON-TO-LARGE DIGITAL SURFACE

Continuous measurements to discrete periodic zones



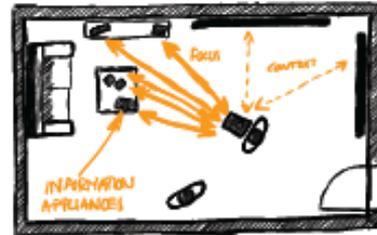
DEVICE-TO-LARGE DIGITAL SURFACE

Proxemic zones around large digital surface trigger reactions on portable personal devices.



PERSON-TO-DOMESTIC ROBOT

Proximity - same environment, same space, different time (asynchronous)



DEVICE-TO-DEVICES (MULTIPLE, LARGE QUANTITIES)

orientation and physical distance are filter for device selection

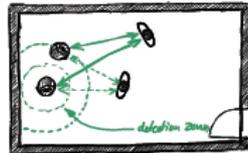




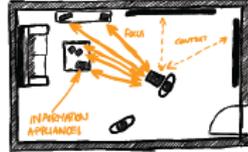
PERSON-TO-LARGE DIGITAL SURFACE
 Continuous measurements to detect personal zones



DEVICE-TO-LARGE DIGITAL SURFACE
 Discrete zones around large digital surface trigger reactions on portable personal devices.



PERSON-TO-DOMESTIC ROBOT
 Proximity - some development, some gear, affordance (shape/size)



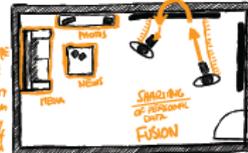
DEVICE-TO-DEVICES (MULTIPLE, LARGE QUANTITIES)
 orientation and physical distance as filter for device selection



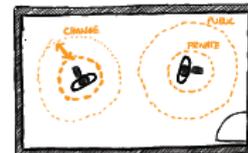
PERSON-TO-DEVICE-TO-DEVICE
 orientation (angle/pointing) & distance
 device velocity to person & device avoidance



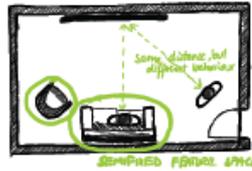
PERSON-TO-LARGE DIGITAL SURFACE (HORIZONTAL TABLETOP) & DEVICE-TO-LARGE DIGITAL SURFACE
 Related to "lean the surface" paper



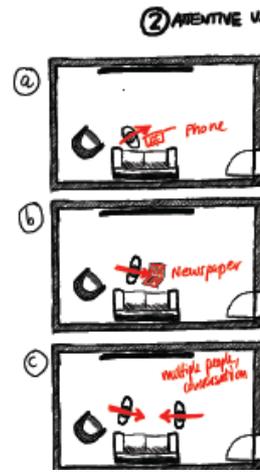
PERSONAL PORTABLE DEVICE-TO-DEVICE
 LINE INTERACTIVE SURFACE AS MEDIATOR - HYBRID
 CONTINUOUS INPUT (MOVING OR VISIBILITY) AVAILABLE ITEMS



PERSONAL PORTABLE DEVICE-TO-DEVICE (PROXIMITY-AWARE RFID TAGS)



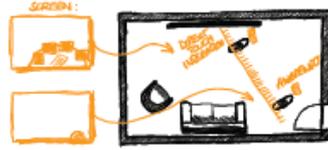
1 SEMI-DEFINED FEATURE SPACE
 Different to...
 "Don't forget about top's options when distance but not angle is considered"



2 ALTERNATE USER INTERFACE
 ORIENTATION + OBJECT OR PERSON
 -> difficult to produce alternate user interfaces - what object is?



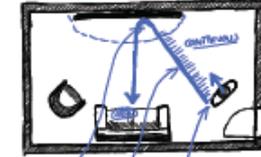
3 PHYSICAL TOKENS TO MEDATE EXPLICIT INTERACTION
 Different from...
 - pointing devices
 - touch controls
 - gesture interfaces
 Plans to play with this in particular orientation and distance to a person



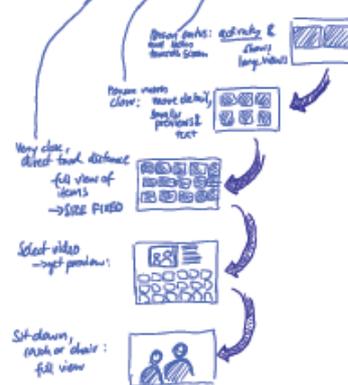
4 AWARENESS TO INTERACTION
 CONTINUOUS: SIZE OF VIEW & INTERVIEW
 LOCATION ON SCREEN
 DISCRETE: ONE IN CLOSE DISTANCE TO SCREEN, FIXED SIZE



DIFFERENT FROM
 - COLLIER'S REARTE
 -> Dynamic size, increasing information
 -> from awareness to interaction

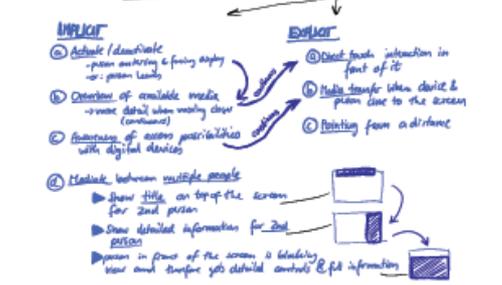


5 CONTINUOUS KNOWLEDGE OF...
 a) DISTANCE
 b) ORIENTATION
 c) IDENTITY
 d) VELOCITY



to a) Distance
 Continuous: size of position, awareness zones of devices
 Check: about touch interaction, early / late, semi-fixed feature
to b) Orientation
 Discrete (discrete): facing towards face display, facing towards another person
 Continuous (continuous): fine position, reach orientation
to c) Identity
 Discrete: who's who?
 Implemented or just intention: who's who? -> shared pass, physical token, authentication, who's who? -> adapt volume, security / policy -> distance, background
 Discrete: who's who? -> full device, full device
to d) Velocity
 Discrete: who's who? -> position & direction

6 HOME MEDIA PLAYER APPLICATION
 VS. - Aggregated table-top (TV)
 - Table Ambient Display (Tablet)



IMPLICIT
 1. Active / desirable -> position awareness & facing away -> person leaves
 2. Direction of available media -> more detail when nearby closer (continuous)
 3. Awareness of access possibilities with digital devices
 4. Media between multiple people -> show title on top of the screen for 2nd person, show detailed information for 2nd person, person in front of the screen is holding some kind of surface gets detailed controls & full information

EXPLICIT
 1. Direct touch interaction in front of it
 2. Media transfer when device & person close to the screen
 3. Pointing from a distance

ALTERNATIVE UI, examples
 -> hovering plant cell
 -> attention to newspaper
 -> conversation between people

IDENTITY
 -> History -> continue playback
 -> Preference -> show personal media library
 -> Security -> selection enforcement

SIGNIFICANT FEATURE SPACE
 -> some distance, but standing
 -> sitting on couch / chair

OVERRIDE MECHANISMS
 1. Skip track, increase distance
 2. Turn around
 3. Explicit gesture (with hand device)
 4. Timeout ("ignore")
 5. Disable command
 6. Settings
 7. "blacked" for device

Technique: 10 plus 10

- 1) State the design challenge
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#1 good Apps make good neighbours

- Strong communities are built one relationship at a time, and research has shown that personal well-being is improved when people build connections in their immediate local area. But these connections can be difficult to form for a variety of reasons -- rental occupants may change regularly, individual lives have different schedules, and the population may reflect a variety of cultures, ages, and family sizes. Design a digital experience that a person can use to build relationships with their neighbours.

#2 lost in the crowd

- During a crisis, many people turn immediately to their mobile devices for assistance and information. One such situation occurs when parents lose track of a young child at a crowded theme park. Assume an application about that park would be installed on devices of a large number of guests and workers. Design a feature of that application that could help quickly reunite parents with their children, without requiring their children to wear or carry a device.

#3 share your story

- Most newly-arrived immigrants in Germany have a lot of questions, and are keen to establish contacts with people in their new area. At the same time many Germans don't know much about the immigrants' backgrounds and stories. Design an application that fosters mutual understanding by allowing both immigrants and Germans to share their stories and questions.

#4 Garage Sale Helper

- Garage sales can offer big rewards for sellers and buyers. Unfortunately preparing your own sale is often a daunting task. It's also difficult for potential buyers to discover your merchandise. Design an experience that would help either sellers or buyers to get more from their garage sales.

From single sketch to storyboard

The interface only at a **single moment** in time

