

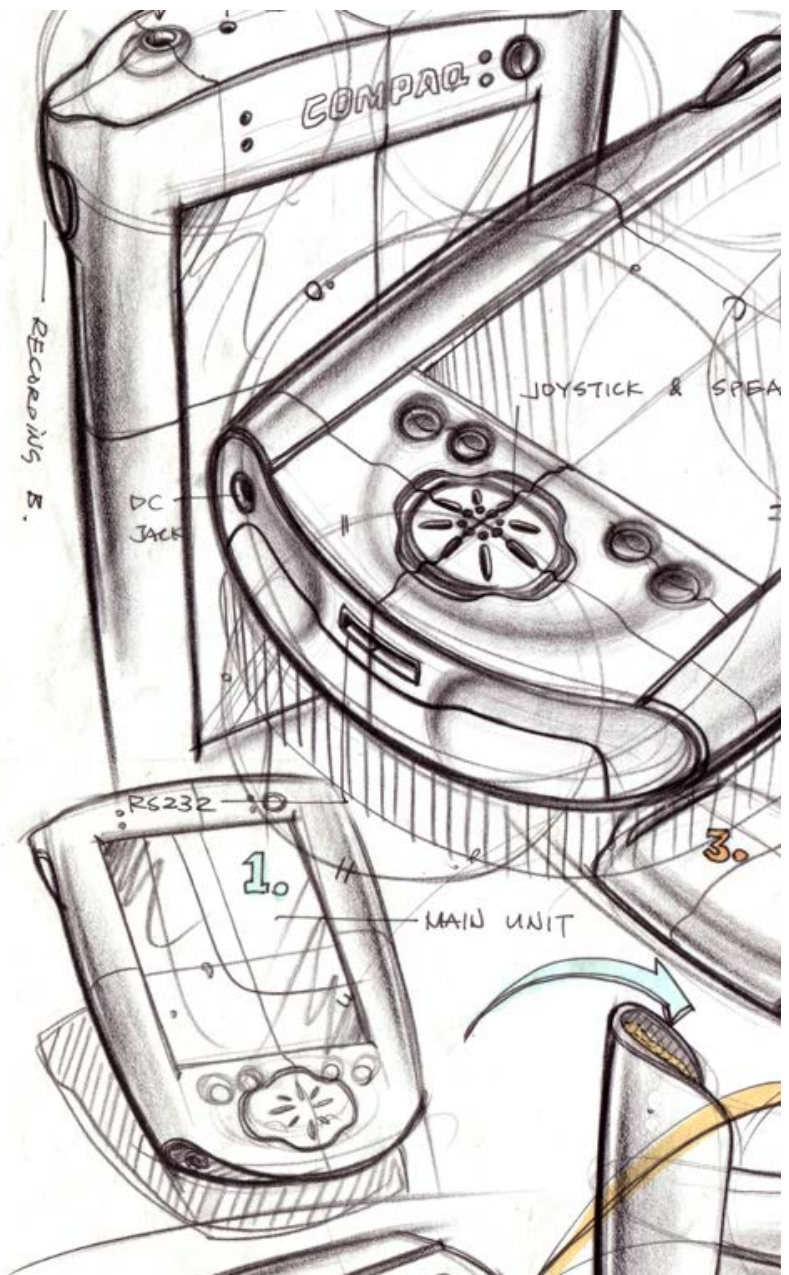


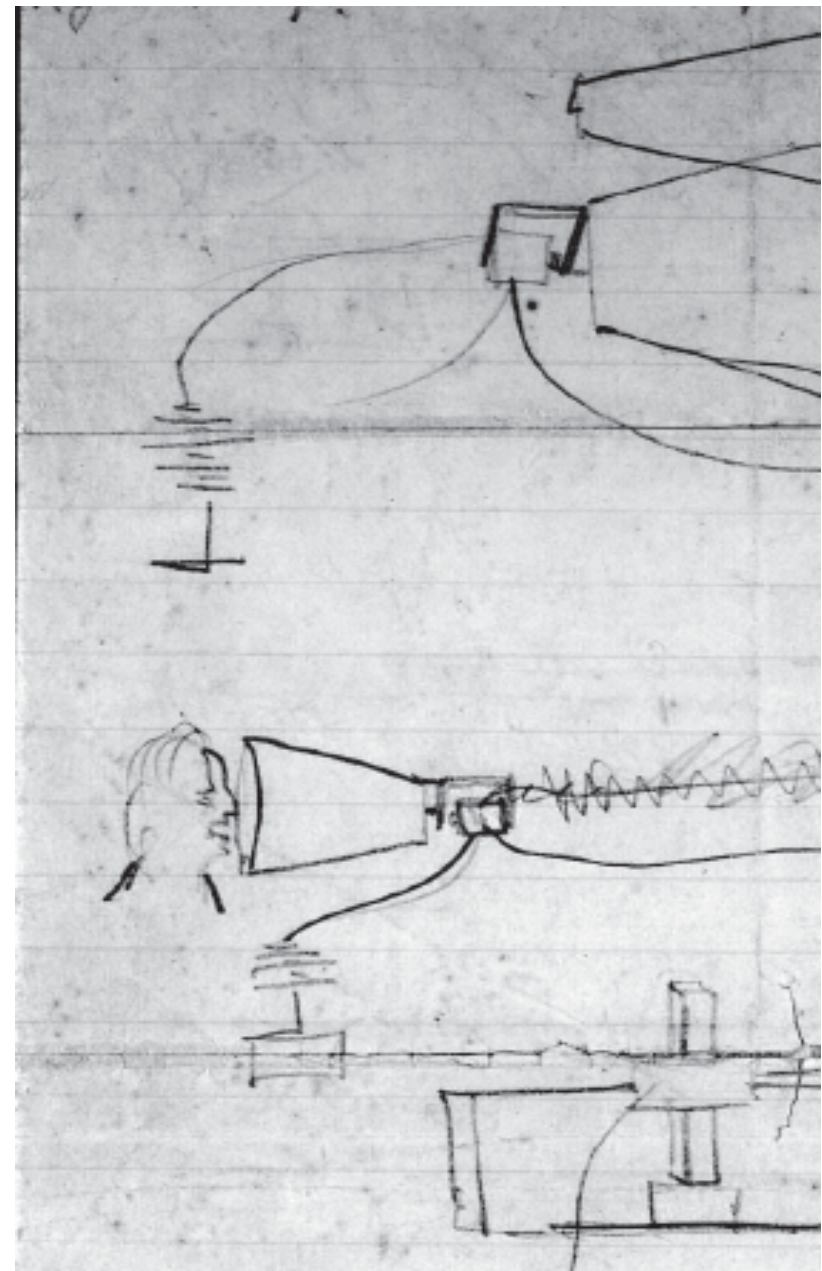
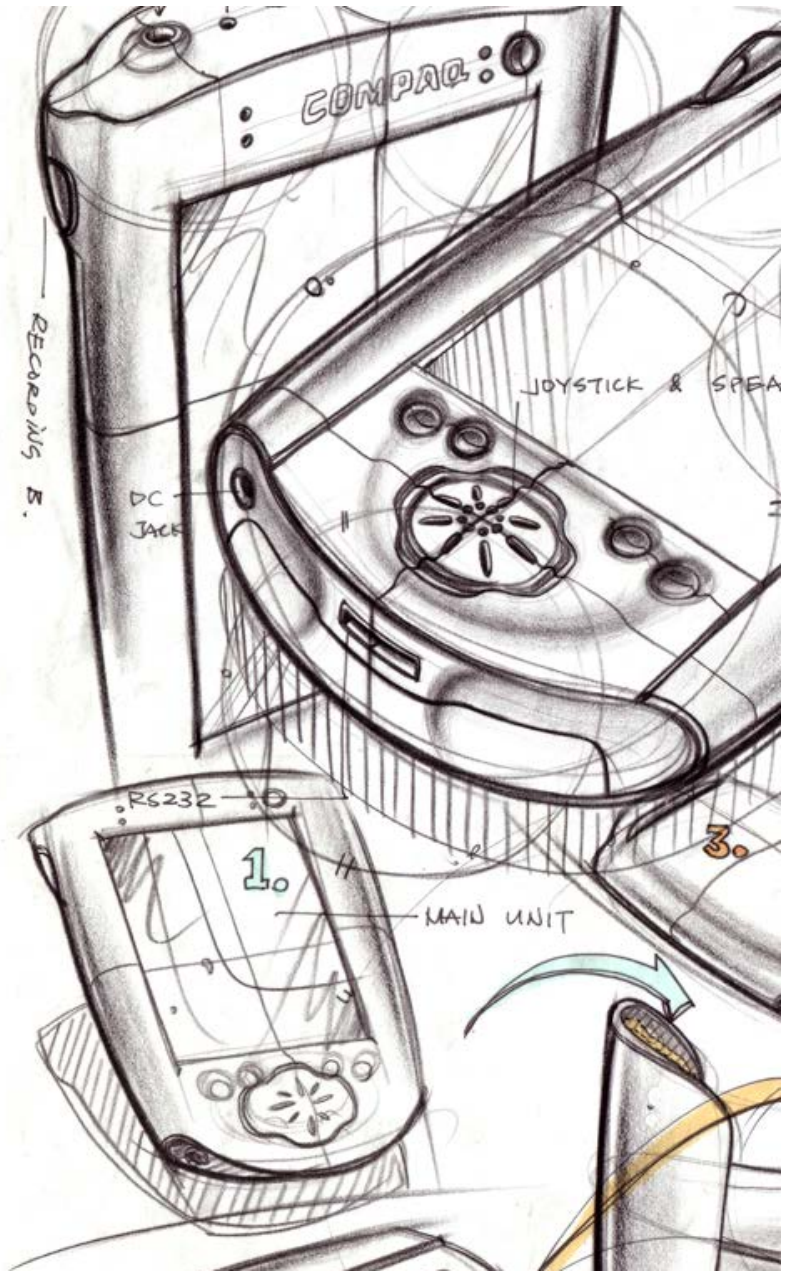
Sketching User Experiences

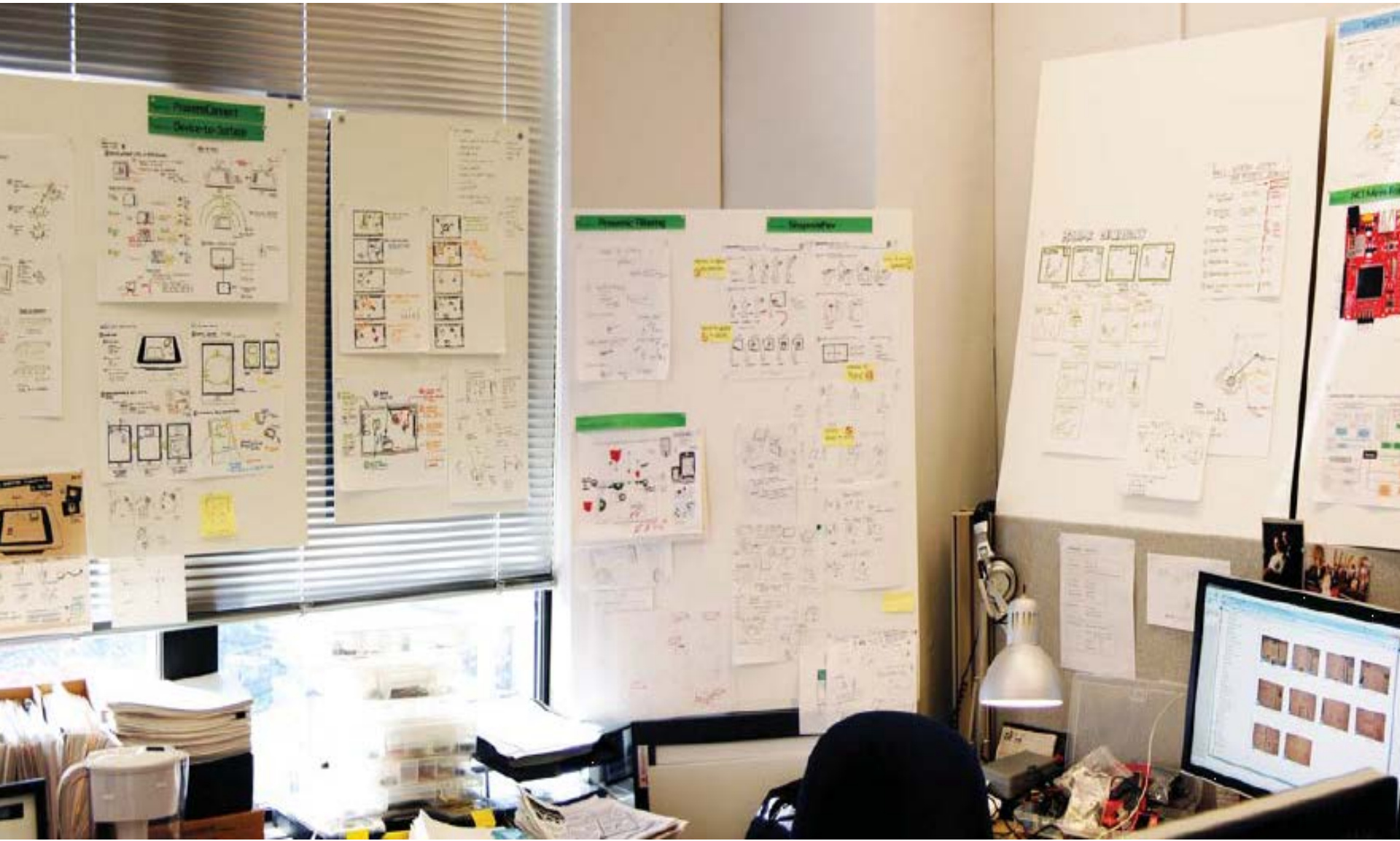
The Workshop

Nicolai Marquardt

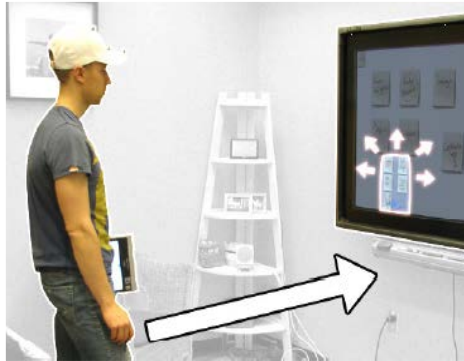
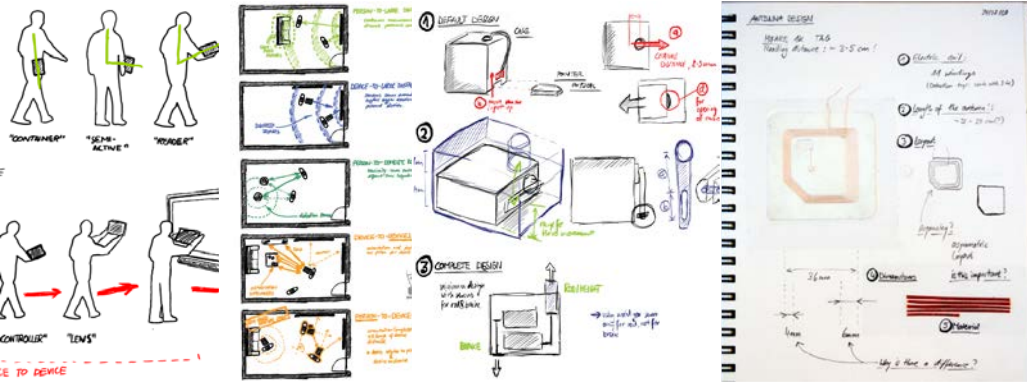
Interaction Design Guest Lecture at LMU
University College London
www.nicolaimarquardt.com







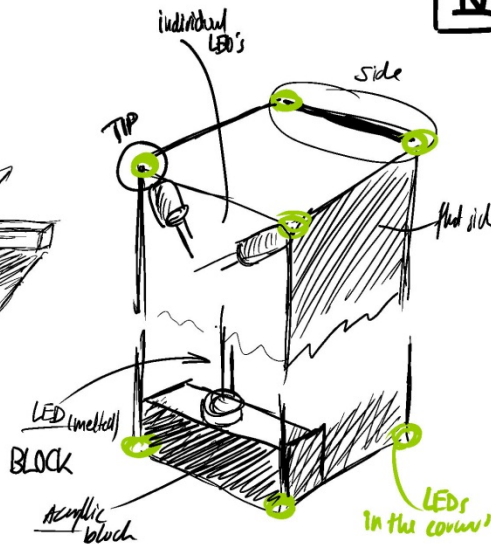
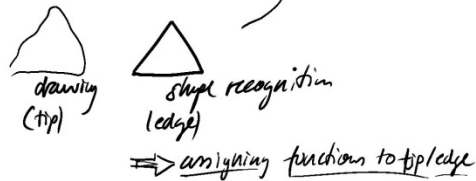




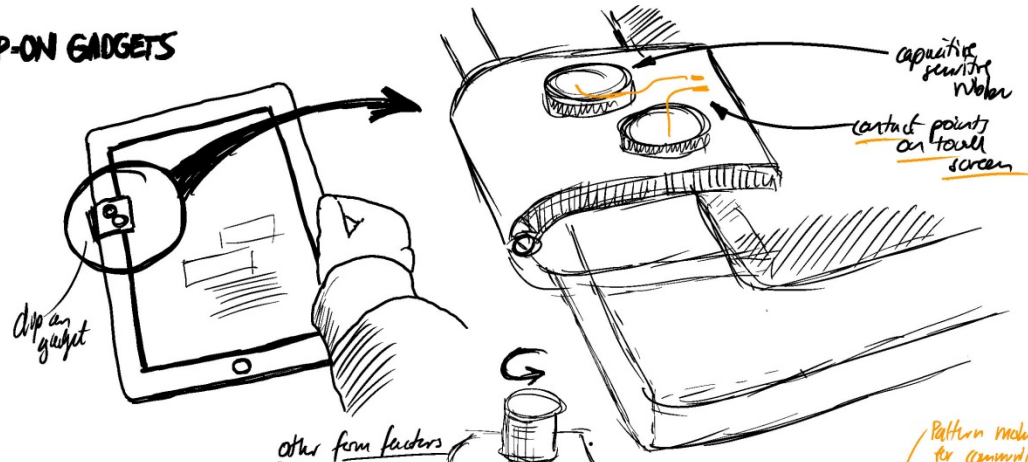
Get ready:
hands-on sketching
throughout the talk

filling the blank page...

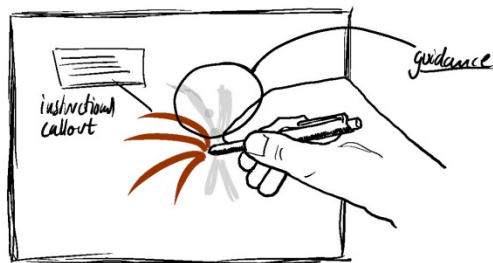
CONTÉ (Daniel Vogel)



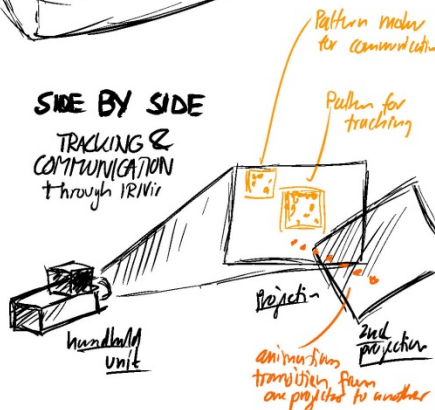
CLIP-ON GADGETS



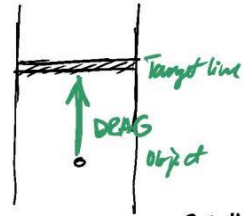
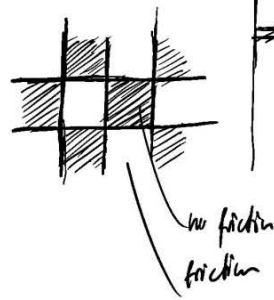
SKETCH-SKETCH REVOLUTION



SIDE BY SIDE TRACKING & COMMUNICATION through IR/IRi



CHI NOTES



3 conditions

- constant high friction
- " low friction
- variable friction

uses high-frequency vibration to give the impression of increased or decreased friction..

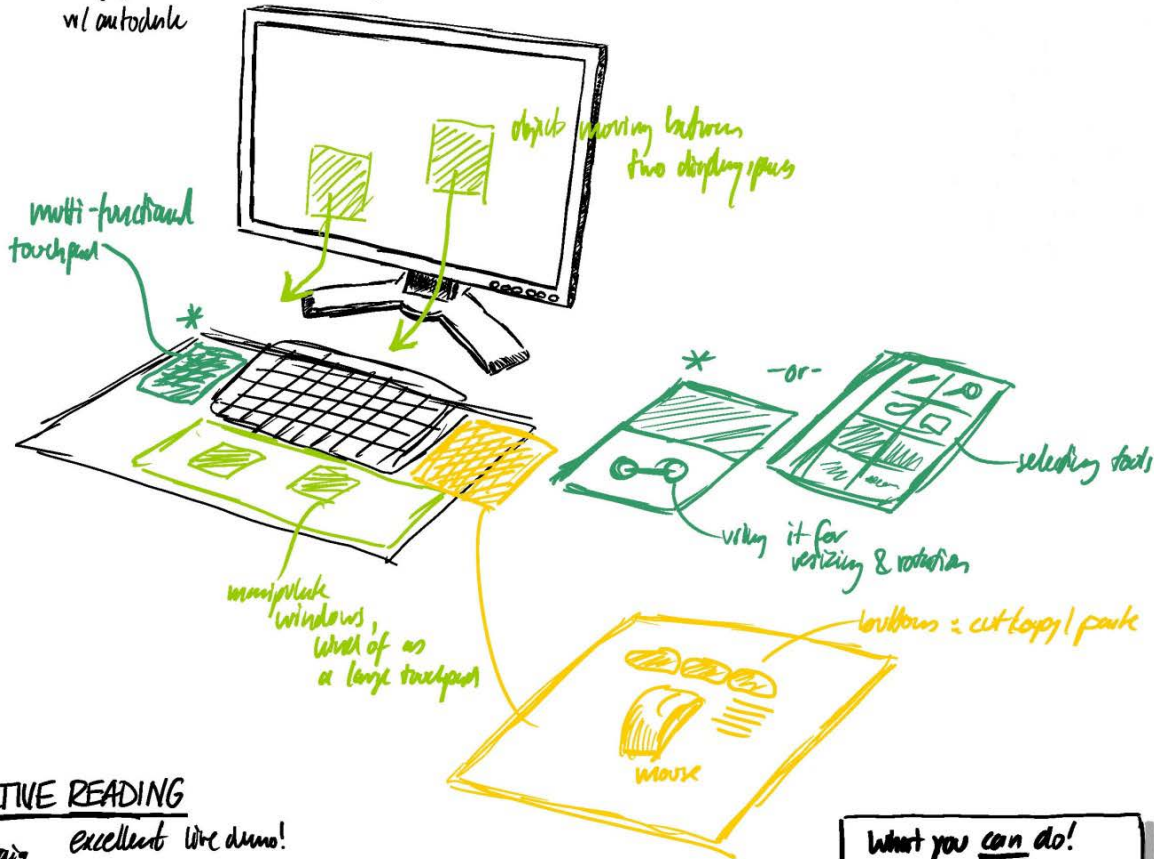
3 studies overall
+ User engagement study

Future work

- Taxonomy of sensations
- Mapping to widgets

MAGIC DESK

Bringing touch interaction to desktop applications
w/ out mouse



ACTIVE READING

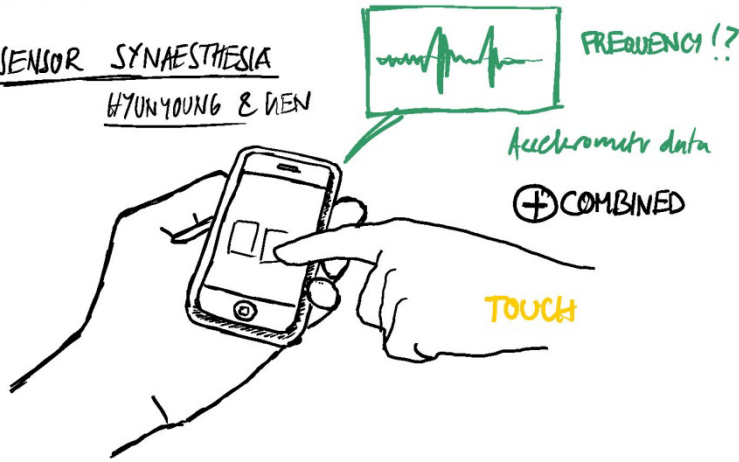
excellent live demo!
Crazy
testimonies
GATECH

What you can do!
vs.
What you should do!

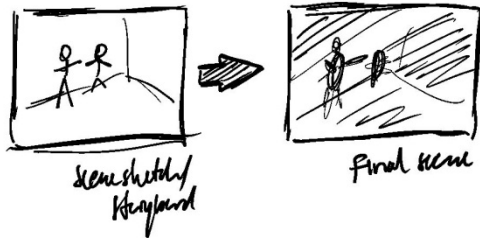
CHI NOTES

SENSOR SYNAESTHESIA

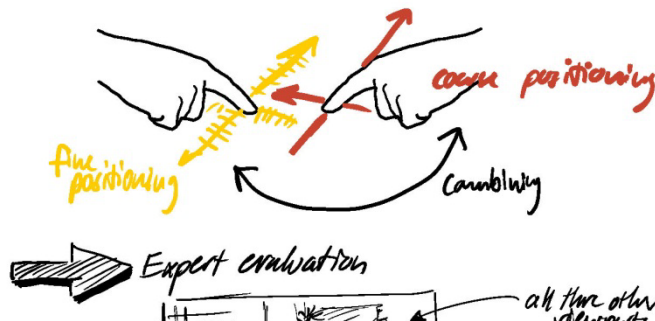
BYUNYOUNG & DEN



EDEN: Multitouch tool for constructing virtual (with Björn Hartmann) organic environments



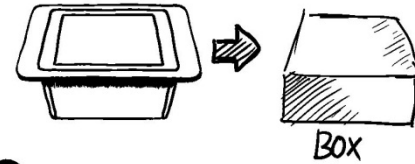
Imprecision of multitouch: → Organic environment vs. man-made ones



DESCRIBE OBJECTS FROM GESTURES

CHRIS HOLZ & BANDY

① Often describe into PRIMITIVES



② Showing top 3 objects

③ Use timing to remove transition gestures

Ideas: - differences between cultures?
- what about providing feedback?

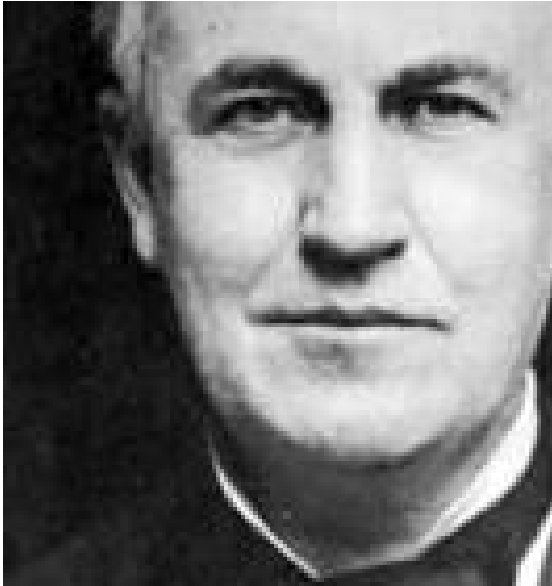
Design Principles

- ① one gesture at a time
→ difficult for artist to use multiple, simultaneous gestures
- ② Split gestures across hands
- ③ Simple gestures to frequent operations
- ④ Motion reflects operation
- ⑤ Control at most two parameters
- ⑥ Incorporate indirect manipulation
- ⑦ Avoid long traversals

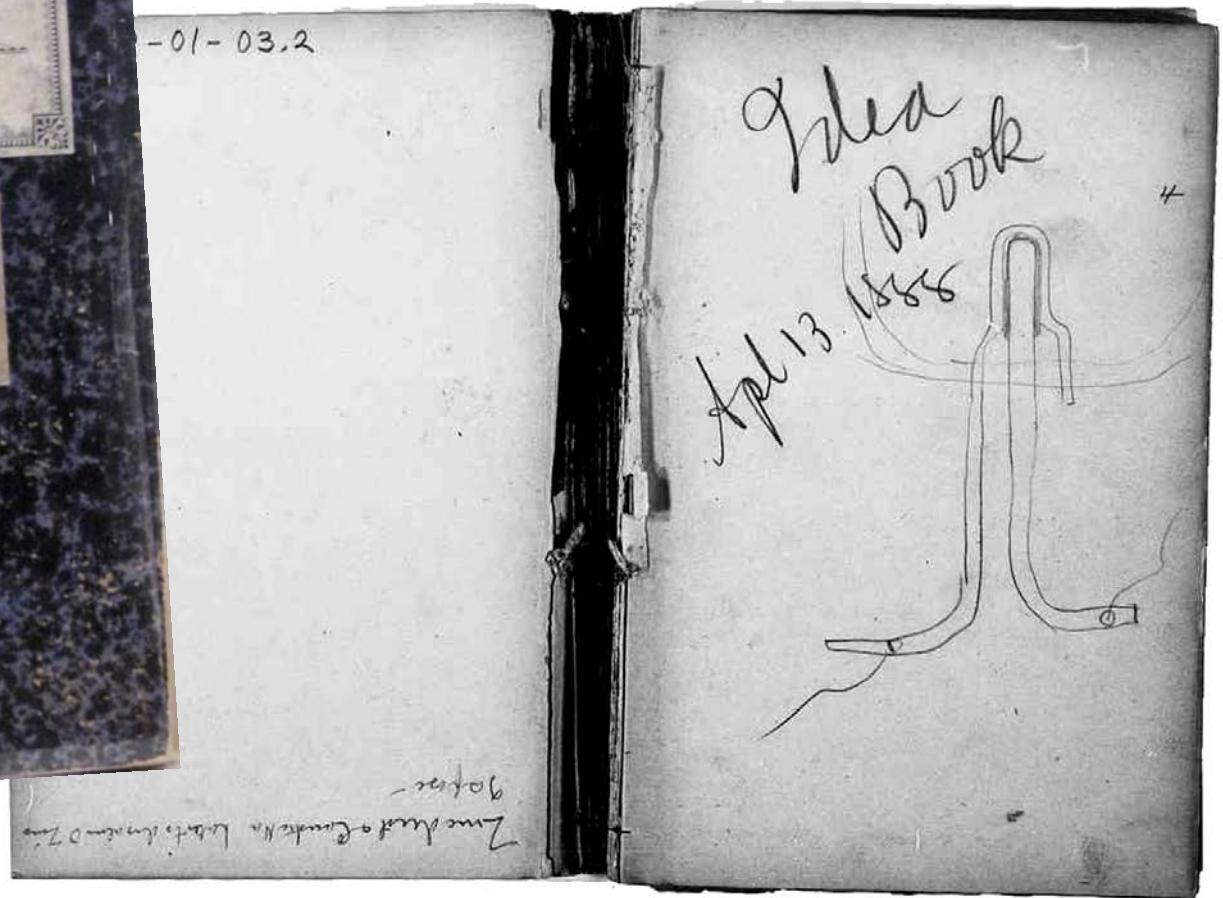
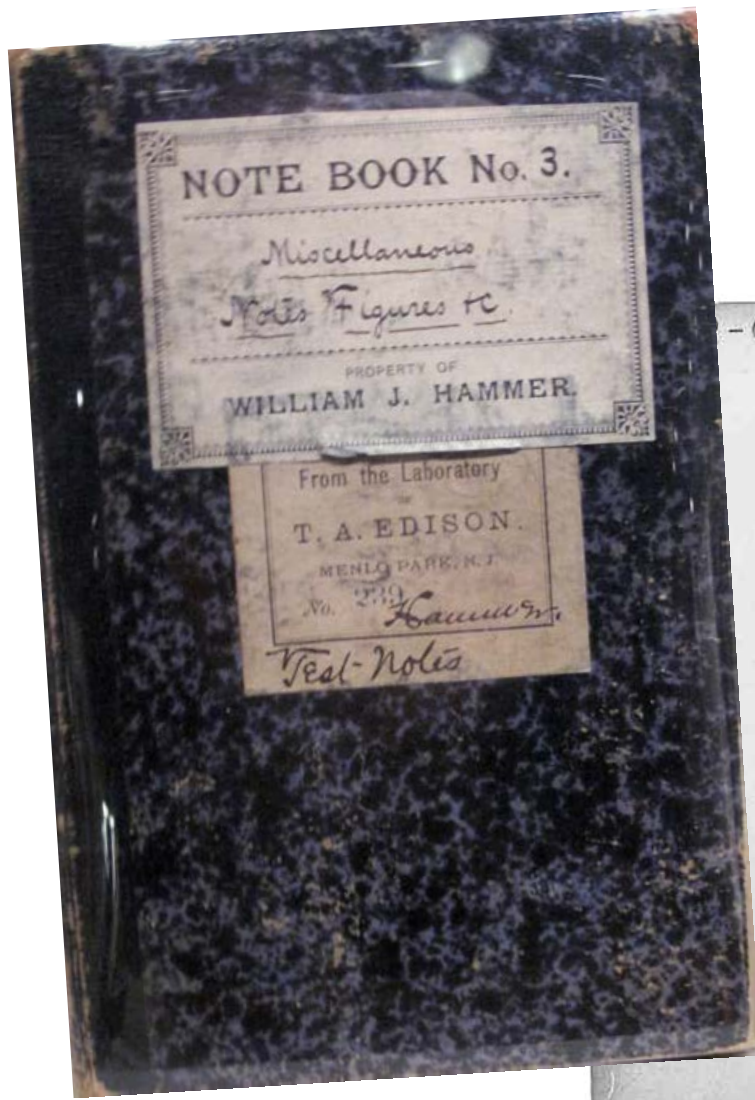
Why is sketching useful?

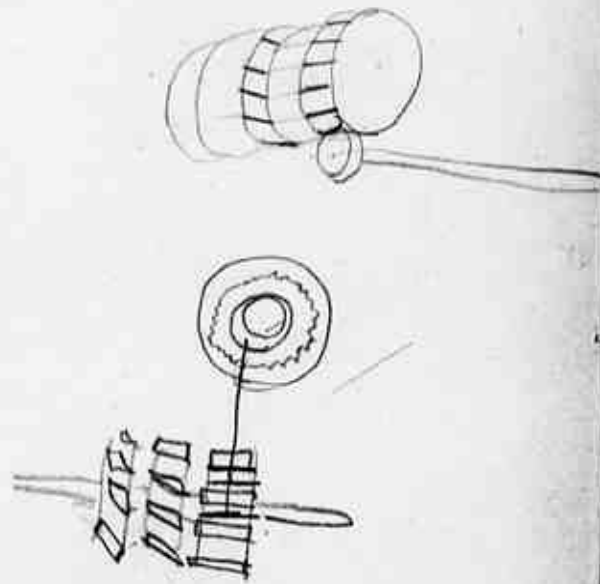
Why is sketching useful?

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



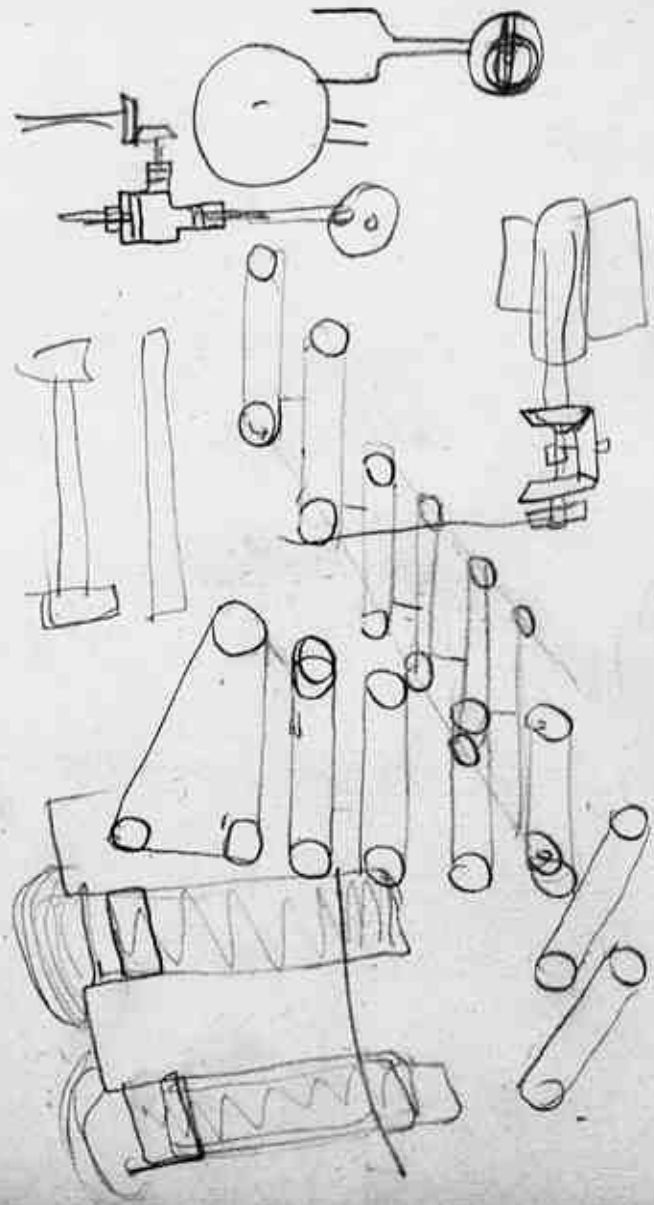
Thomas Alva Edison | Inventor



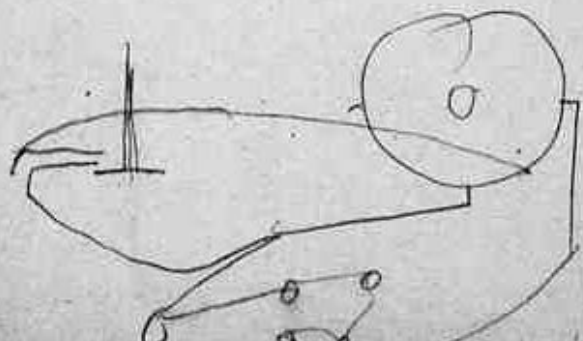
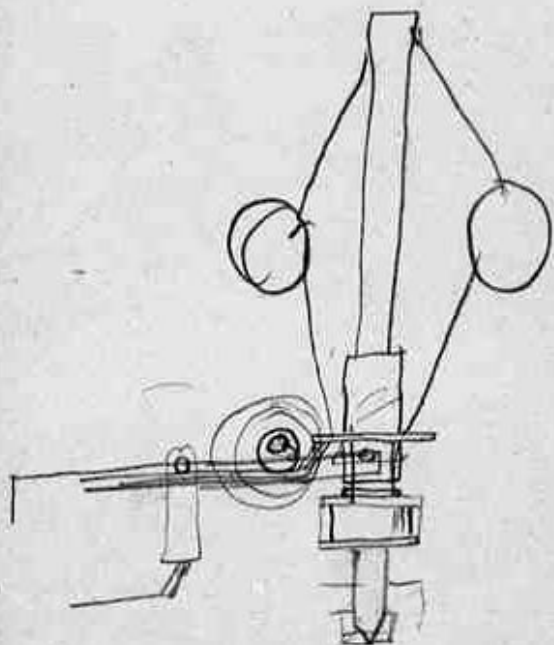


12
238
- 96

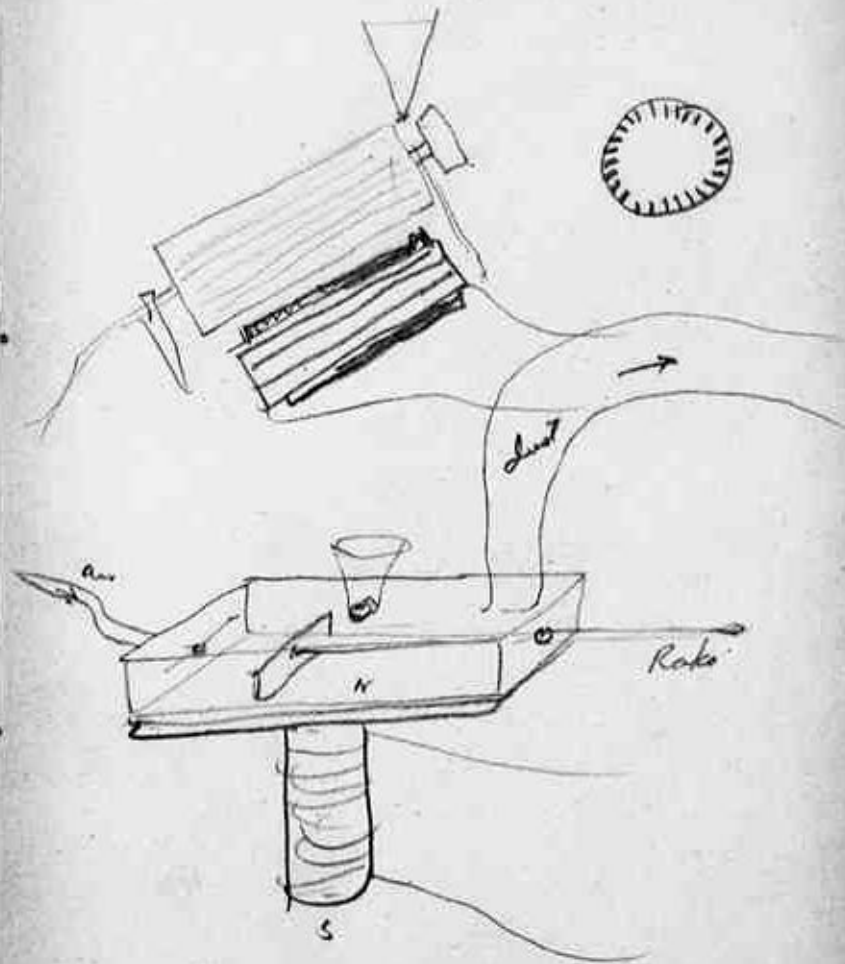
4



Por

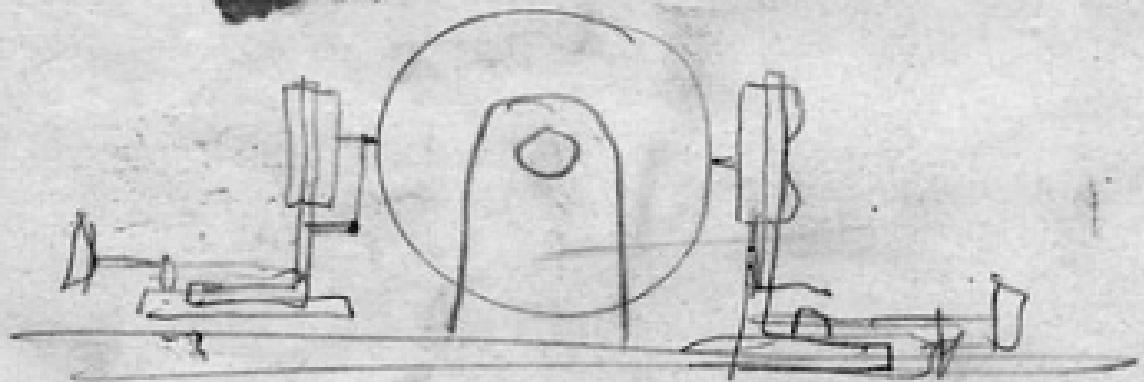
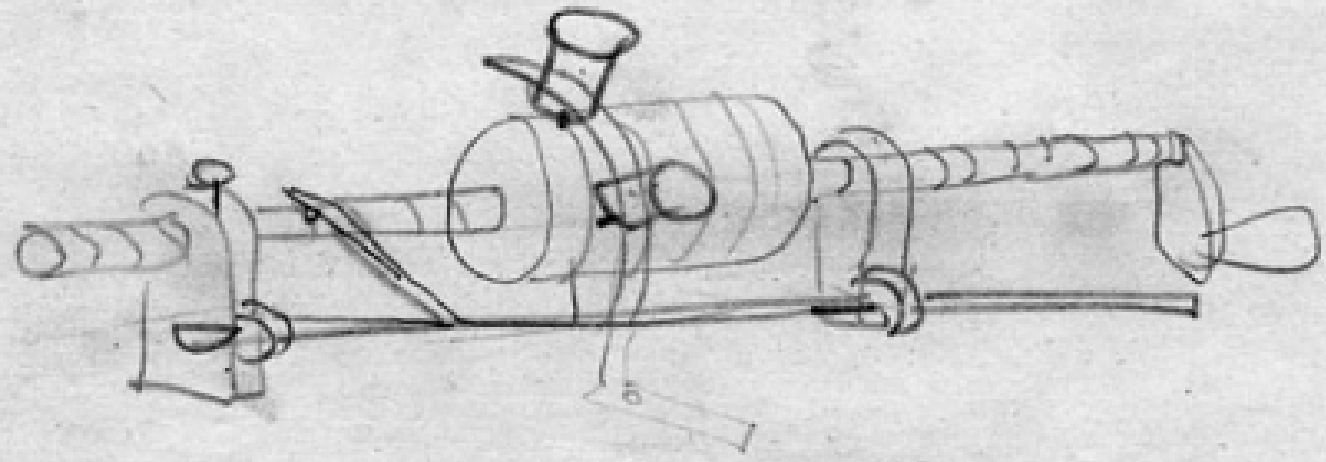


Convent april 29. 89



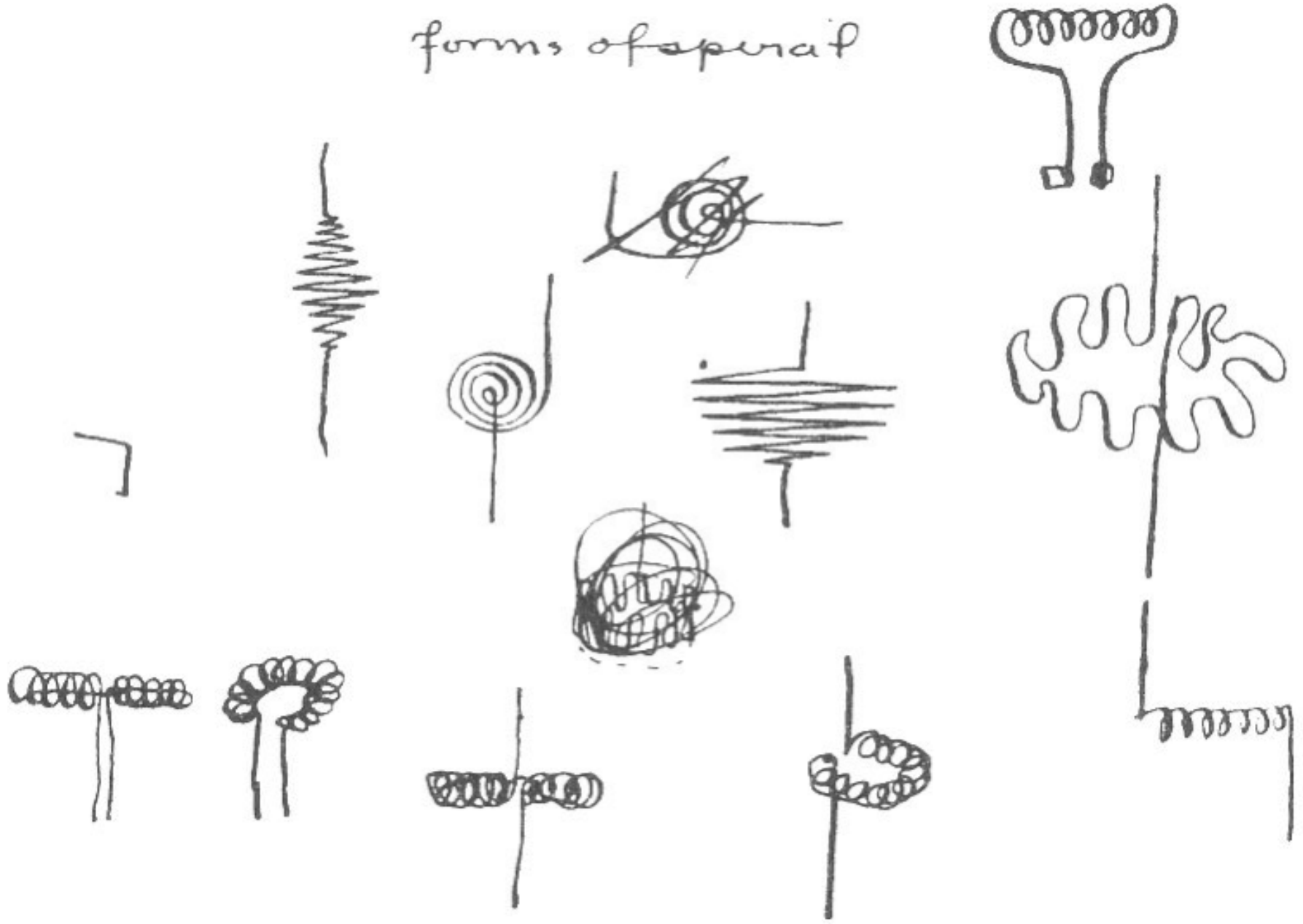
W. L. B. B. B.
Chas. Batchelor

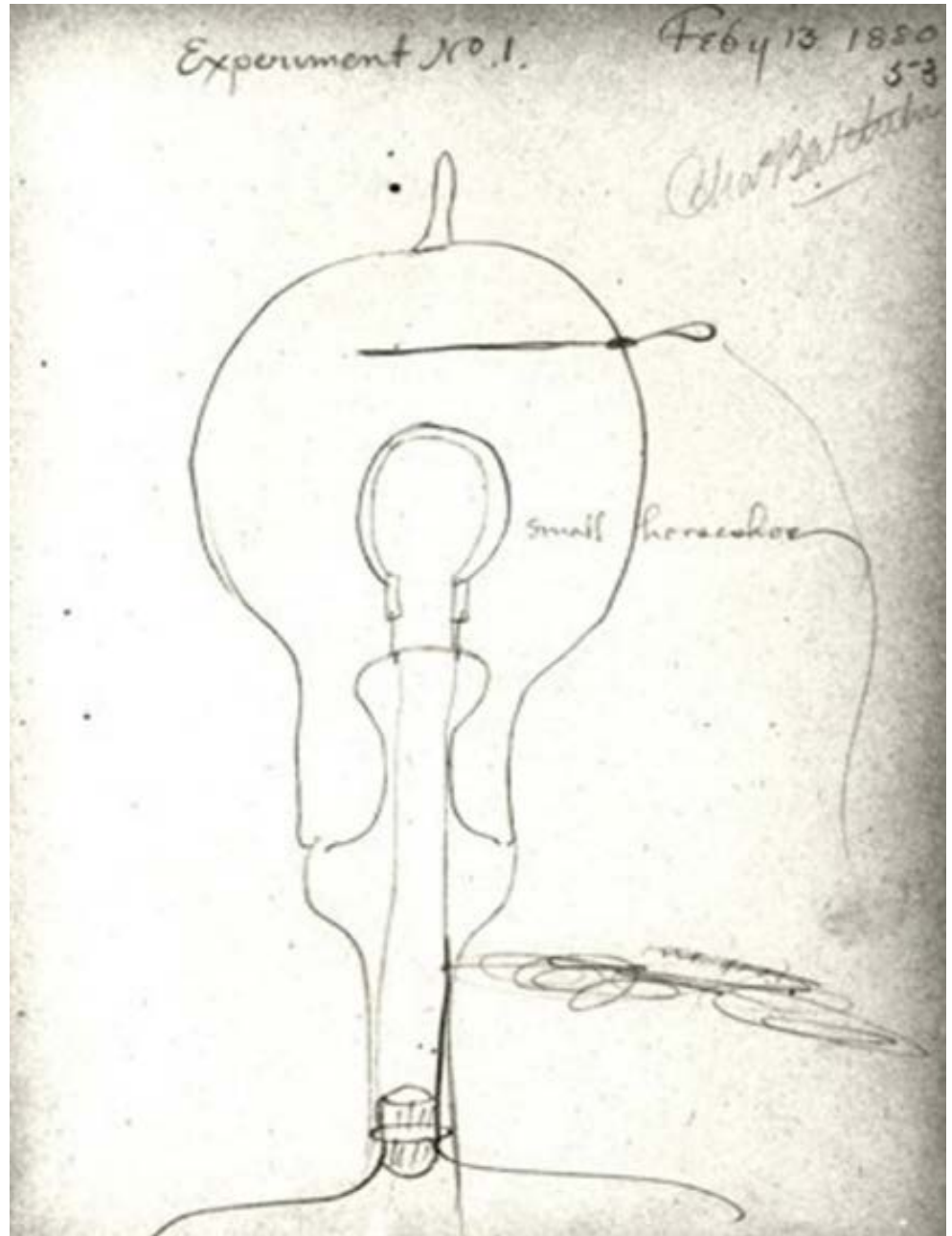
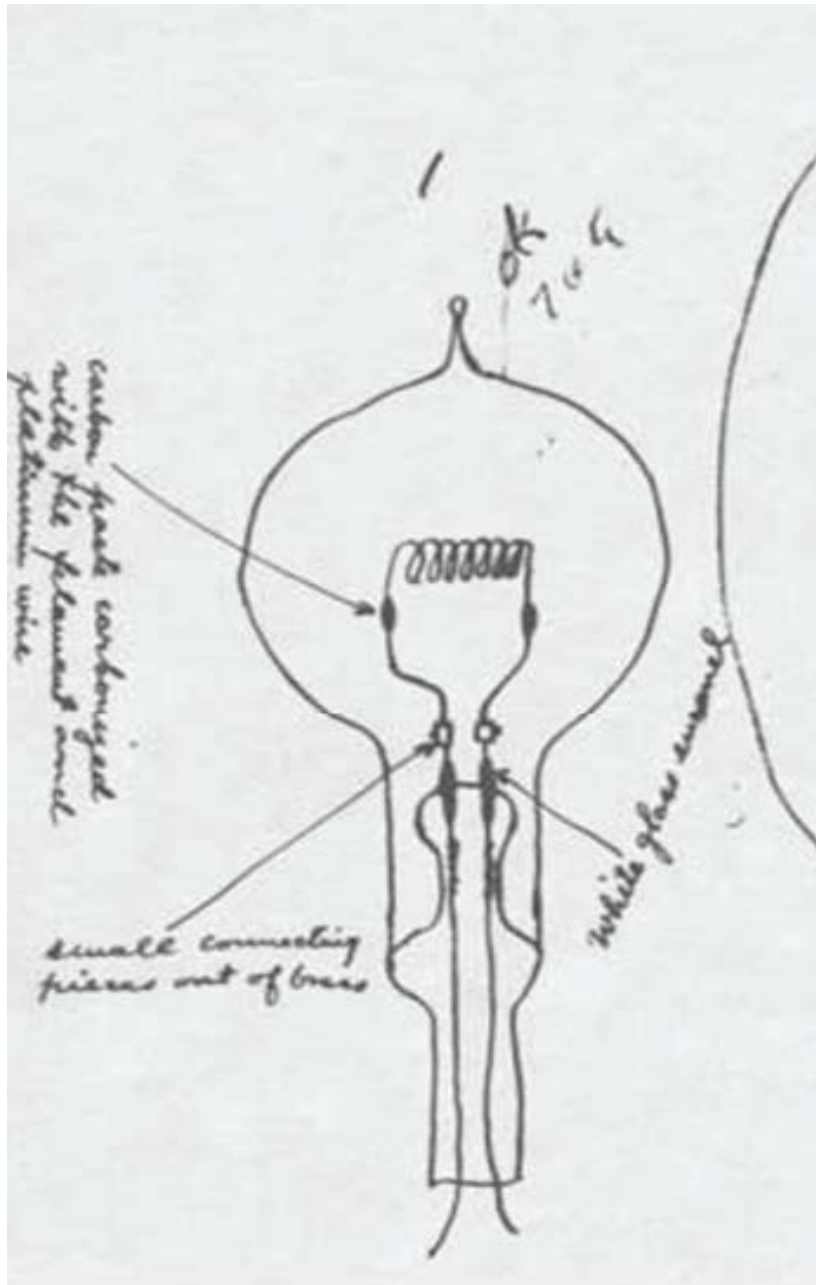
J. K. K.





forms of spiral





Edison and his staff
created over

2,500

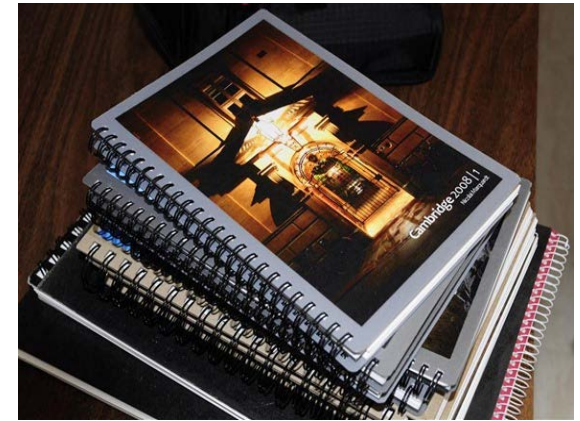
notebooks with
200-300 pages each





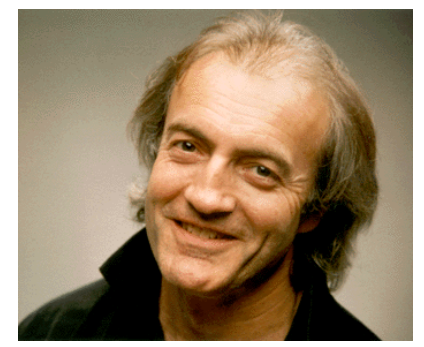
The Sketchbook

- capture many initial ideas
- develop variations, alternatives, details
- keep a record of your ideas
- reflect on changing thought processes over time
- communicate ideas to others by showing
- choose ones worth developing
- capture good ideas you see elsewhere
- collect photos, tape them into your book

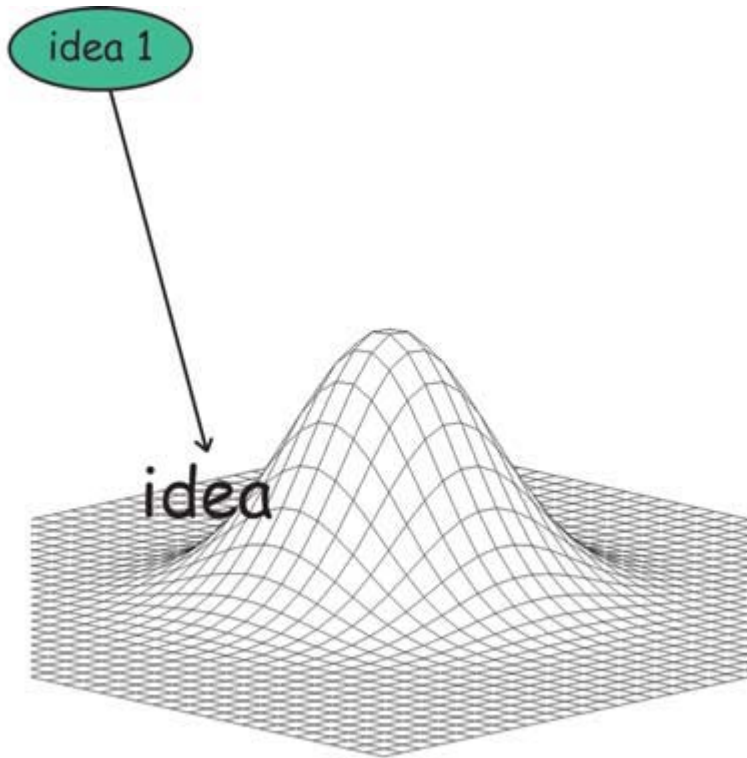


getting the design right vs. getting the right design

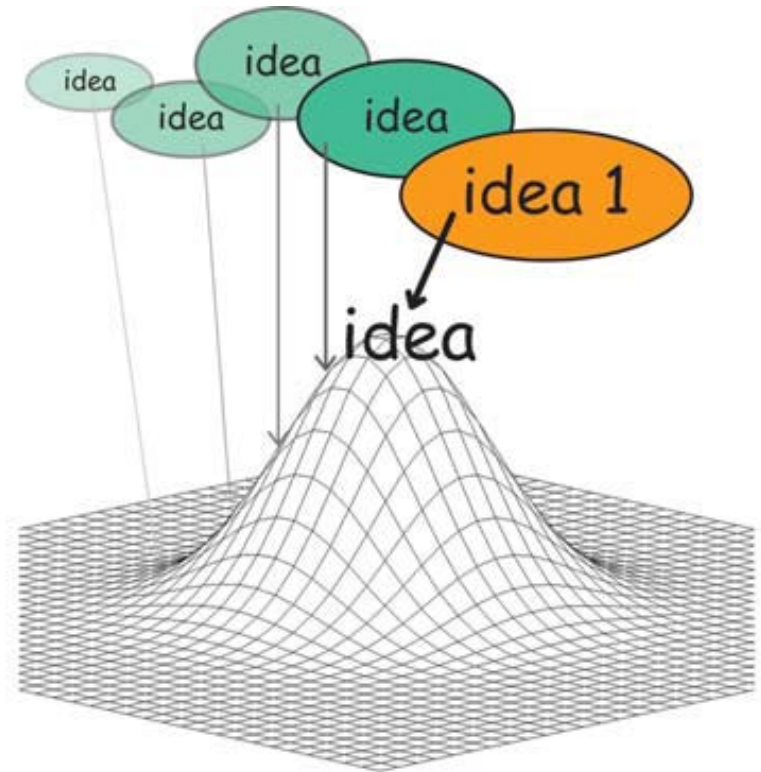
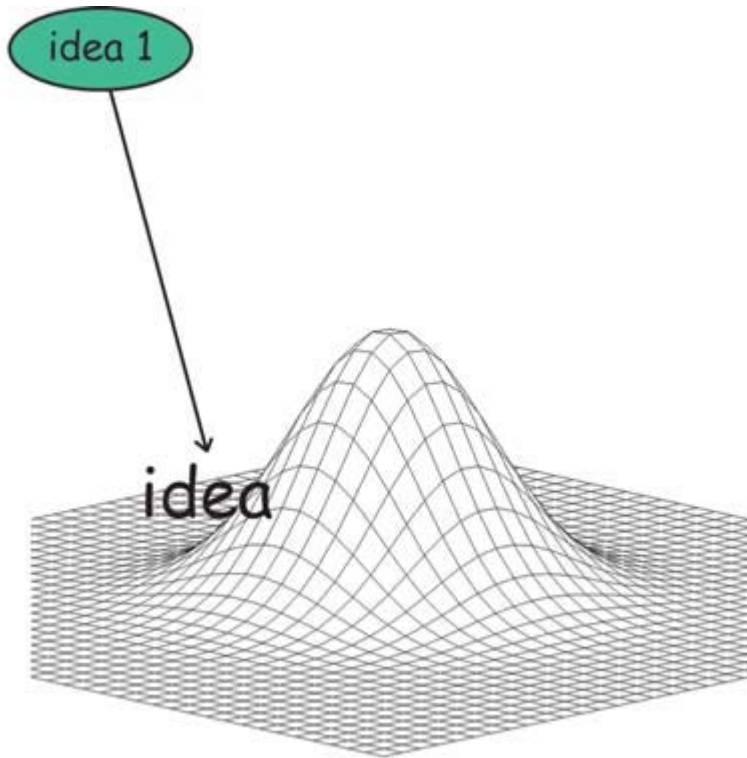
(Bill Buxton)



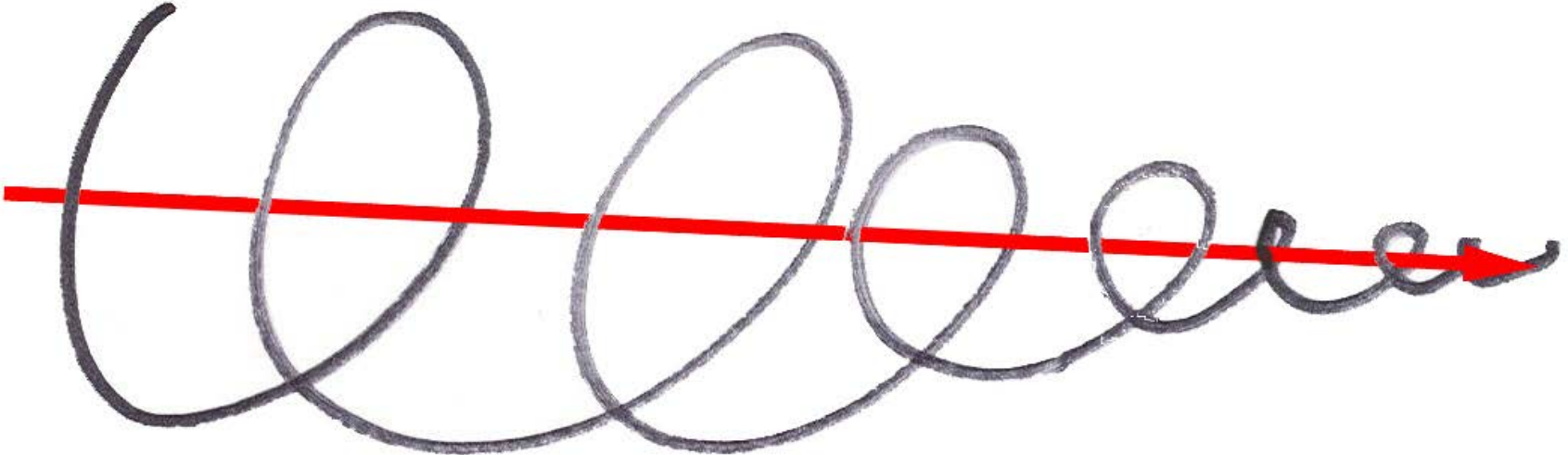
Buxton - getting the design right



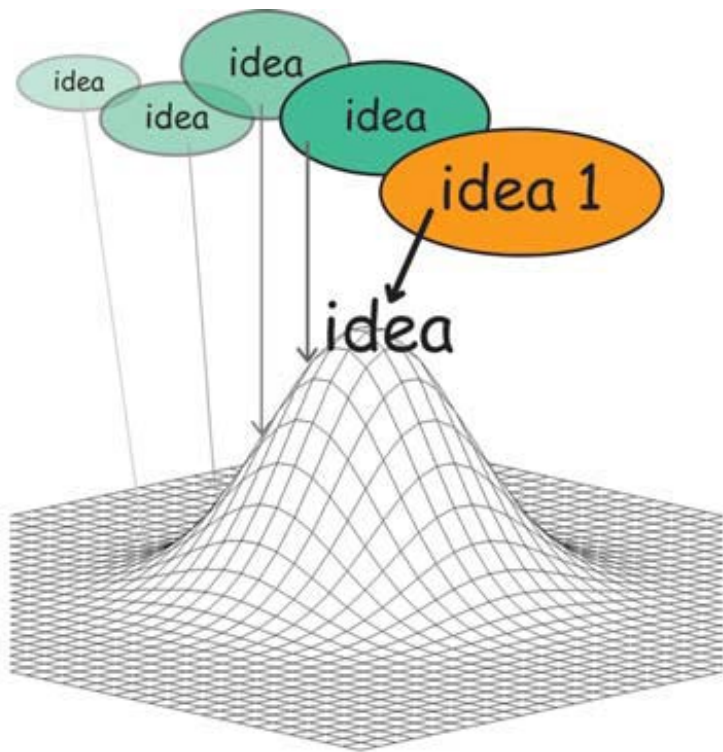
Buxton - getting the design right



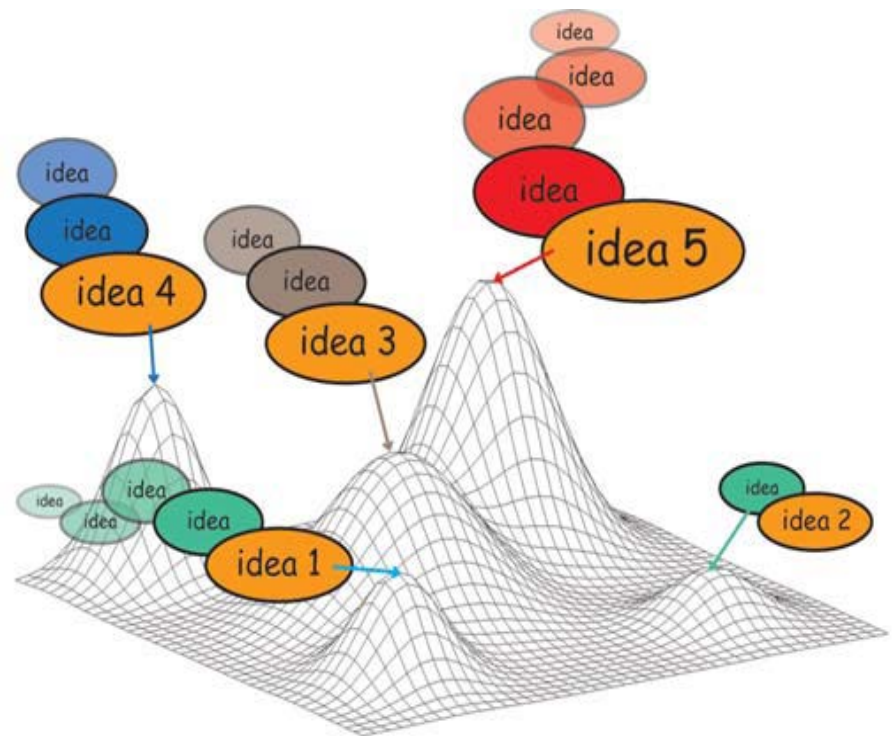
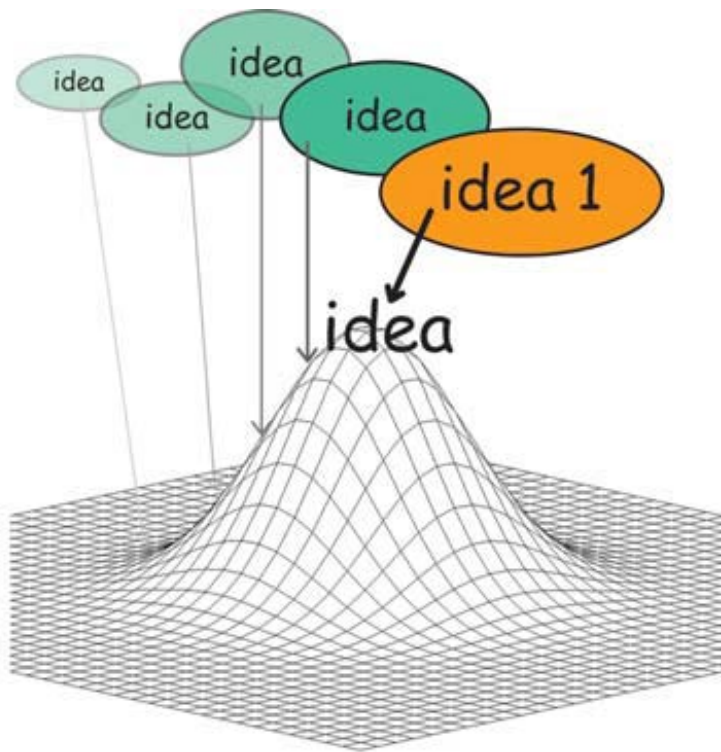
Buxton - getting the design right

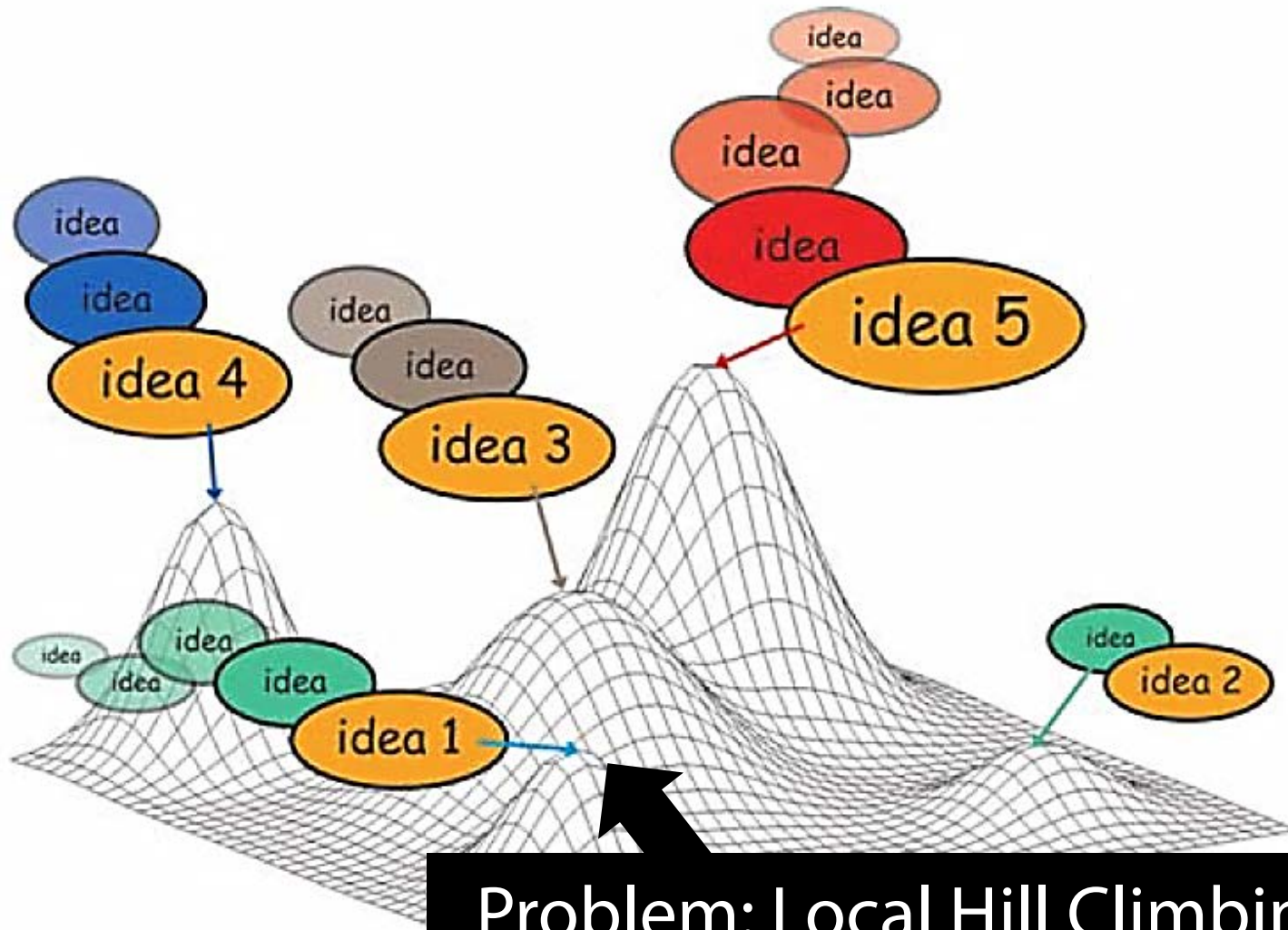


Buxton - local versus global maxima

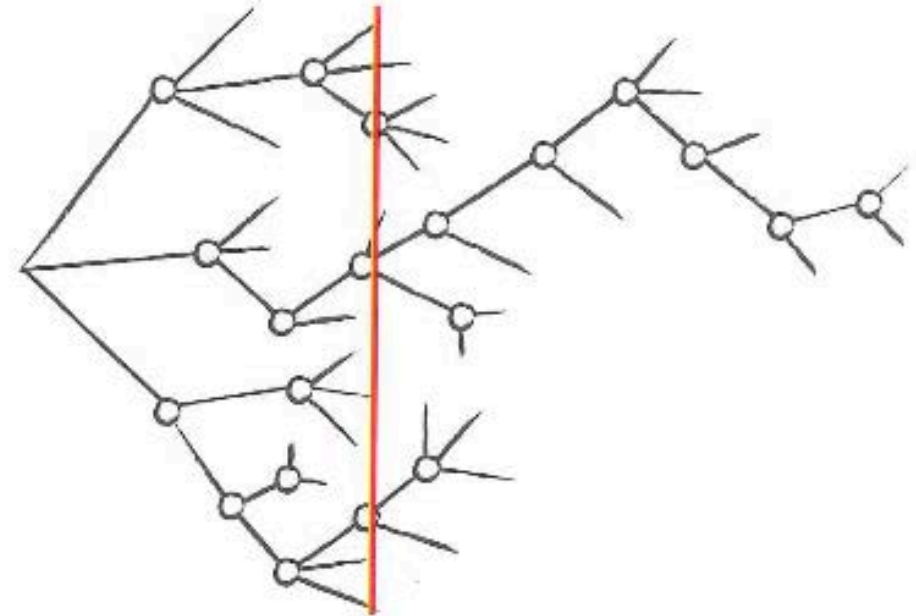
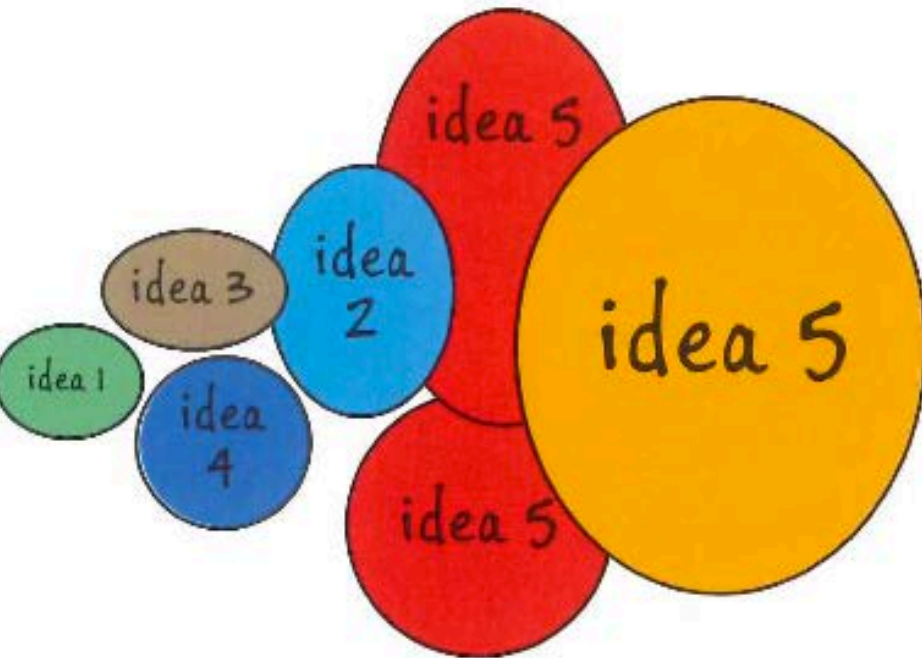


Buxton - local versus global maxima





Instead: Getting the **right design**

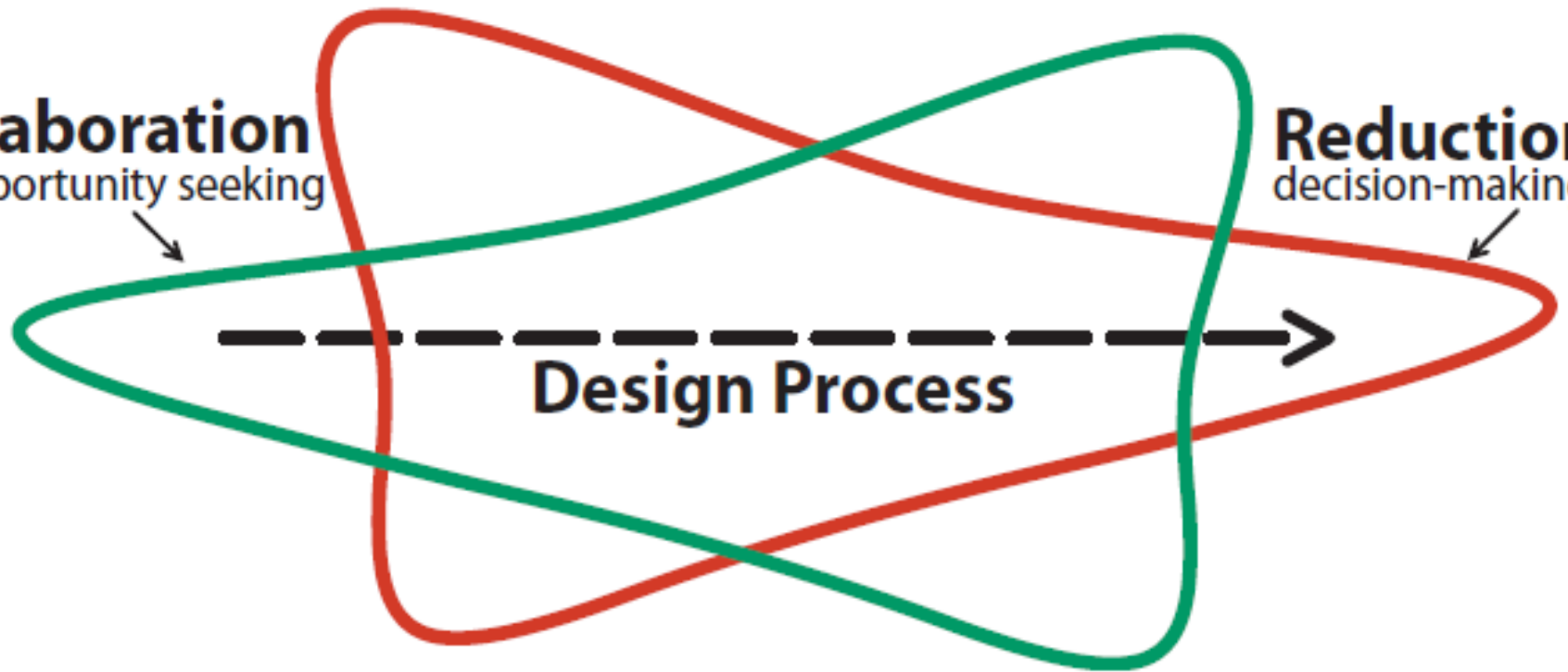


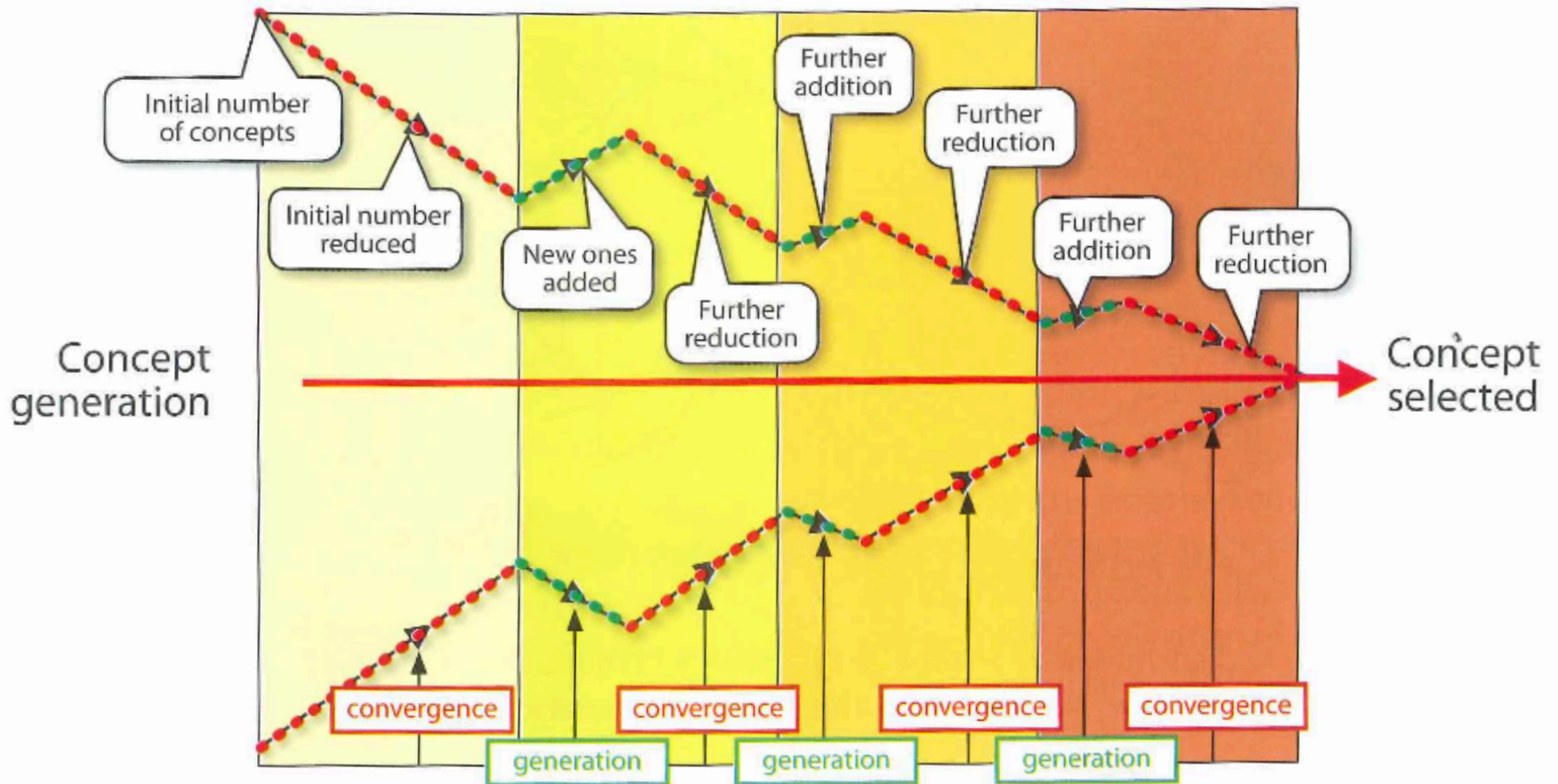
Getting the right design vs. getting the design right

- getting the right design involves **searching as much of a design space as possible**
- once you've found a promising design you want to improve it as much as possible (get it right) by **exploring variations** (local hill climbing)

Elaboration
opportunity seeking

Reduction
decision-making





Iterative:

General
overall concepts

Iteration 1
exploratory

Iteration 2
clarification

Iteration 3
resolution

Granularity: **General**
overall concepts

Coarse
significant alternatives

Medium
intermediate development

Fine
detailed refinement

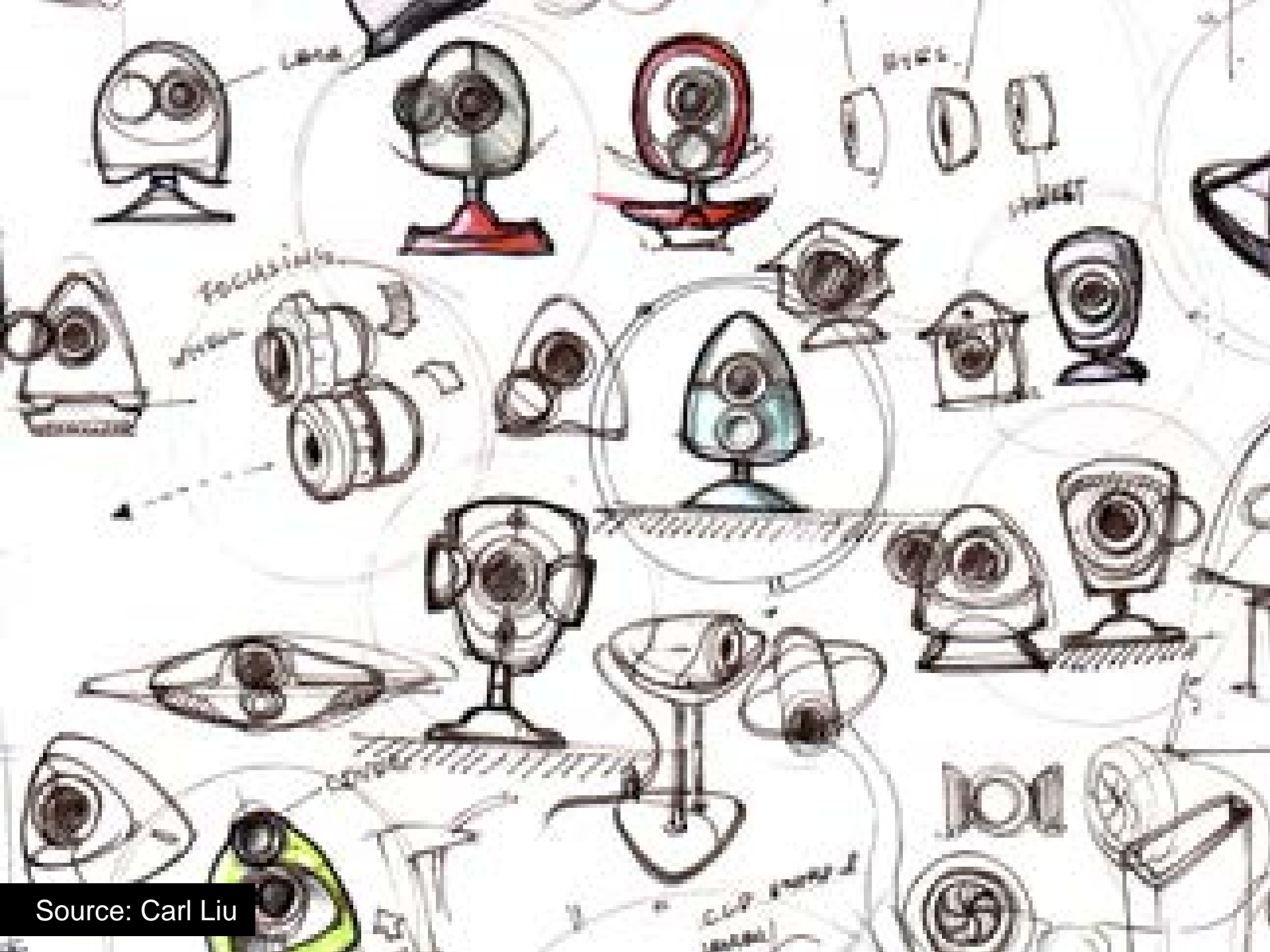
“The best way to have a good idea
is to have lots of ideas.”

Linus Pauling



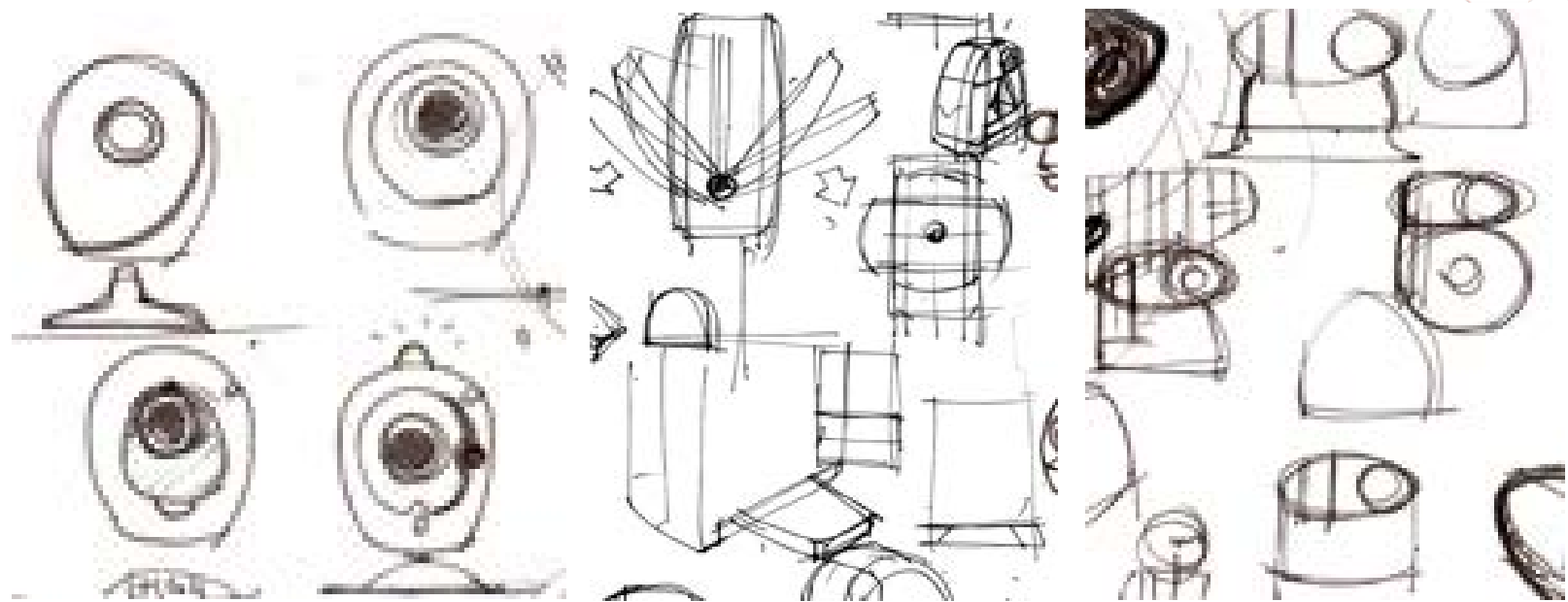
Carl Liu | Interaction Designer

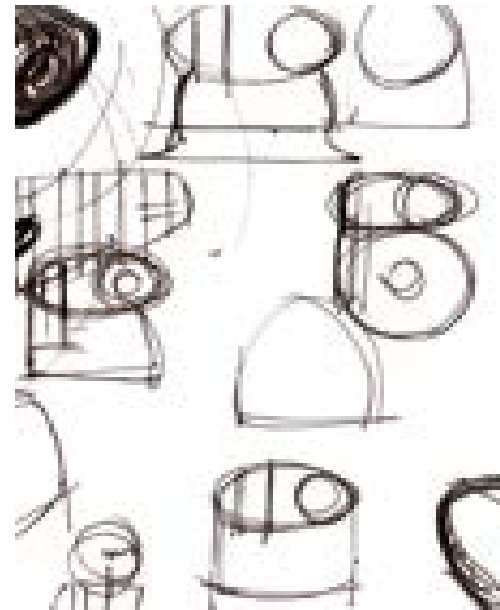
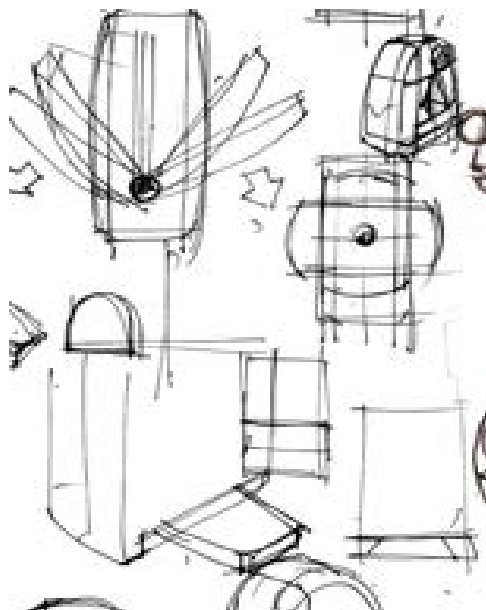
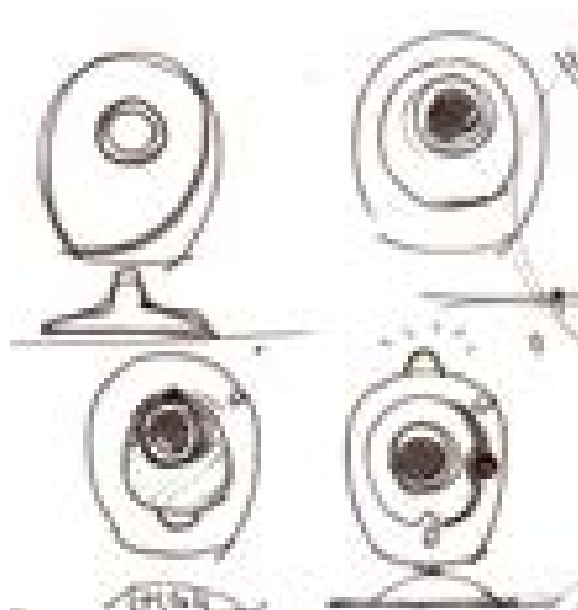




Source: Carl Liu







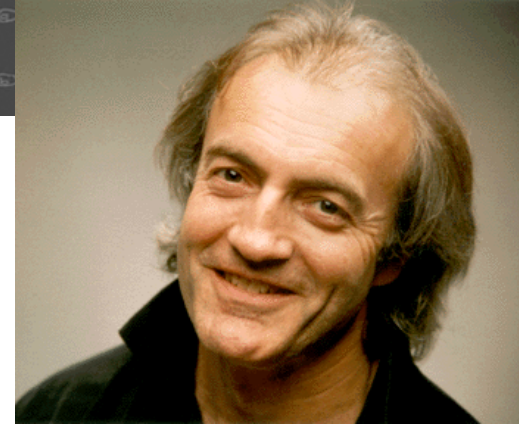
Source: Carl Liu

Clear vocabulary



Clear vocabulary

Plentiful



Clear vocabulary

Plentiful

Suggest and explore rather than confirm

Quick and inexpensive

Timely, when needed

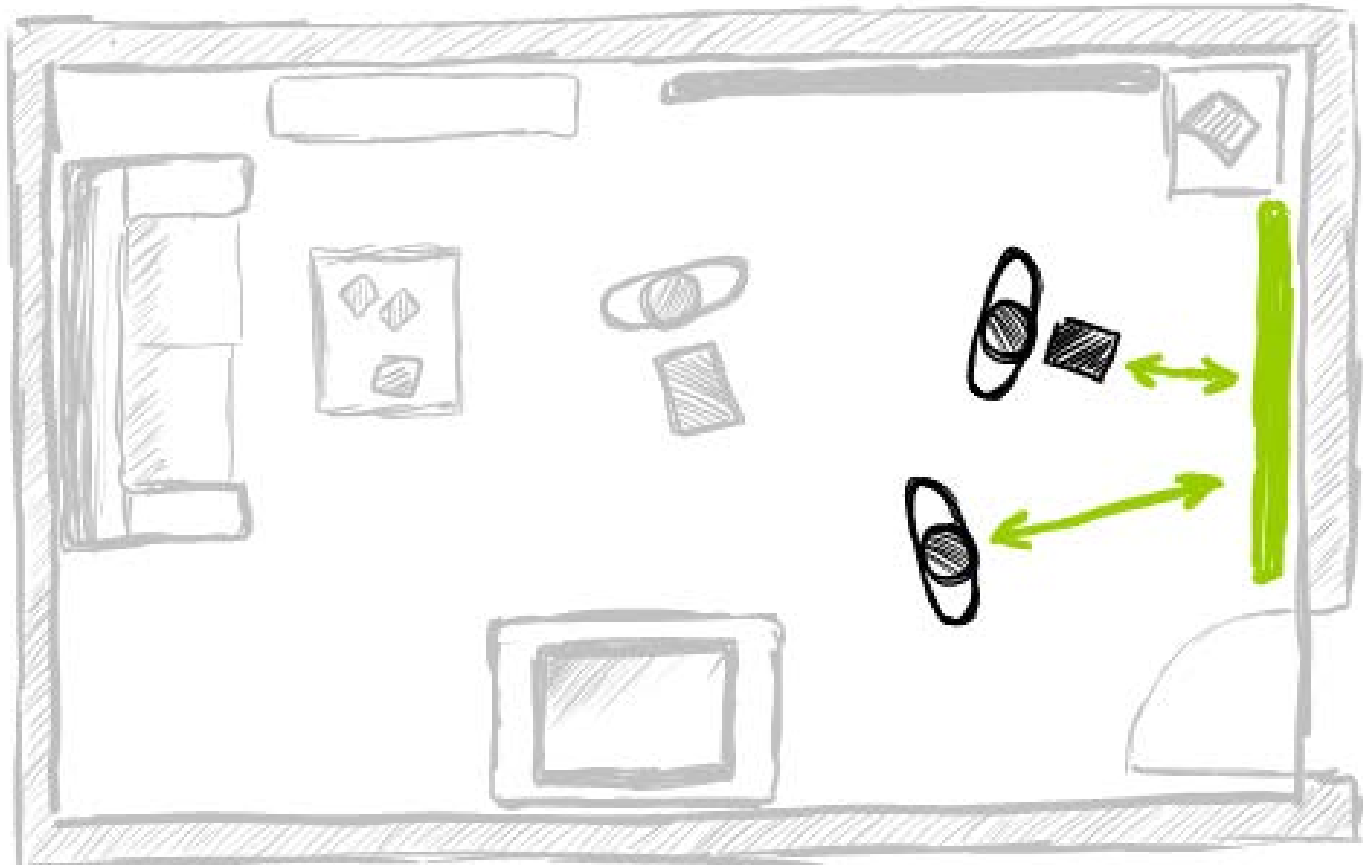
Disposable

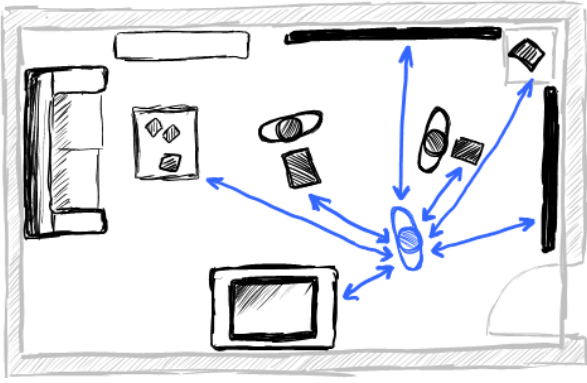
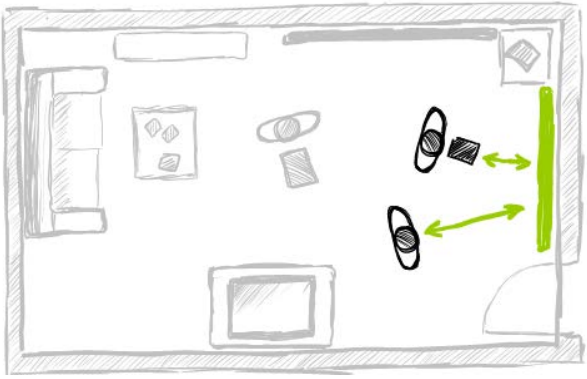
Minimal detail and distinct gesture

Ambiguous

Appropriate degree of refinement



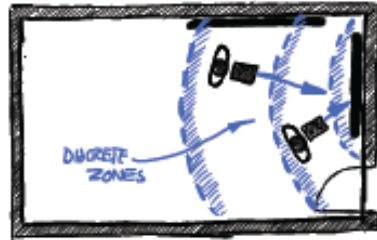






PERSON-TO-LARGE DIGITAL SURFACE

Continuous measurements to discrete physical zones



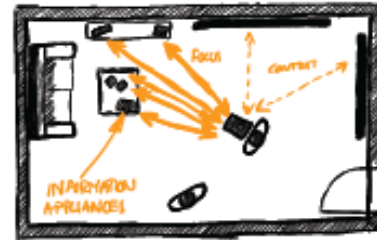
DEVICE-TO-LARGE DIGITAL SURFACE

Proximity zones around large digital surface support device selection on portable personal devices.



PERSON-TO-DOMESTIC ROBOT

Proximity - same environment, same space, affordance (spatial awareness)



DEVICE-TO-DEVICES (MULTIPLES, LARGE QUANTITIES)

orientation and physical distance as filter for device selection





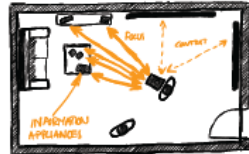
PERSON-TO-LARGE DIGITAL SURFACE
 Continuous measurements to detect potential zones



DEVICE-TO-LARGE DIGITAL SURFACE
 Discrete zones around large digital surface despite location on portable personal device.



PERSON-TO-DOMESTIC ROBOT
 Proximity - some environment, some gear, different time (dependencies)



DEVICE-TO-DEVICES (MULTIPLE, LARGE QUANTITIES)
 Interaction and physical distance not filter for device selection



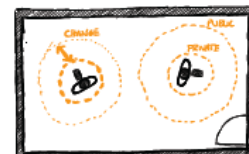
PERSON-TO-DEVICE-TO-DEVICE
 orientation (angle/pointing)
 all length of device dynamic



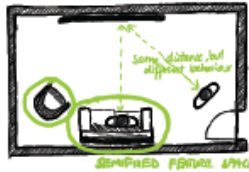
PERSON-TO-LARGE DIGITAL SURFACE (HORIZONTAL TABLETOP)
DEVICE-TO-LARGE DIGITAL SURFACE



PERSONAL PORTABLE DEVICE-TO-DEVICE
 Large interactive surface as feedback



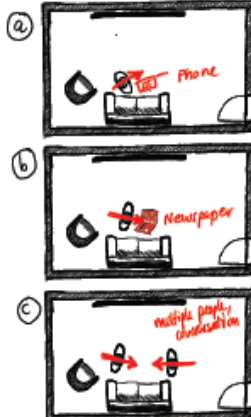
PERSONAL PORTABLE DEVICE-TO-DEVICE (PROXIMITY-AWARE RFID TAGS)



1 SEMI-DEFINED FEATURE SPACE

Different to:
 - Don't forget about top's options when distance but not angle is considered

2 ALTERNATIVE USER INTERFACE

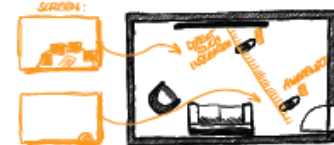


ORIENTATION + OBJECT OR PERSON
 -> difficult to produce alternative user interfaces - what object is?

3 PHYSICAL TOKENS TO FACILITATE EXPLICIT INTERACTION



Different from:
 - pointing gestures
 - touch controls
 - gesture interfaces
 -> focus to physical tokens in particular orientation and distance to a person

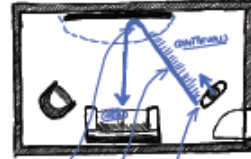


4 AWARENESS TO INTERACTION

CONTINUOUS: - SIZE OF LENS
 - LOCATION ON SCREEN
DISCRETE: - ONE IN CLOSE DISTANCE TO SCREEN, FLUID SIZE

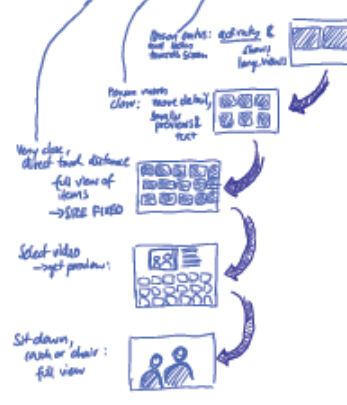


Different from:
 - COLLAPSE'S RESOLVE
 -> Dynamic size, increasing information
 -> from awareness to interaction



5 CONTINUOUS KNOWLEDGE OF...

- a) DISTANCE
- b) ORIENTATION
- c) IDENTITY
- d) VELOCITY



a) Distance
 - size of position
 - awareness zones of devices
Check
 - about touch interaction
 - early / last semi-fused feature
b) Orientation
 - facing towards face display
 - facing towards another person
Continuous orientation
 - fine position
 - reach orientation
c) Identity
 - Who?
 -> change pos. physical token
 -> interaction
 -> when individual media library
 -> adapt volume
 - Security/Police
 -> detection
 -> integration
Dynamic
 -> fluidity of device full device
d) Velocity
 -> motion
 -> position & selection

6 HOME MEDIA PLAYER APPLICATION

VS. -> Aggregated table-based (X)
 -> Table Ambient Display (X)
 -> dynamic information on regular basis implicit and explicit information?



- IMPLICIT**
- Active / detectable -> position awareness & facing away or: person leaves
 - Detection of available media -> more detail when nearby close (continuous)
 - Awareness of access possibilities with digital devices
 - Media between multiple people
 -> show title on top of the screen for 2nd person
 -> show detailed information for 2nd person
 -> person in focus of the screen is holding some kind of surface gets detailed controls & full information
- EXPLICIT**
- Direct touch interaction in front of it
 - Media transfer when device is near close to the screen
 - Pointing from a distance

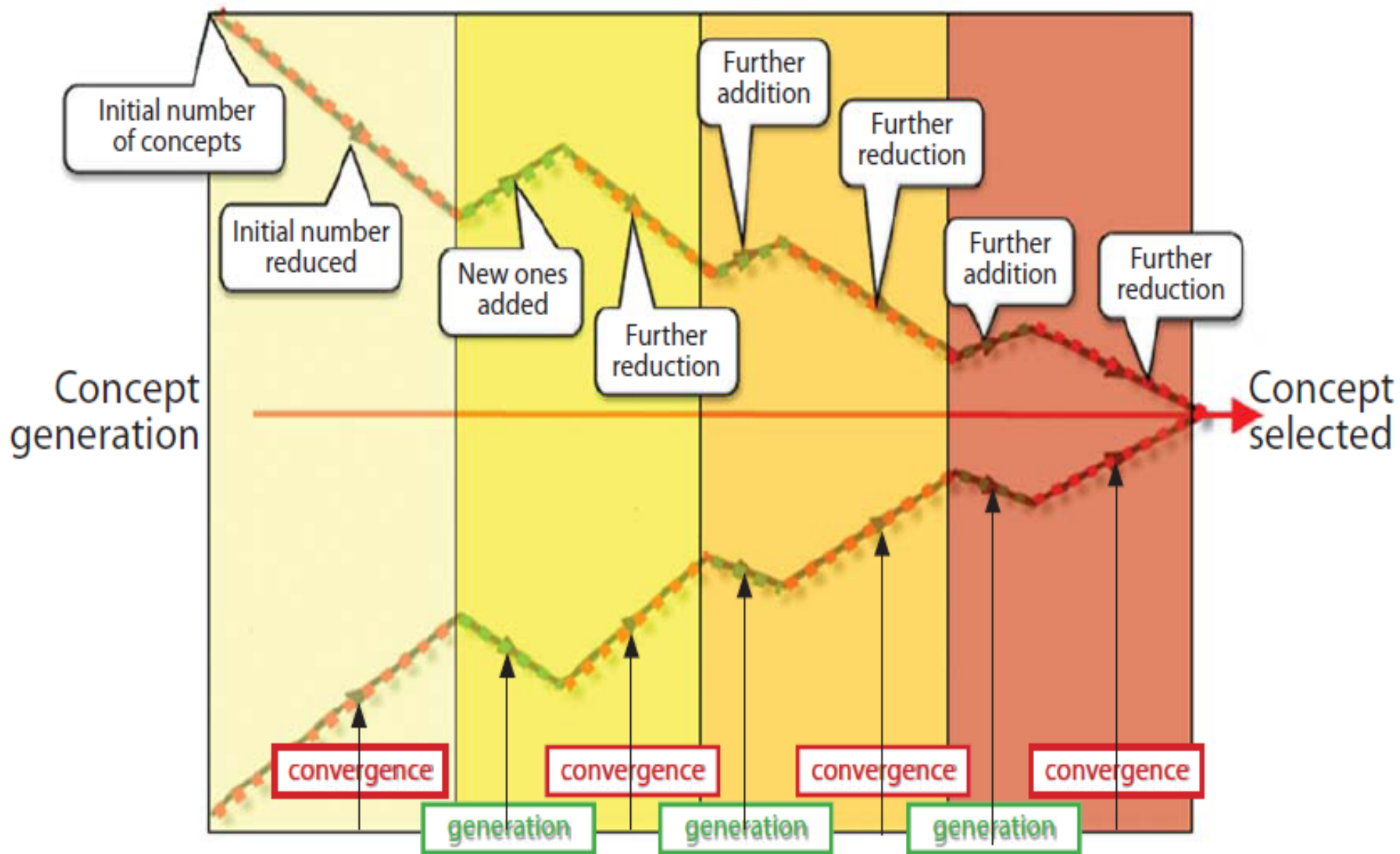
- OVERSIDE MECHANISMS**
- Step back, increase distance
 - Time around
 - Explicit gesture (with words device)
 - Timeout ("sync")
 - Disable command
 - Settings
 - "blacked" for device

TRICK FEATURE LINE
 - Security
 - Portability
 - Privacy
 - Type of touch

Technique: 10 plus 10

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
- 4) Choose the most promising designs as a starting point
- 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

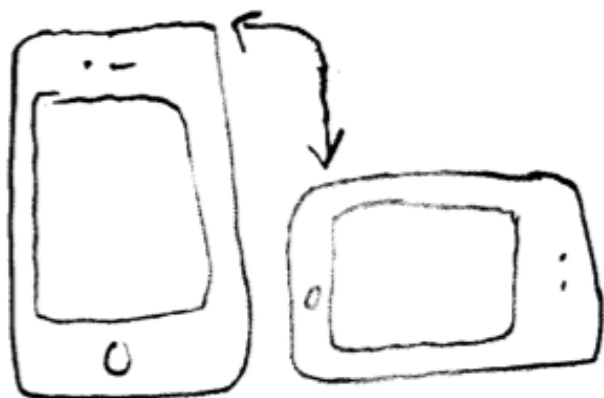
Medium
intermediate development

Fine
detailed refinement

Technique: 10 plus 10

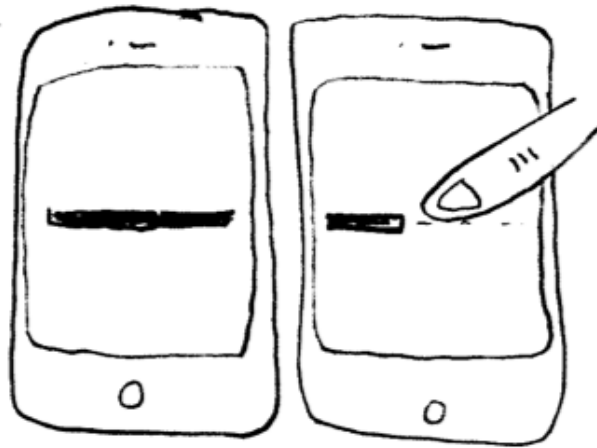


Both people type a word chosen by them

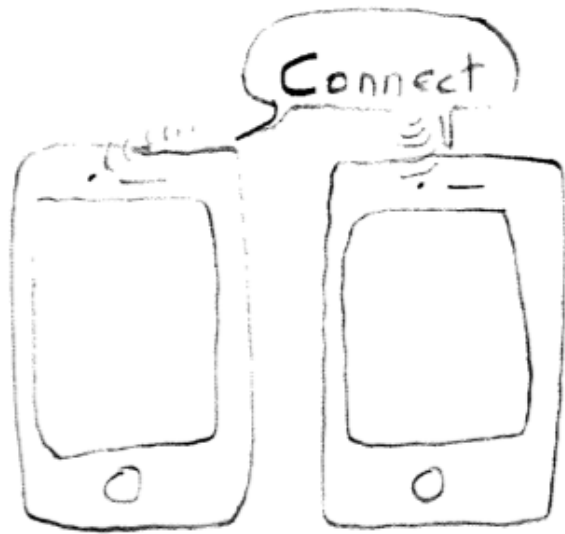


Rotate in a pattern, where other person has to mimic it (accelerometer)

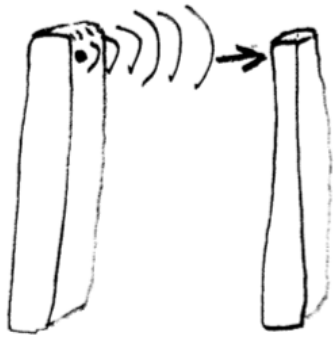




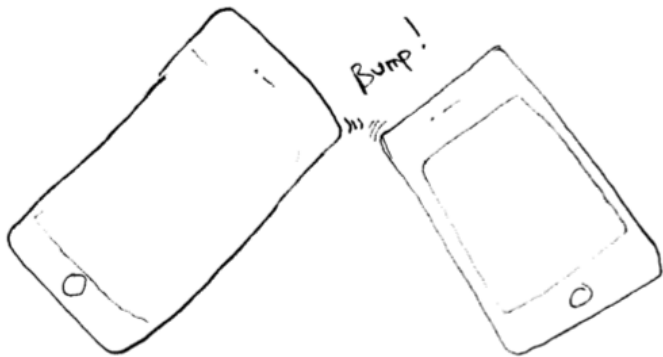
Synchronous gesture
Trace a line across both side by side devices as a single stroke



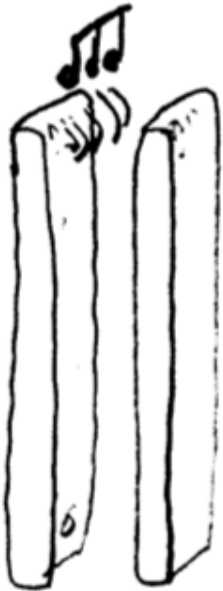
Microphones pick up spoken command at similar volume



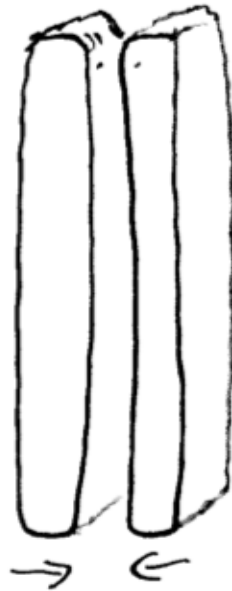
LED strobe
pattern captured
by camera



Bump. Accelerometer matches
bump vibrations



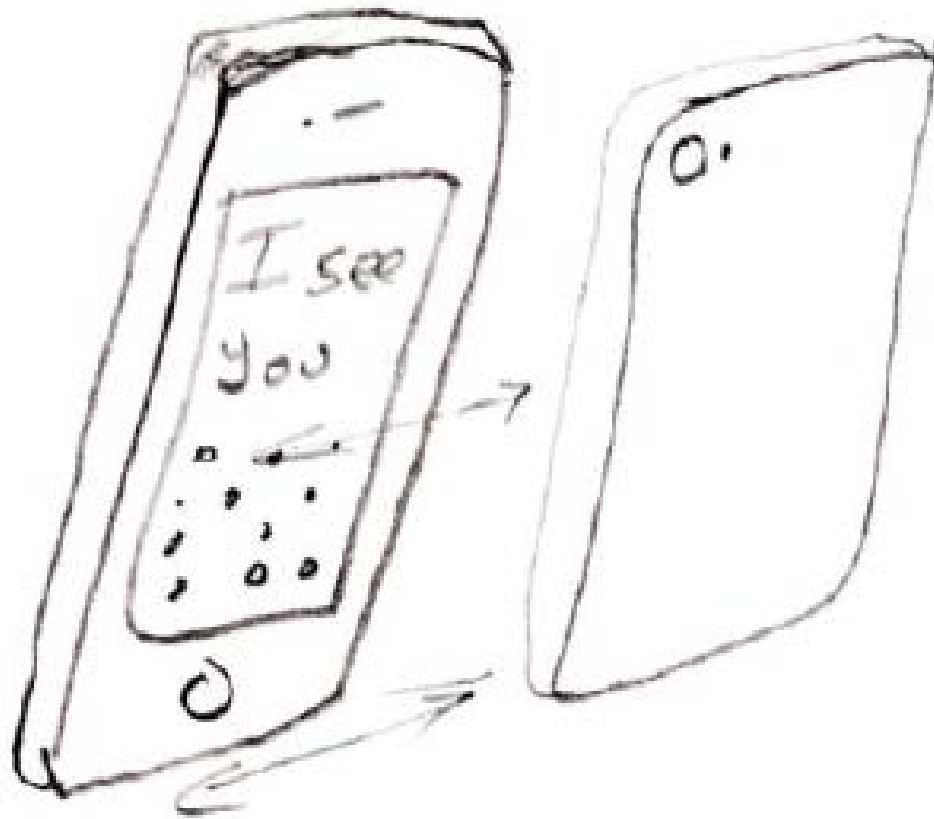
Faint musical
sound played
on one device
picked up by
the other
device



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



3 simultaneous
taps on both
phones



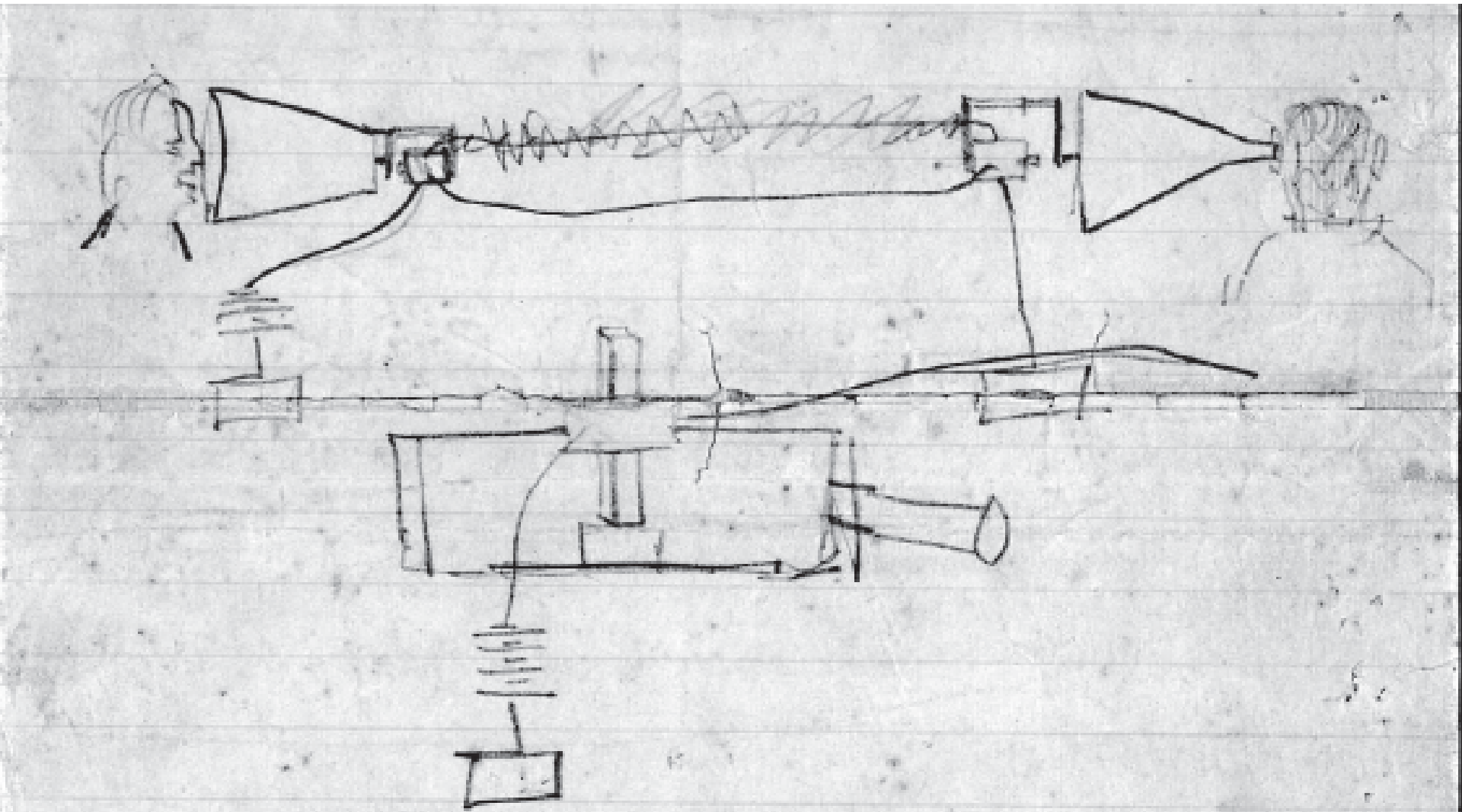
Mutual
Video / photos
captures
identifying
images such
as tags via
camera

Technique: 10 plus 10

Then: Choose & Refine Sketches

“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.”

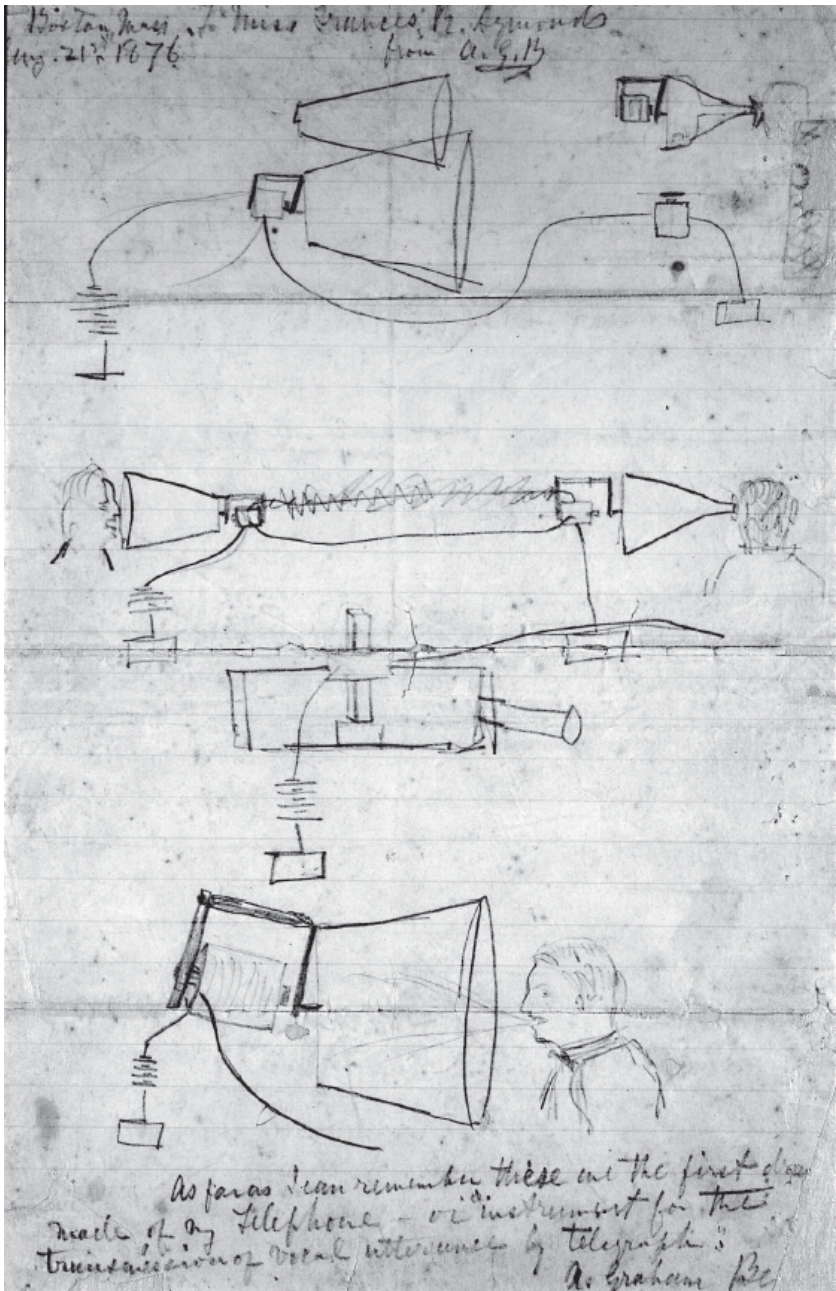
Saul Greenberg et al., 2011



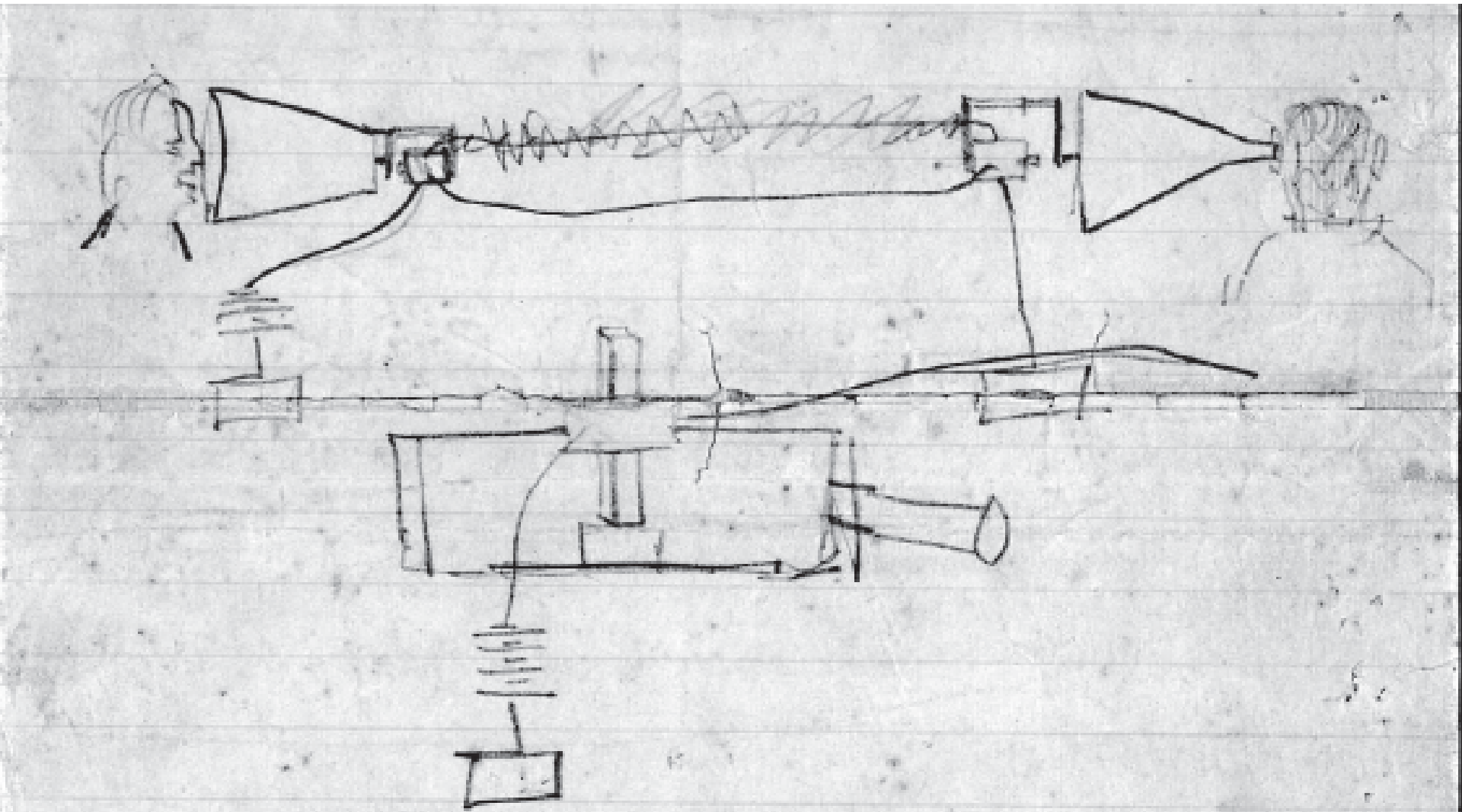


Alexander G. Bell | Engineer, Inventor





Handwritten notes at the top of the page, including:
- "HOLD PHONE & RFID REFLECT"
- "SURFACE-LIKE INTERACTION"
- "Acoustic Echoes" (with a drawing of a hand)
- "Tracking location" (with a list: - frequency, - distance to reflector, - phase shift)
- "Timing calibration" (with a list: - range, - etc. 30)





Getting Started: Sketching Vocabulary



Hands-on Sketching ***(page 1)***

20 SECONDS WARM-UP:

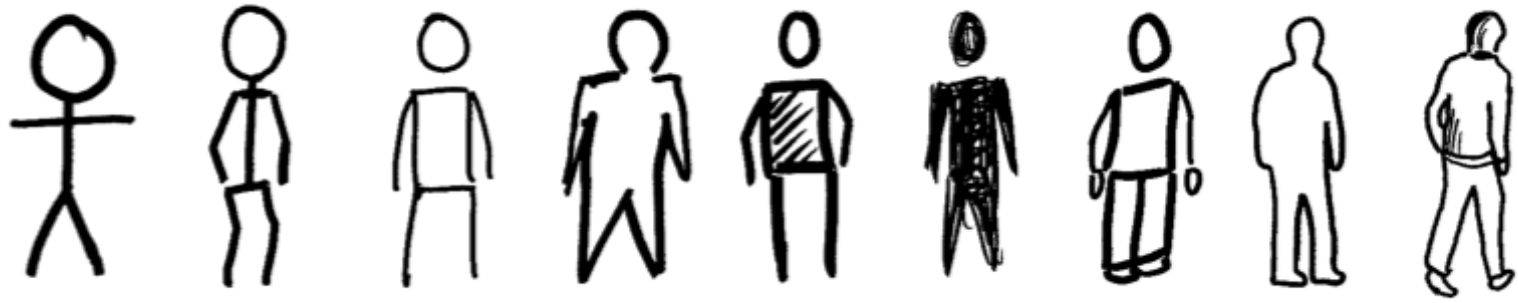


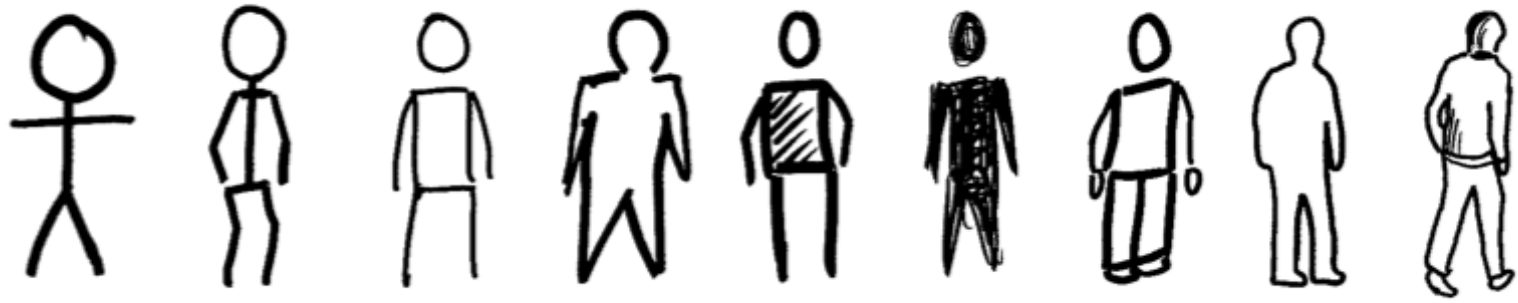
Sketch 3 stick figures:

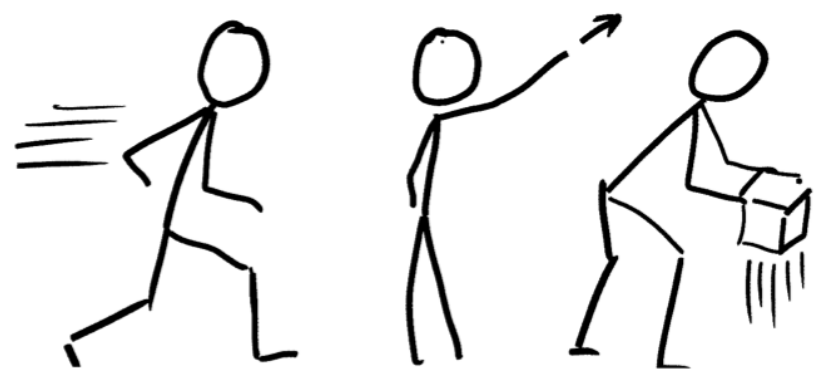
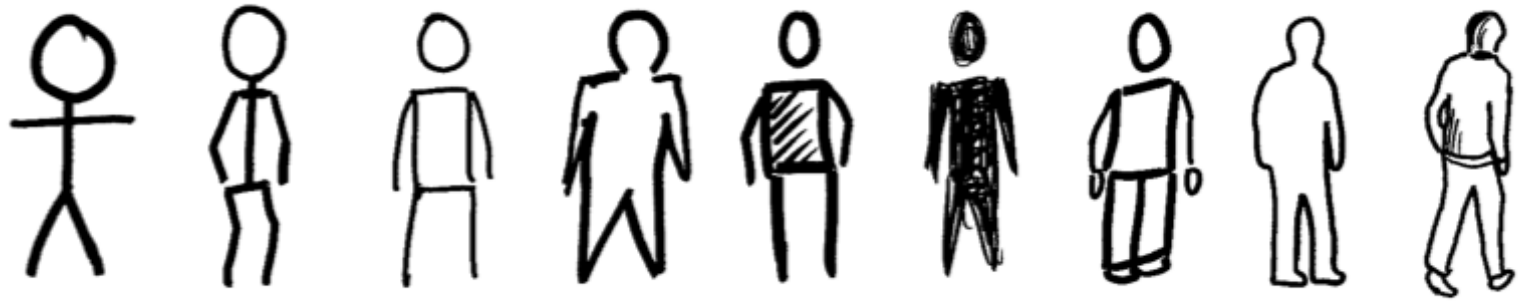
- 1. Pointing**
- 2. Running**
- 3. Picking up an object**







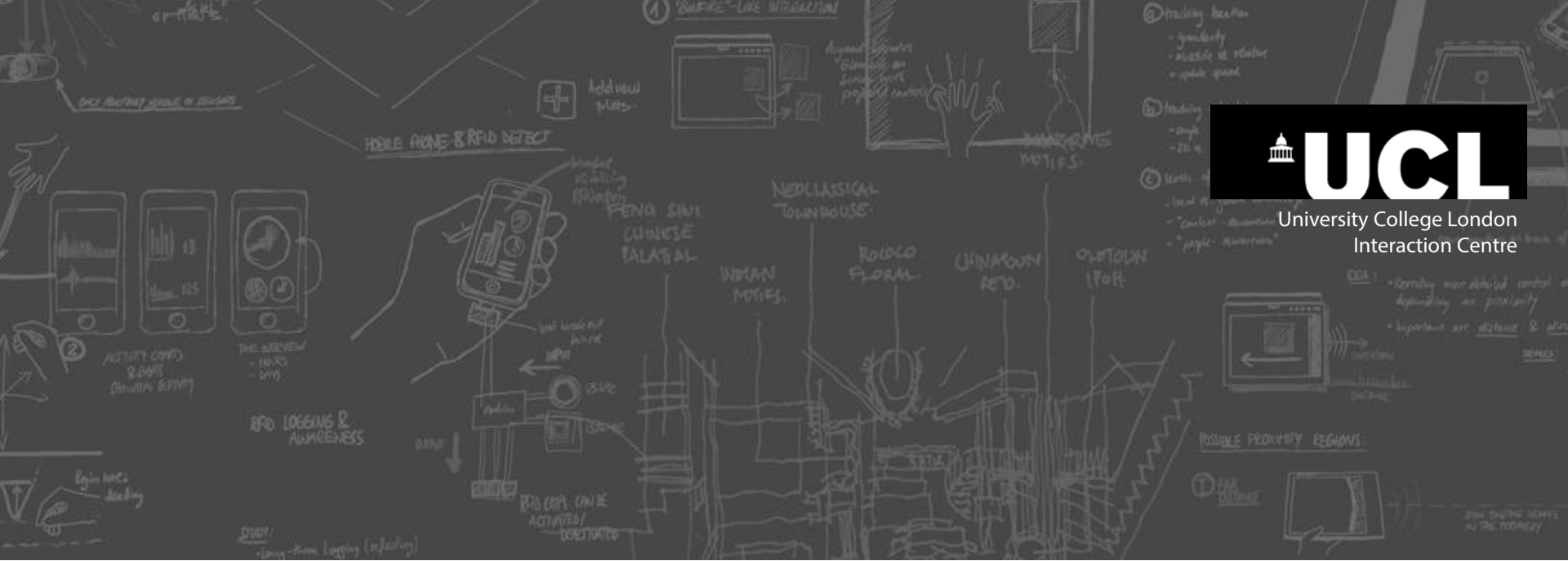




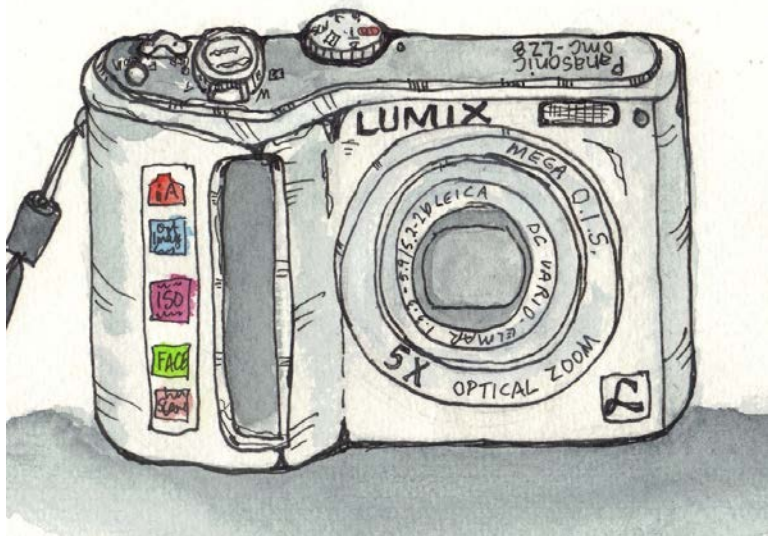


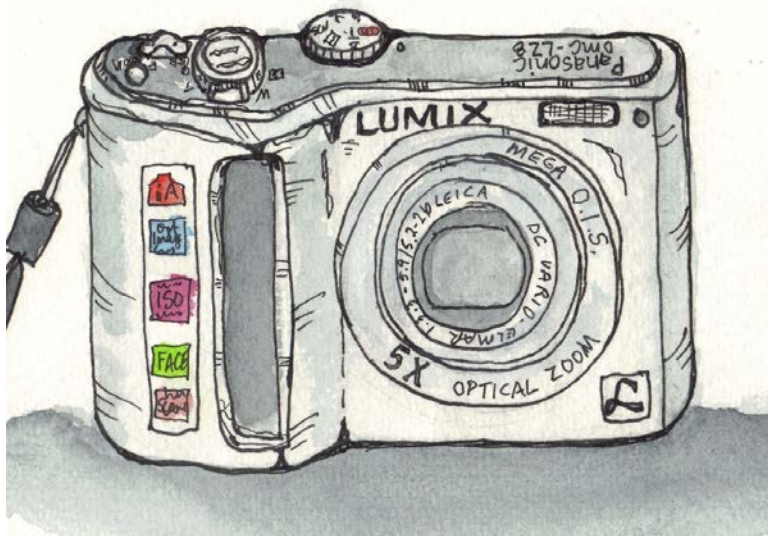


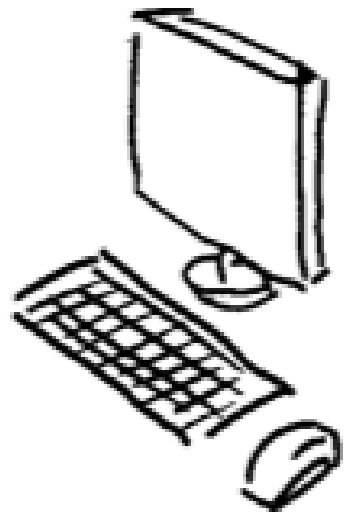
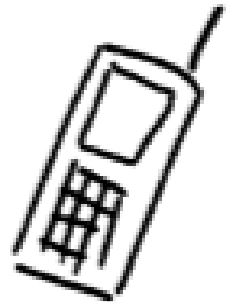
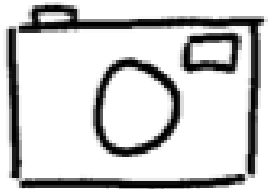


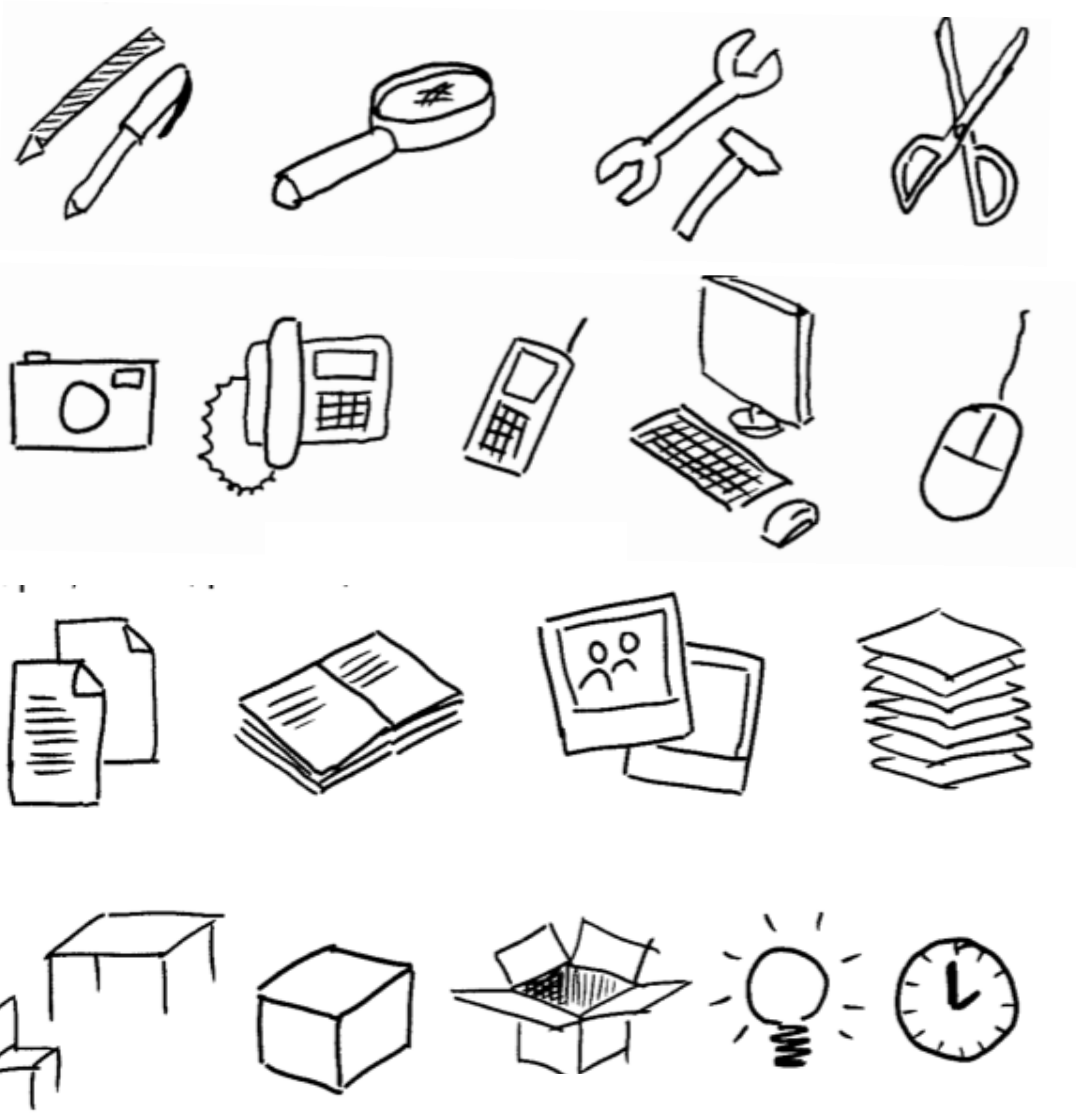


Sketching Devices and Objects









Hands-on Sketching

(page 2)

Getting Started: Some Best Practices

Imitate sketching styles you like

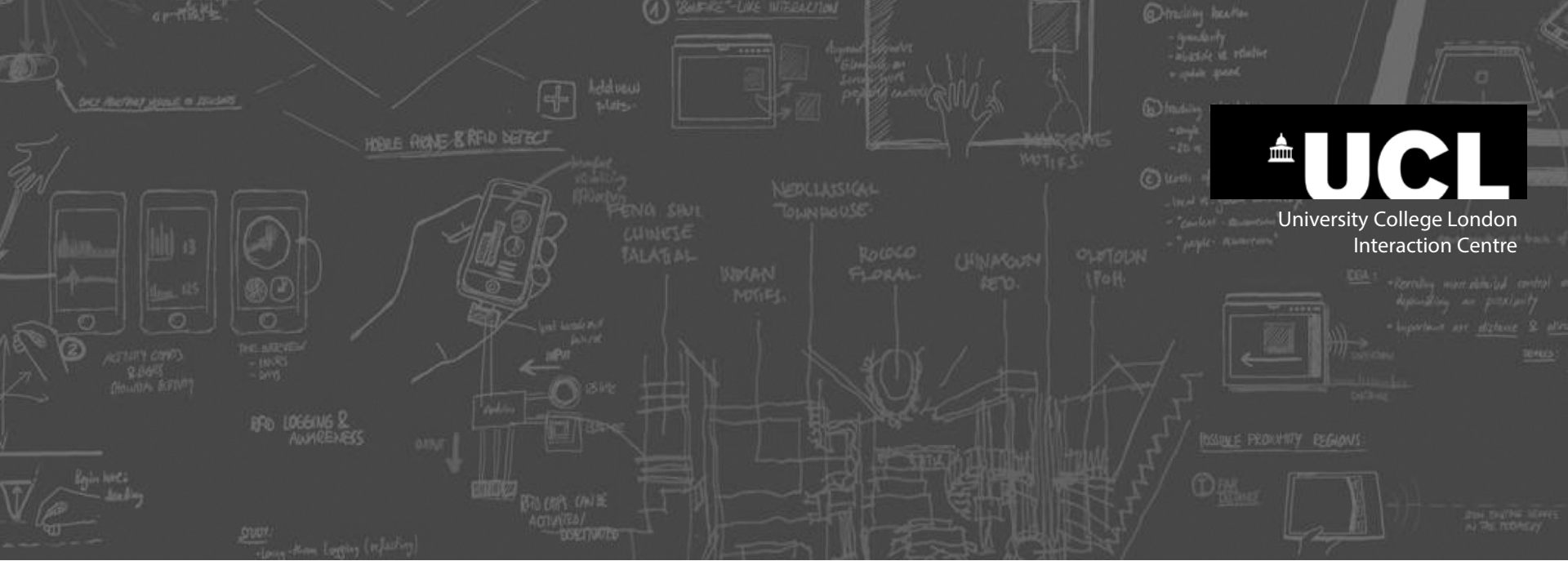
Add date, time (+context)

Sketching with fast, long strokes

Keep mistakes

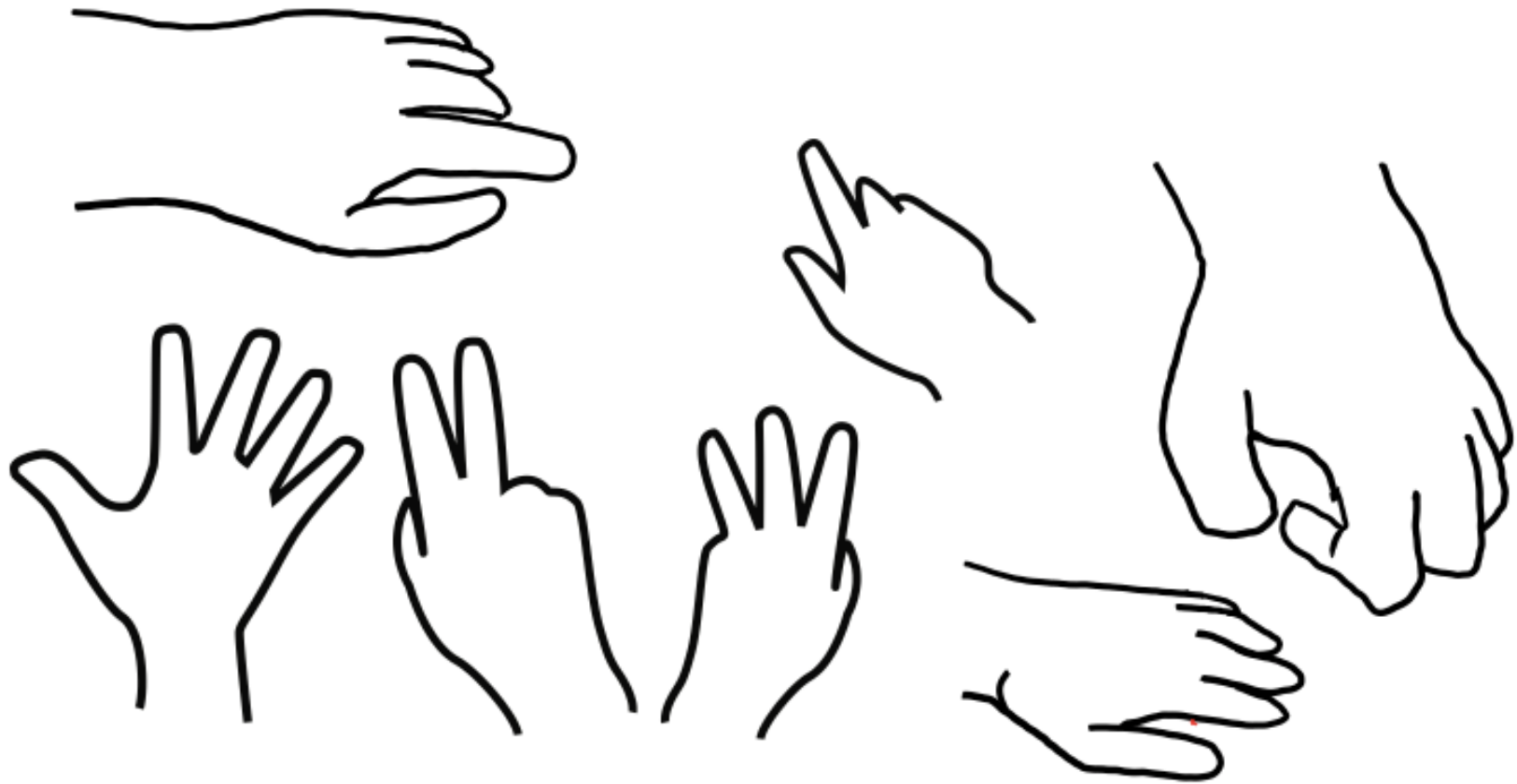
Analog before digital

3D is not necessary (most of the time)

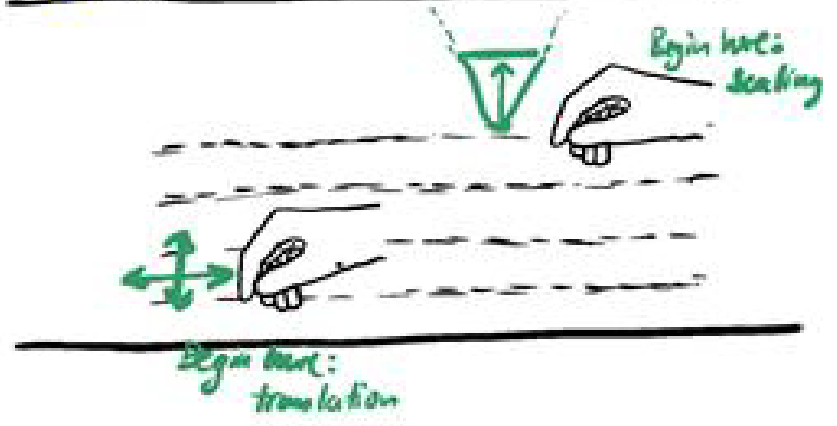
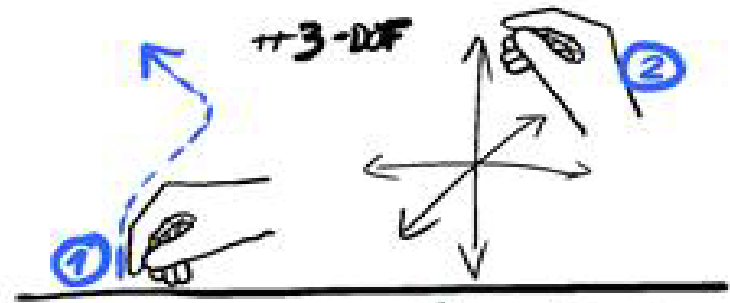
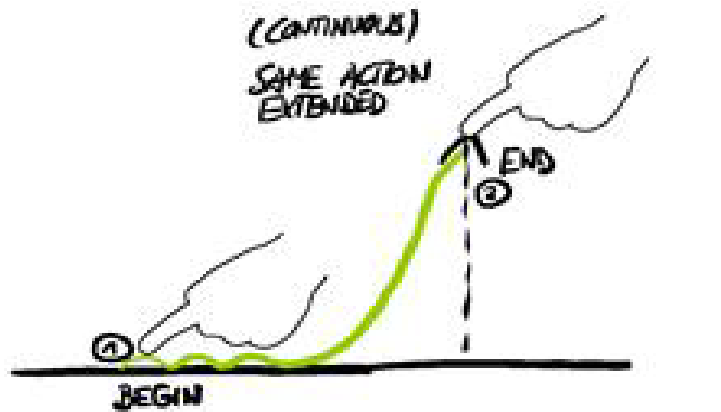


University College London
Interaction Centre

Sketching Hands and Gestures

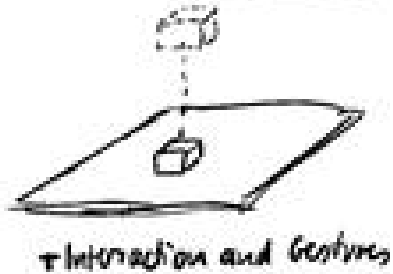


CONTINUOUS INTERACTION SPACE

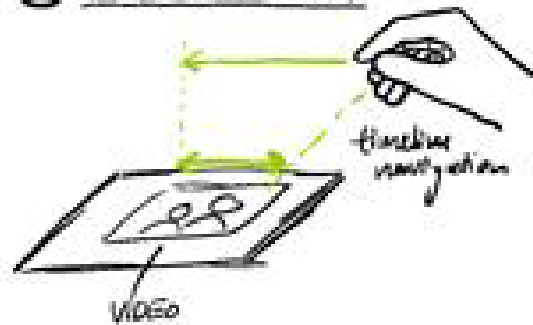


STICES ABOVE SURFACES

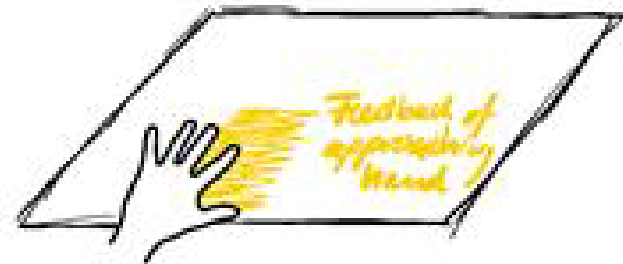
① 3D SIMULATION / INTERACTION



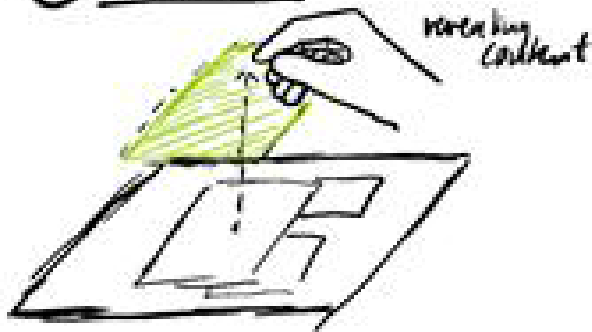
② INPUT PARAMETER



③ AWARENESS / FEEDBACK



④ 2.5D INPUT

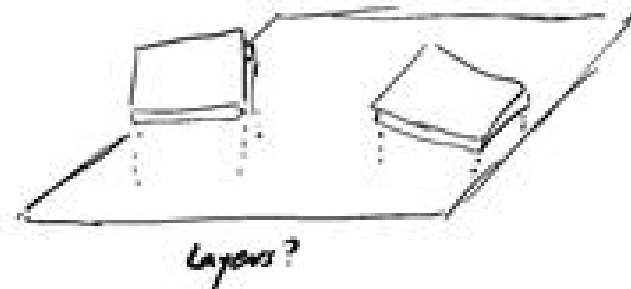


⑤ COMPLEX GESTURES

eg: handover? hand roll/yaw/pitch?



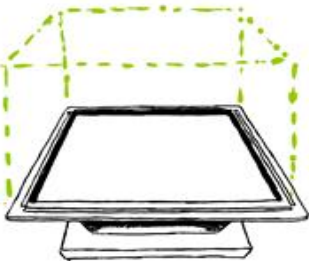
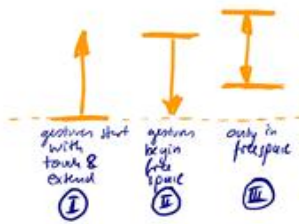
⑥ TOOL SPACE



SPACE ABOVE SURFACES / THEMES

① UNIFYING TOUCHGESTURES WITH GESTURES ABOVE

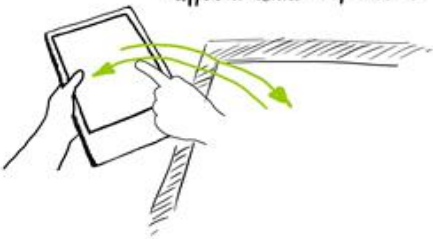
(most closely related to previous work)



- QUESTIONS:
- Type of gestures:
 - ① mirrored (?)
 - ② extended continuous
 - ③ proximal
 - > needs revision in paper
 - > look up Grossman's paper of Taxonomy
 - Touch vs. space above
 - personal preferences
 - interaction regions

② GESTURES WITH 'TABLET' (Tablet as surface)

- which type of gestures?
- differences between surface and non?

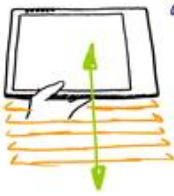


③ TWO HANDED INTERACTION



④ LAYERS

- Interaction with digital content layers
- Selection of layers
 - Activation
 - ① view
 - ② manipulate
 - ③ insert
 - ④ revealing layers of data (-> learn)



⑤ COLLABORATION

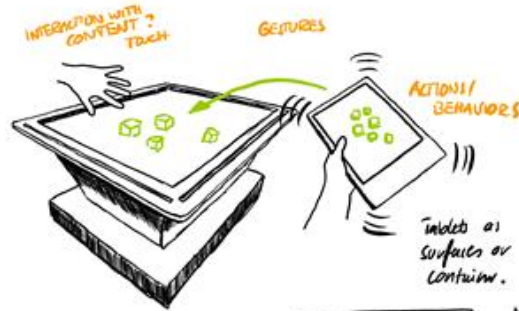


⑥ ORIENTATION

SPACE ABOVE SURFACES / THEMES

② 2.5D INTERACTION / PHYSICAL SIMULATION

- CONCEPT:
- Simulating natural behaviour of virtual objects on digital surfaces
 - Providing natural "free space" interaction with digital content



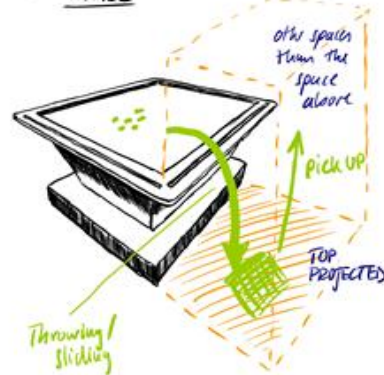
- Moving (tapping (cloning) digital content
- Types of content?
- Gestures to interact? swipe, drag, flick
- Behaviour of devices?

PHYSICS BEHAVIOR



EXTENSIONS:

② EXTENDED SURROUNDING SPACE



- Forms of interaction?
- Behaviour of data / content

③ PHYSICAL ARTEFACTS

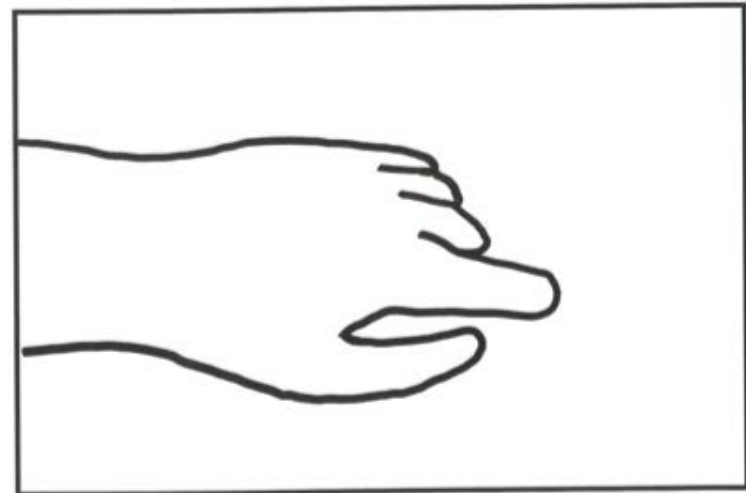
- Trampolines
- Boxes / Containers -> other objects?



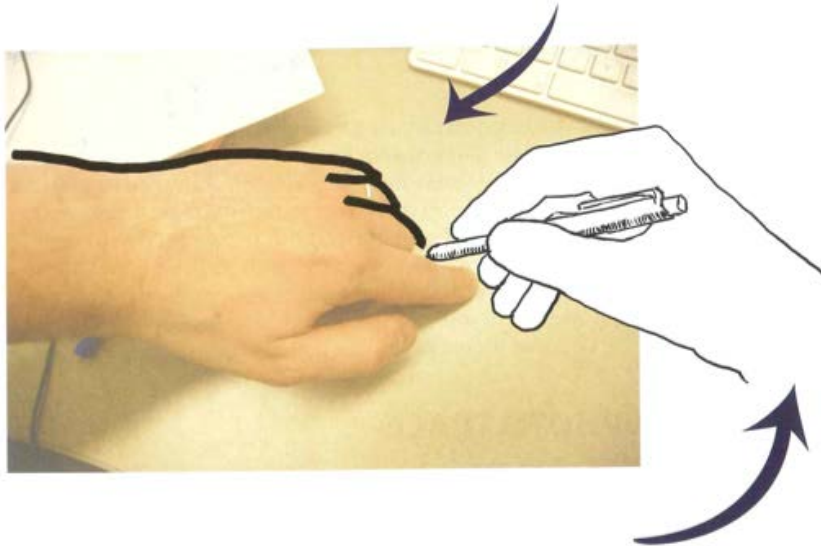
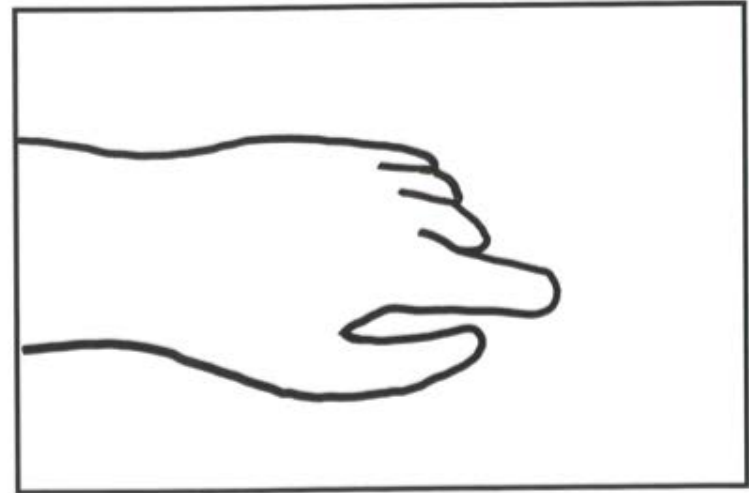
- How to integrate?
- How to provide adequate feedback?
- Other tangible objects? Controls?

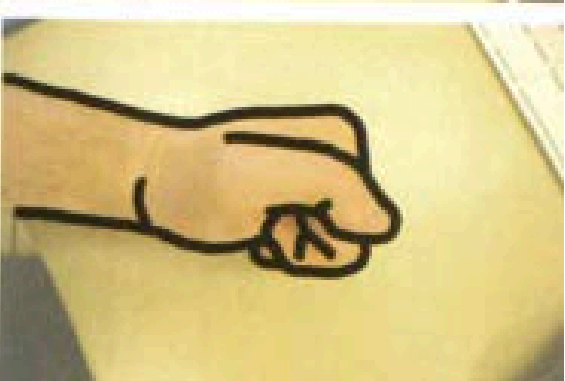
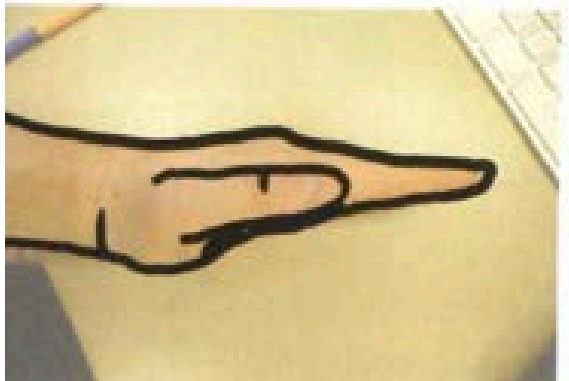
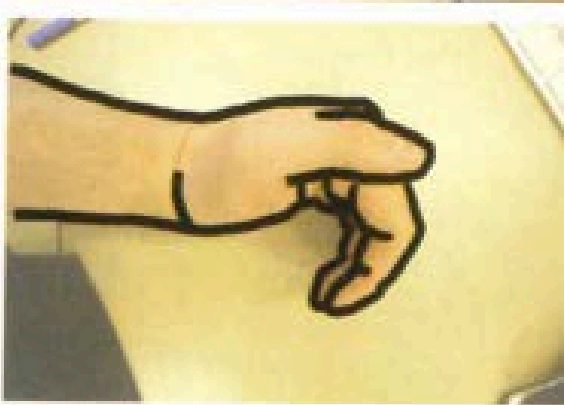
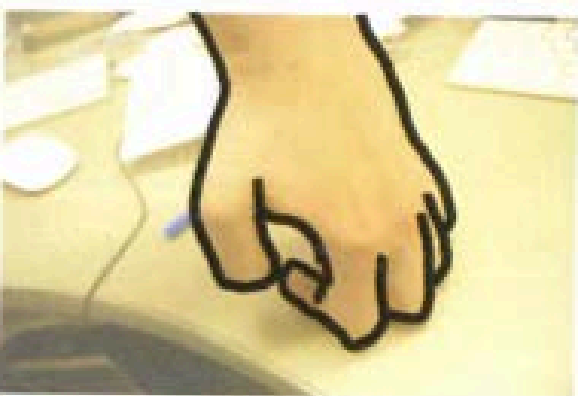
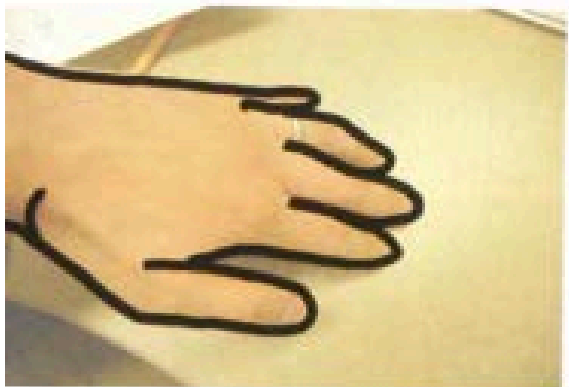
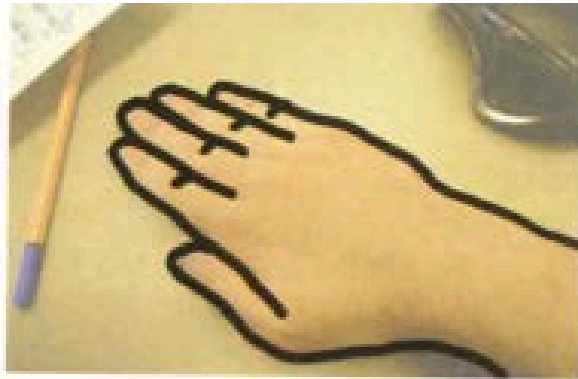
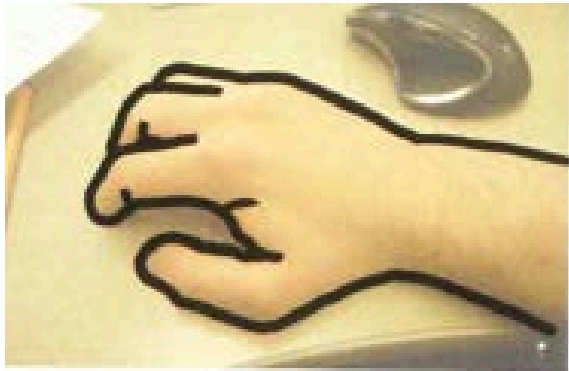
But: “I still can’t draw...”

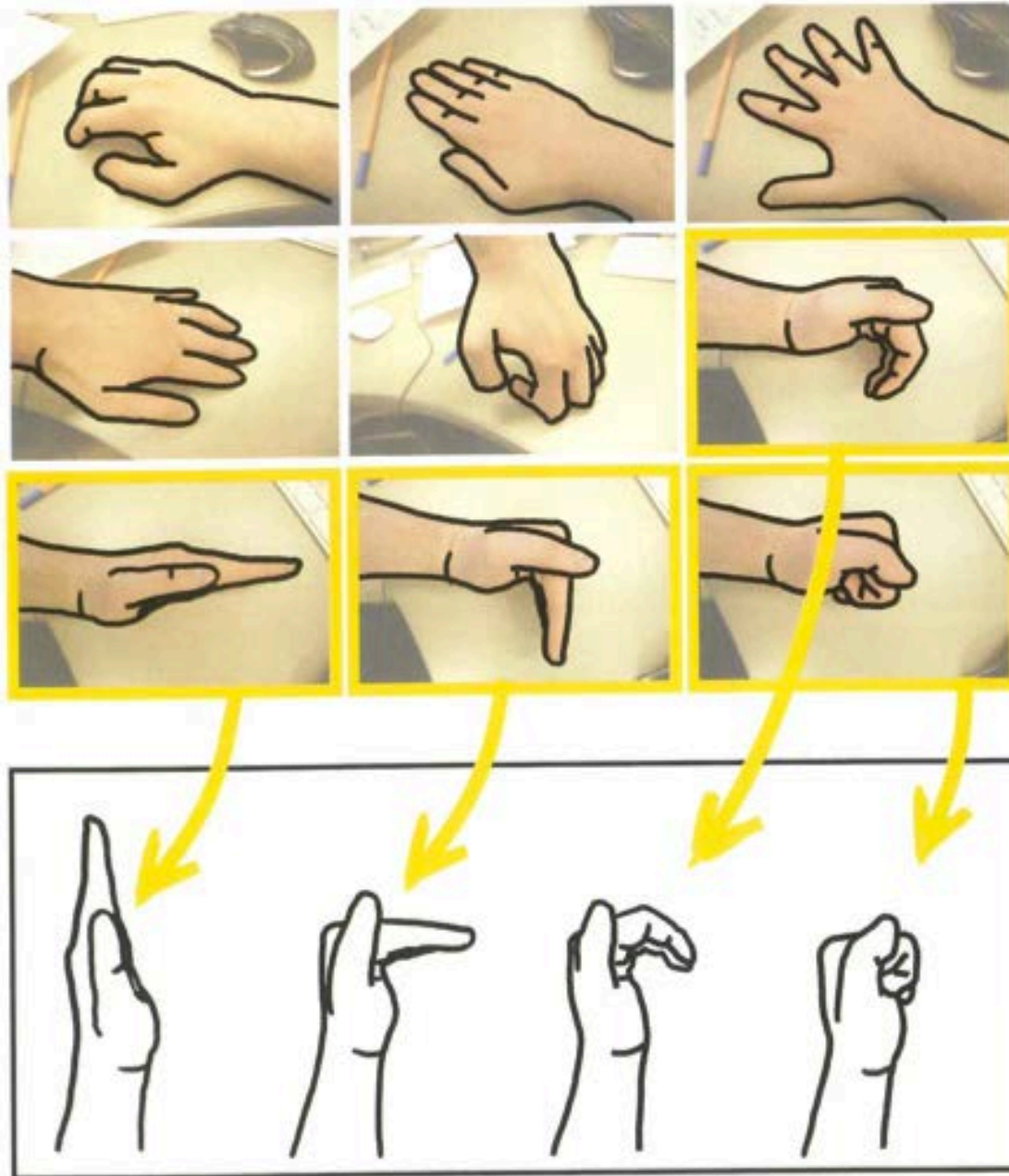
Sketching Technique: Photo Tracing

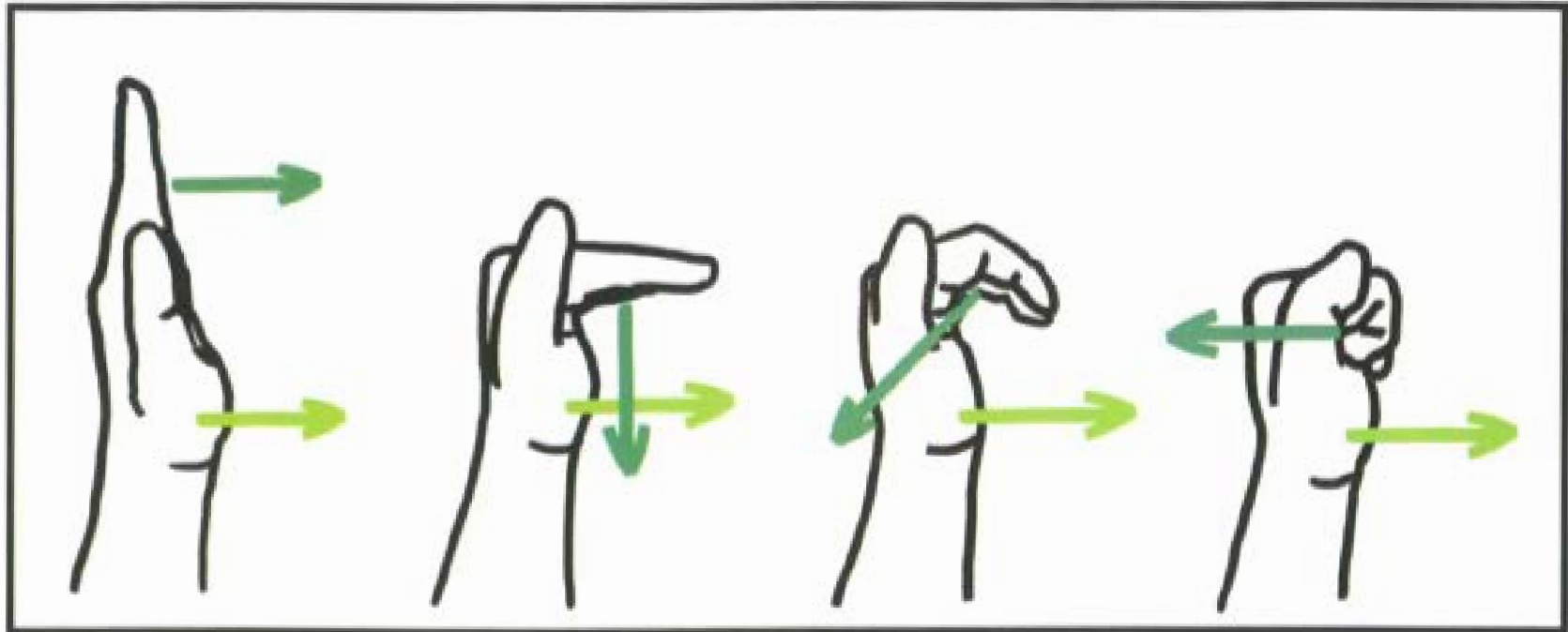


Sketching Technique: Photo Tracing





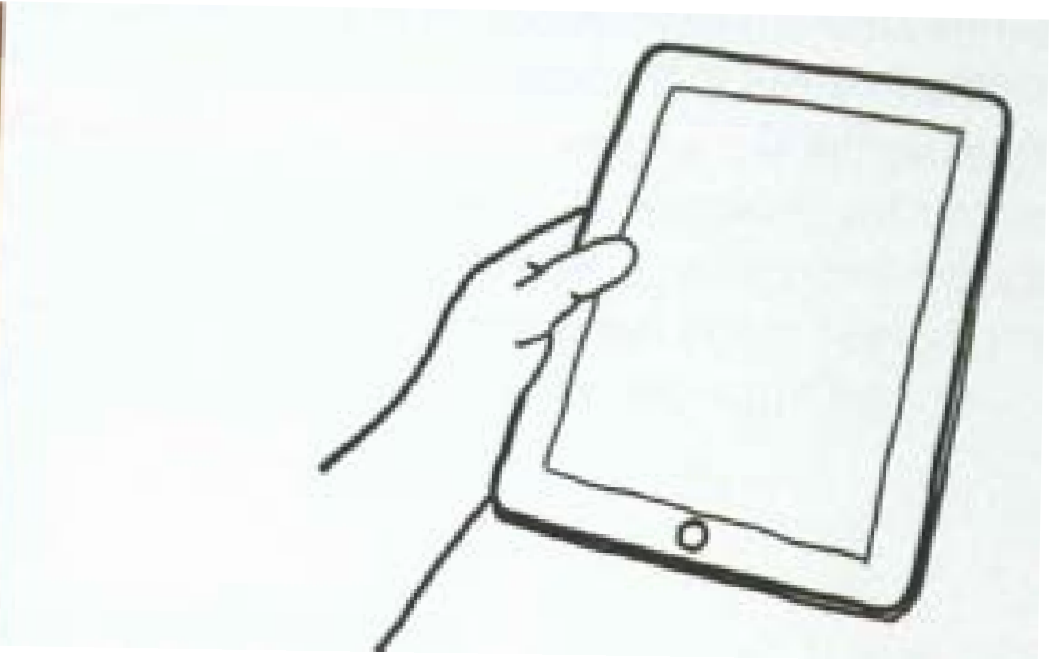




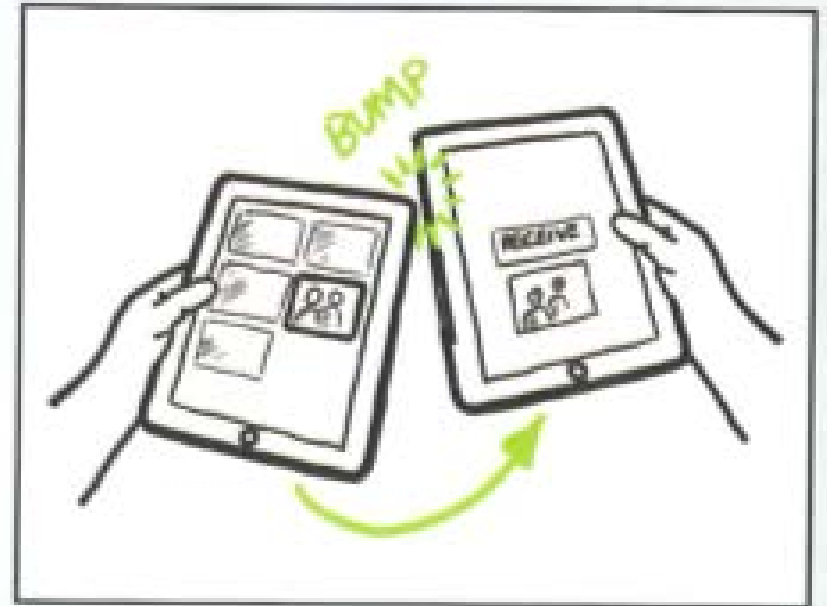
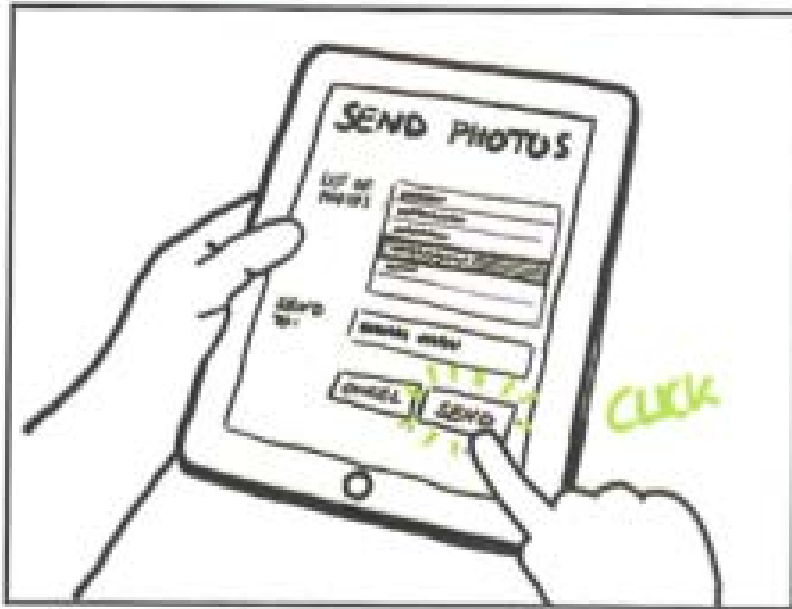
Sketching Technique: Templates

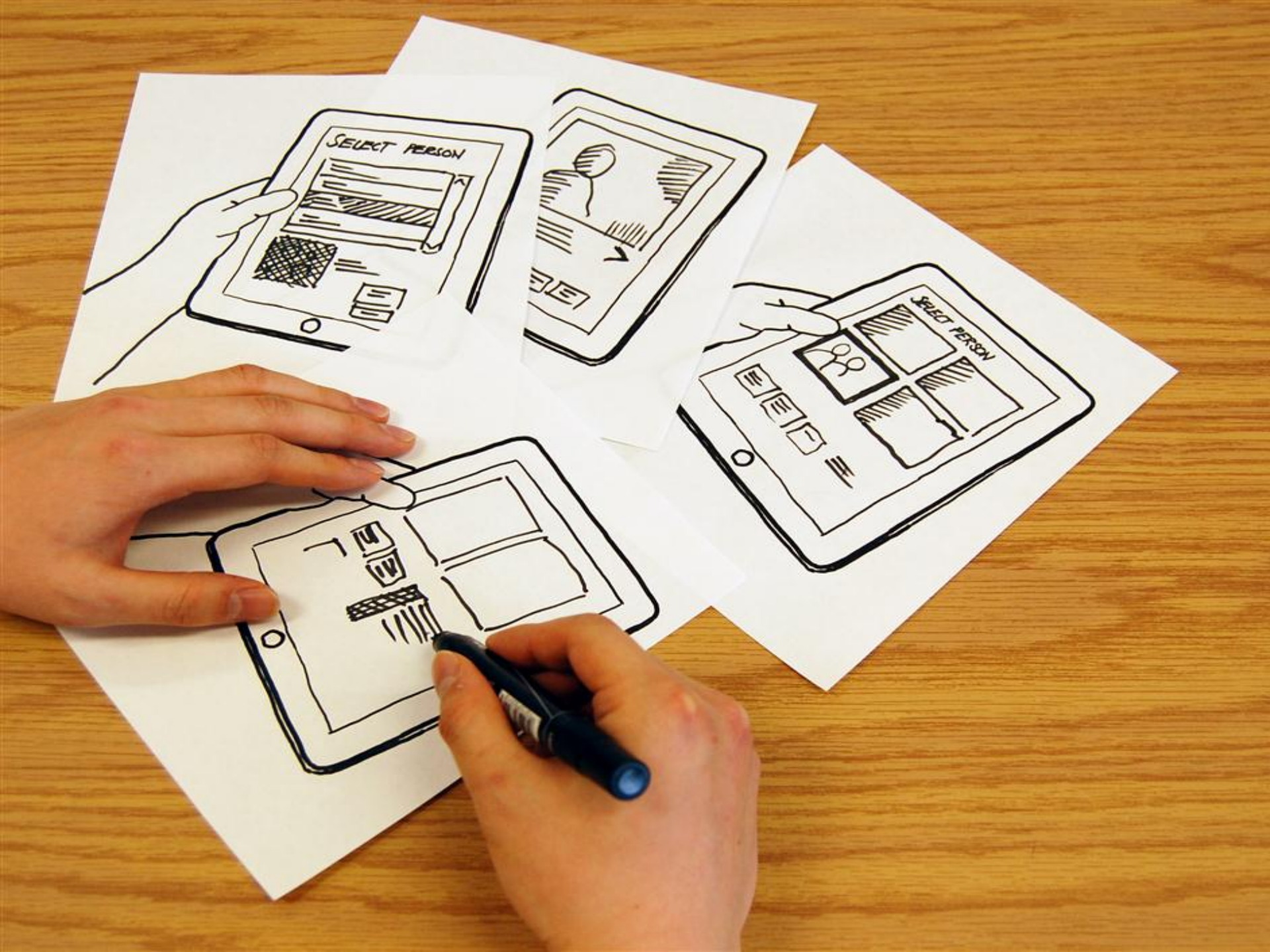


Sketching Technique: Templates



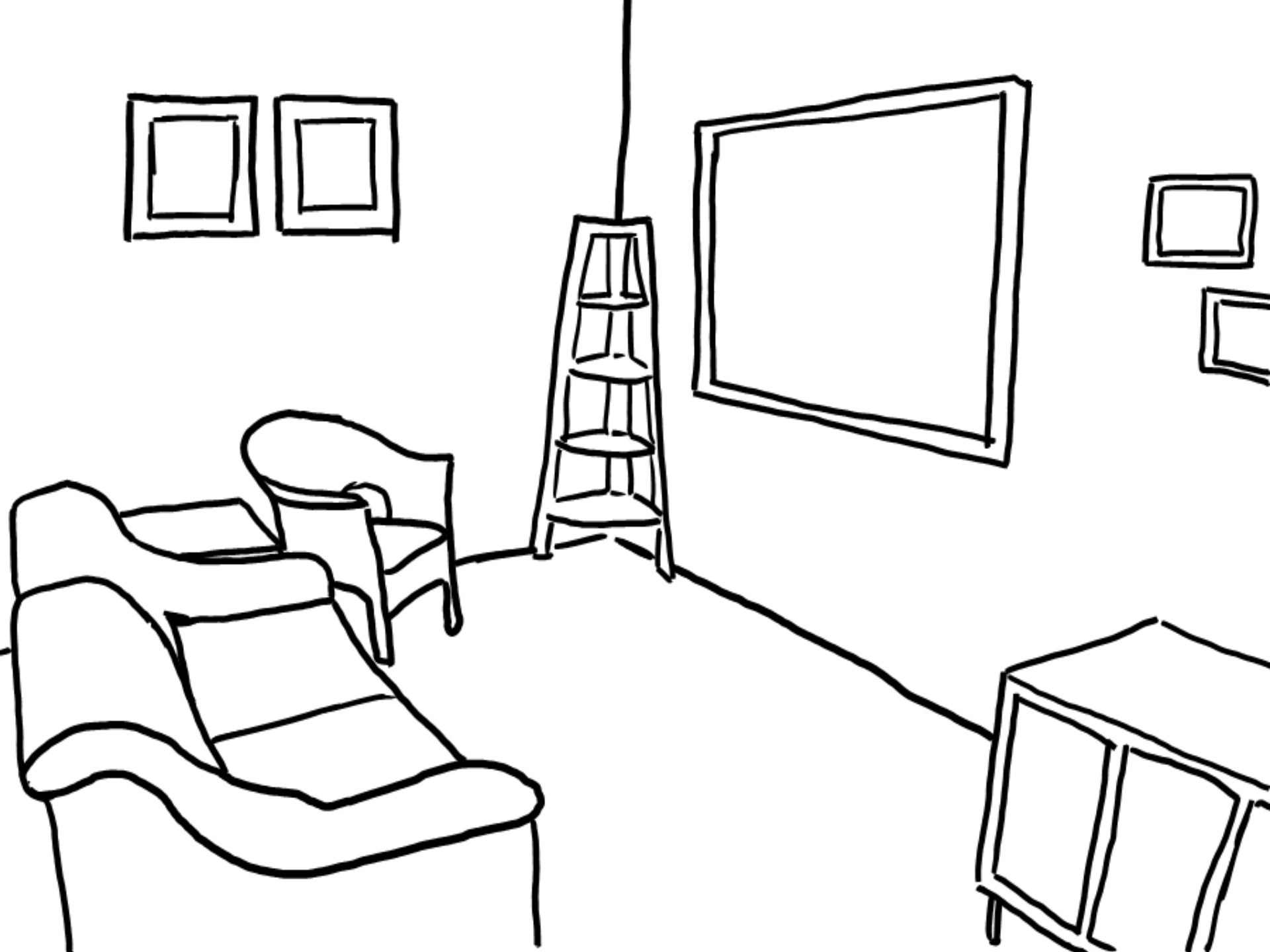
Sketching Technique: Templates

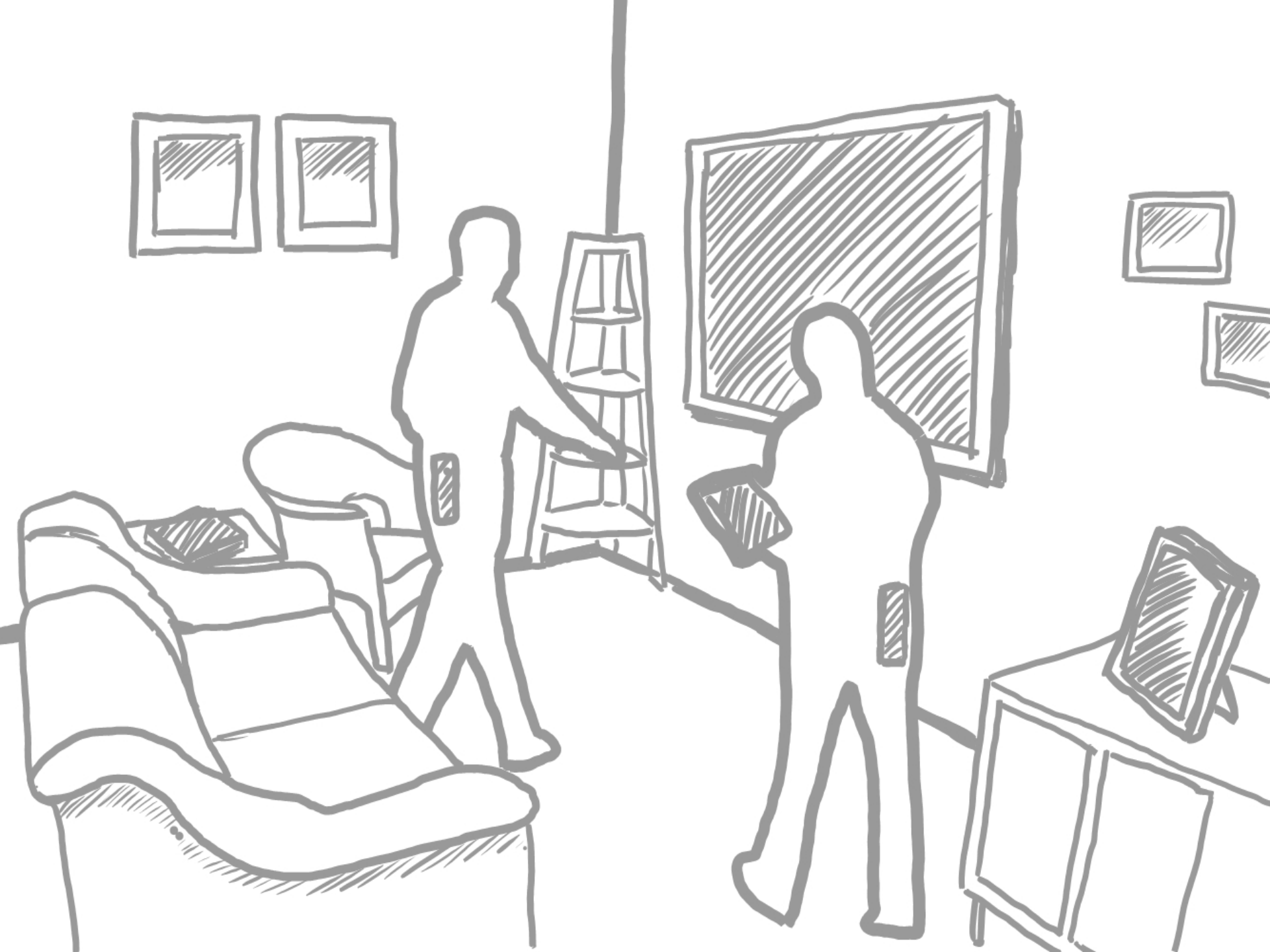


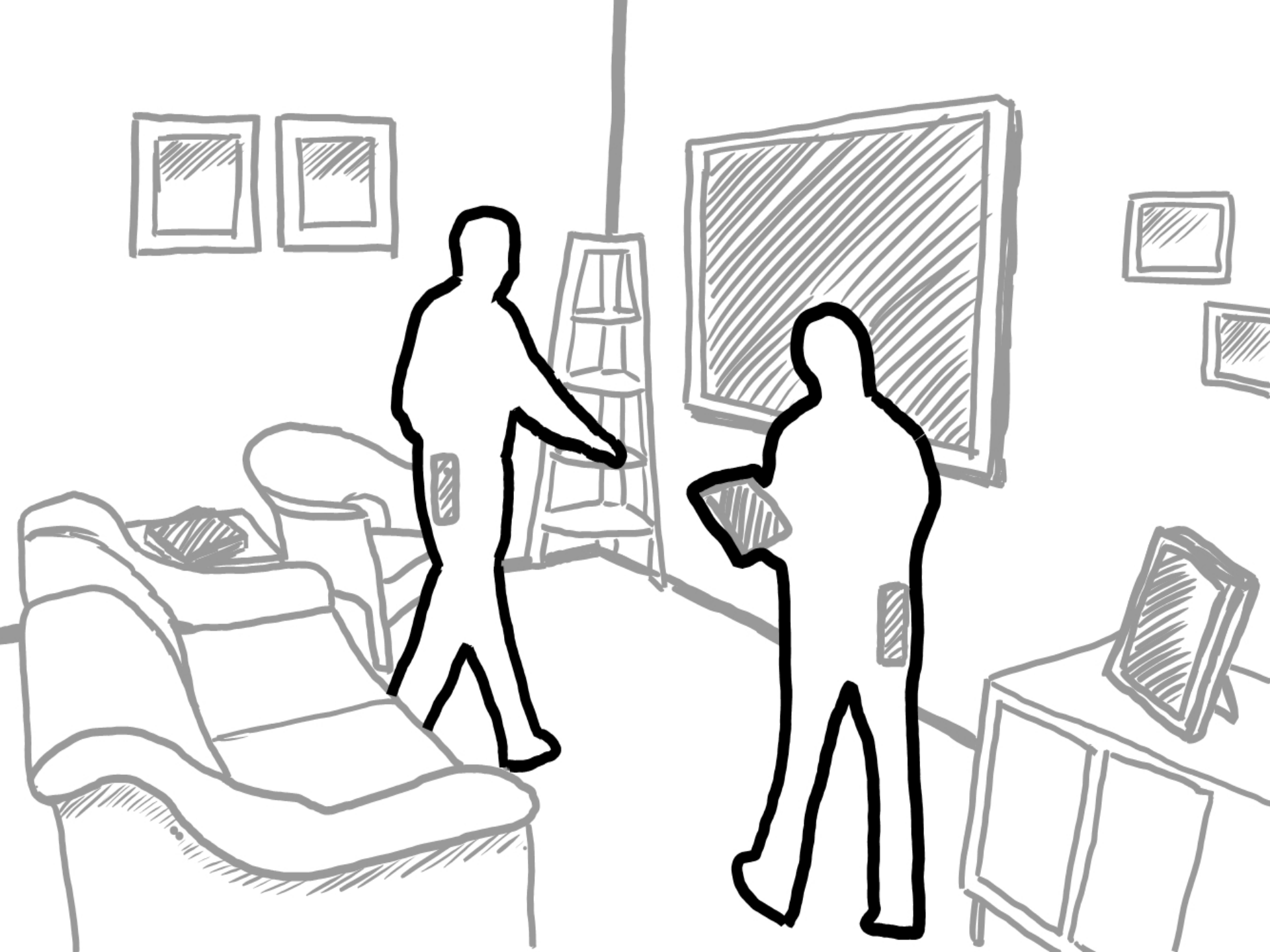


Hands-on Sketching: Photo Tracing (page 3)

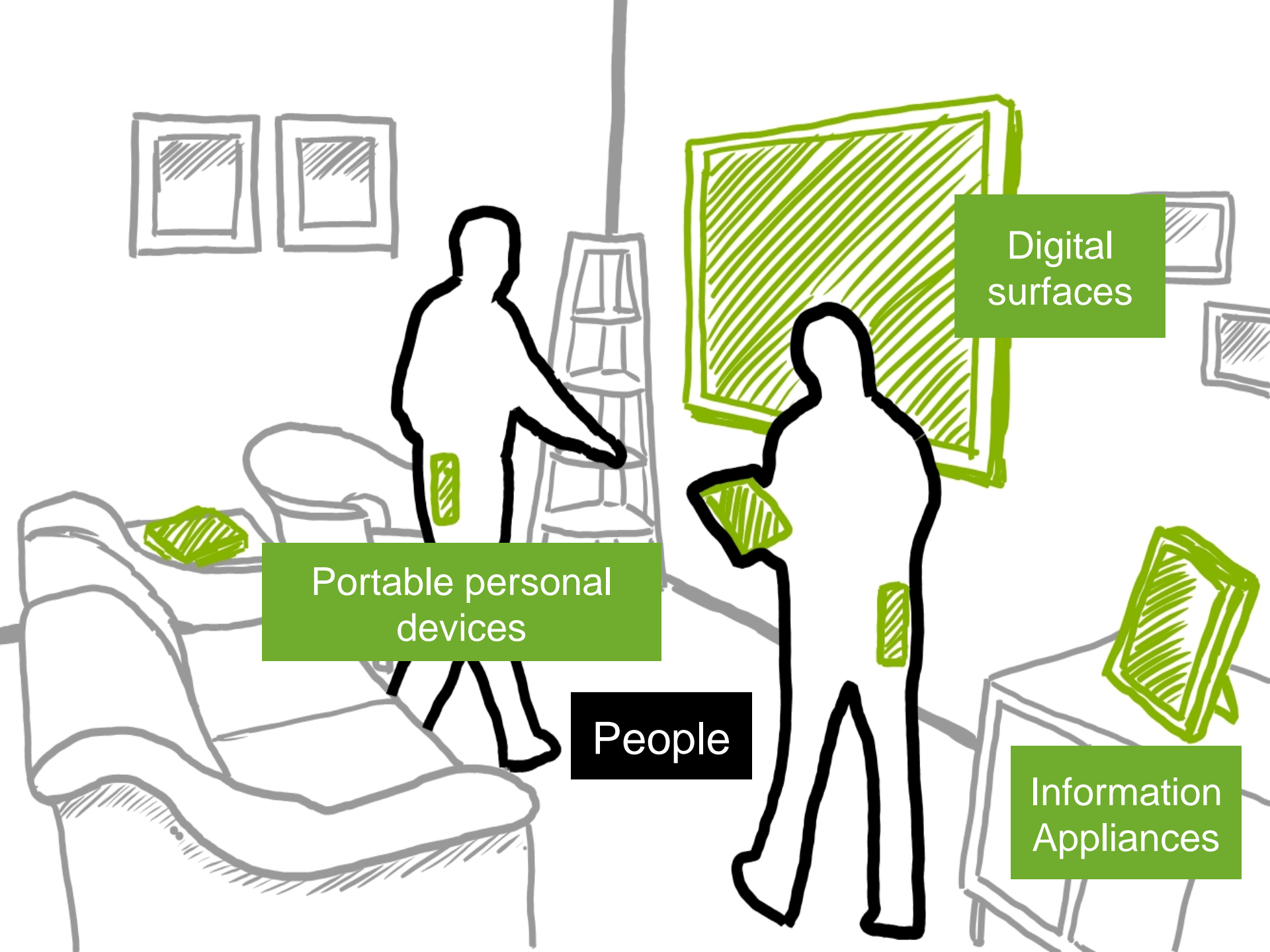












Portable personal devices

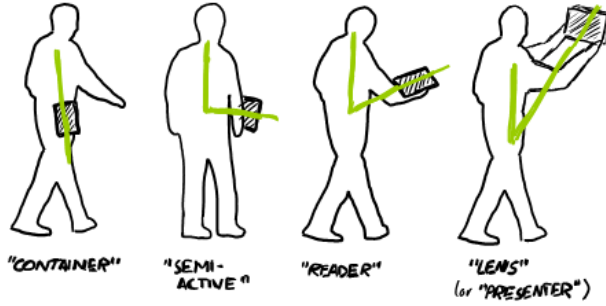
Digital surfaces

People

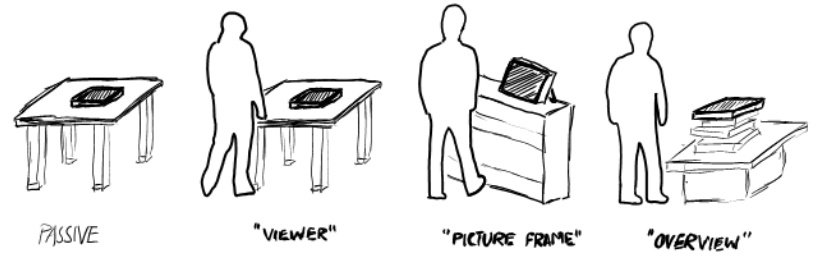
Information Appliances

① DEVICE - TO - PERSON

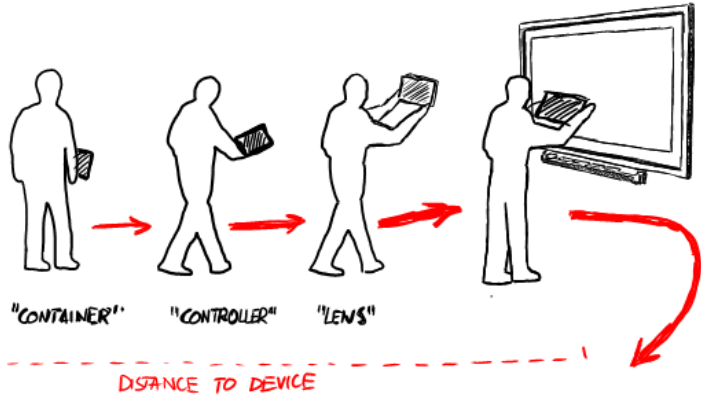
— relative orientation + distance to person



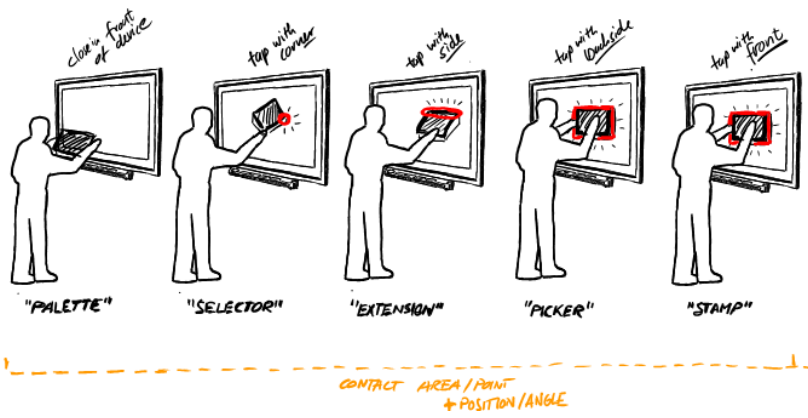
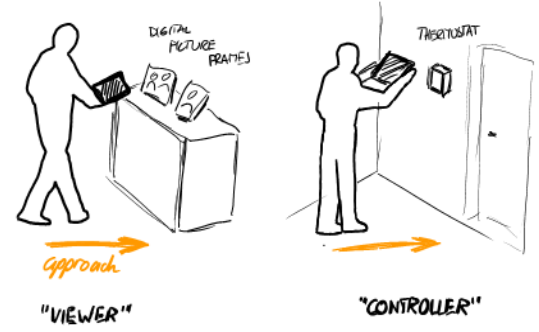
③ DEVICE - TO - NON DIGITAL OBJECTS / FIXED AND SEMIFIXED FEATURE SPACE



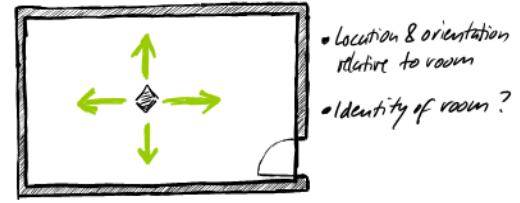
② DEVICE - TO - DEVICE



④ DEVICE - TO - INFORMATION APPLIANCES (subset of device-to-device?)



⑤ DEVICE - TO - FIXED FEATURE / ENVIRONMENT

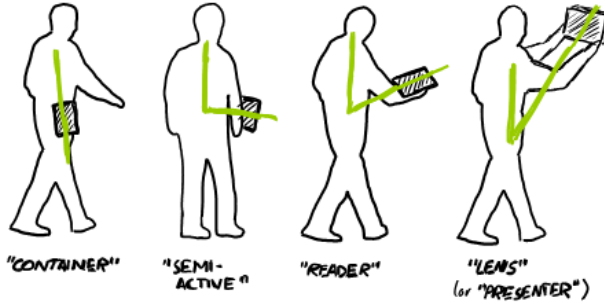


⑥ DEVICE PROPERTIES

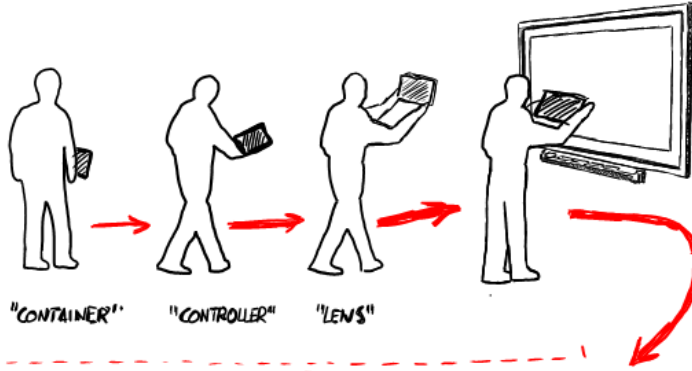
- visible
- activity
- owner
- people around
- global orientation (aff + acc + comp)

① DEVICE-TO-PERSON

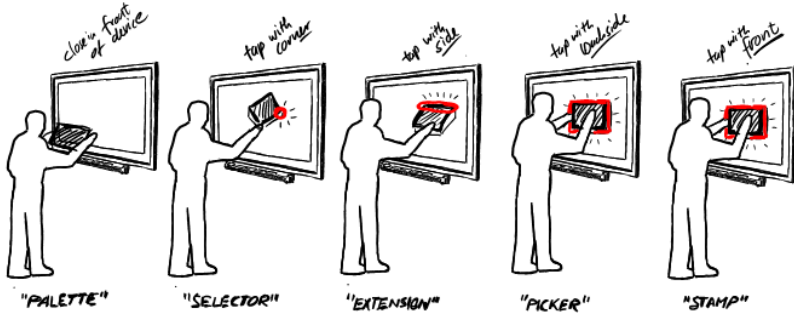
— relative orientation
+ distance to person



② DEVICE-TO-DEVICE

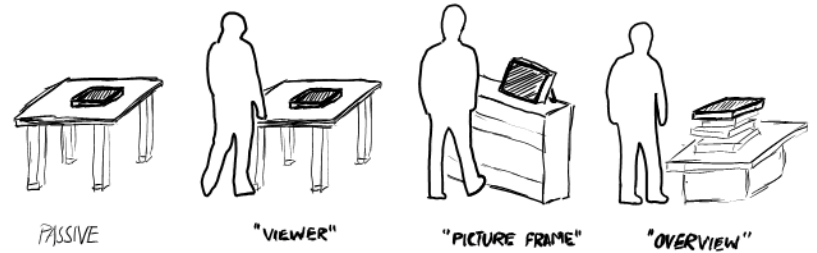


DISTANCE TO DEVICE

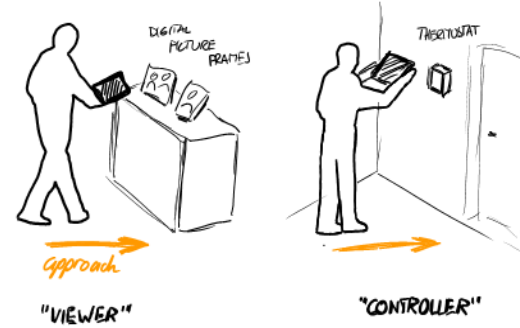


CONTACT AREA / POINT
+ POSITION / ANGLE

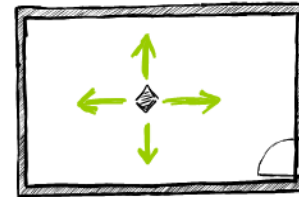
③ DEVICE-TO-NON DIGITAL OBJECTS / FIXED AND SEMIFIXED FEATURE SPACE



④ DEVICE-TO-INFORMATION APPLIANCES (subset of device-to-device?)



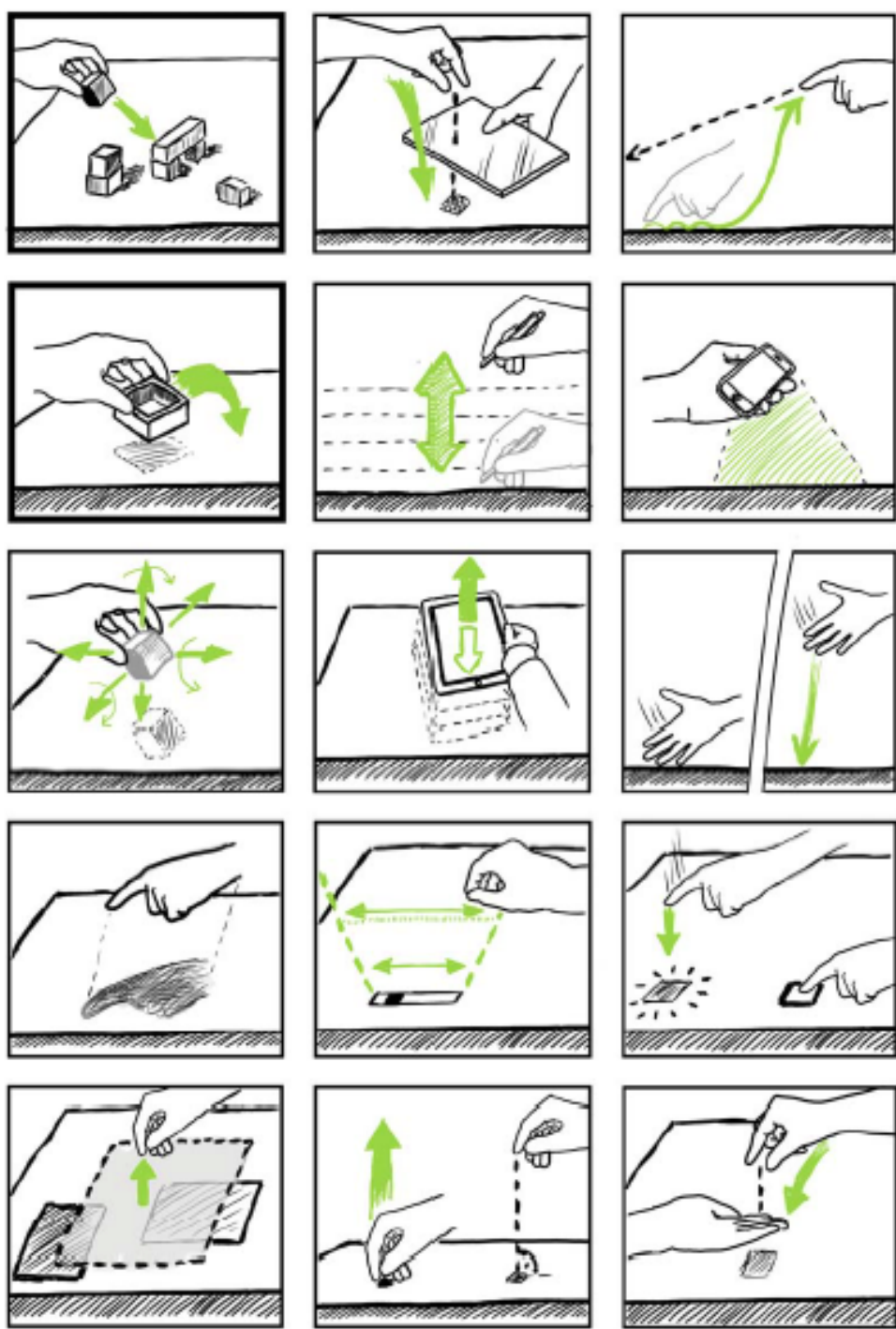
⑤ DEVICE-TO-FIXED FEATURE / ENVIRONMENT

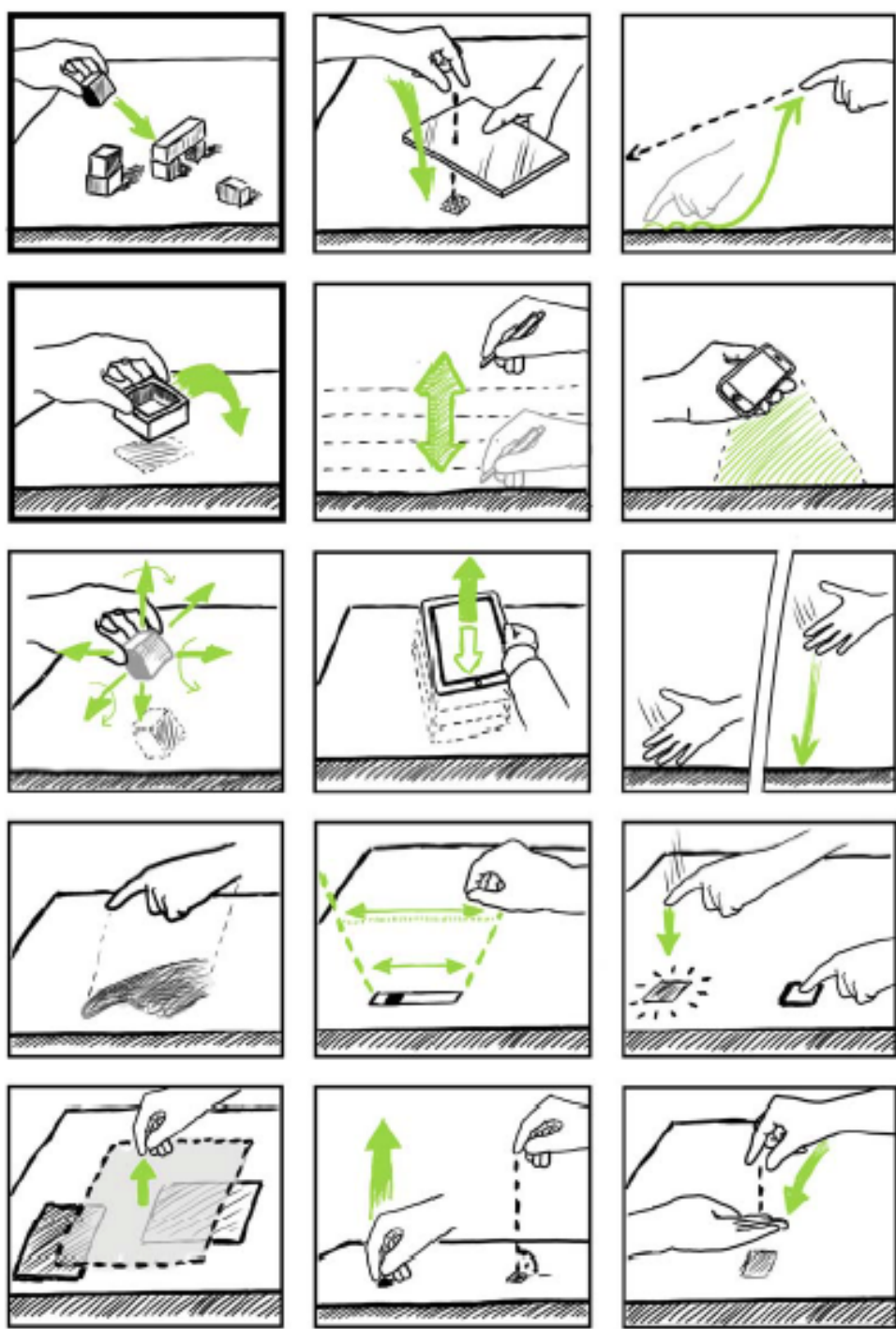


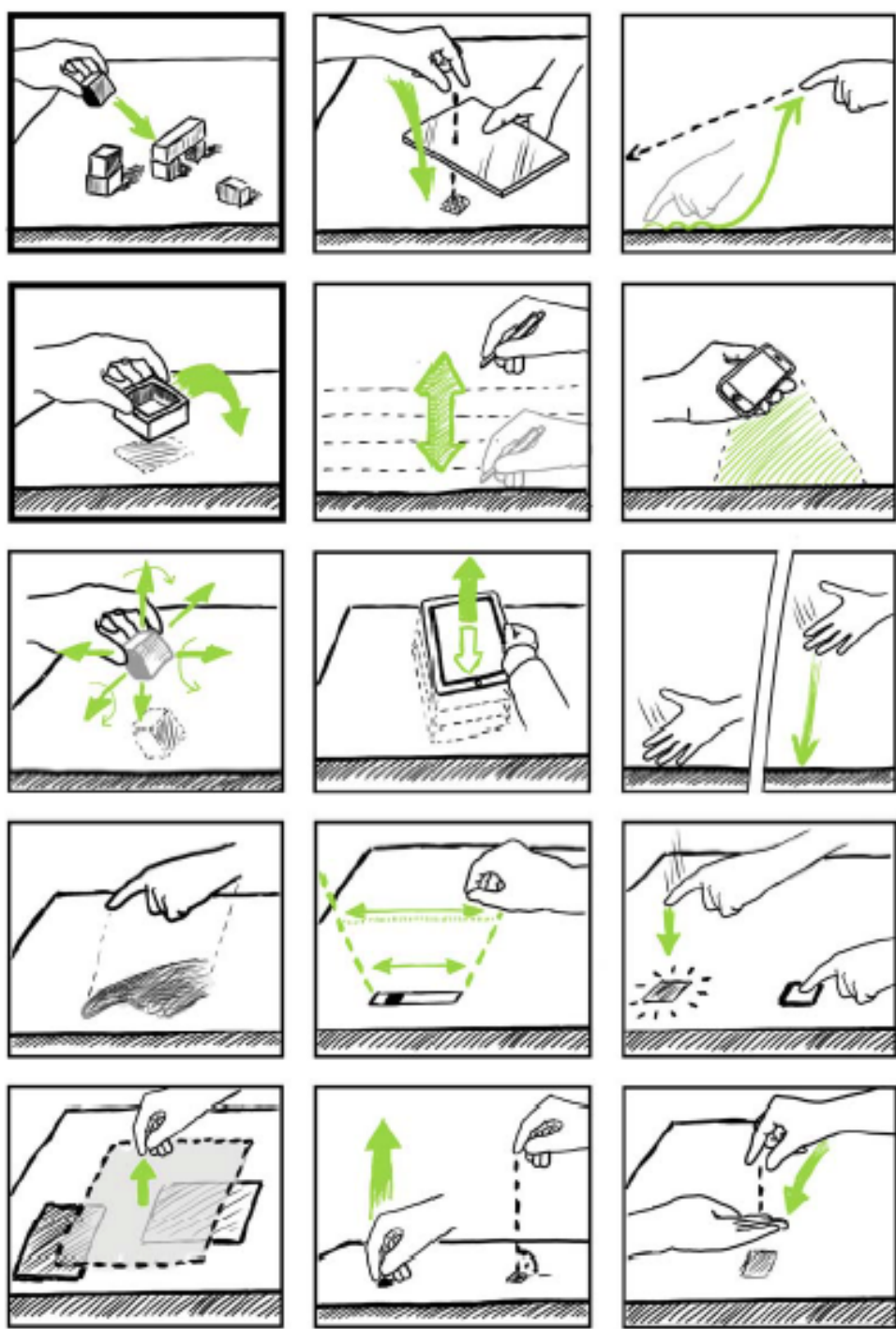
• location & orientation relative to room
• identity of room?

⑥ DEVICE PROPERTIES

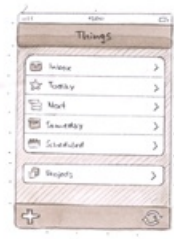
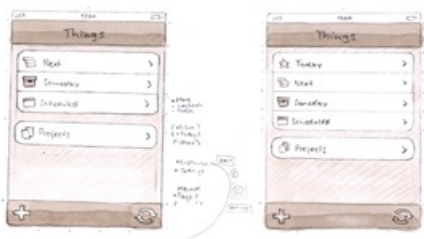
- visible
- activity
- owner
- people around
- global orientation (aff + acc + comp)











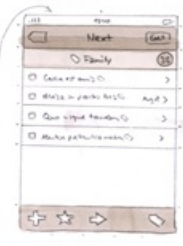
NEXT LIST



PRINT BY TAG



PLACES WORKSHOP



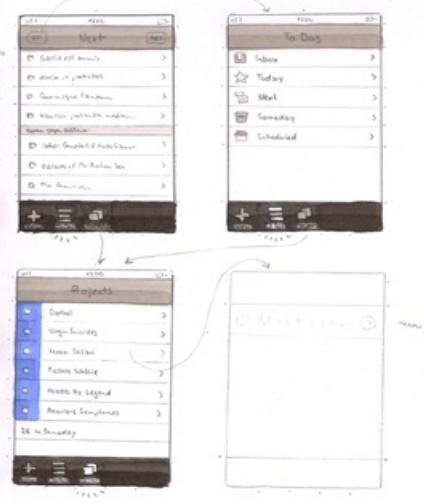
Next: Black



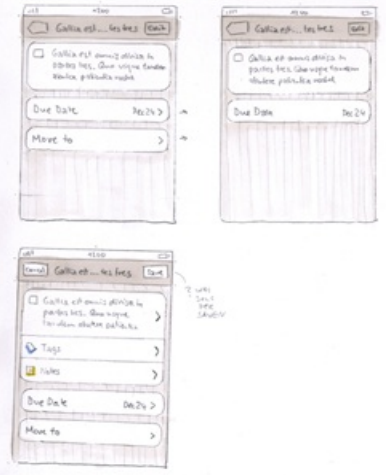
Cover: New To Do



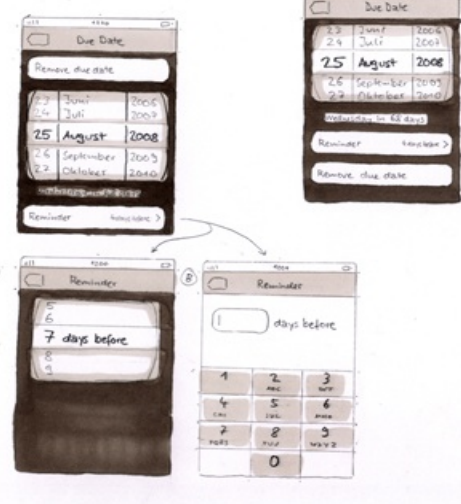
TAB-BAR SOLUTION



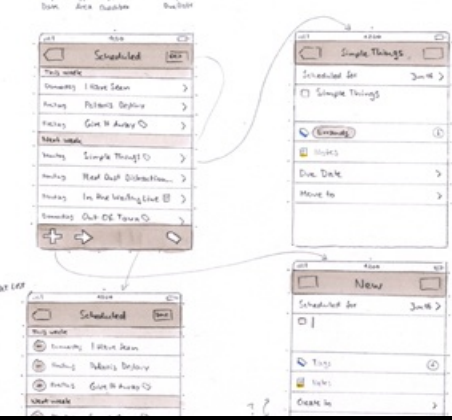
EDIT MODE



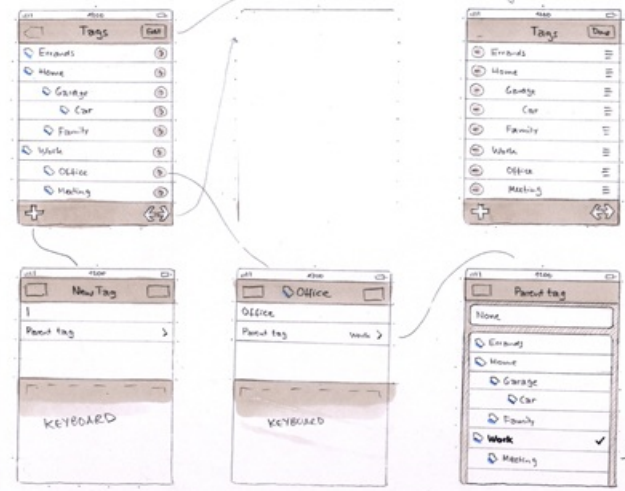
DUE DATE



SCHEDULED

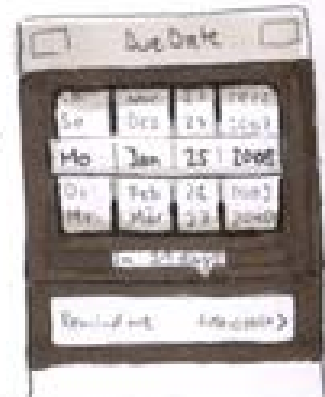
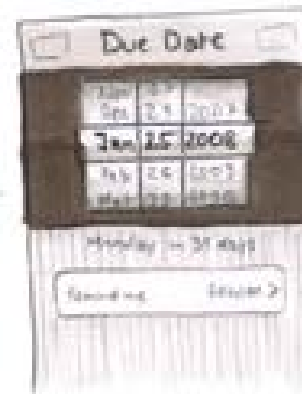
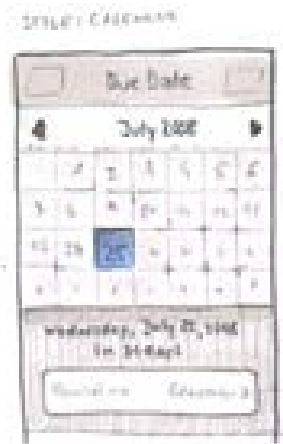


MANAGING TAGS



EDIT / NEW





removed all



EDIT / NEW

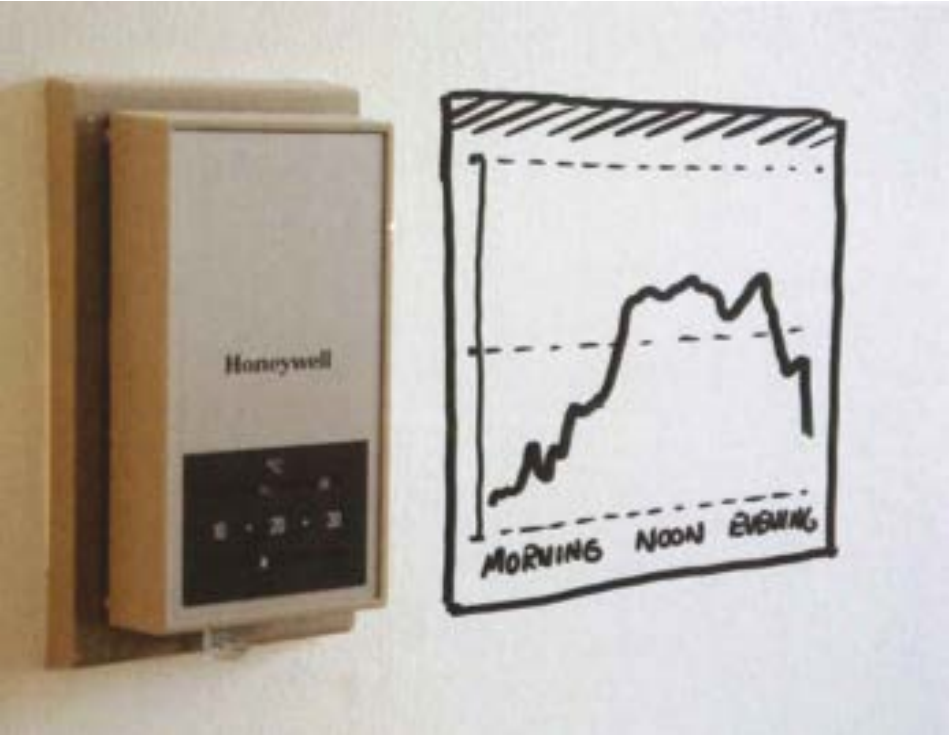


Sketching Technique: Hybrid Sketches

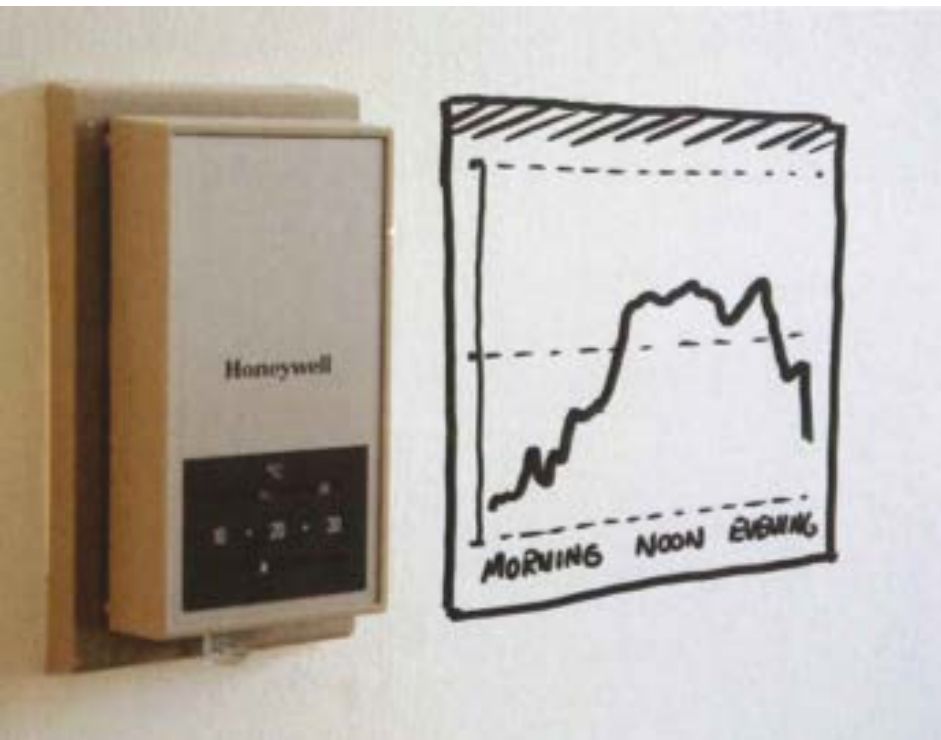


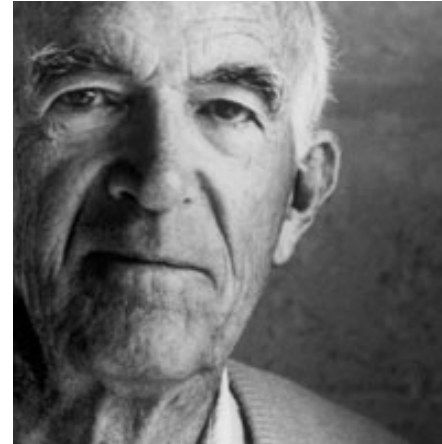


Sketching Technique: Hybrid Sketches

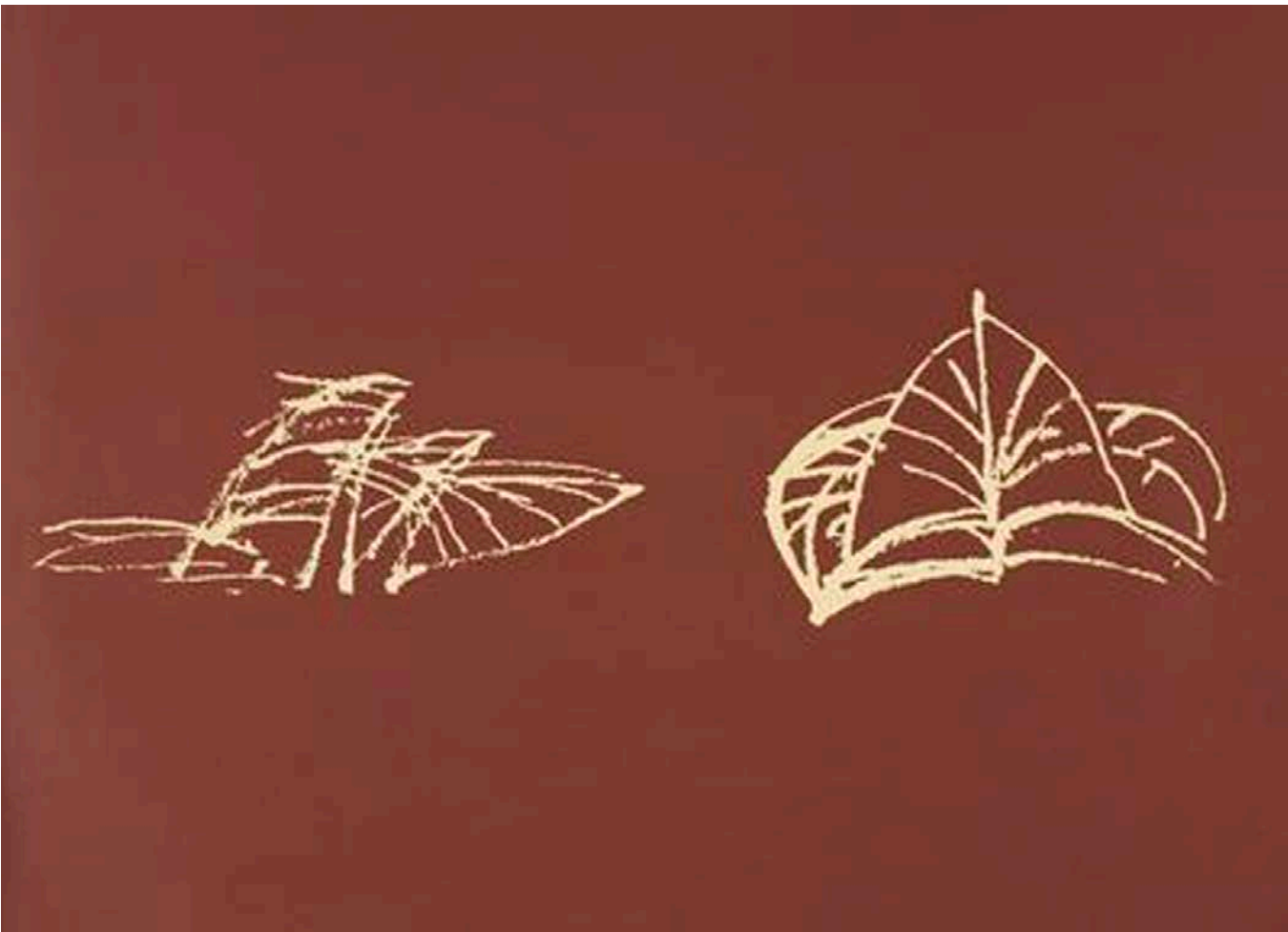


Sketching Technique: Hybrid Sketches

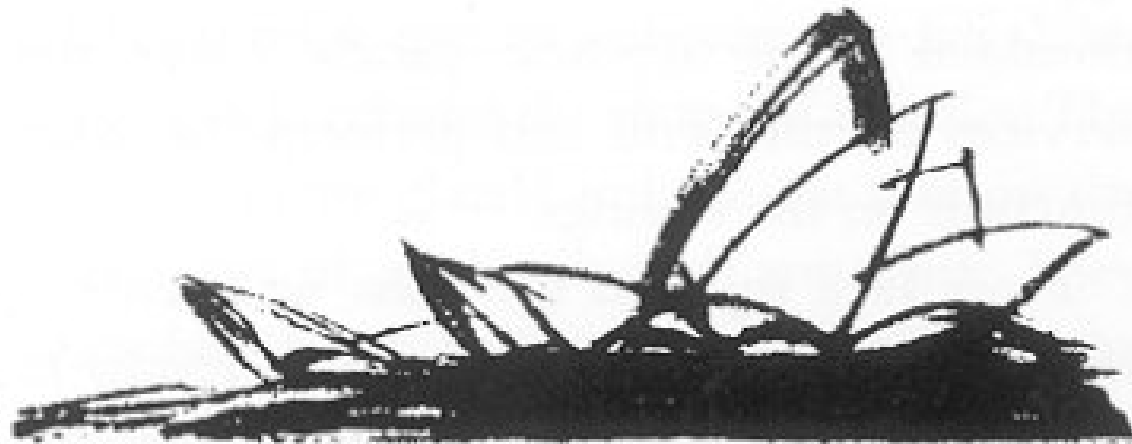




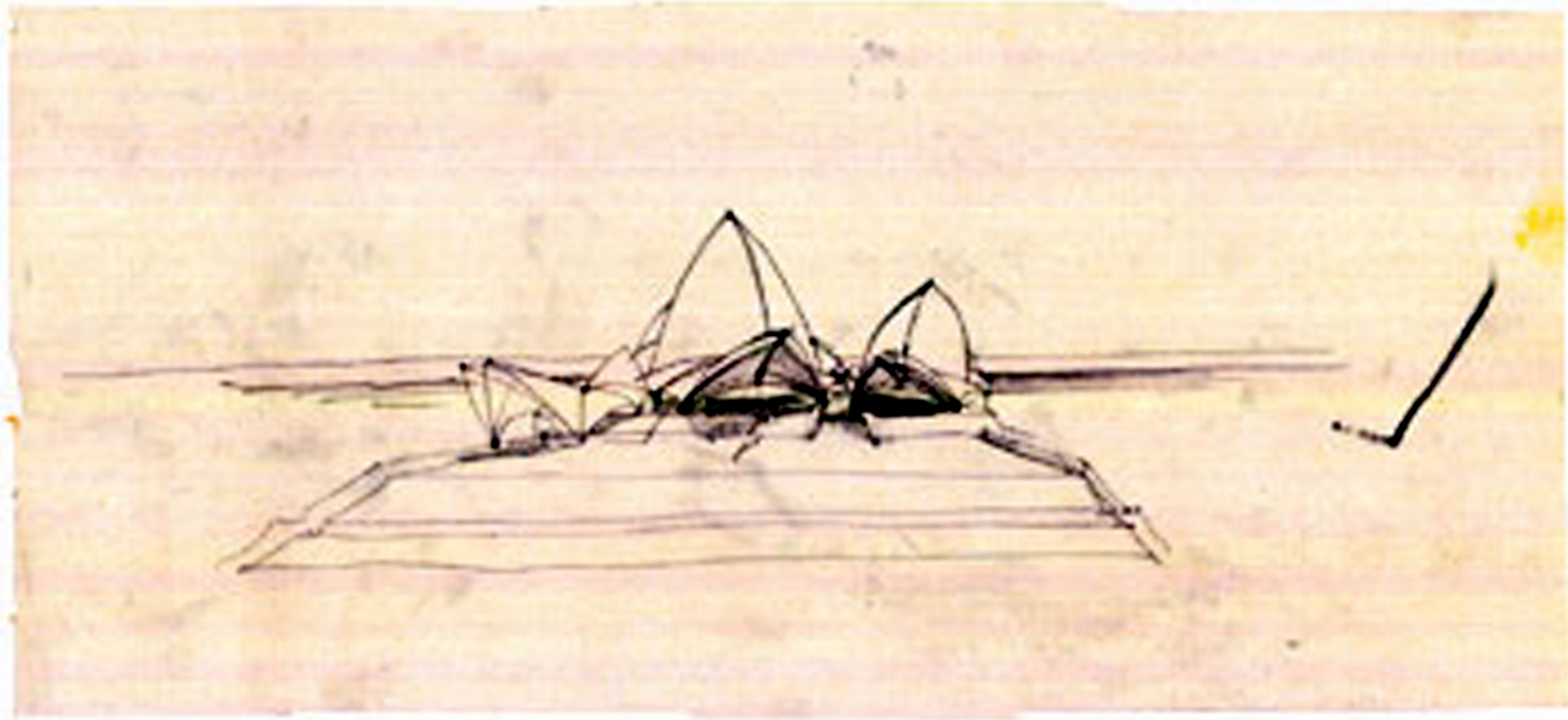
Jørn Utzon | Architect



Source: Jørn Utzon



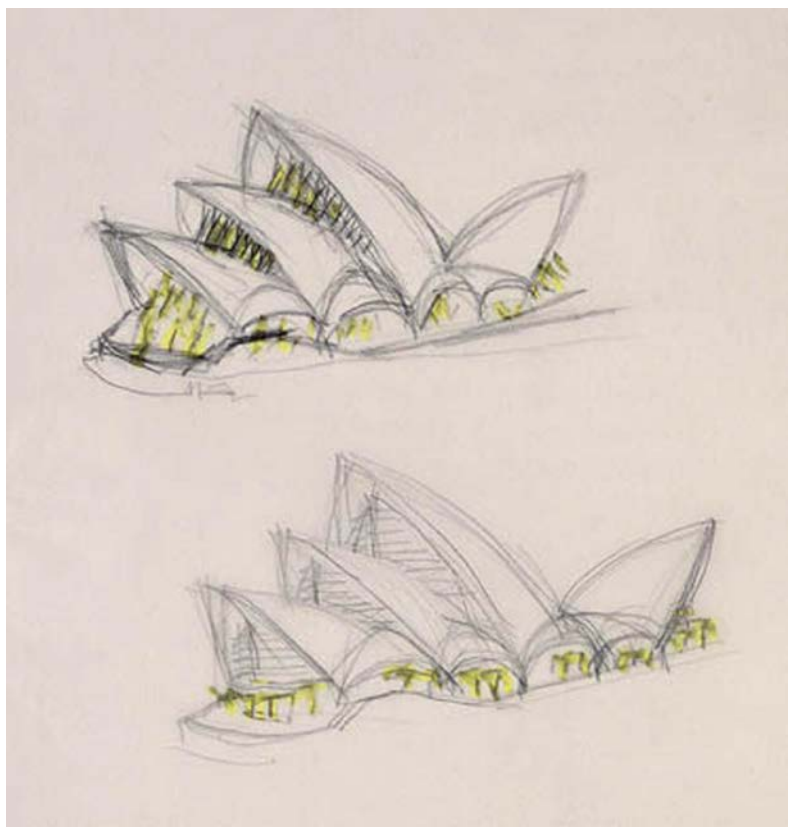
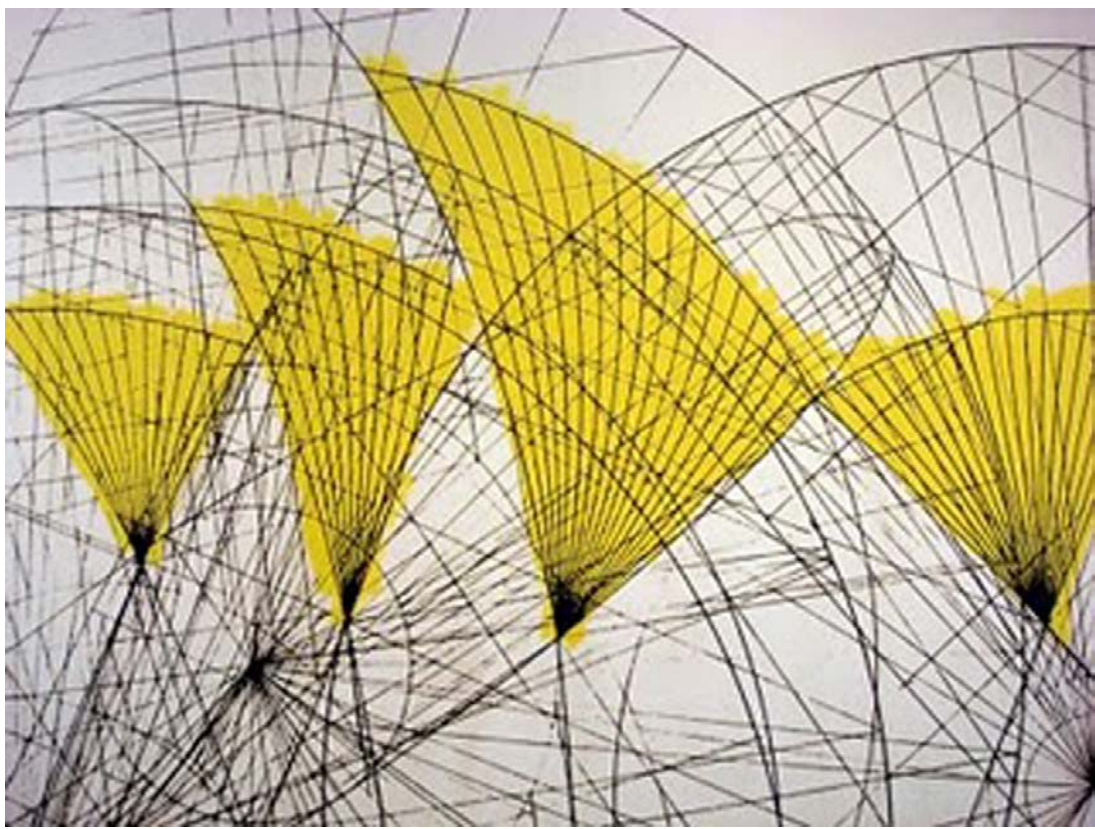




Source: Jørn Utzon

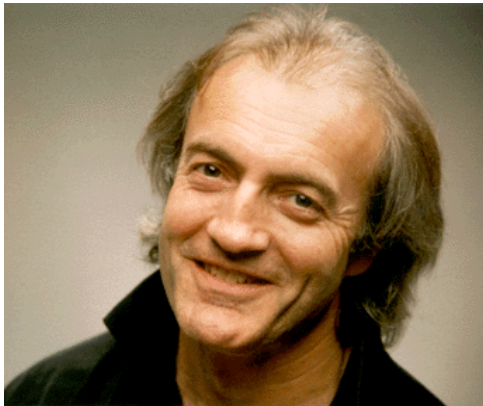


Source: Jørn Utzon



Source: Jørn Utzon

Minimal detail and distinct gesture

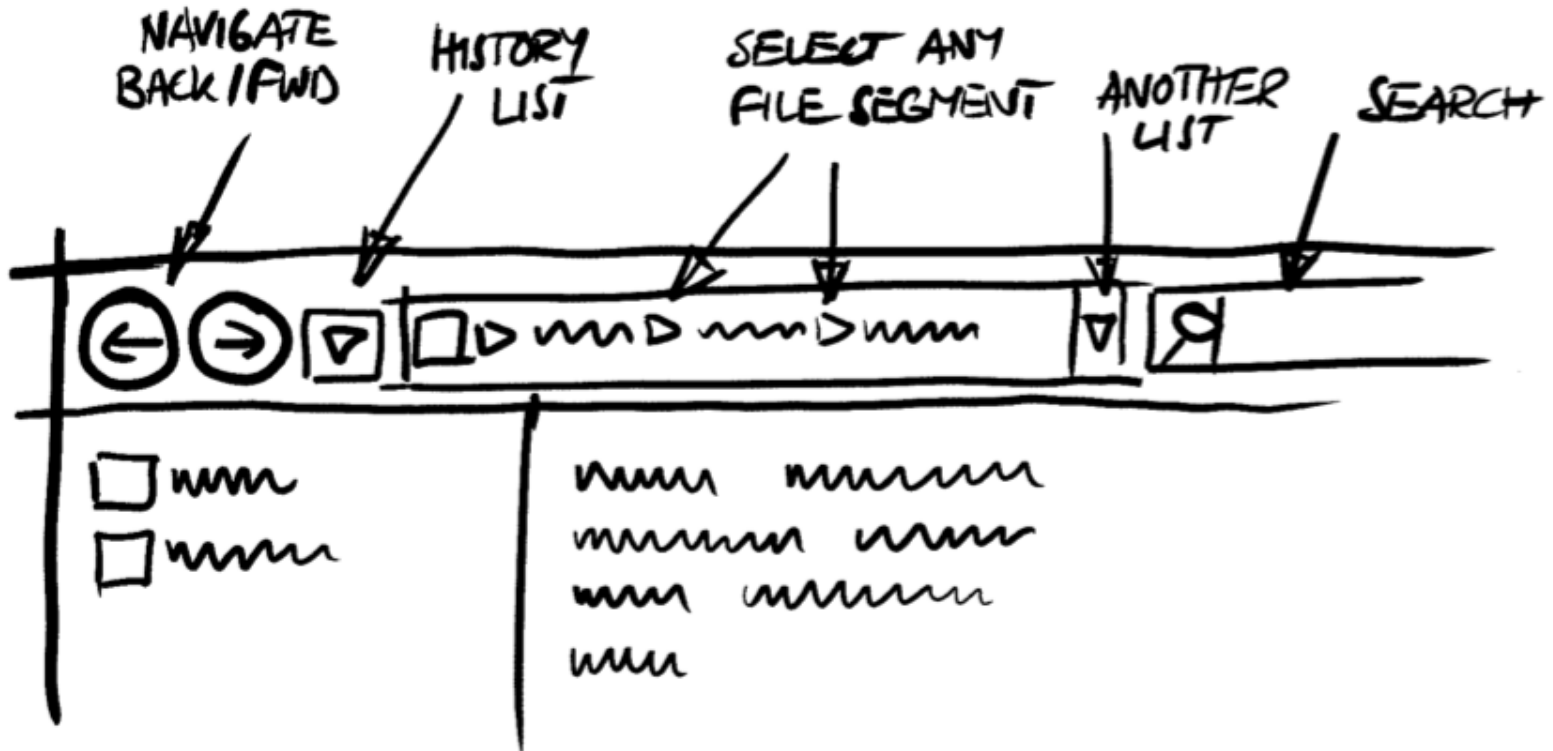


Sketching Technique: Reduce to essentials

Sketching Technique: Reduce to essentials



Sketching Technique: Reduce to essentials



Sketching Technique: Reduce to essentials

Computer Telephone

Last Name:

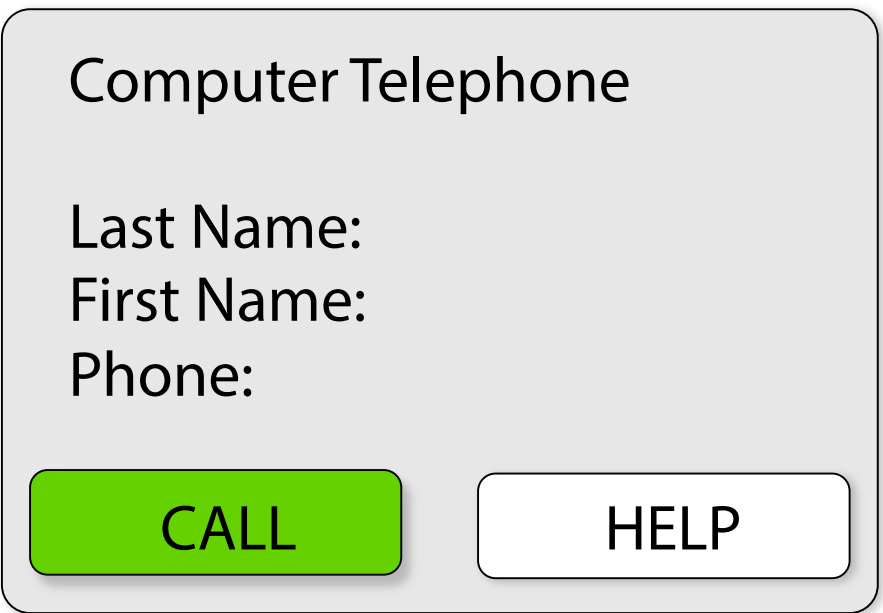
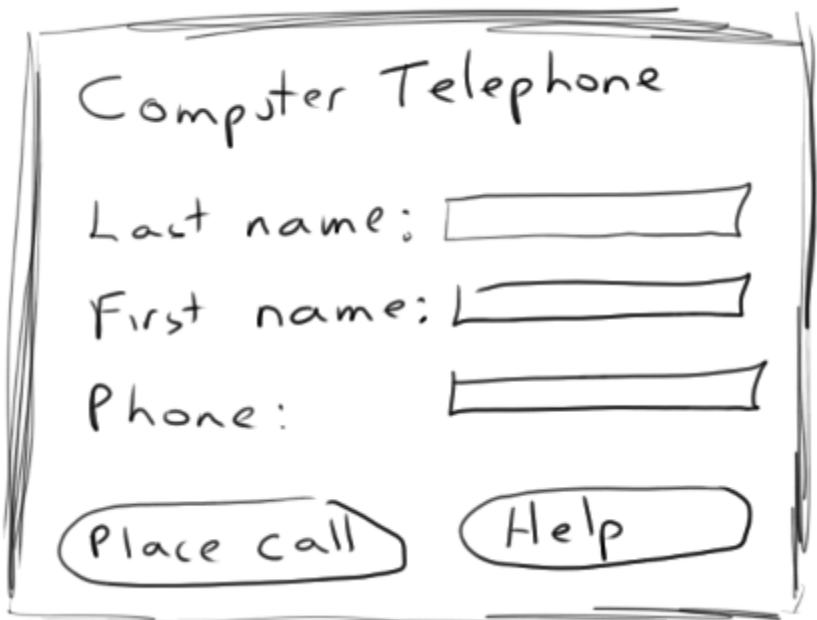
First Name:

Phone:

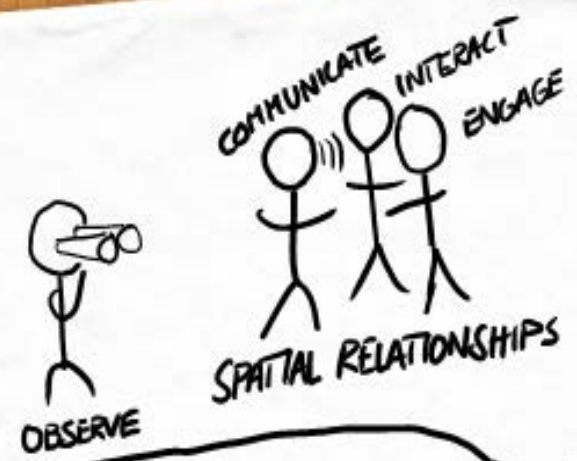
CALL

HELP

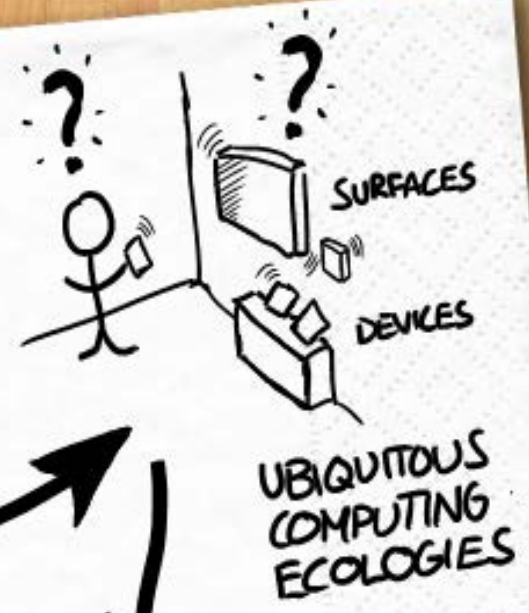
Sketching Technique: Reduce to essentials







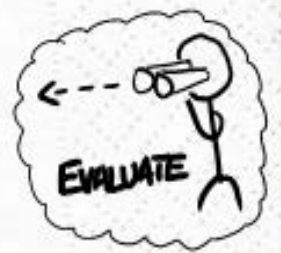
VS.



PROXEMICS

An oval containing an icon of an open book and the word 'PROXEMICS' in bold capital letters.

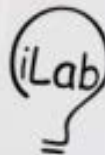
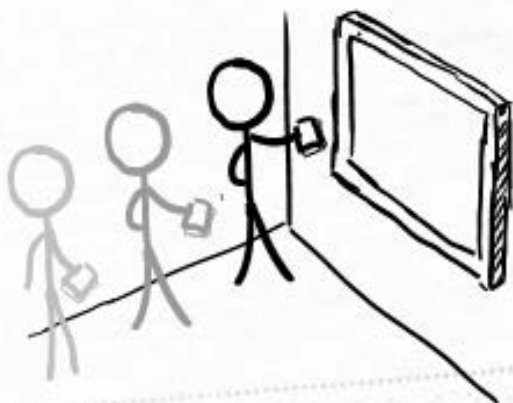
- DISTANCE *(trends natural and artificial)*
- ORIENTATION α
- MOVEMENT \rightarrow
- IDENTITY A B C



UNIVERSITY OF CALGARY

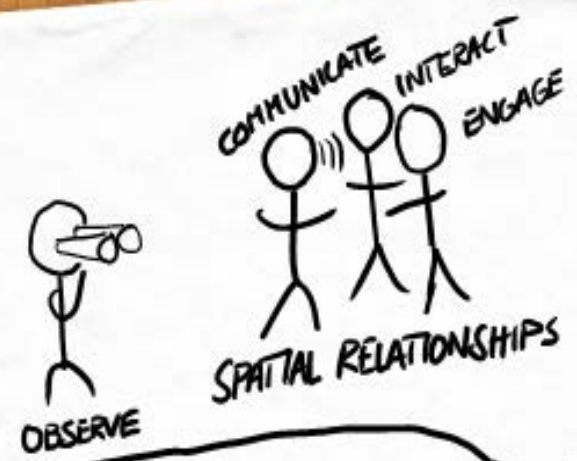
NICOLAI MARQUARDT



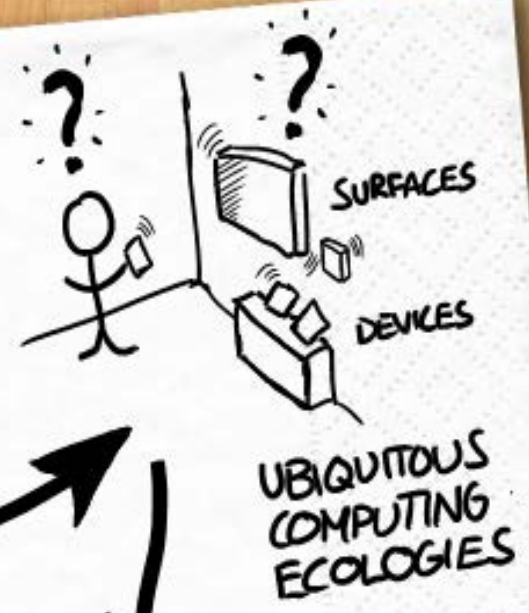


UNIVERSITY OF CALGARY





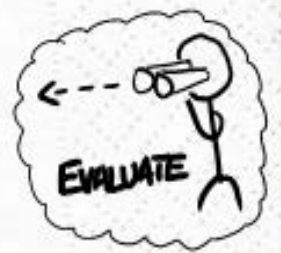
VS.



PROXEMICS

An oval containing an icon of an open book and the word 'PROXEMICS' in bold capital letters.

- DISTANCE *(tends to extend and contract)*
- ORIENTATION α
- MOVEMENT \rightarrow
- IDENTITY A B C



UNIVERSITY OF CALGARY

NICOLAI MARQUARDT

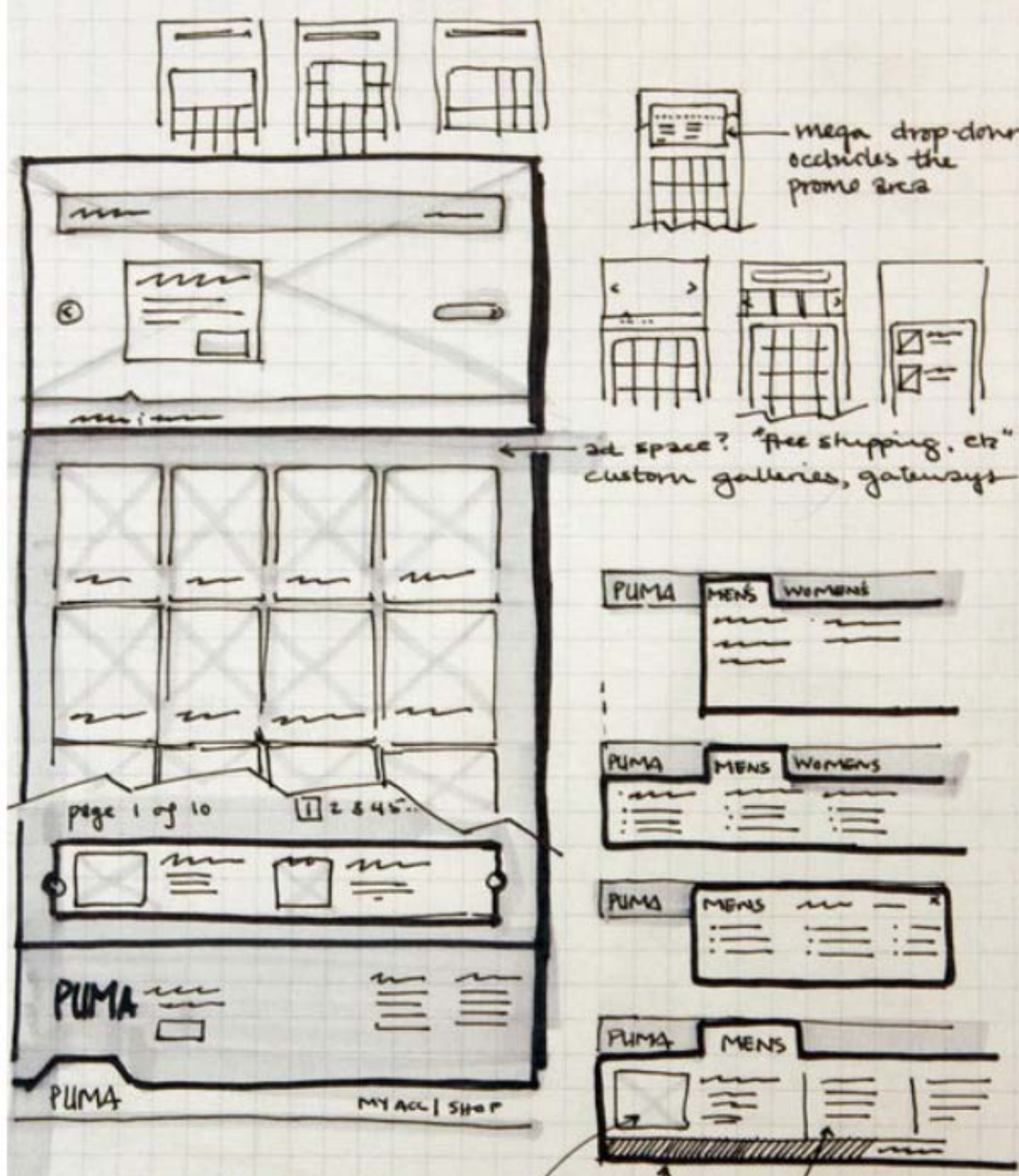






Sketching Technique: Wireframes

Sketching Technique: Wireframes



COMMLOGIX v1



• WHITE
 • CLEAN
 • WIDE OR FIRED
 IN A SHAPE

HORIZONTAL NAV w/ DRIPDOWN SUBNAV

- MINI MODULES w/ TEASER INFO FOR EACH PRODUCT
- 1 - HOME
 - 2 - ABOUT
 - 3 - SOLUTIONS
 - 4 - REQUEST INFO
 - 5 - CUST. SERVN.
 - 6 - HOW IT WORKS
 - 7 - KEY COMP
 - 8 - FAQ
 - 9 - CONTACT

FOOTER w/ ADD'L INFO



③

FIRED + ENCLOSED DESIGN

TABBED TABLE

930 ft side

Structural sections

seam

Structure, ideas

vertical slabs?
vertical ribs?
rigid frame?
2nd level?
how to lay out
2nd level?
Same way as
on the table

⊕

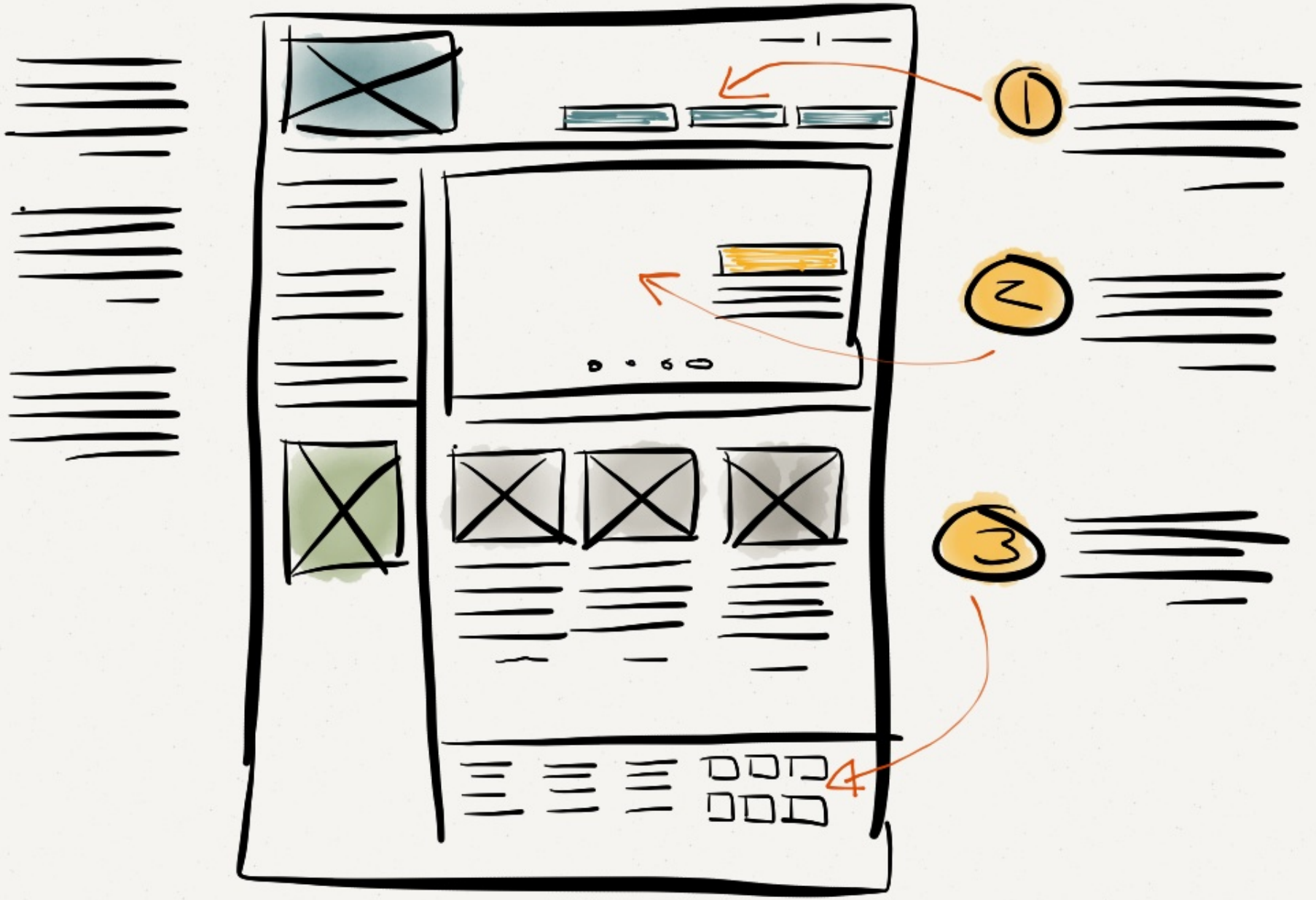
Take top
down
L&S

one at
bottom the table
200 x 150

930 ft
400 ft - 250 ft

NOTES





Hands-on Sketching: Wireframes (page 5)

Task: Sketch the essential elements of the following interface

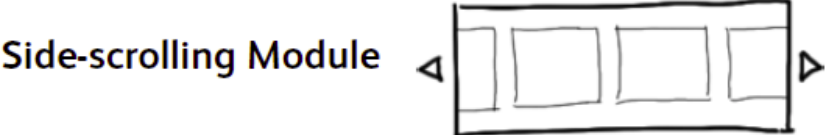
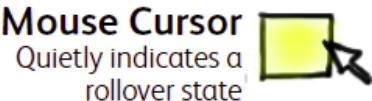
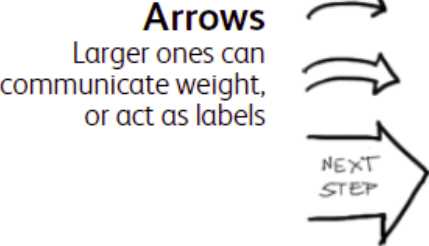
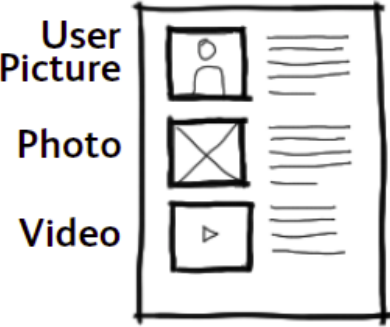
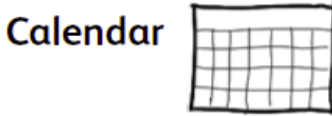
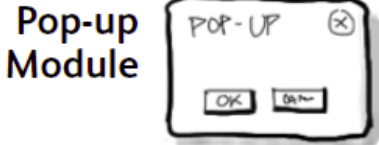
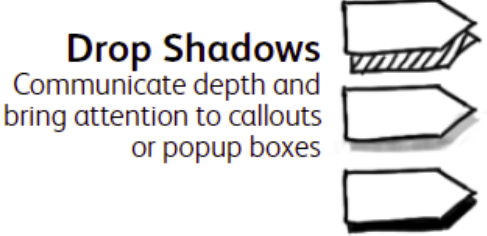
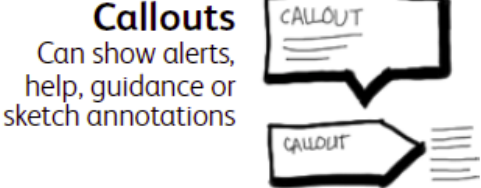
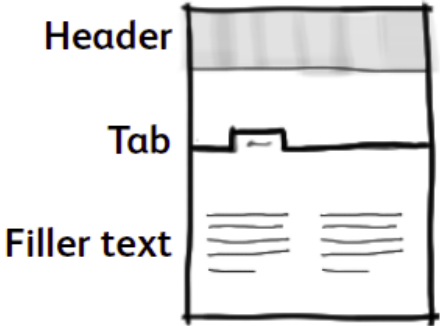
Task: Sketch the essential elements of the following interface



Task: Sketch the essential elements of the following interface

... and now sketch variation of this interface.

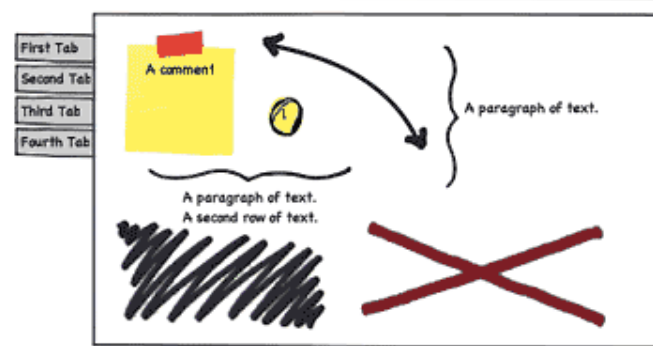
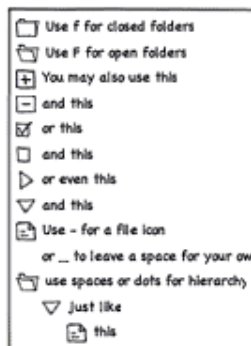
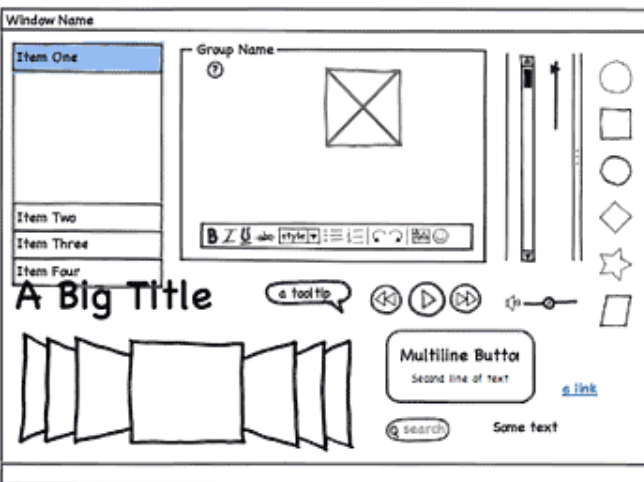
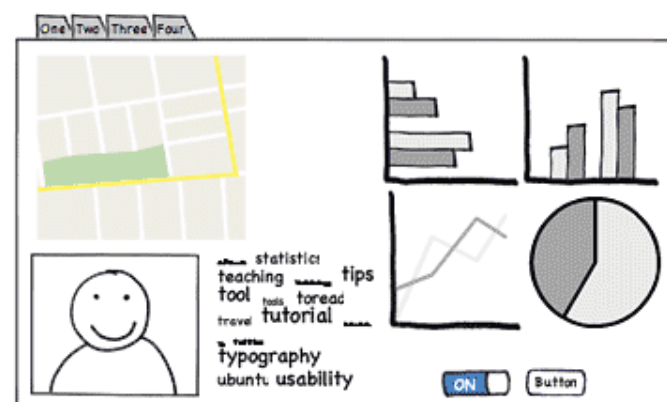
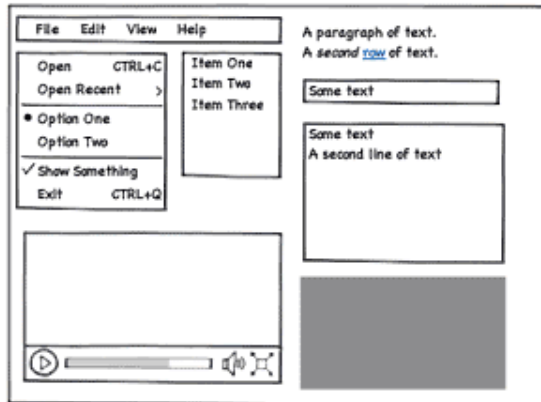
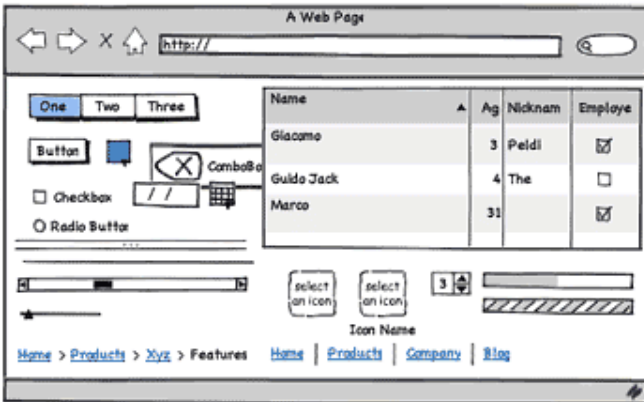
Wireframe sketches: Elements



Shortcuts: Paper Prototypes with Office Supplies



Wireframing software (e.g., Balsamiq)



Characteristics of Sketches vs. Prototypes

Characteristics of Sketches vs. Prototypes

SKETCH

PROTOTYPE

SUGGEST → DESCRIBE

EXPLORE → REFINE

QUESTION → ANSWER

PROPOSE → TEST

PROVOKE → RESOLVE

TENTATIVE → SPECIFIC



Visual Narrative and Storyboards

Single sketch

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

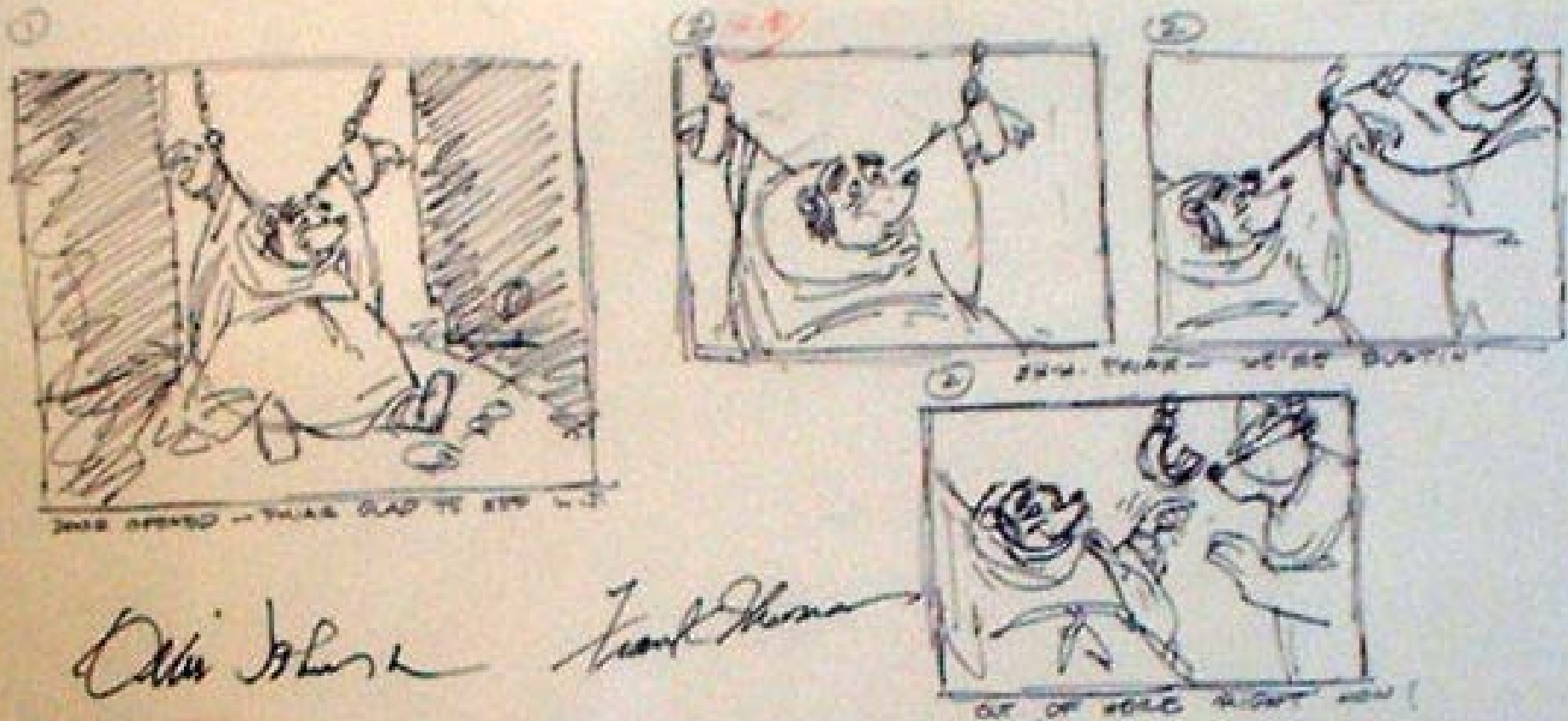


Single sketch

- captures user interface, but not user behaviour
- excludes dynamics of interaction over time
 - user actions
 - system responses
 - context
- **doesn't tell a story**



Storyboards: A Long Tradition in Animation

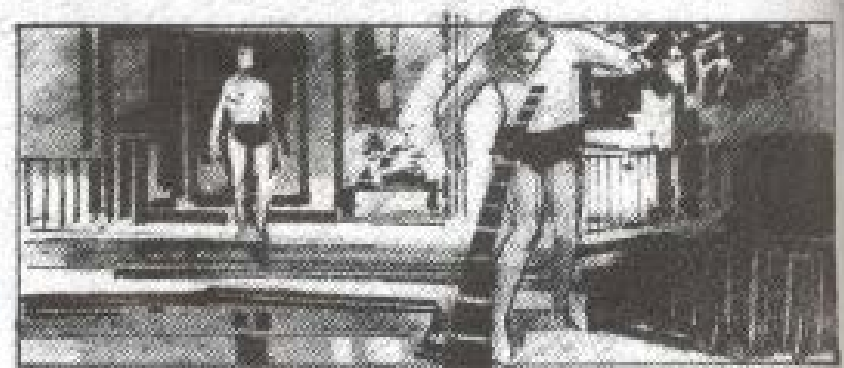


Key Elements: Annotations

Key Elements: Annotated Actions



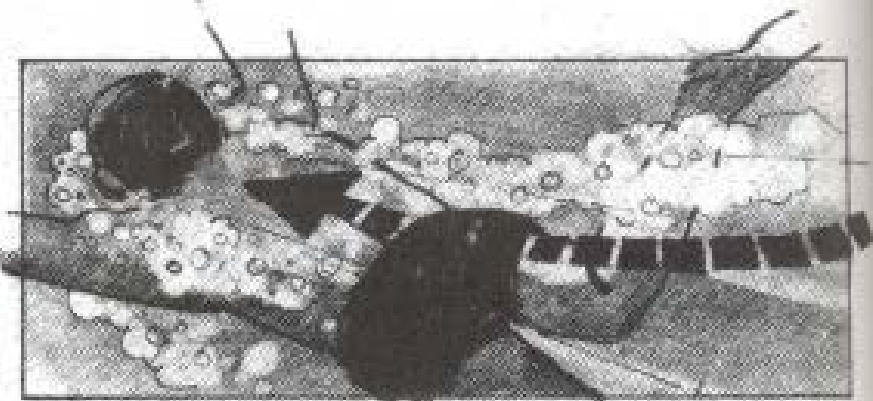
Key Elements: Transitions



78 - ZOOM BACK WITH BEN.



79 - RIGHT TO CAMERA AND FAST PAN LEFT



79 - AS BEN STARTS UP.



Creating Storyboards

Step-by-Step

The goal



1. Person passing by an advertisement board



2. Notices one announcement and is interested in more information



3. Taking a photo of a barcode on the poster.

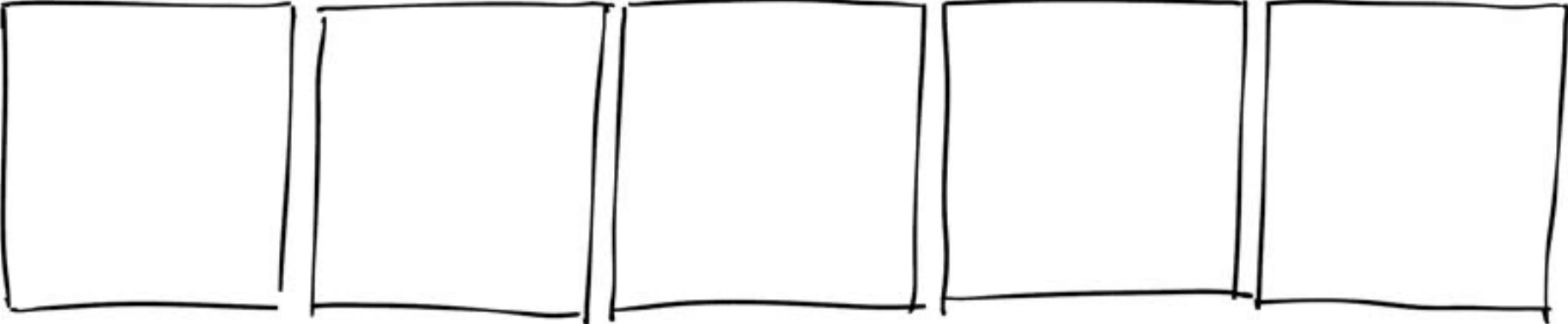


4. The mobile phone downloads detailed information about the new product.

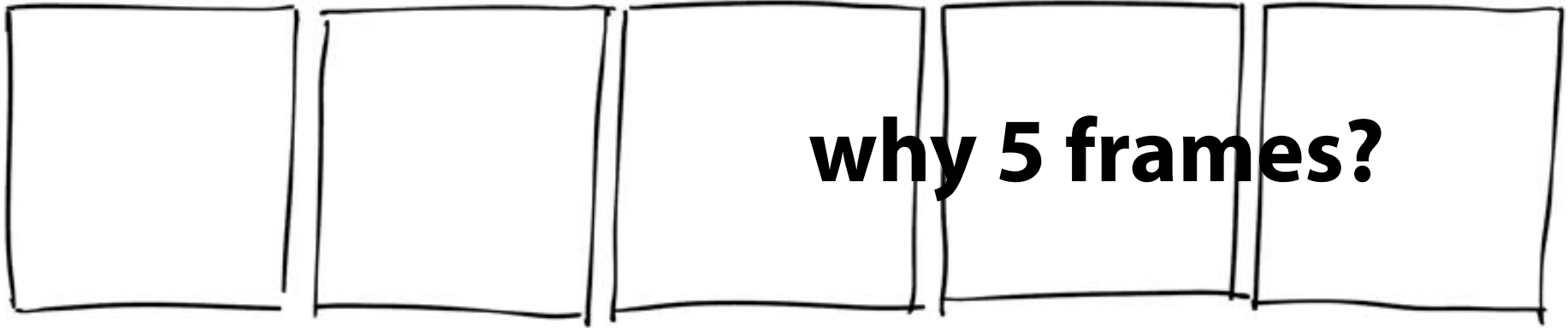


5. The person puts away the phone and turns around.

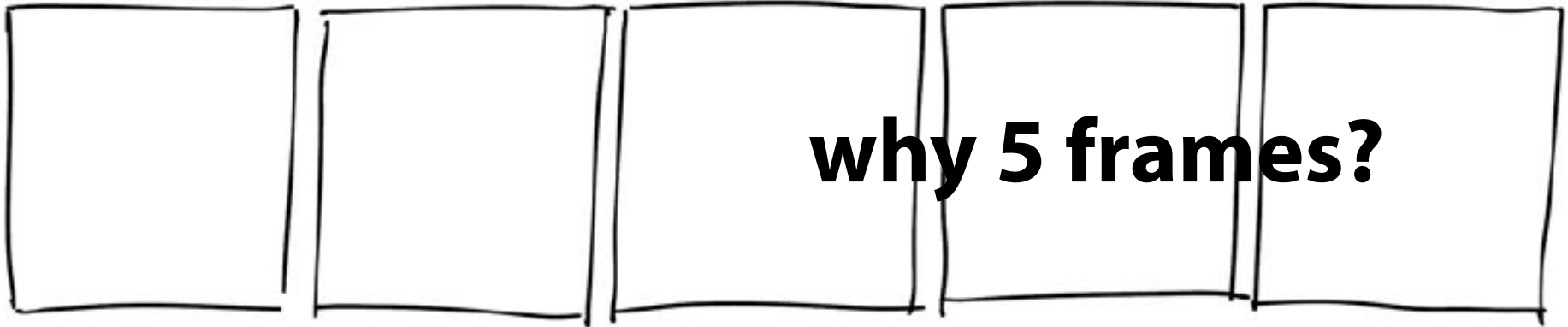
Begin with 5 empty frames



Begin with 5 empty frames

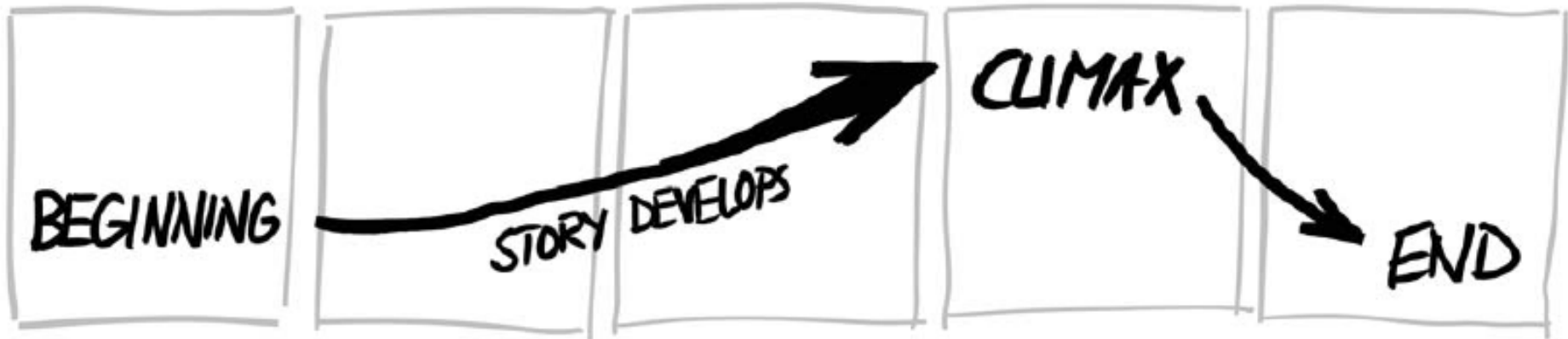


Begin with 5 empty frames

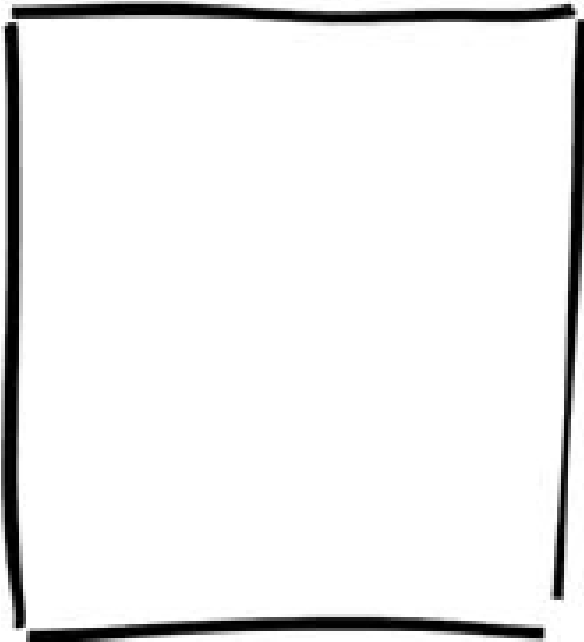


- range between 3 and 7
- if more: try to split it up

Develop a story

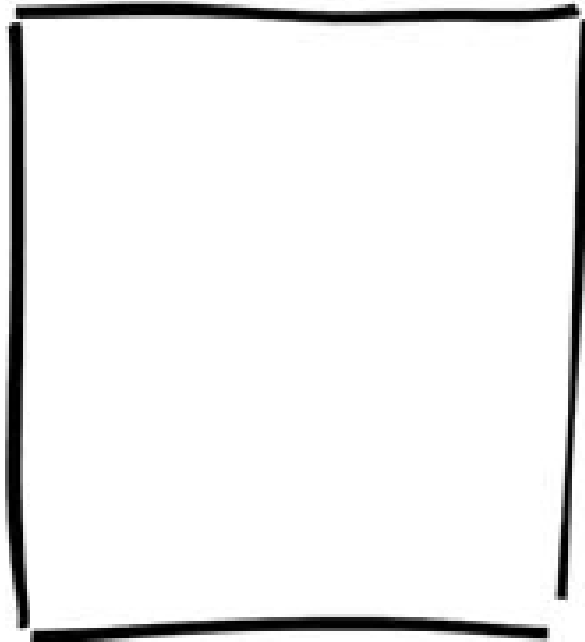


Write script: 1 sentence per frame

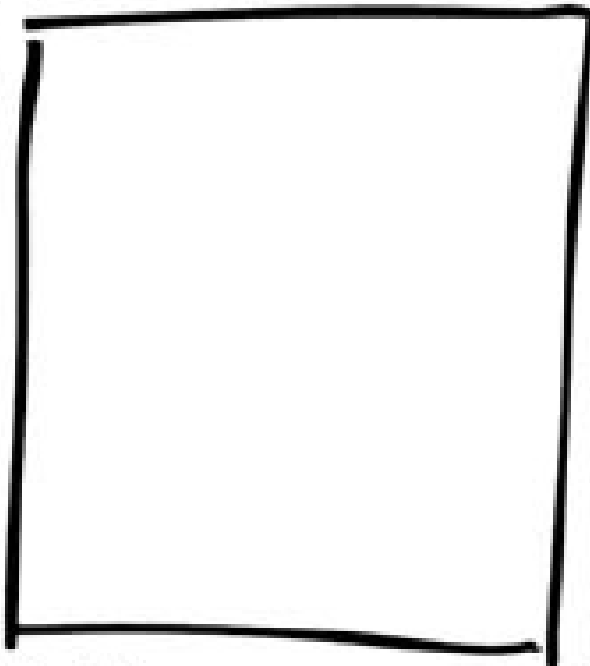


*A. Person passing by
an advertisement board*

Write script: 1 sentence per frame



1. Person passing by
an advertisement board



2. Notices one announcement
and is interested in more
information



3. Taking a photo of a board
on the poster.

Sketch the individual frames



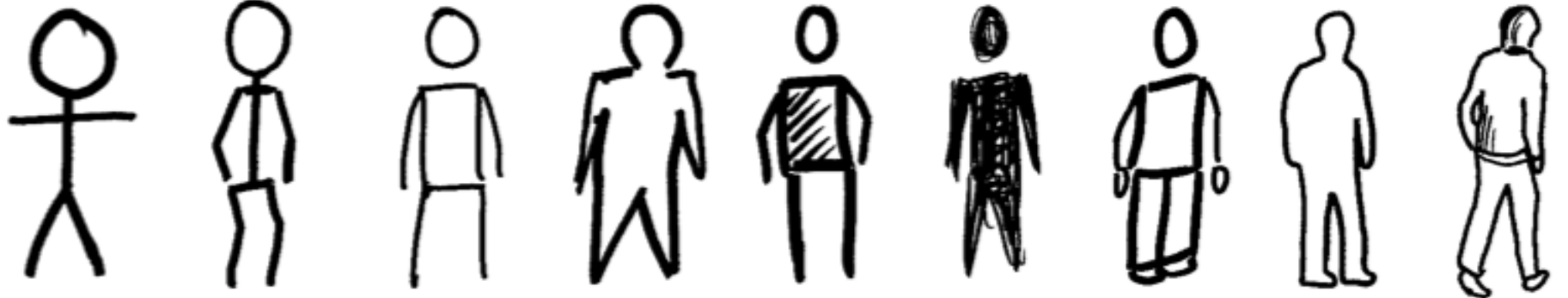
1. Person passing by
an advertisement board

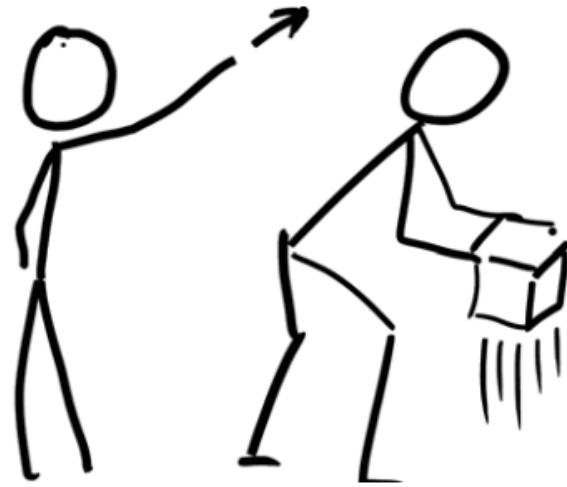
Sketch the individual frames

Remember: use sketching vocabulary and other sketching techniques we learned earlier



*1. Person passing by
an advertisement board*





Select appropriate camera shots (learning from film making)

Select appropriate camera shots

(learning from film making)



Extreme long shot (wide shot)
A view showing details of the setting, location, etc.



Long shot
Showing the full height of a person.



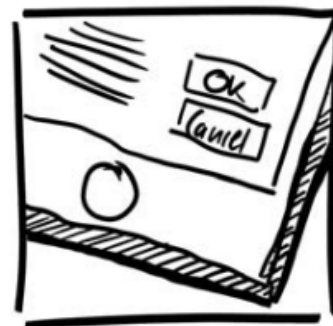
Medium shot
Shows a person's head and shoulders.



Over-the-shoulder shot
Looking over the shoulder of a person.



Point of view shot (POV)
Seeing everything that a person sees themselves.



Close-up
such as showing details of a user interface device the person is holding.



Extreme long shot (wide shot)

A view showing details of the setting, location, etc.



Long shot

Showing the full height of a person.



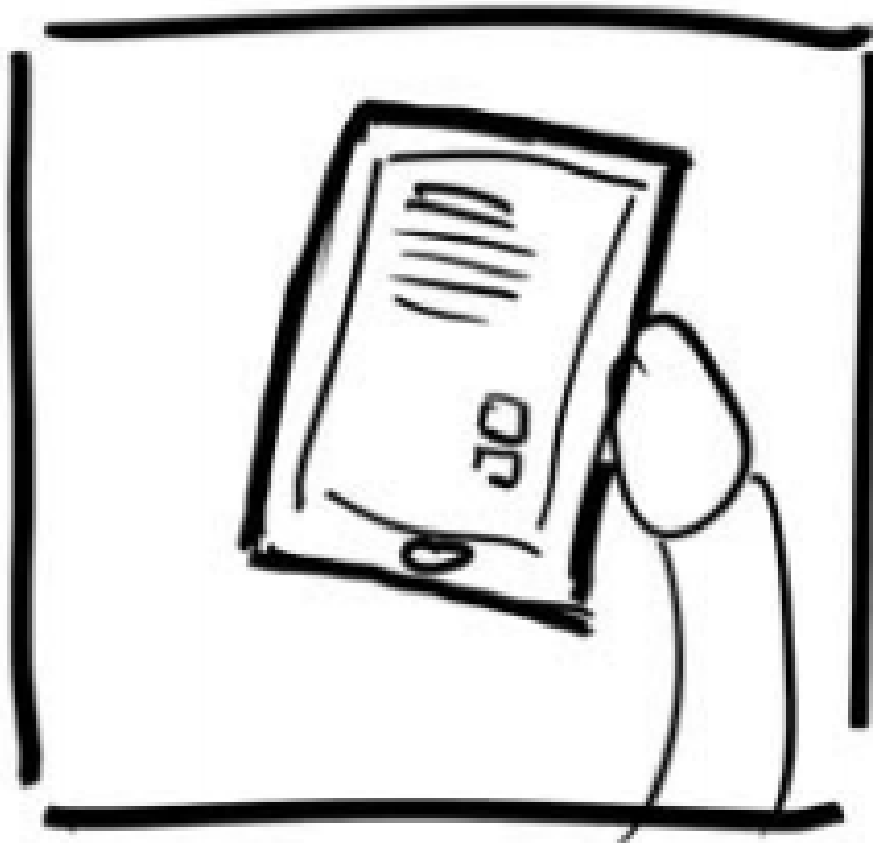
Medium shot

Shows a person's head and shoulders.



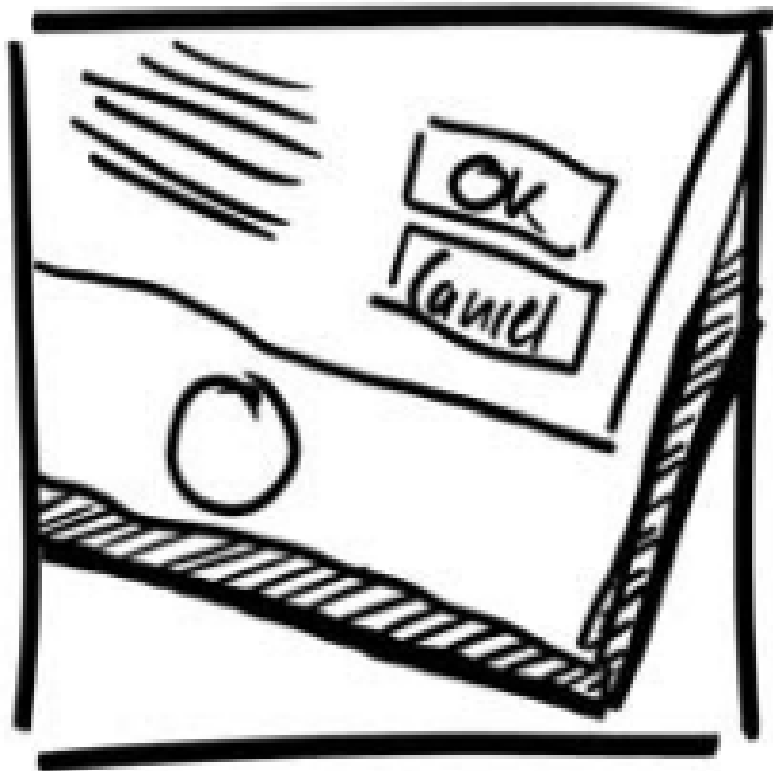
Over-the-shoulder shot

Looking over the shoulder of a person.



Point of view shot (POV)

Seeing everything
that a person sees
themselves.



Close-up
such as showing details of
a user interface a device
the person is holding.

Select appropriate camera shots



Extreme long shot (wide shot)
A view showing details of the setting, location, etc.



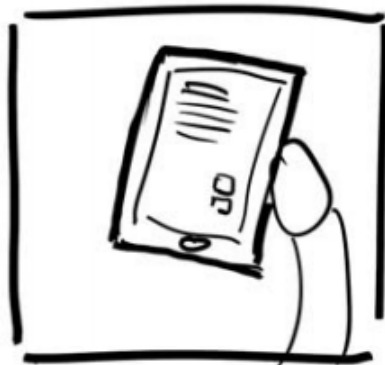
Long shot
Showing the full height of a person.



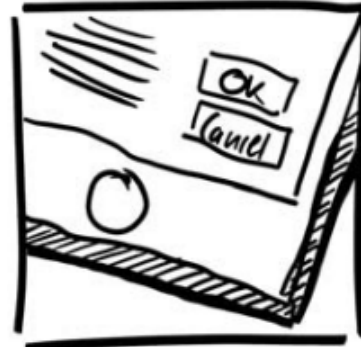
Medium shot
Shows a person's head and shoulders.



Over-the-shoulder shot
Looking over the shoulder of a person.

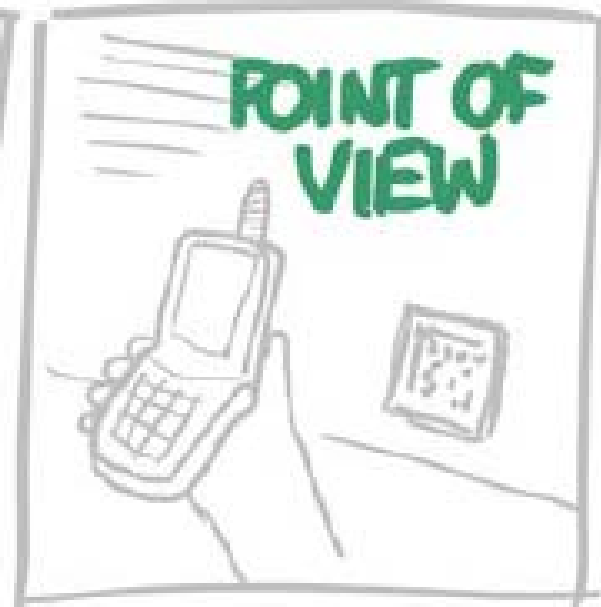


Point of view shot (POV)
Seeing everything that a person sees themselves.



Close-up
such as showing details of a user interface a device the person is holding.

Select appropriate camera shots (learn from film making)



Key Decisions

- **Should I show the user in the scene?**
- **What key frames** should I use to create the sequence?
 - capture the essence of the story
 - people can 'fill in' the rest
- **What key transitions** should I show?
 - actions to get from one frame to the next?

Key Decisions

- **How explicit do you need to be?**

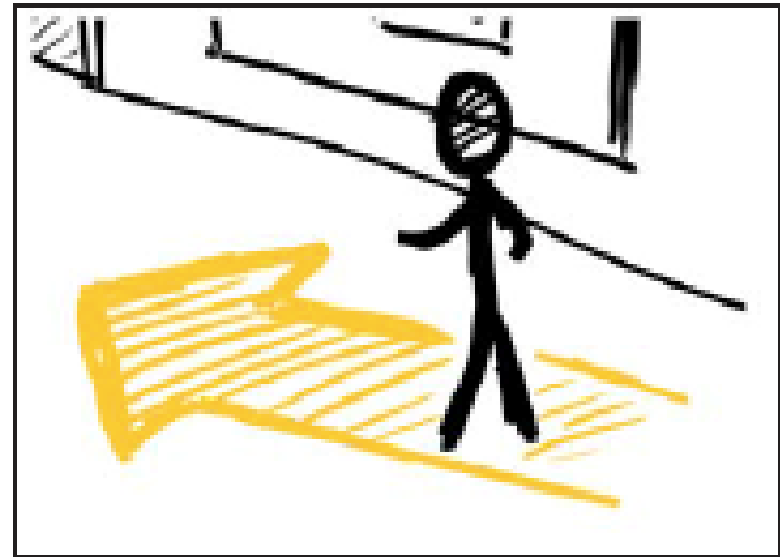
Depends on what you are trying to explain

- are the missing parts important?

Depends on the audience

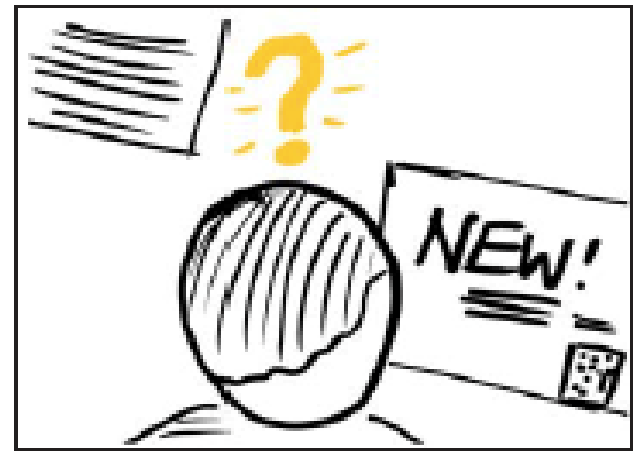
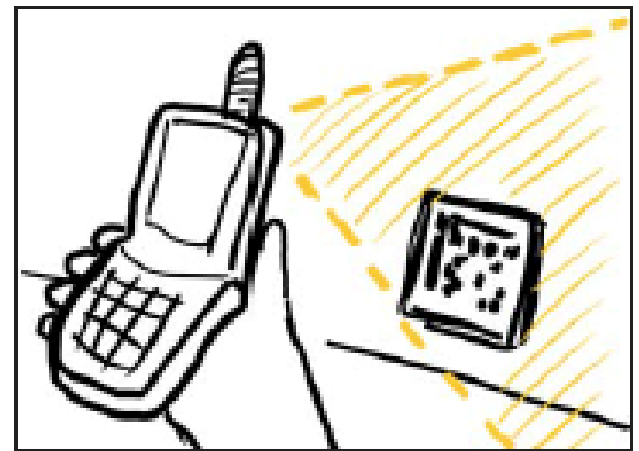
- can your audience fill in the missing bits?

Emphasize actions and motions



Add annotations

to emphasize people's actions or thoughts, or changes happening in a device's user interface



The final storyboard



1. Person passing by an advertisement board



2. Notices one announcement and is interested in more information



3. Taking a photo of a barcode on the poster.

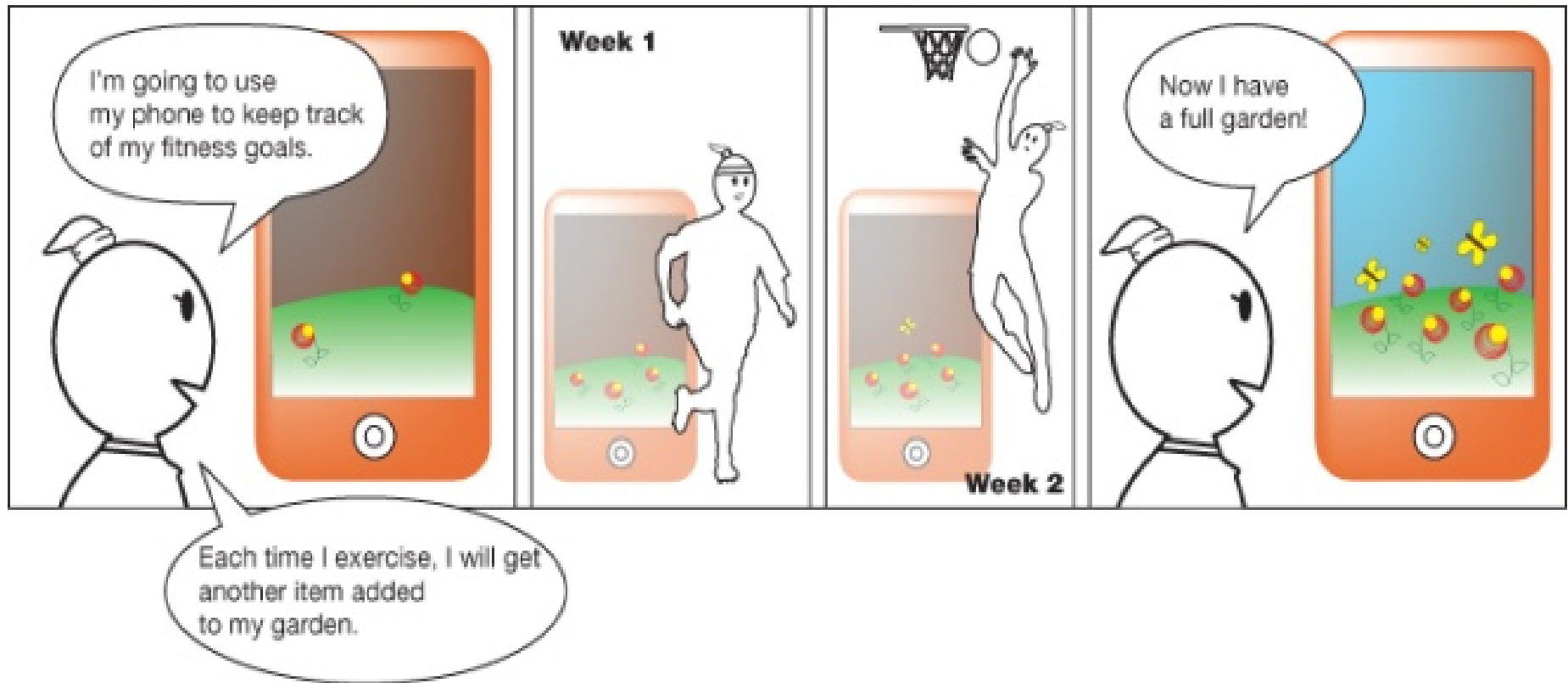


4. The mobile phone downloads detailed information about the new product.



5. The person puts away the phone and turns around.

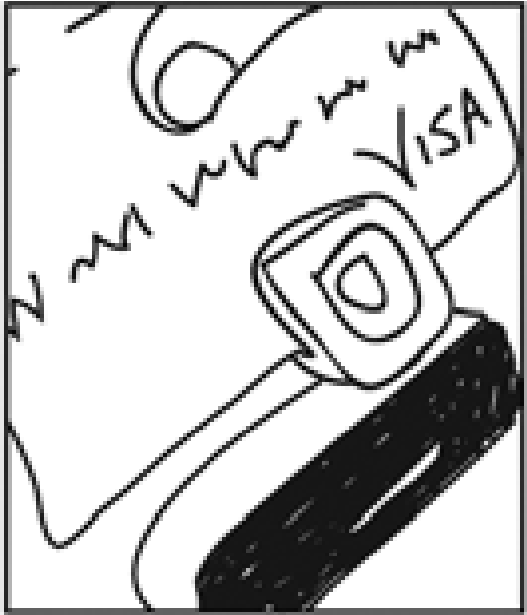
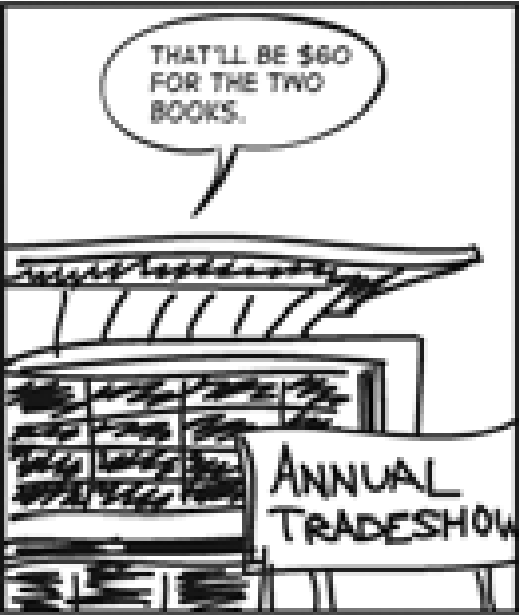
Another storyboard example



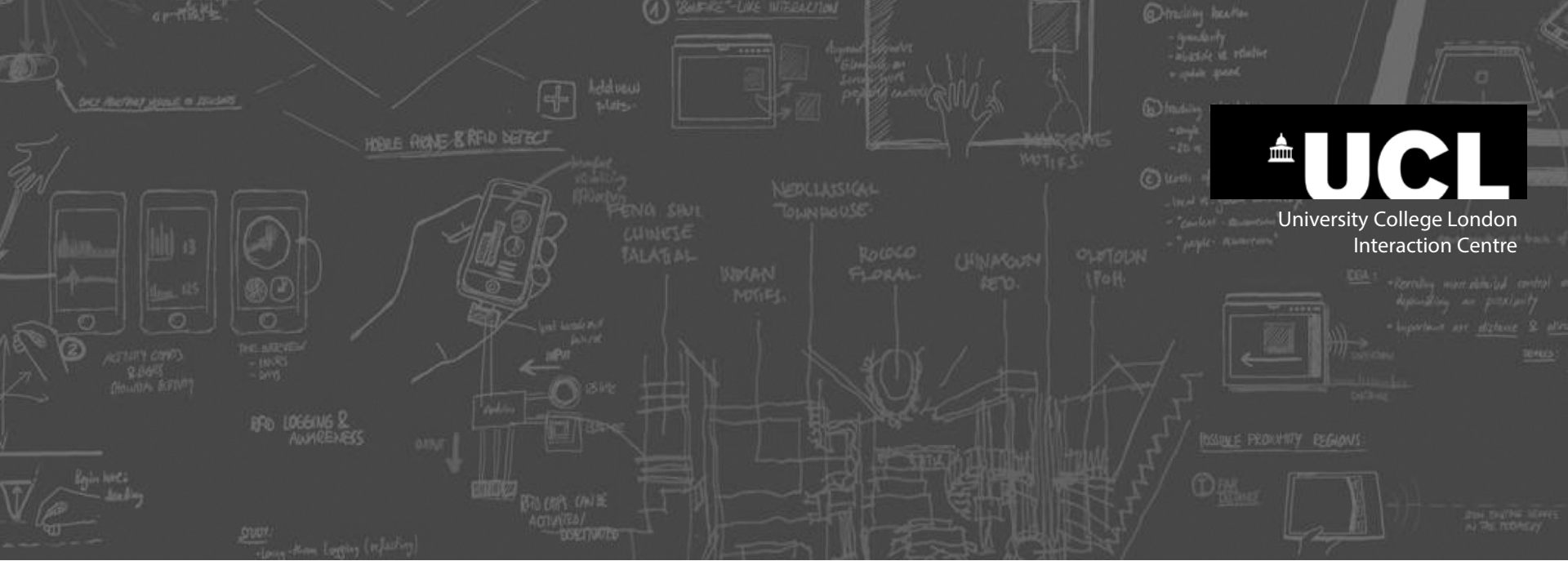
Case study (Kevin Cheng): The Square



Case study (Kevin Cheng): The Square



Hands-on Sketching: Storyboards (page 7)



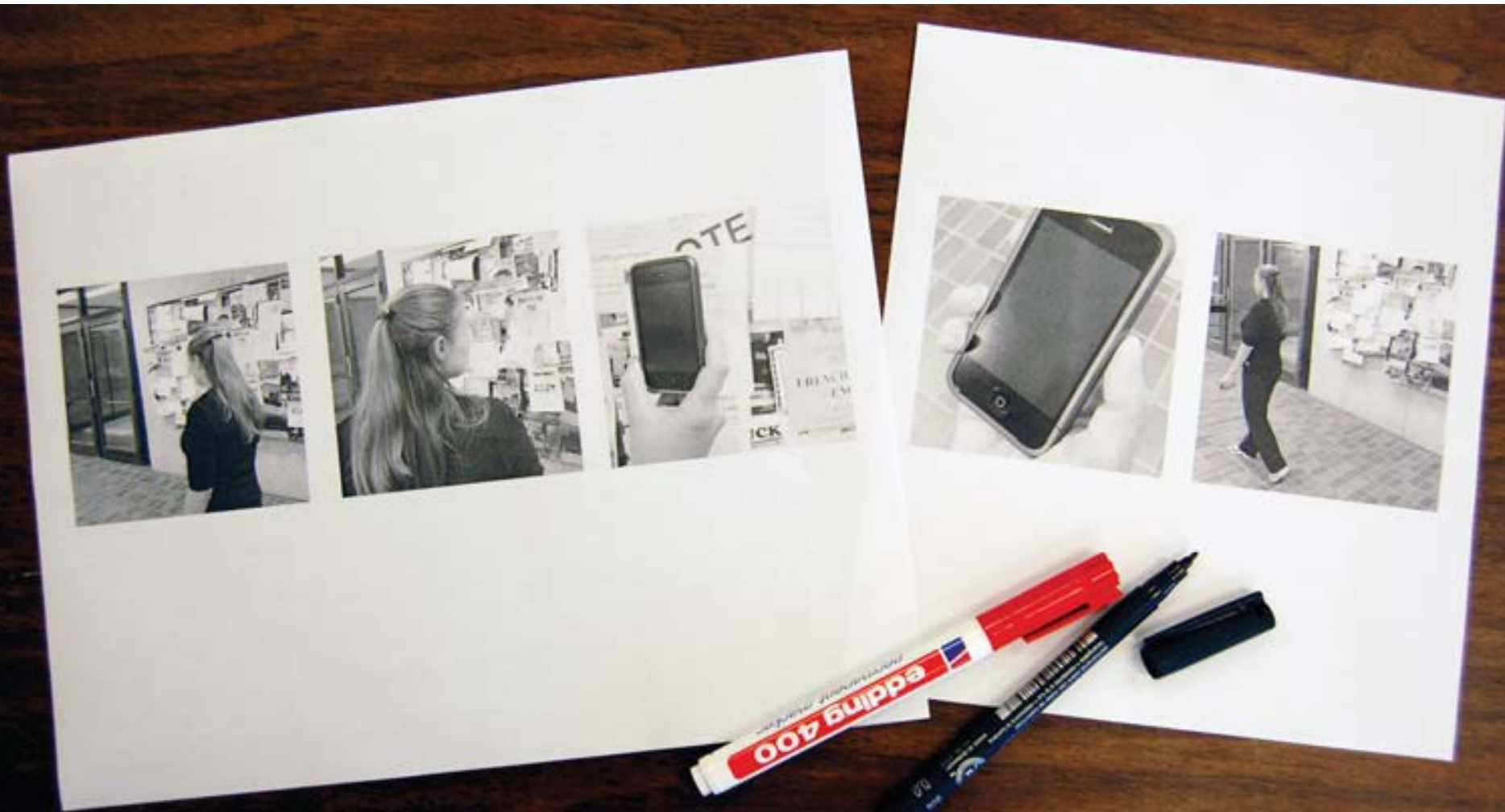
Other methods for creating storyboards

Photo-based storyboards:

Take 5 photos of key moments



Print out (50% transparency)



Add annotations



Add storyline and comments



① Person is passing by an advertisement board



② Notices one particular announcement and is interested in more inform.



③ Takes a photo of the barcode on the poster.

Result



① Person is passing by an advertisement board



② Notices one particular announcement and is interested in more inform.



③ Takes a photo of the barcode on the poster.

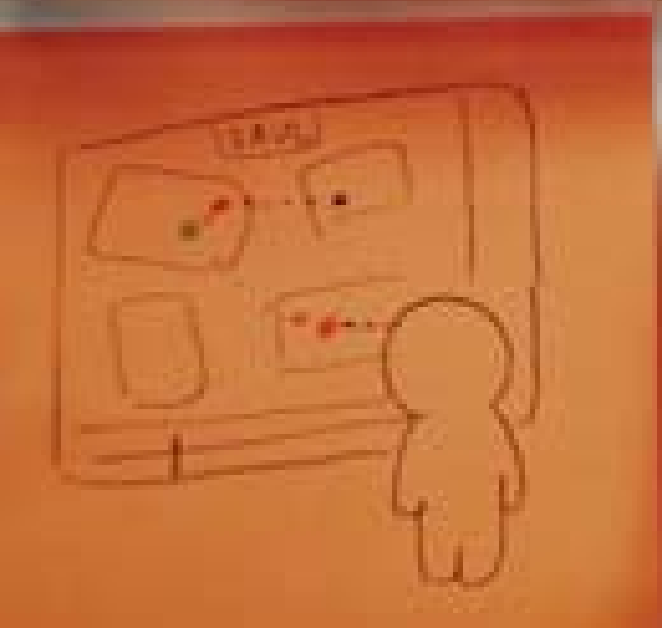
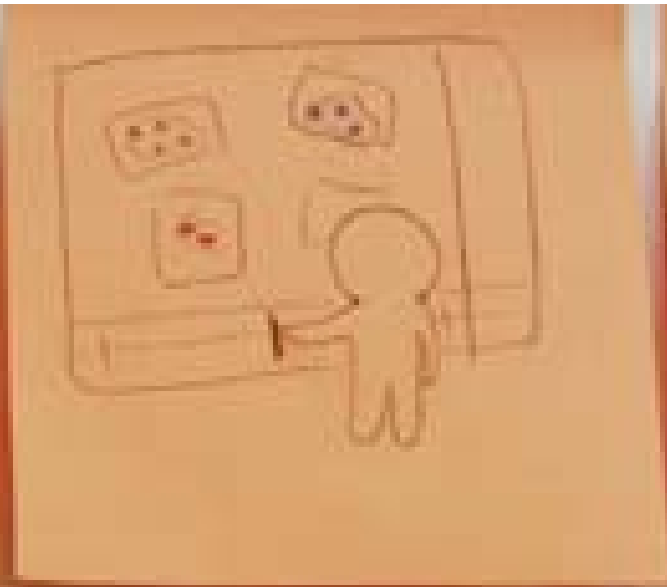
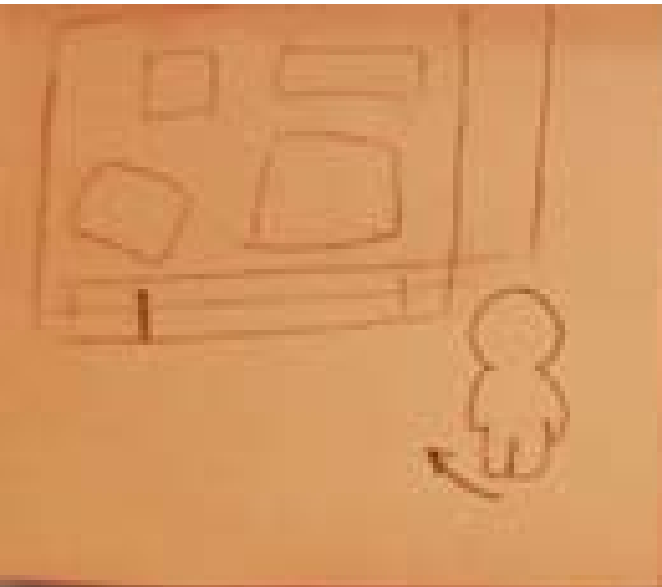


④ Detailed information appears on the phone's screen



⑤ Person turns around and leaves.

Handwritten notes and diagrams at the top of the page, including a small sketch of a person and a screen. The text includes:
- "HOLD PHONE & RFID DETECT"
- "SOURCE-LIKE INTERACTIONS"
- "A small screen displaying an RFID tag's properties"
- "Handwritten notes: - frequency, - model of reader, - main goal"
- "Handwritten notes: - range, - 20% 30"
- "HOLD PHONE & RFID DETECT" (repeated)







Handwritten notes on the left side of the page:

- Get to working on the...
- ...
- ...
- ...
- ...

Handwritten notes on the right side of the page:

- ...
- ...
- ...
- ...
- ...

Handwritten notes on the far right side of the page:

- ...
- ...
- ...
- ...
- ...





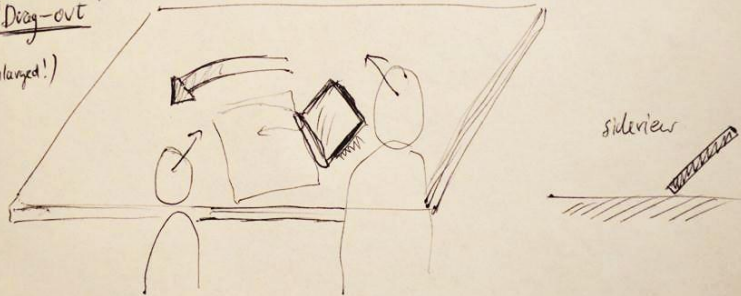
Case Study:

Microsoft Research Cross-Device Interactions

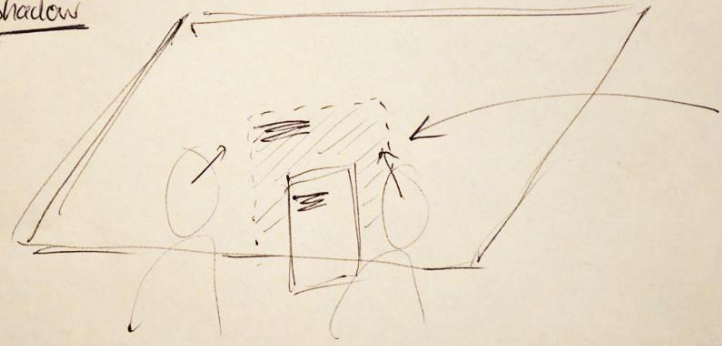


Tablets/~~devices~~ + table + supporting micro-mobility

① ~~Fan-out~~
"Drag-out"
(enlarged!)

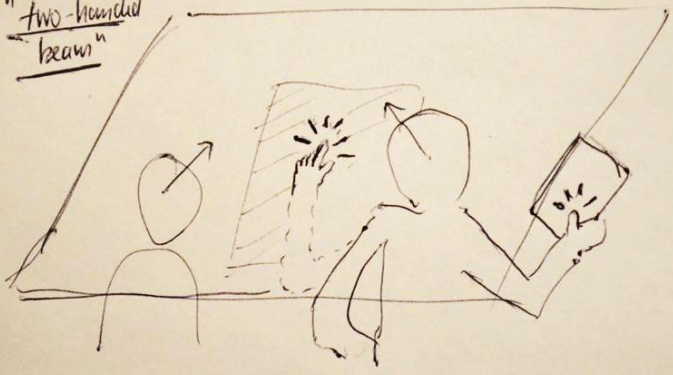


② "Shadow"

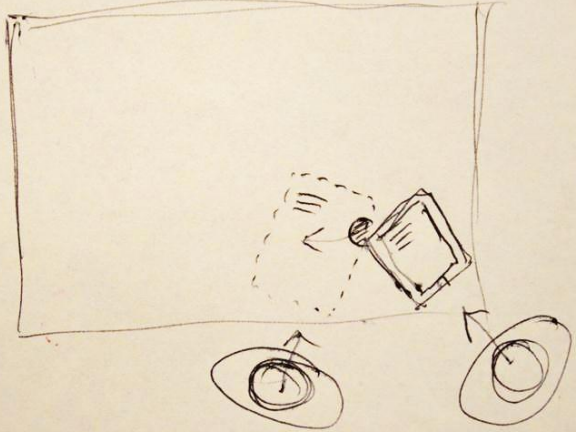


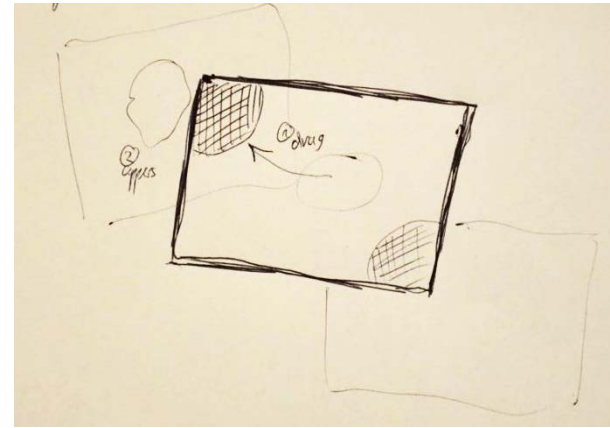
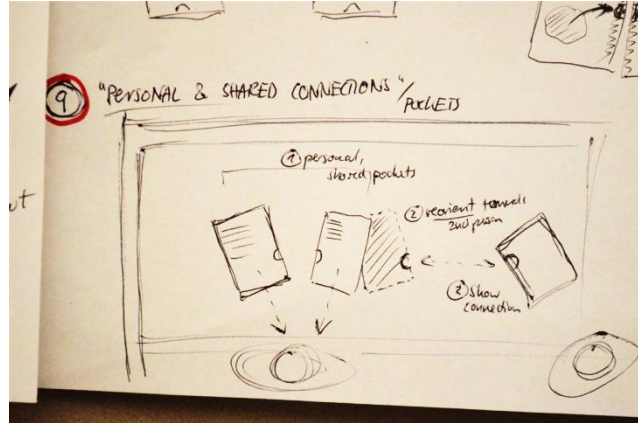
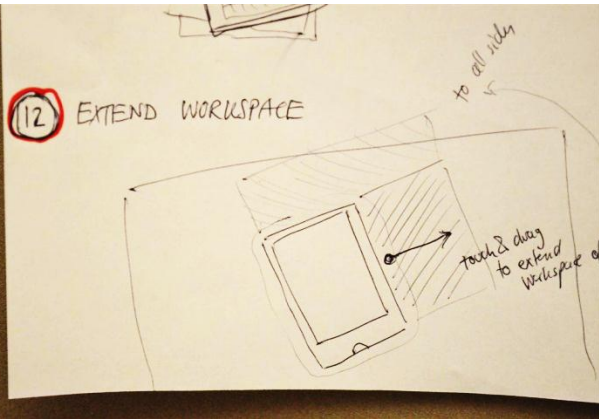
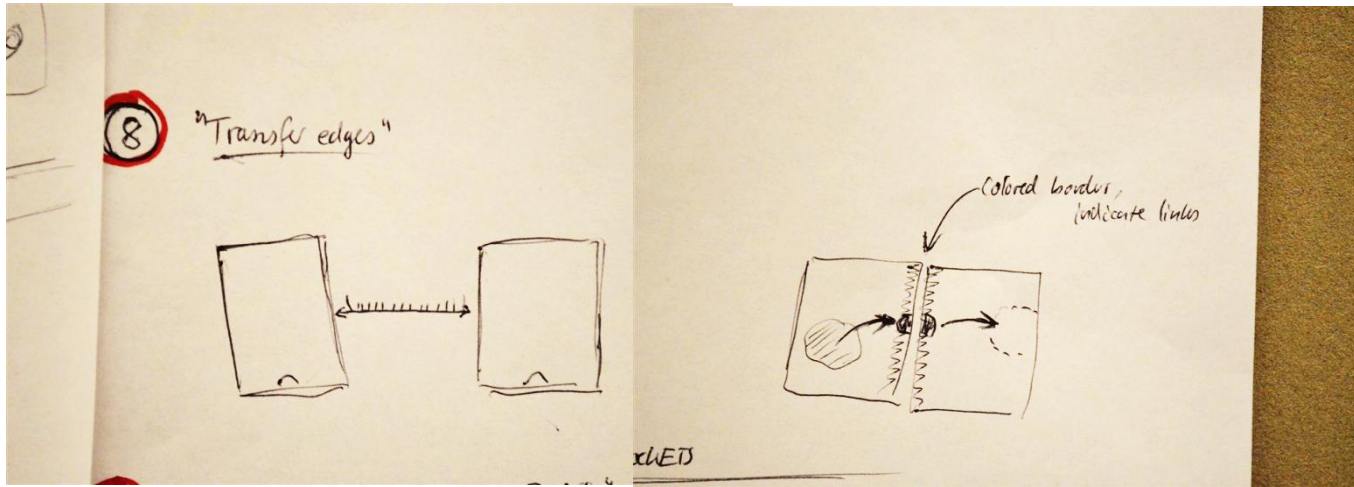
③ "two-handed"

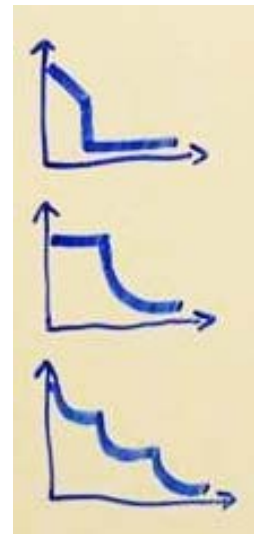
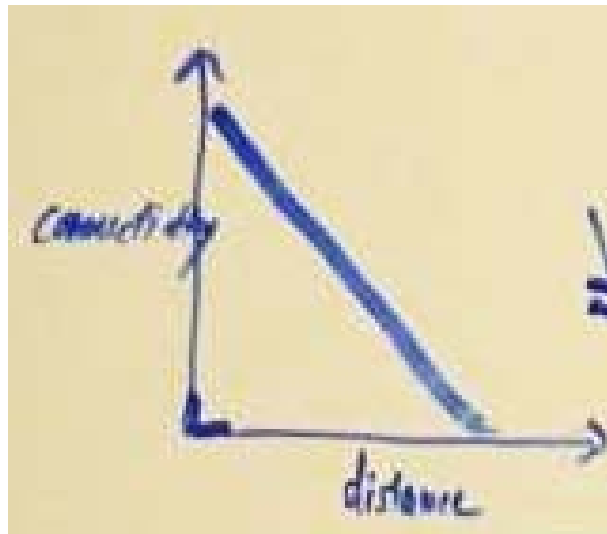
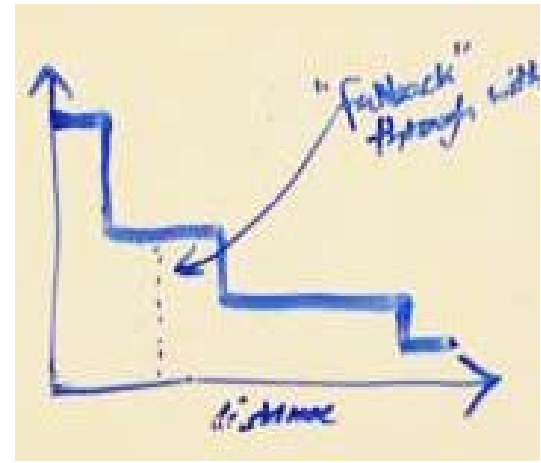
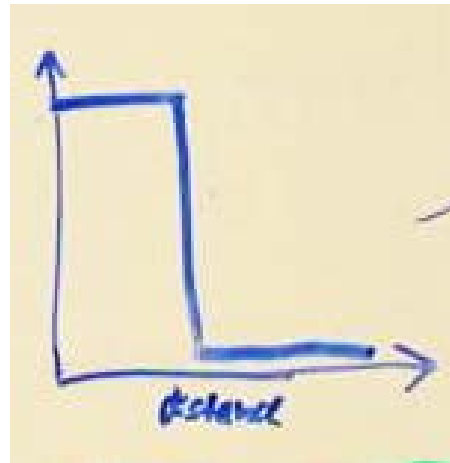
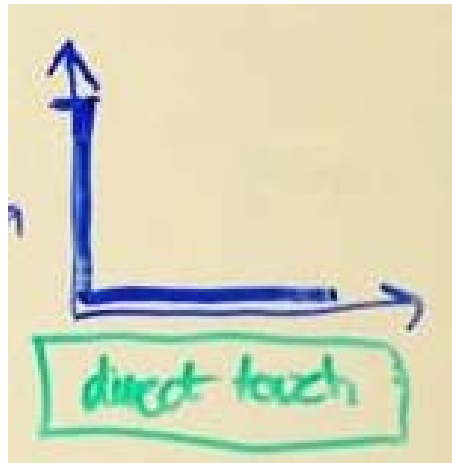
③ "two-handed beam"



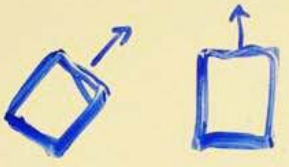
④ "Mirror"







ON SUR



in



**Exploratory
study: 10
participants**

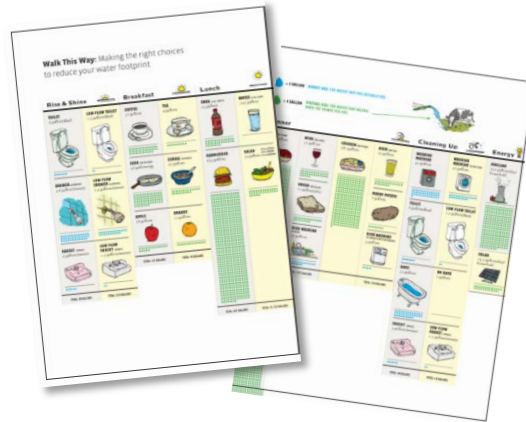


**Foam-core
mockups of
devices**

Tasks

Tasks

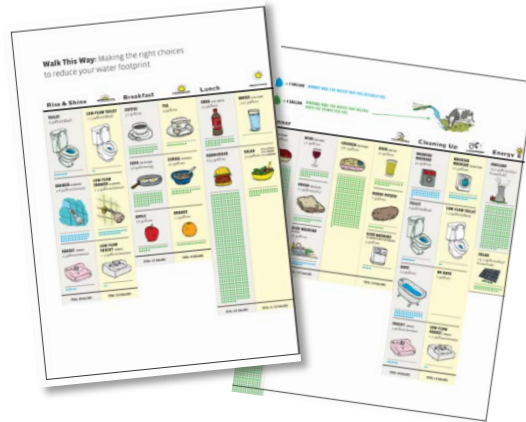
collaborative



Tasks

collaborative

competitive

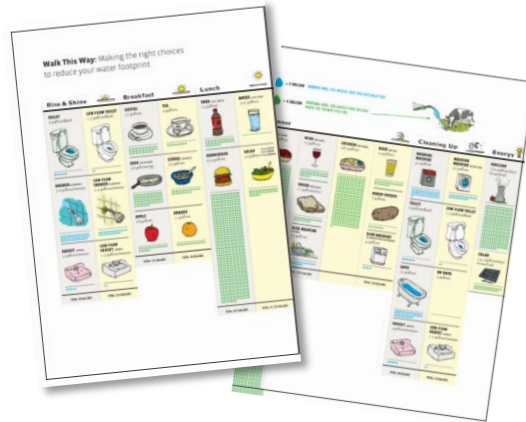


Tasks

collaborative

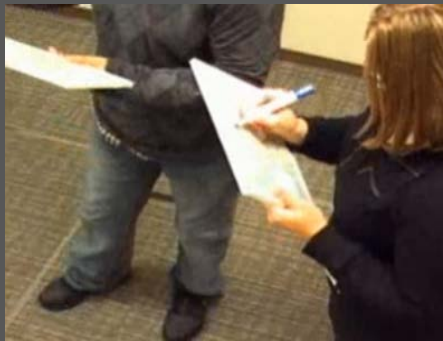
competitive

individual





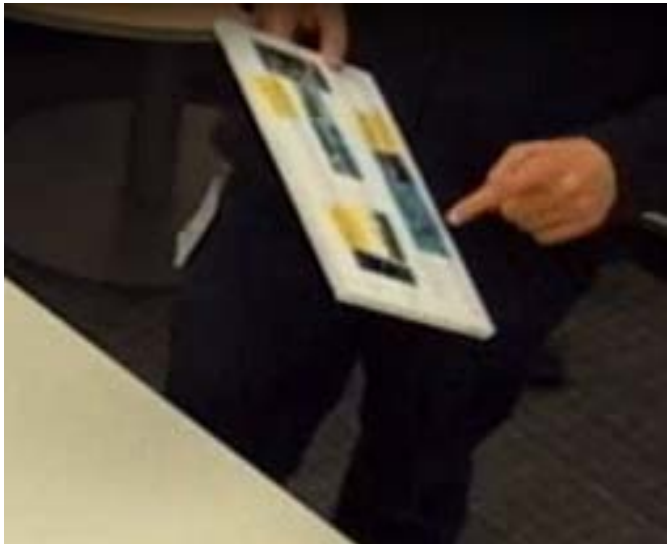
Collaborative



Individual



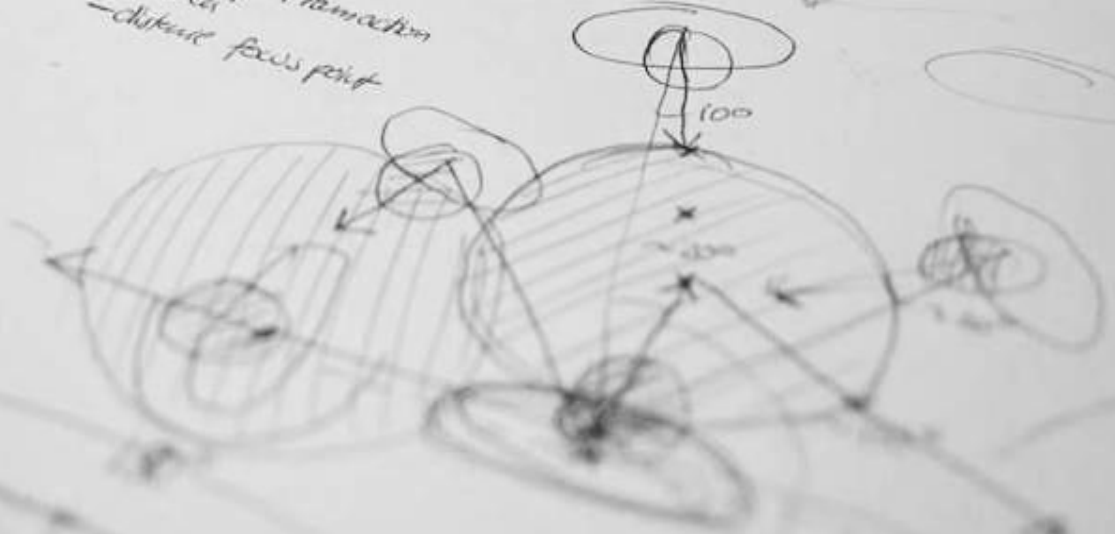
Competitive



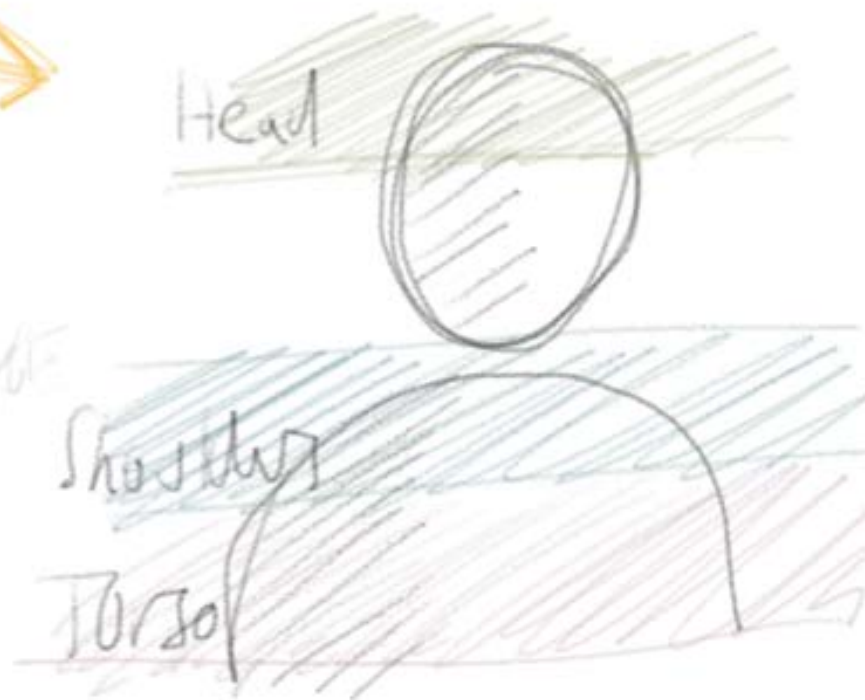
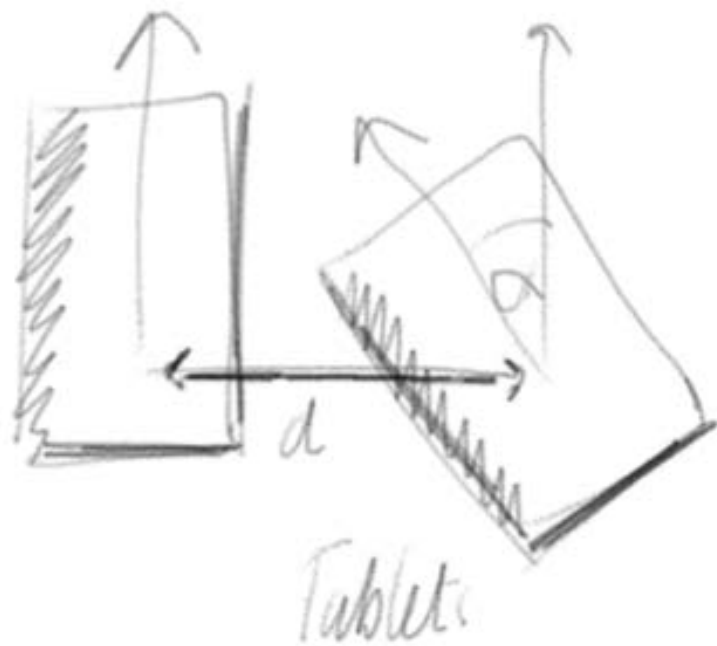
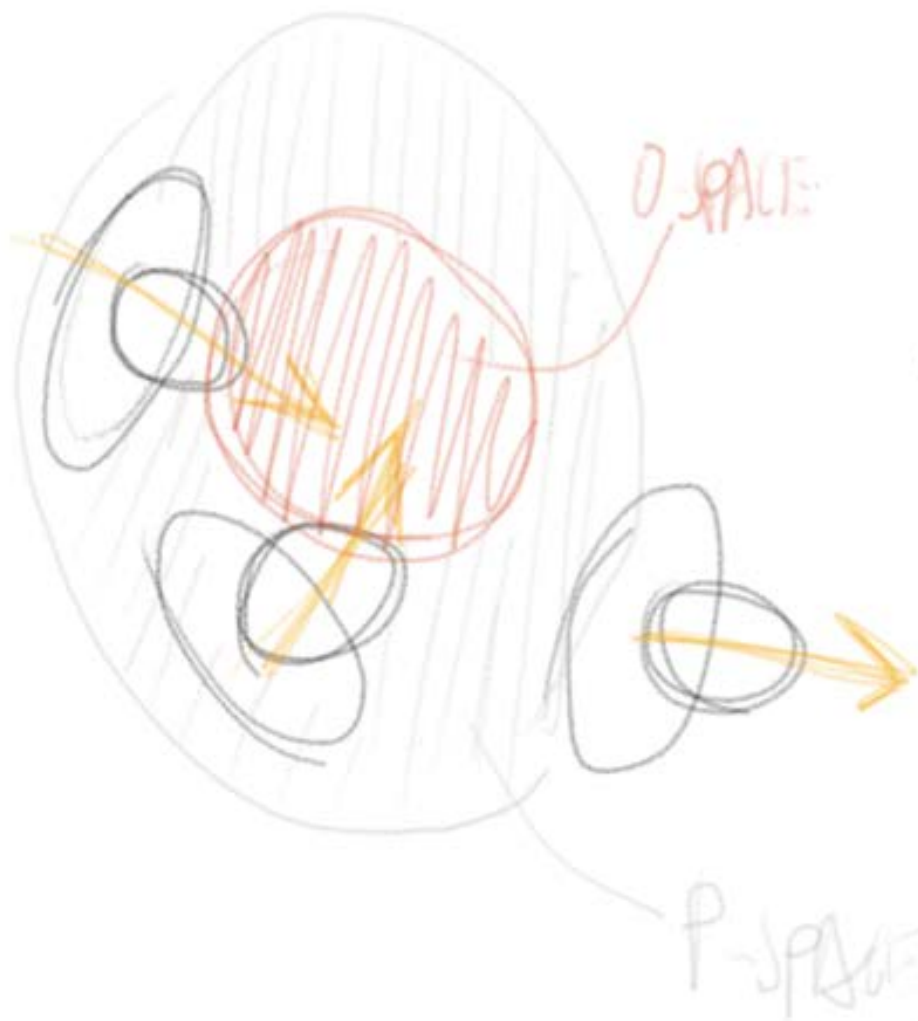


⑤
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- orbital interaction
- orbital areas
- distinct focus point



F-FORMATIONS





Top left



debat top of head



c_1

c_2



c_3

Cutting plane head
Segment (1)

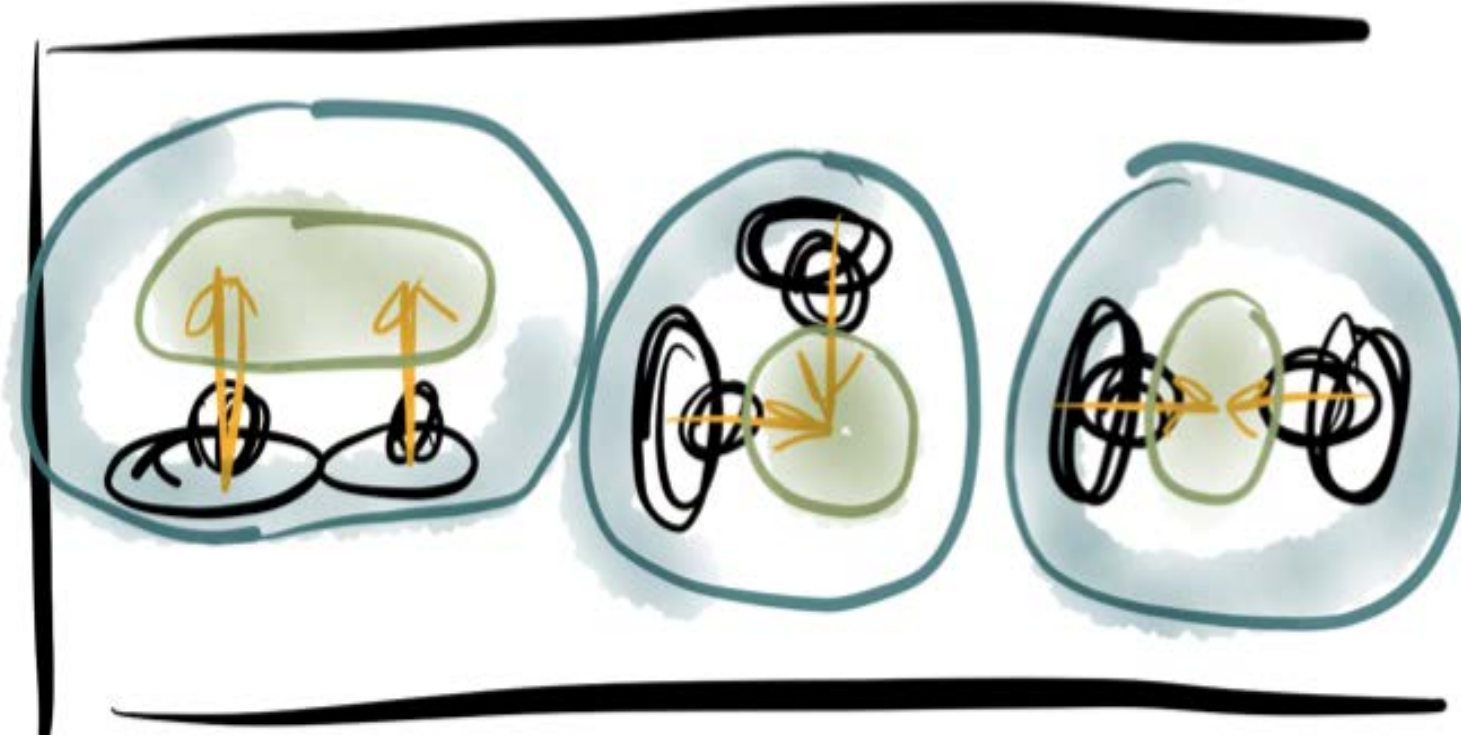
Cutting plane
Shoulder
Segment (2)



From σ'

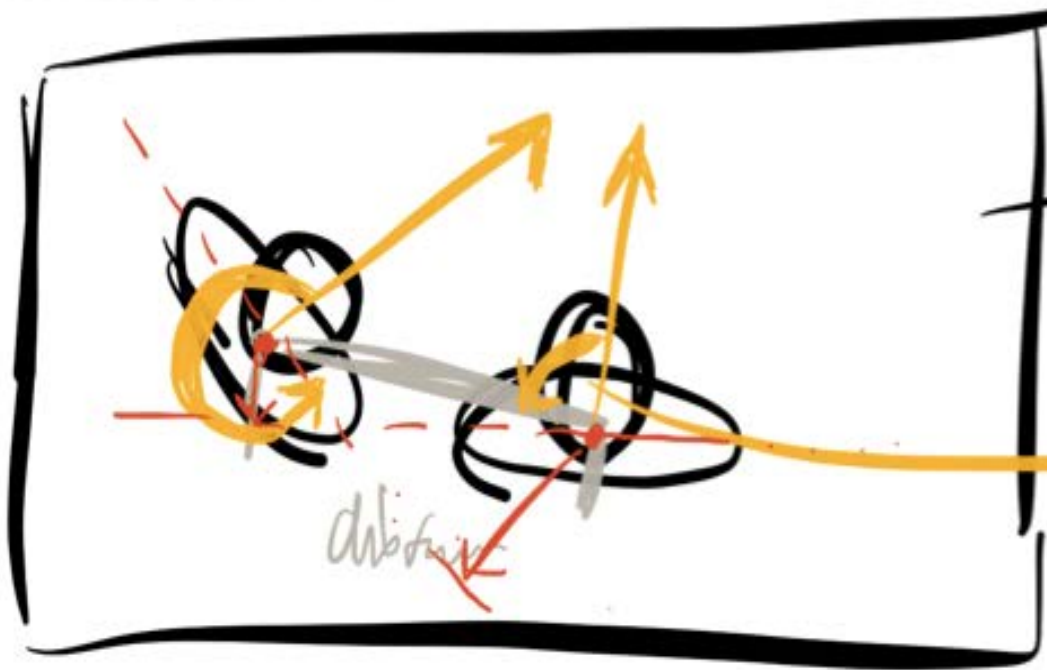
7.70
6.40





could be part of figure 2 (smaller!)

deletion formations



tolerance values

angles

deletion

FIGURES MSR PAPER

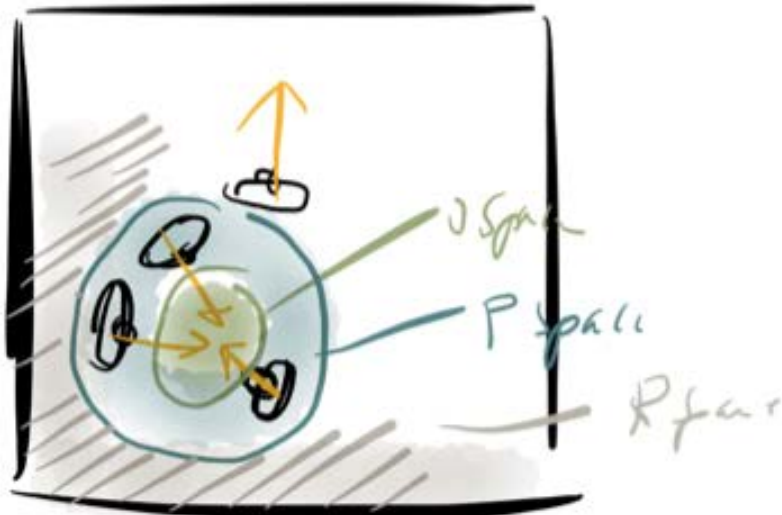


FIGURE 2



FIGURE 6



FIGURE 7

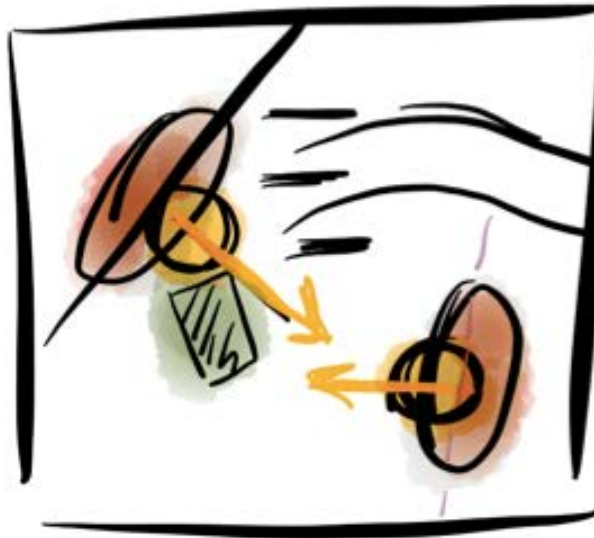


FIGURE 8

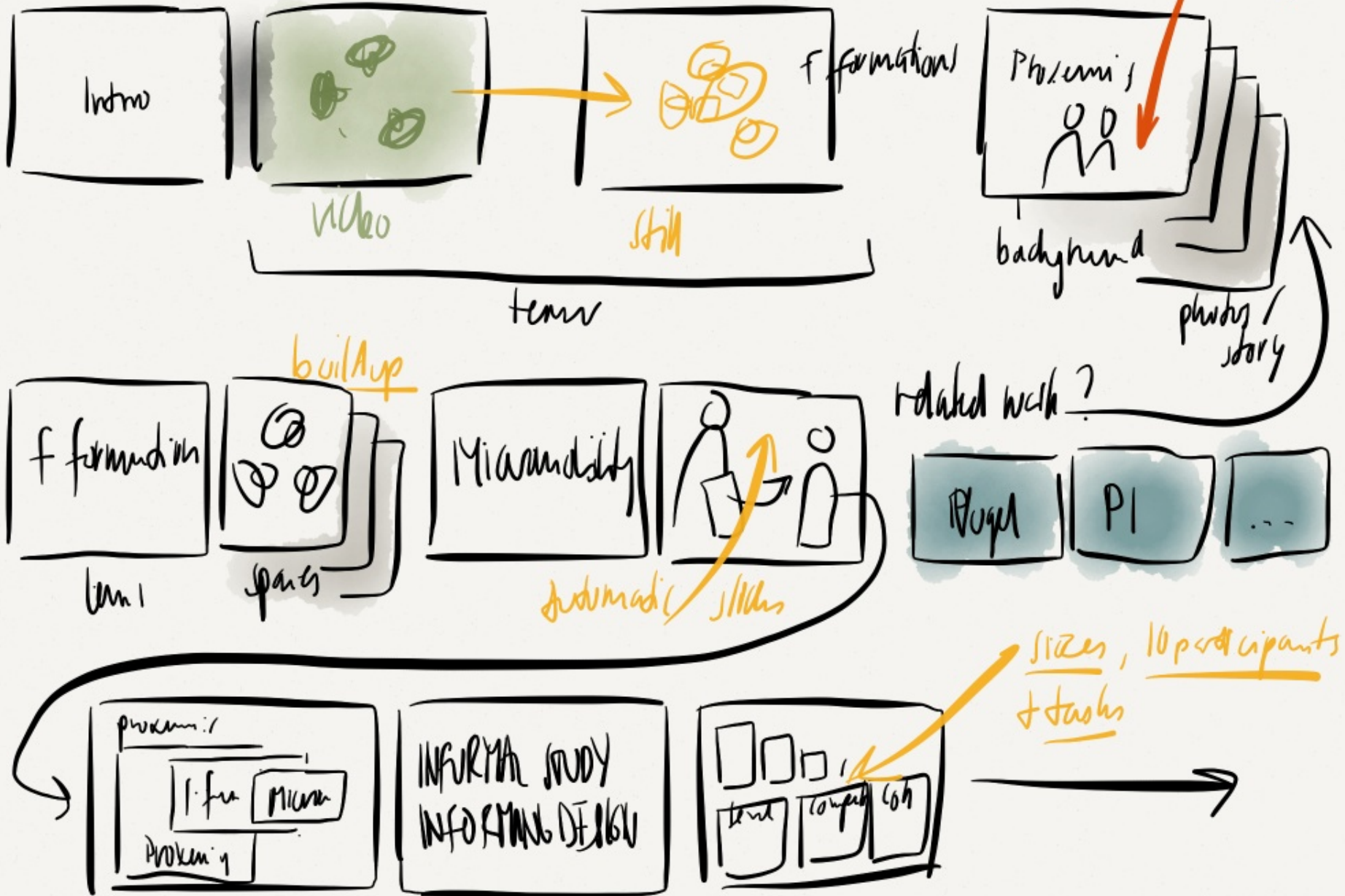
Screenshot System

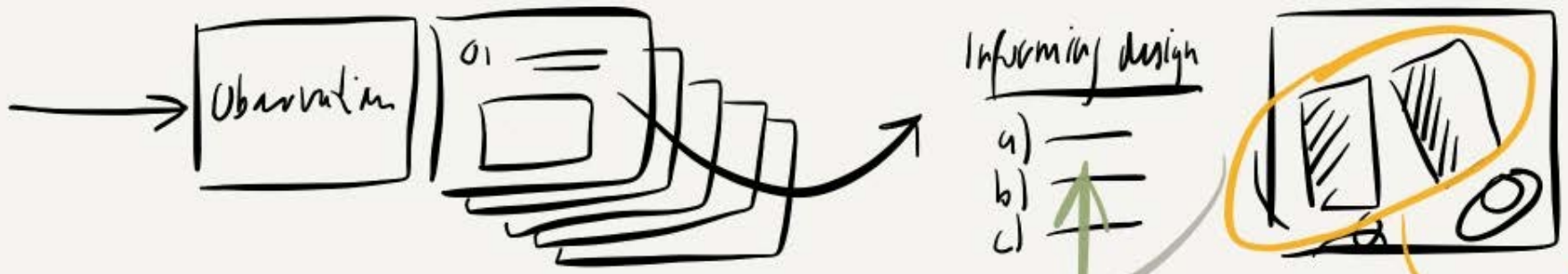
Map to figure 7

Combine as one figure!

trilateral add radius for Munich

MSK GROUP TOGETHER (I)

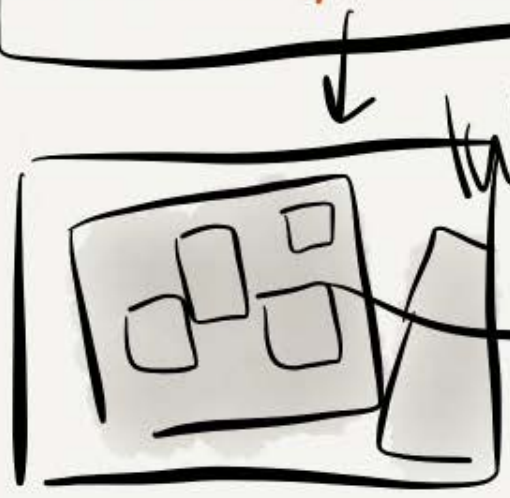




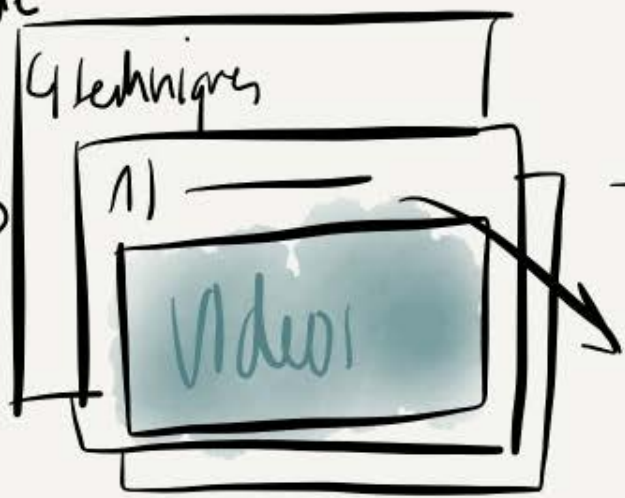
light-weight federations of devices!

- ▷ Detect people's formations
- ▷ Changes in micro-mobility allow federation of devices
- ▷ More & copy digital content

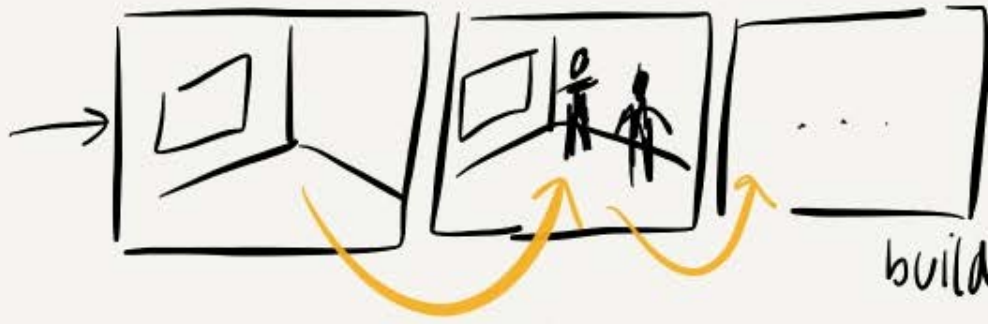
Considering Proximity of people + Proximity of devices



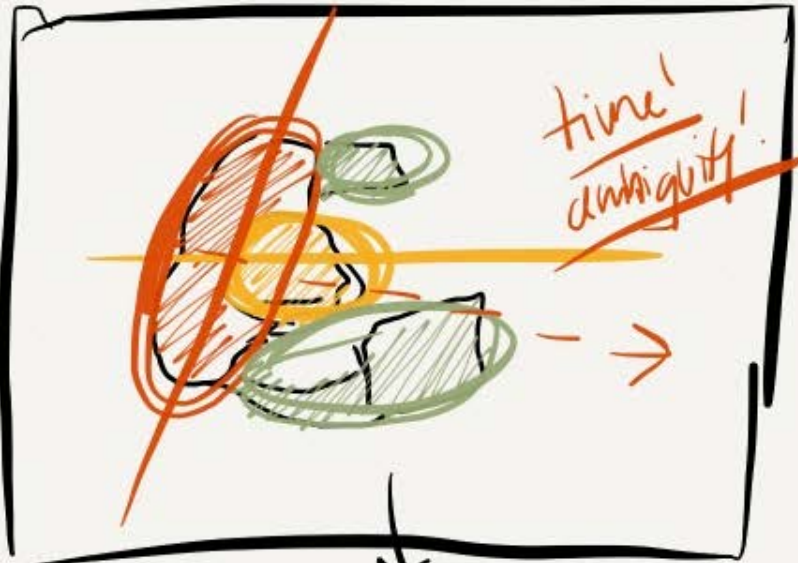
Interference



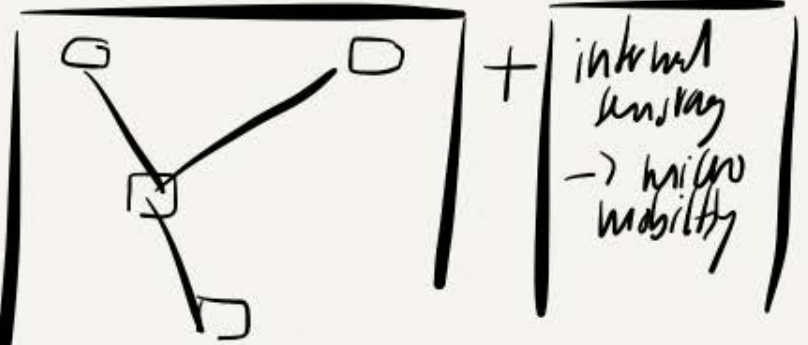
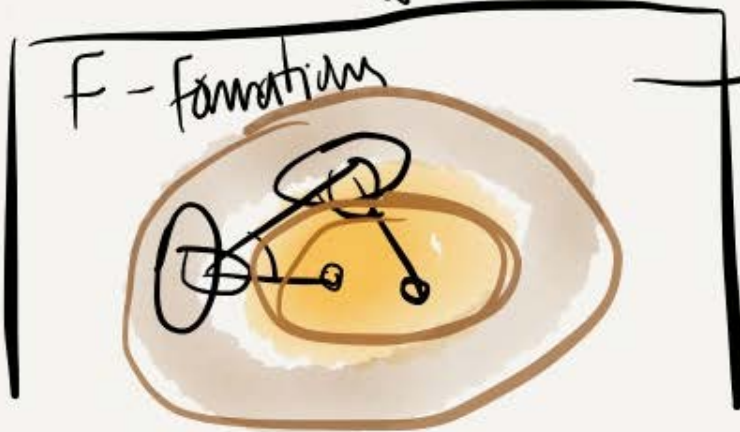
But: how to detect formation of people & devices?

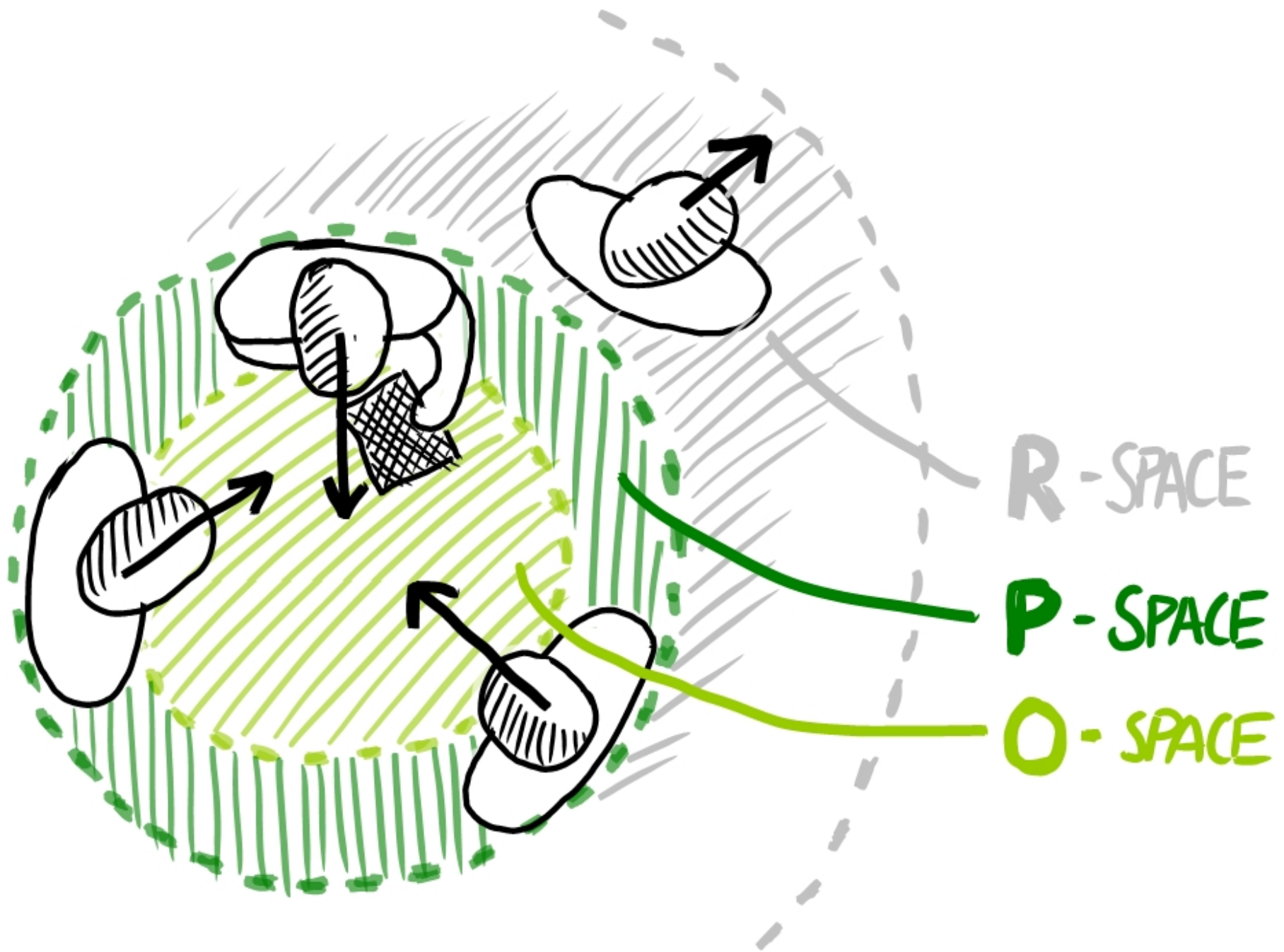


bill boxon?

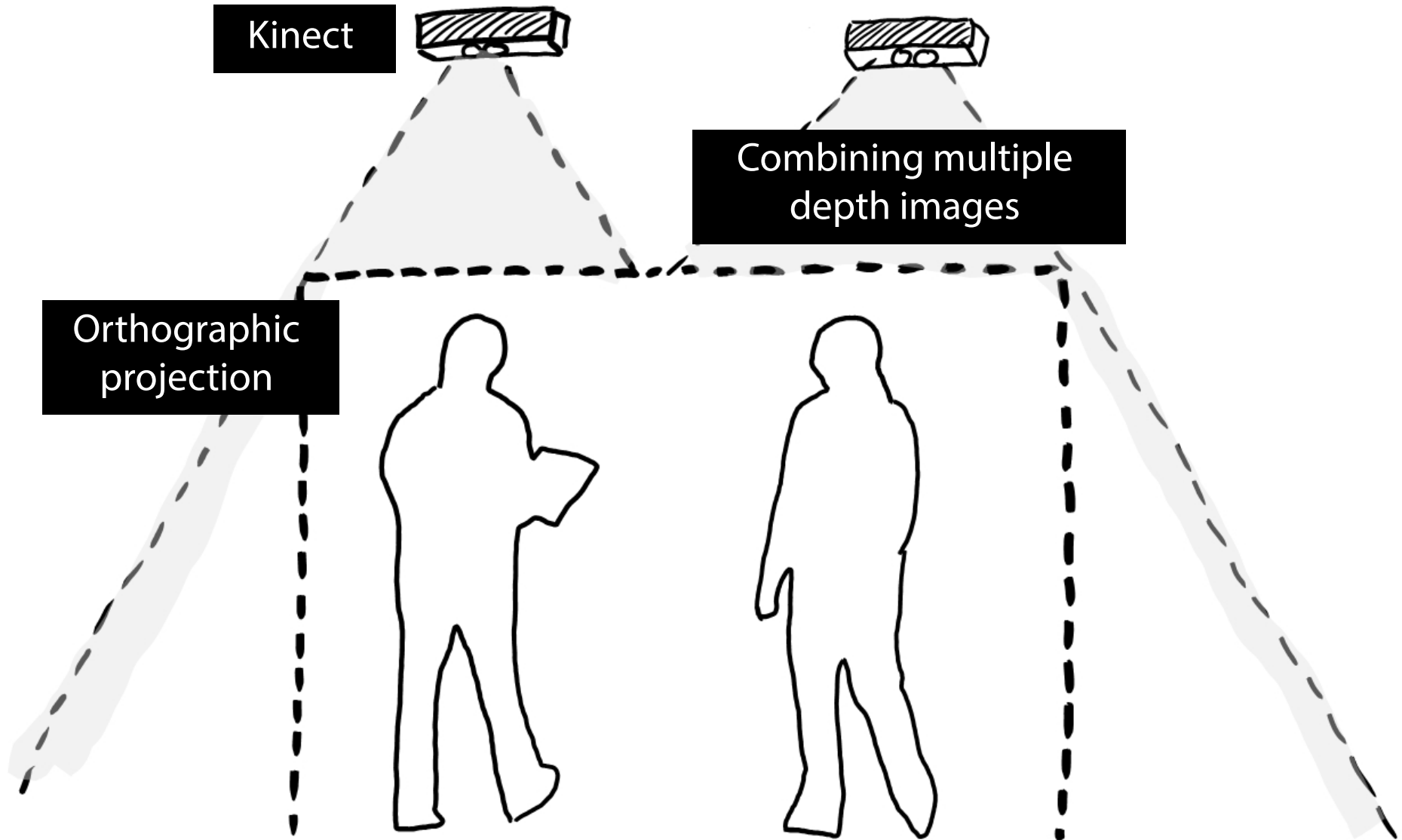


problems people ✓
problems devices ?

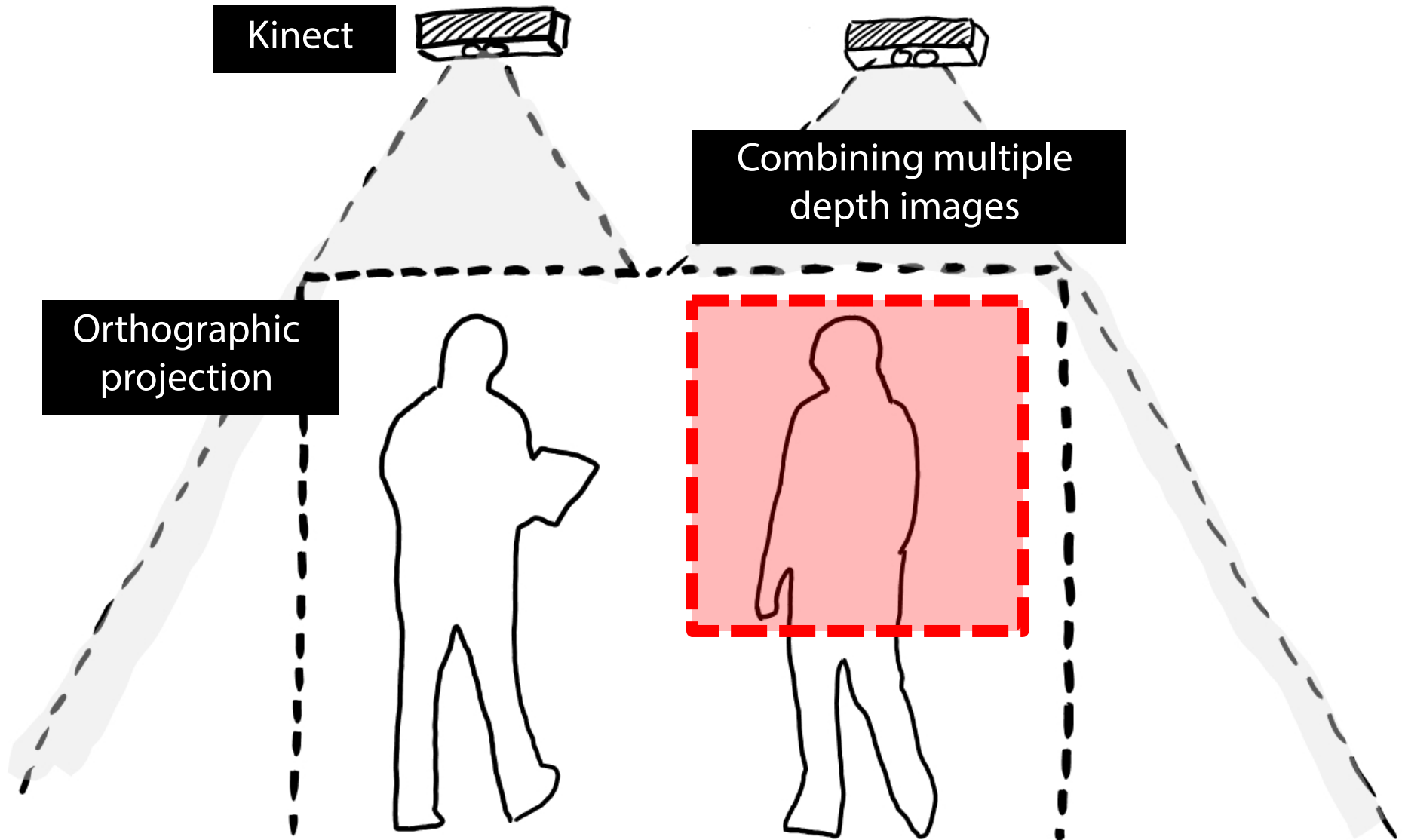




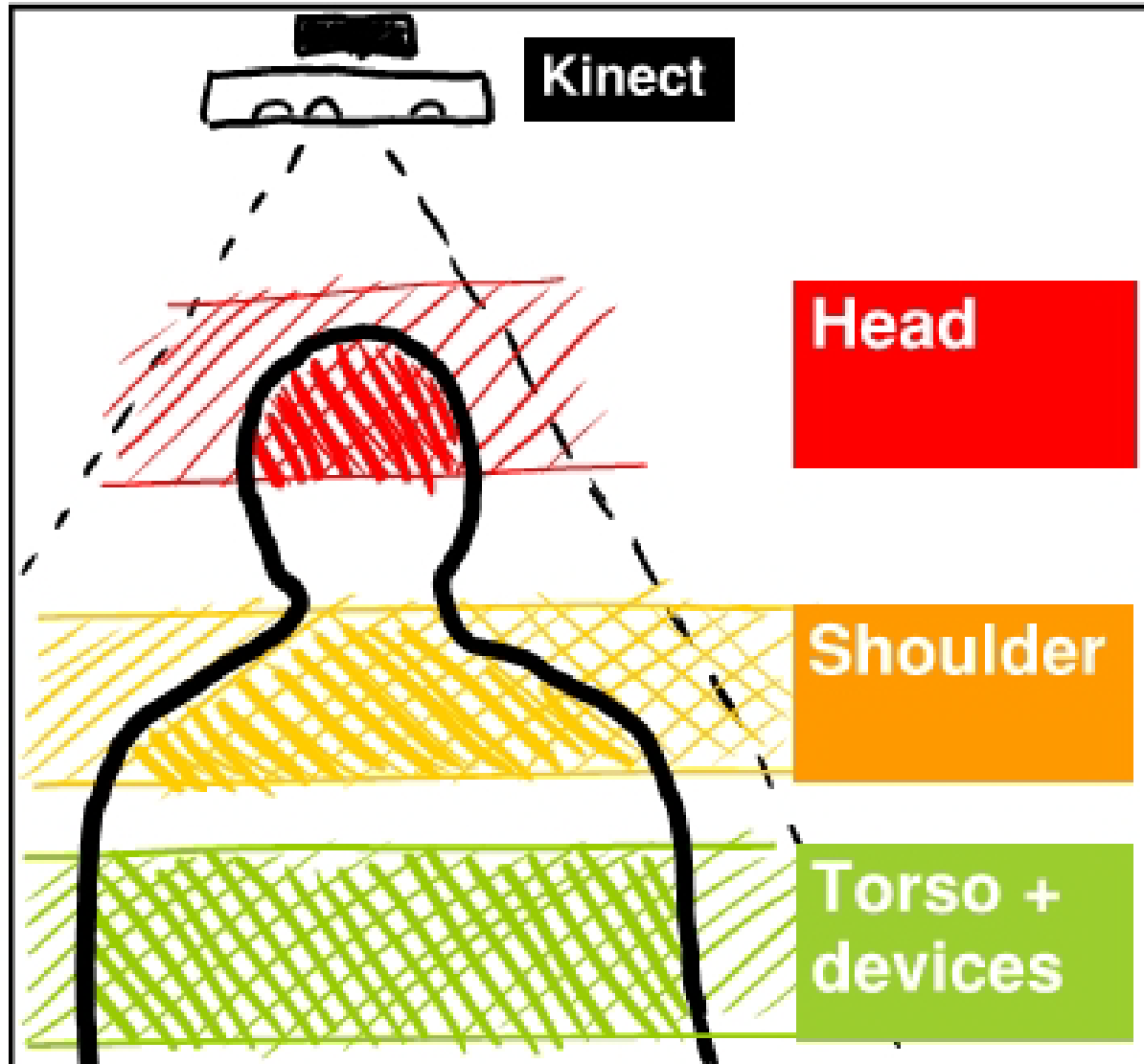
Tracking people's position

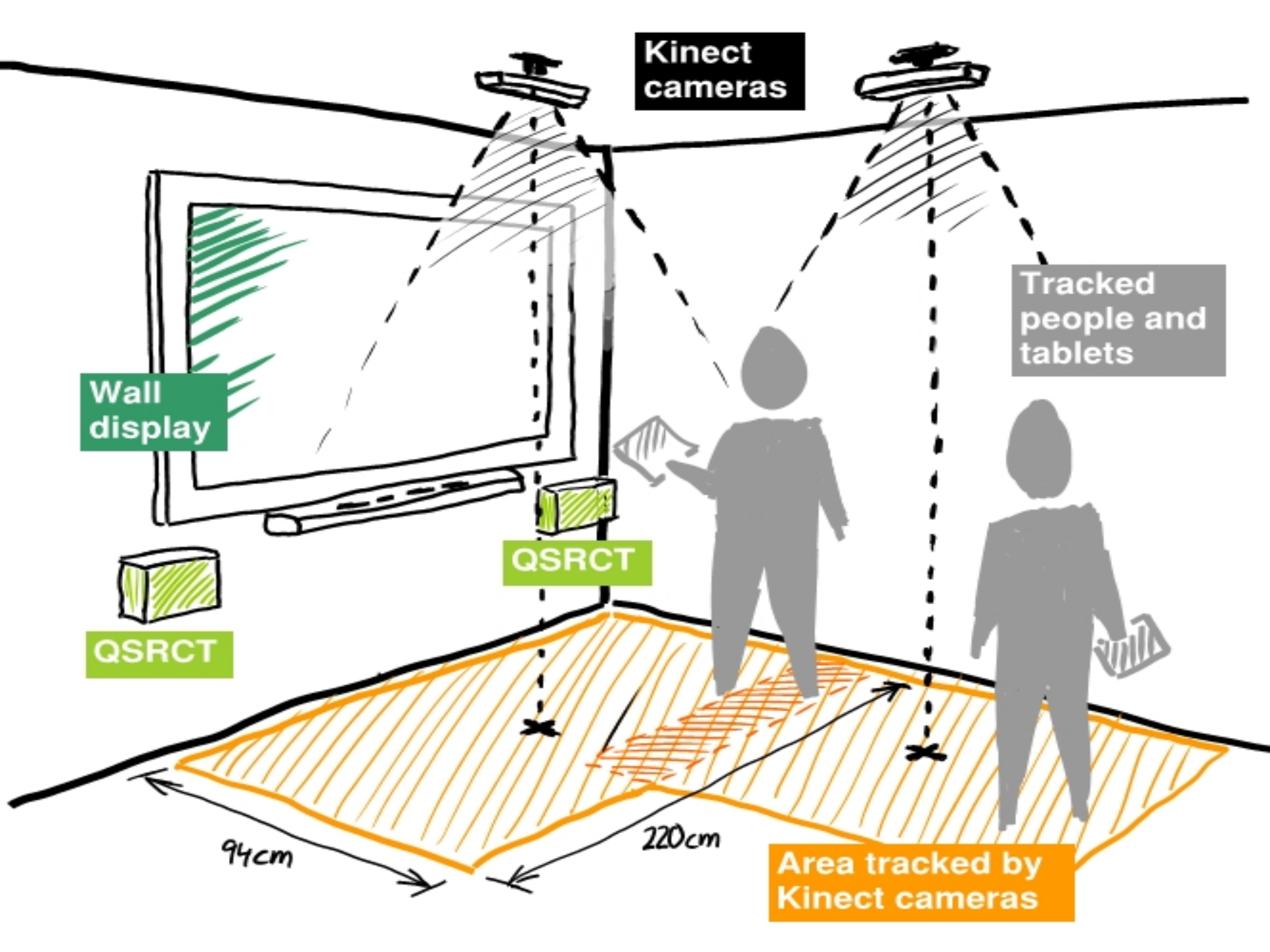


Tracking people's position



Tracking people's position

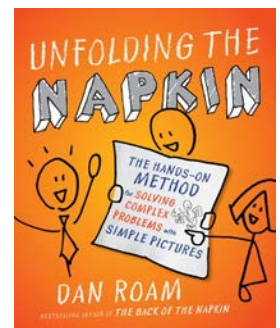
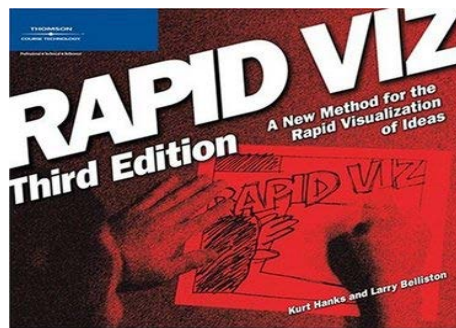
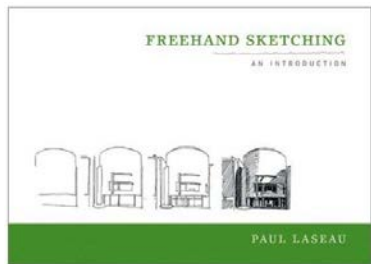
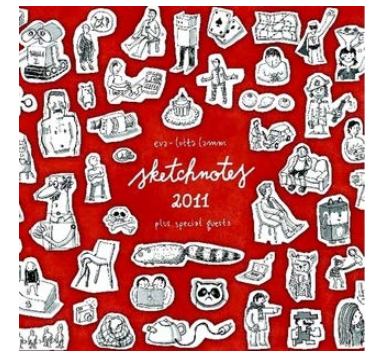
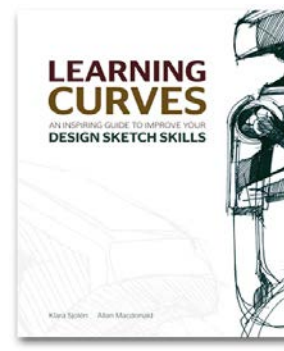
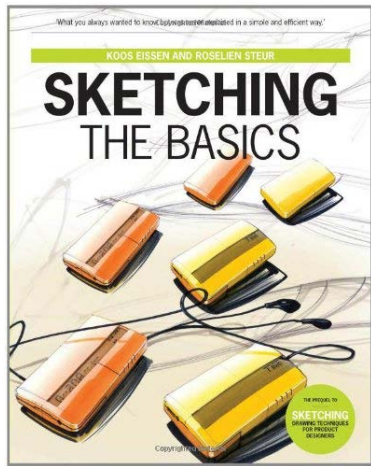
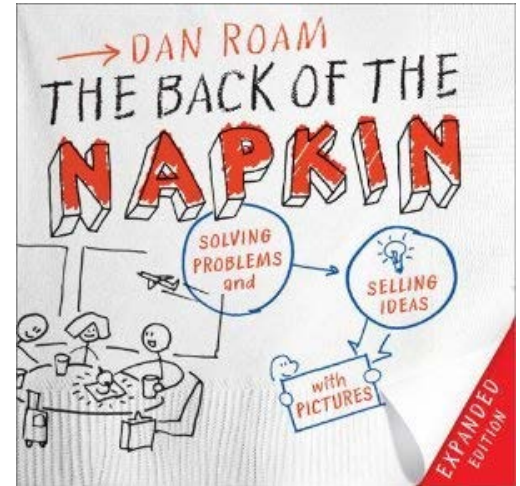
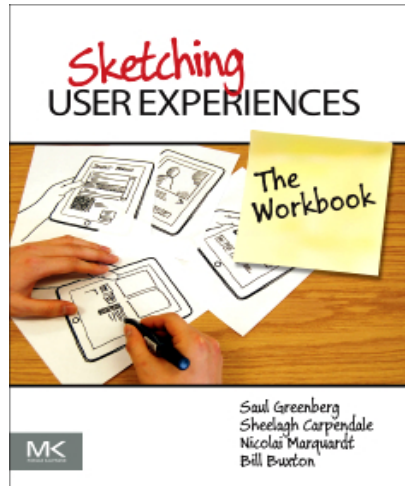
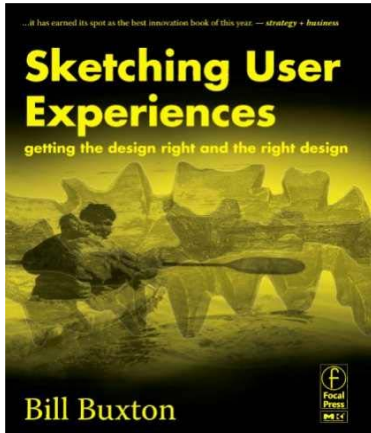




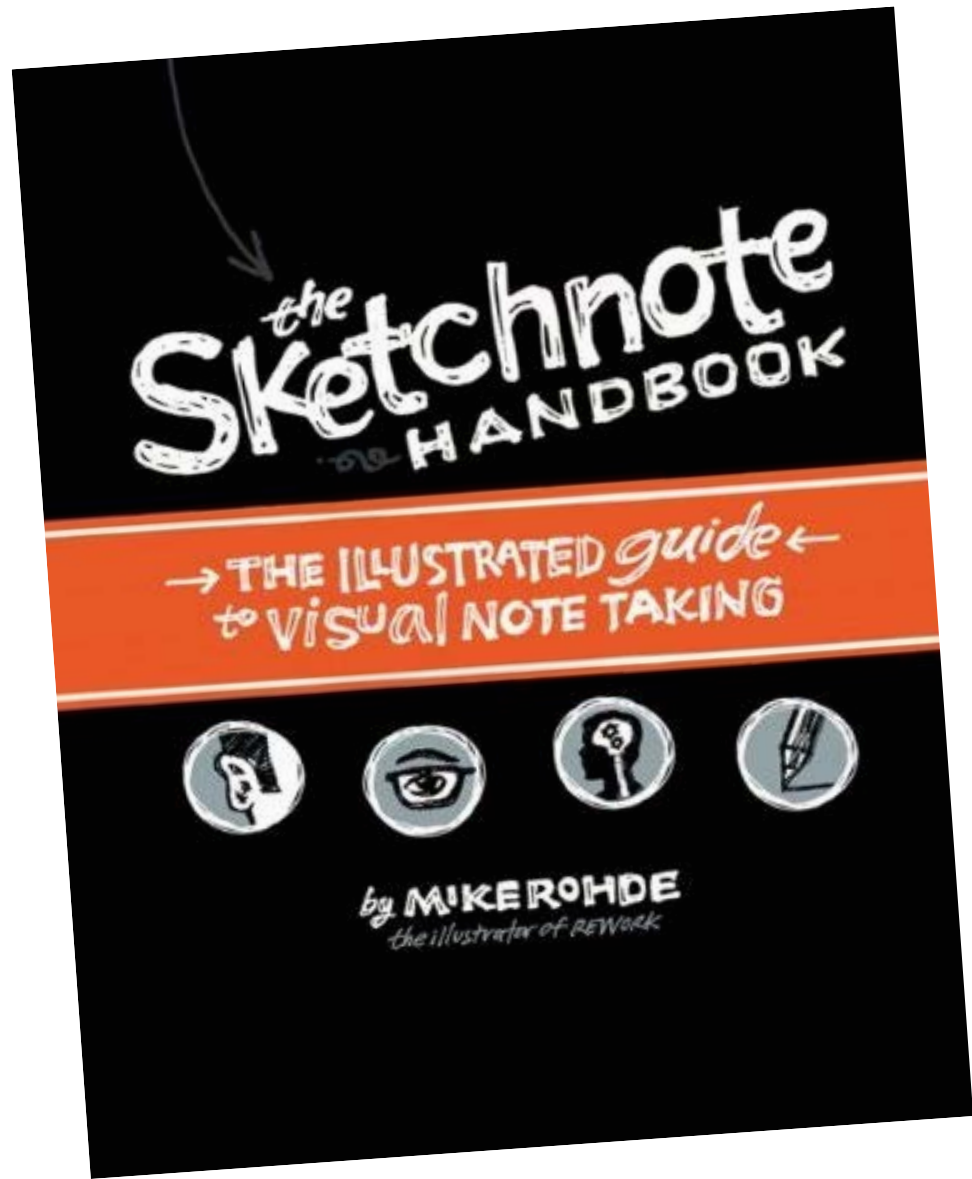


University College London
Interaction Centre

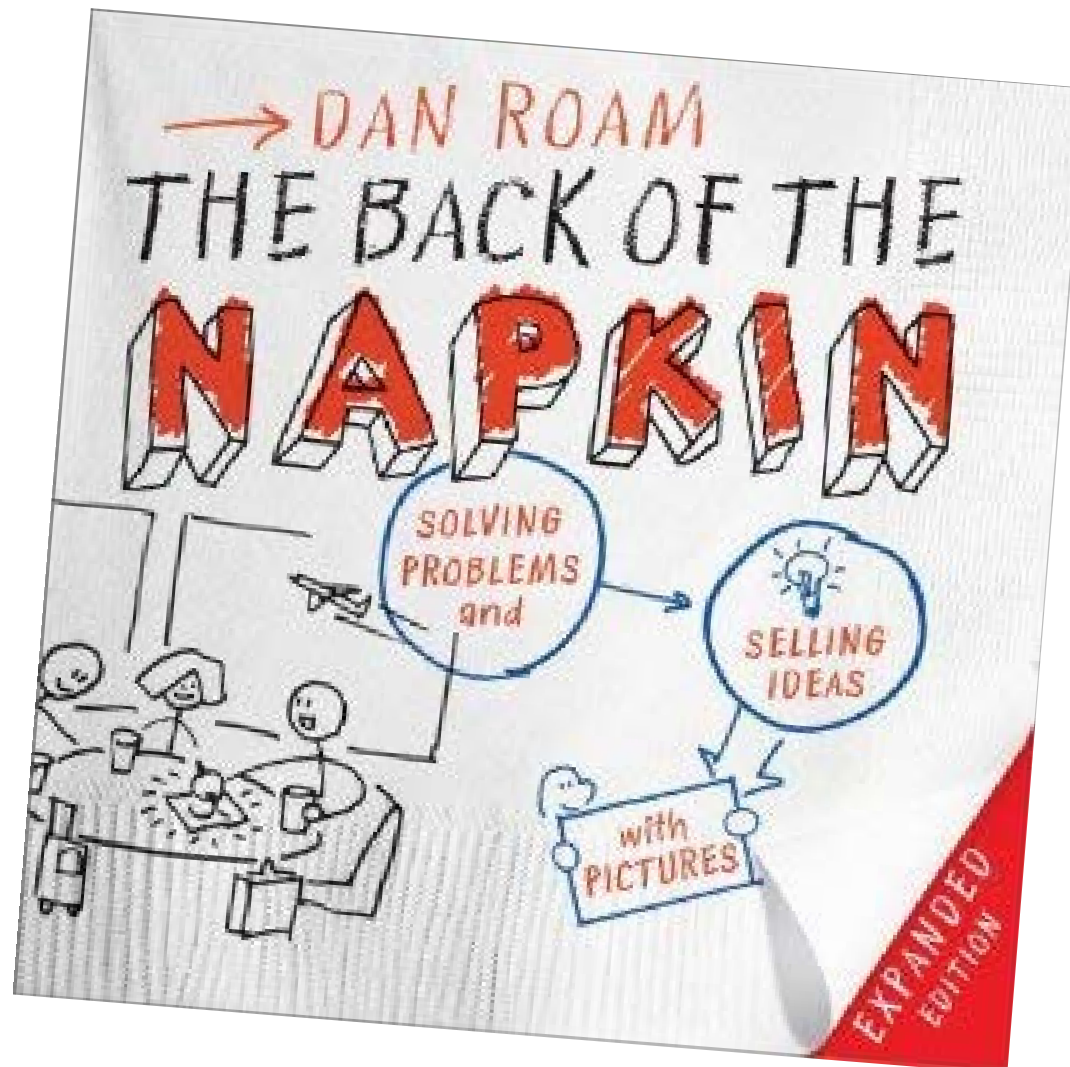
Learning more...



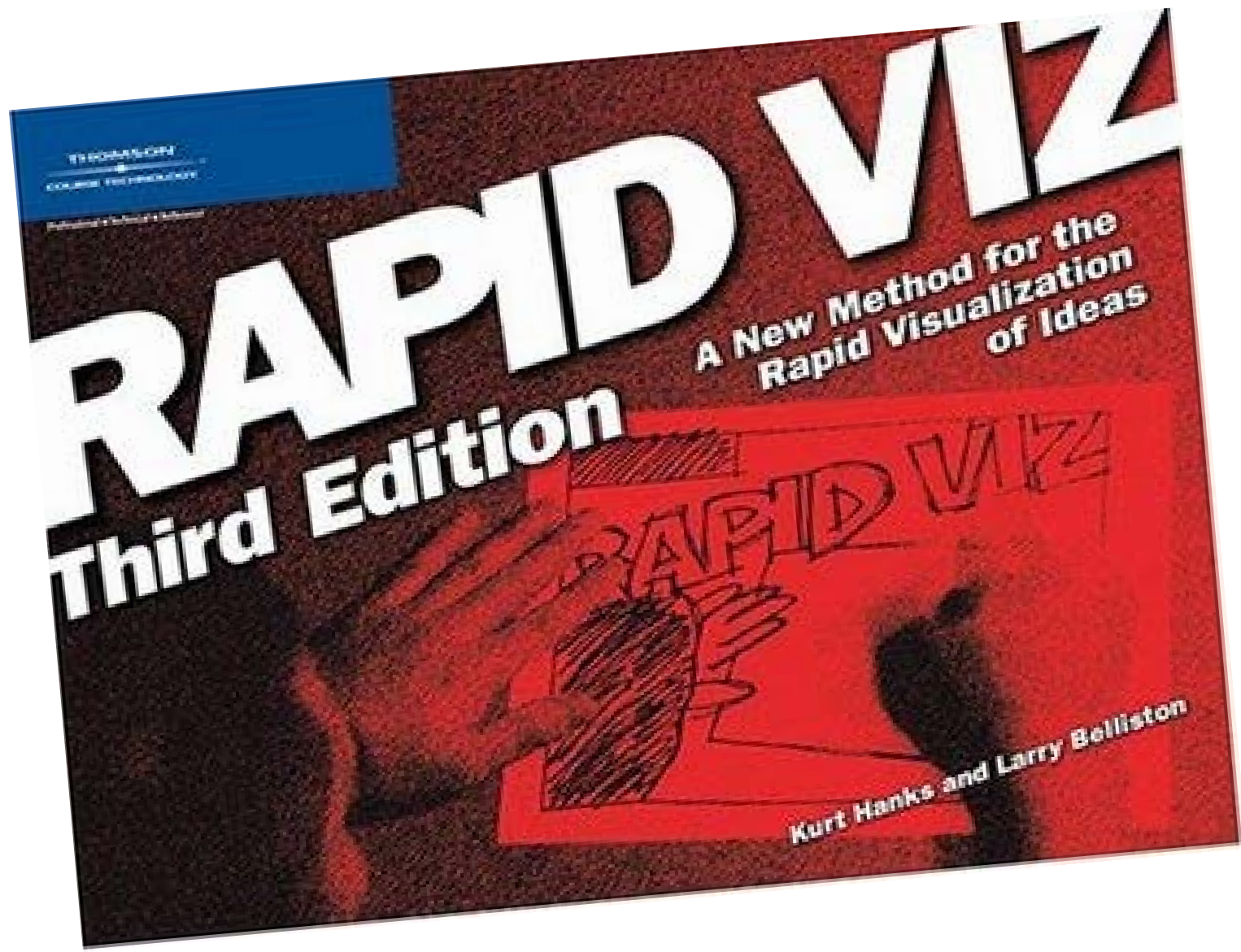
Sketching as everyday habit



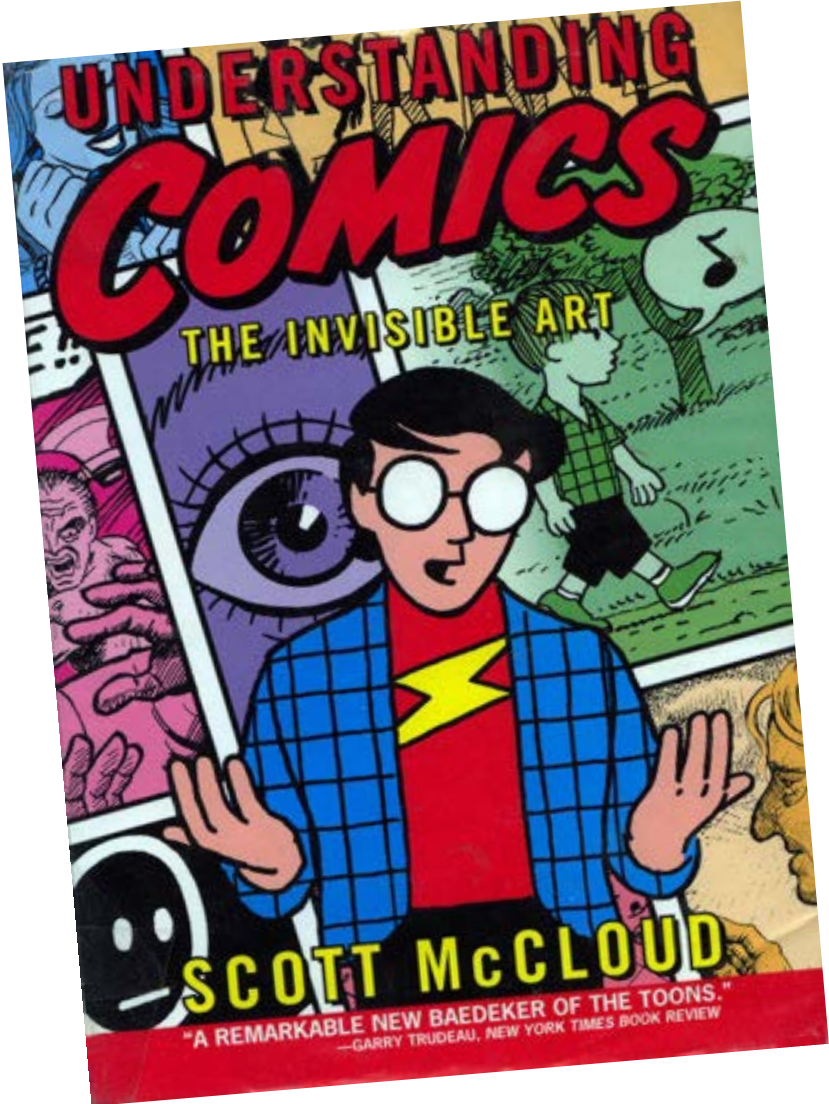
Problem solving with simple sketches



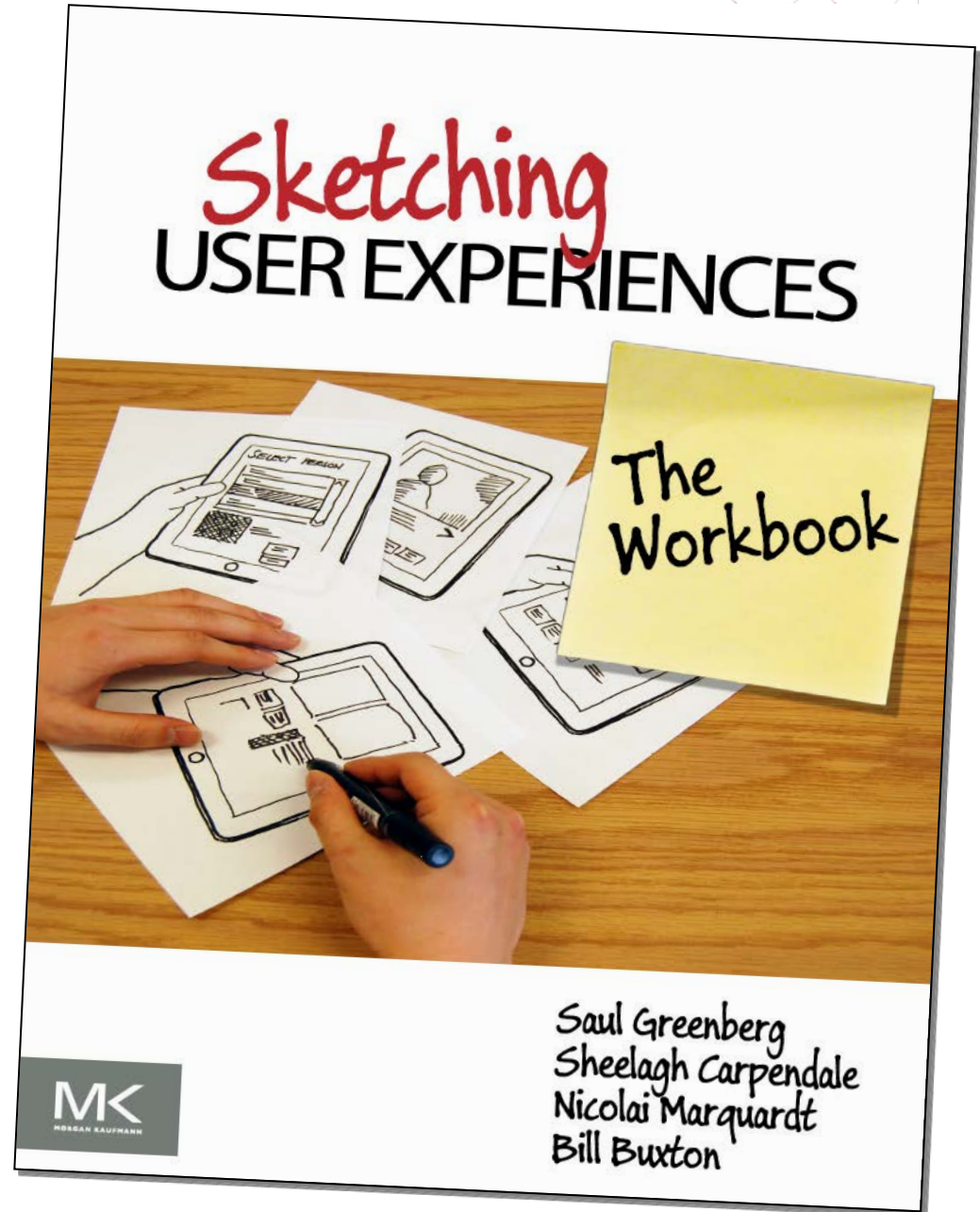
Sketching ideas



Visual storytelling



Sketching user experiences



Sketching workbook website: <http://saul.cpsc.ucalgary.ca/sketchbook/>

References:

- [1] Buxton, W. Sketching User Experiences, Morgan Kaufmann 2007.
- [2] Greenberg, S., Carpendale, S., Marquardt, N., Buxton, B.
Sketching User Experiences: The Workbook. Morgan Kaufmann, 2012.
- [3] Stevens, G. UX Lecture Series University of Siegen 2010.
- [4] Snyder, C. Paper Prototyping, Morgan Kaufmann 2003.
- [5] Canemaker, J. Paper Dreams: The Art And Artists Of Disney Storyboards, Disney Editions 1999.



Jack Dorsey | Software Architect





Sketching User Experiences

The Workshop

Nicolai Marquardt

Interaction Design Guest Lecture at LMU
University College London
www.nicolaimarquardt.com