10+10
Descending the Design Funnel

Recap

The Design Funnel

- *Cycles through elaboration and reduction*

Concept generation → Concept selected

Modified from Pugh, S. (1990) Total design: Integrated methods for successful products engineering. Addison-Wesley. P. 75
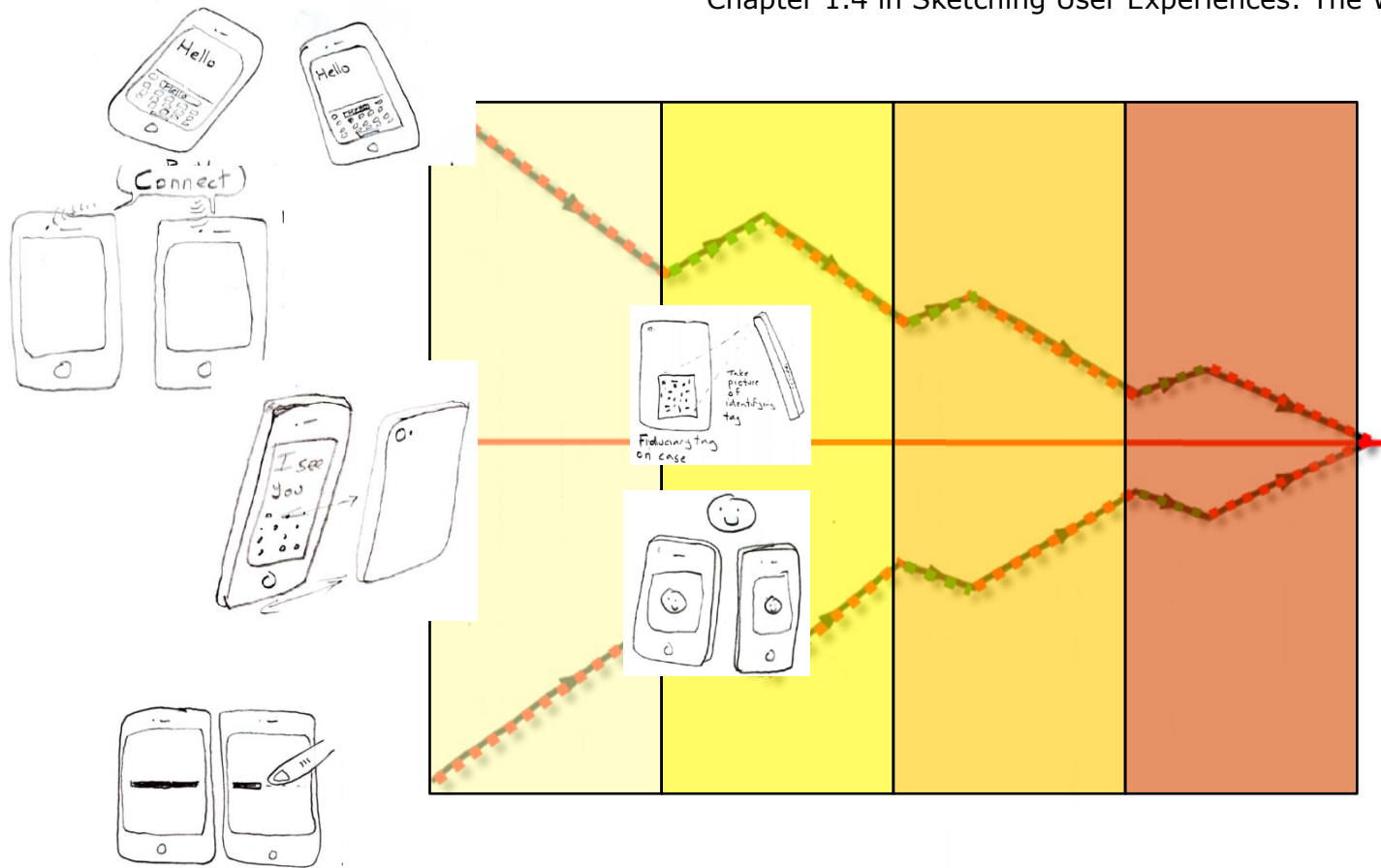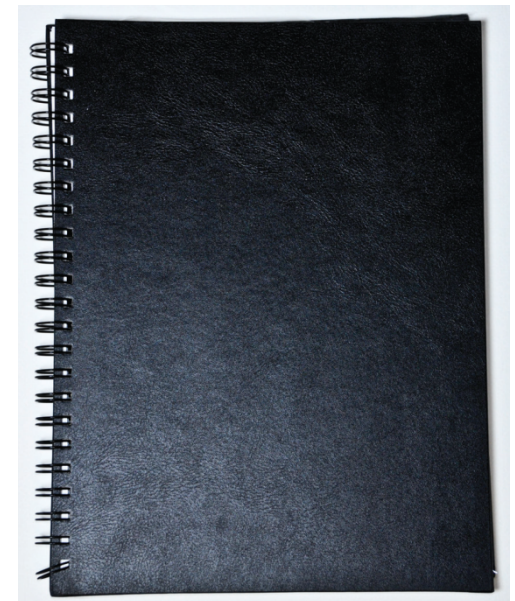
The 10 plus 10 Method

1. State your design challenge
   - problem to solve
   - client need
   - novel system that takes advantage of particular technology…

2. Generate 10+ different design concepts that addresses that challenge
   - brainstorming
   - be as creative and diverse as possible
   - don't judge designs
   - capture essence of idea, not details

The 10 plus 10 Method

3. Reduce the number of design concepts OR repeat
    - o   review all designs
    - o   discard ones that don't have merit
    - o   use sketch to explain and get feedback on remaining designs from others
    - o   gather reactions (including your own)

    OR

    - o   Based on reflection, repeat step 2

4. Choose the most promising concept(s)
    - o   Your starting point

The 10 plus 10 Method

5. Produce 10 details / variations of that concept

    o   explore the concept

    o   generate different ways of realizing the concept

    o   dig deeper in a particular way (i.e., flesh out details)

6. Present your ideas to a group

    o   coffee / donuts go a long way

    o   solicit feedback (positive, what could be improved, etc.)

    o   Suggestions about redesigns

7. As your ideas change, sketch them out

    o   that is, go back to step 1, but deeper into the design funnel

Example: Design Challenge

How can two people connect their mobile devices for information exchange (e.g., photo transfer) without resorting to dialog boxes or other tedious interface requests?

Assumptions

- mobile device detects nearby phones
- they can initially do some limited communication
- you and the person can perform some action that both phones recognize as a 'handshake' affirming a full connection is desired. That is, it exploits social convention where you both agree to do something.
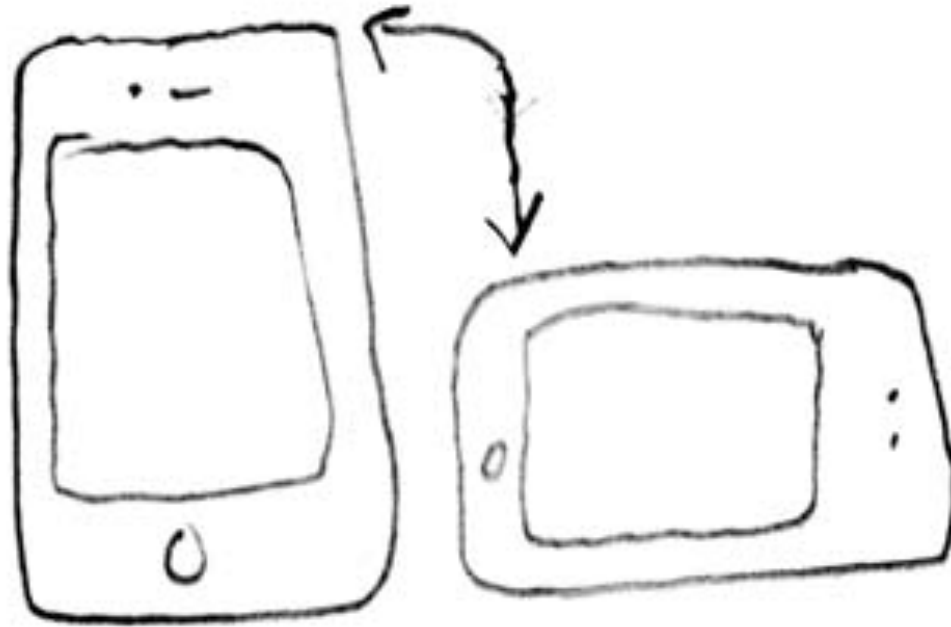
Generate 10 competing concepts

i) Enter an agreed upon keyword

Both people type a word chosen by them

Generate 10 competing concepts

ii) Mimic a rotation pattern

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

(within 5 seconds)

Generate 10 competing concepts

iii) Tracing across displays
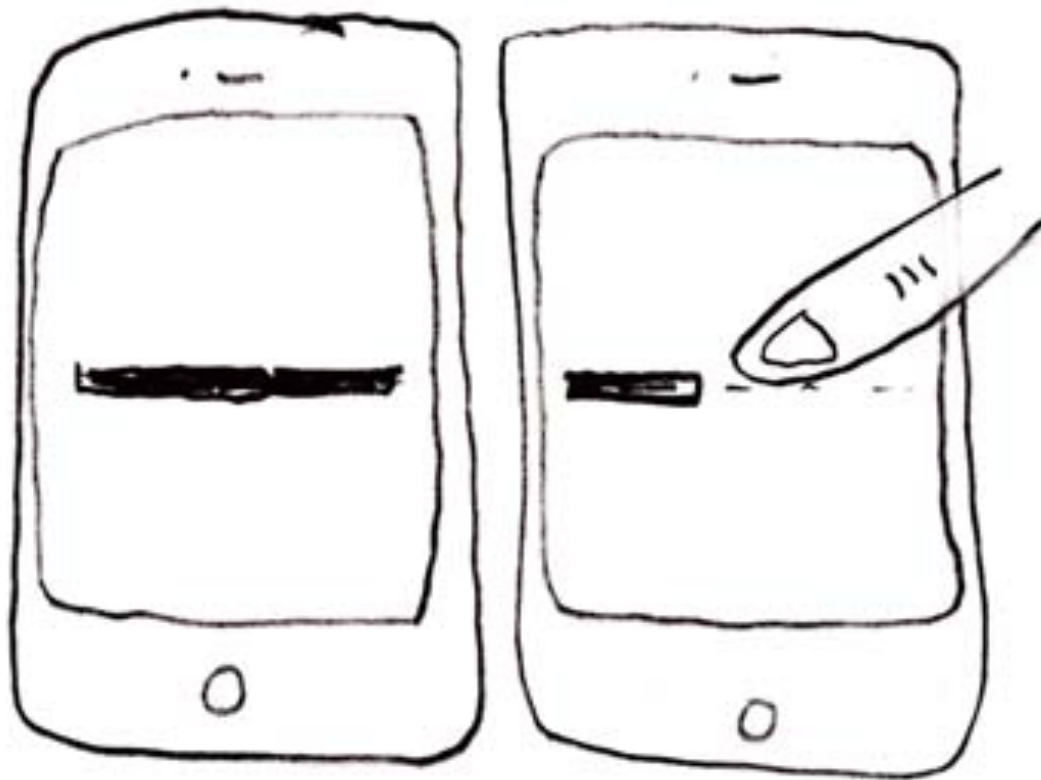
Synchronous gesture

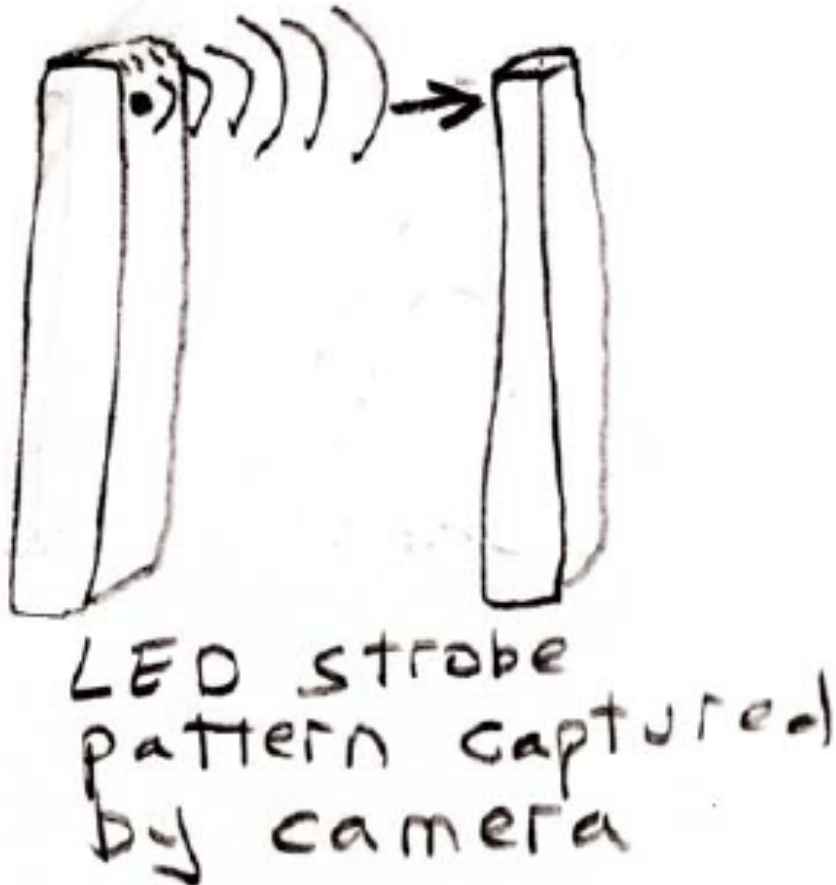Trace a line across both side by side devices as a single stroke
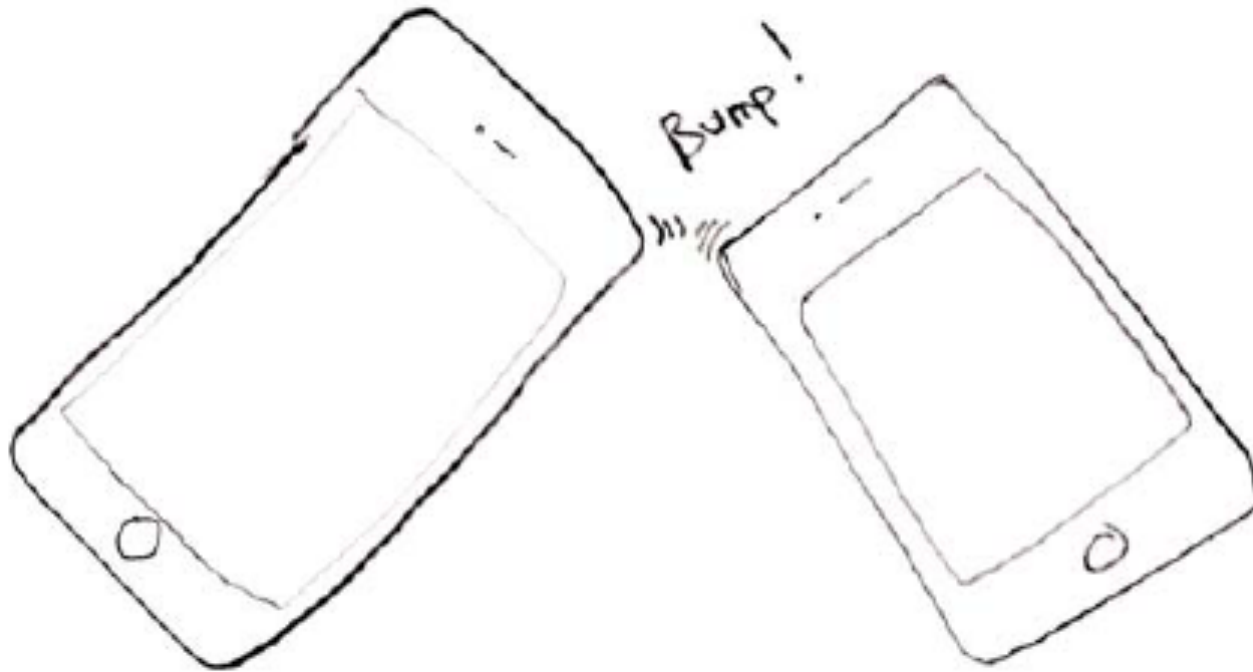
Generate 10 competing concepts

iv) Speak a command
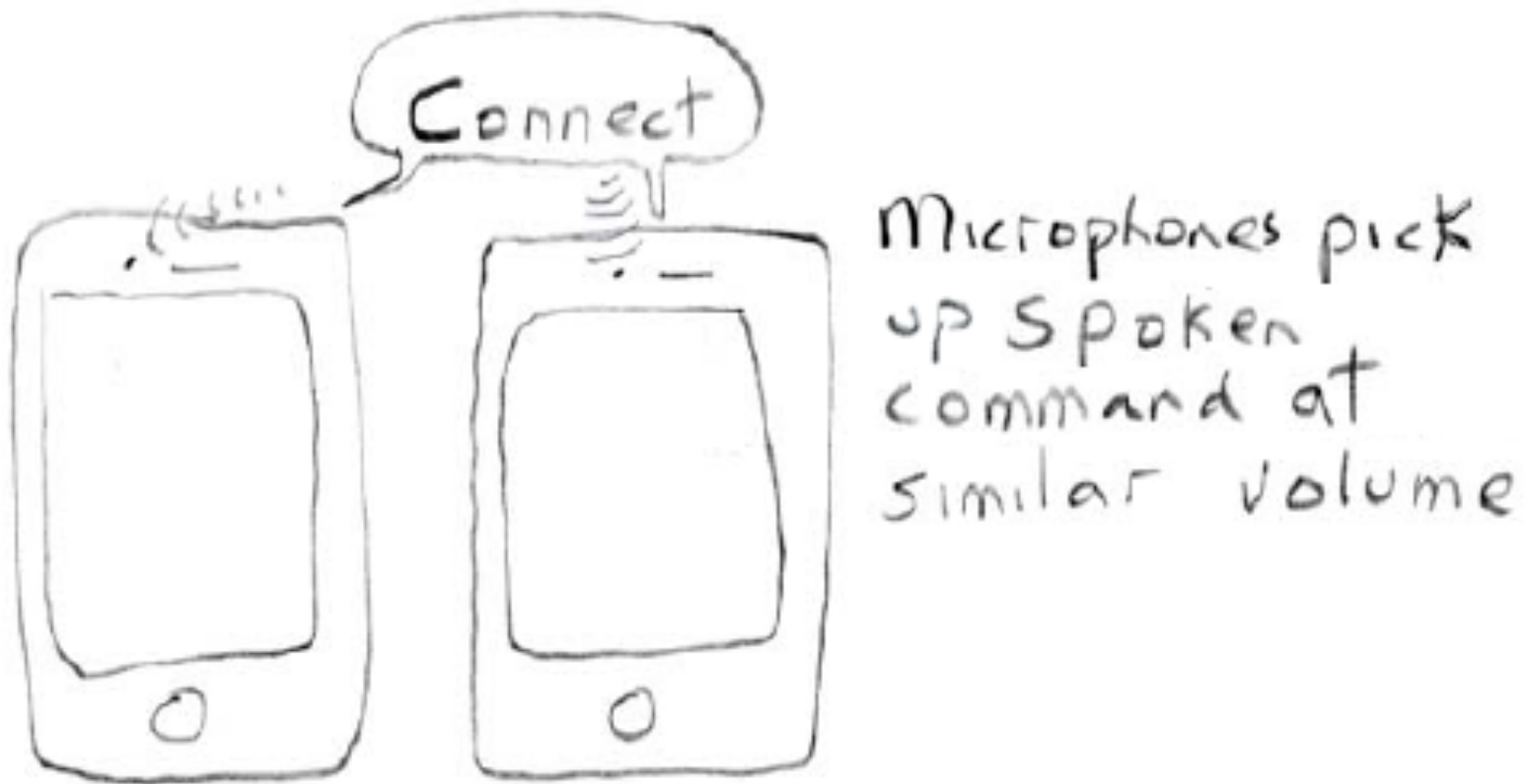
Generate 10 competing concepts

v) Recognize a phone's flash strobe pattern

LED strobe
pattern captured
by camera

Generate 10 competing concepts

vi) Bump two phones together (credit: Bump Technologies)

Bump. Accelerometer matches bump vibrations

Generate 10 competing concepts

vii) Musical sequence
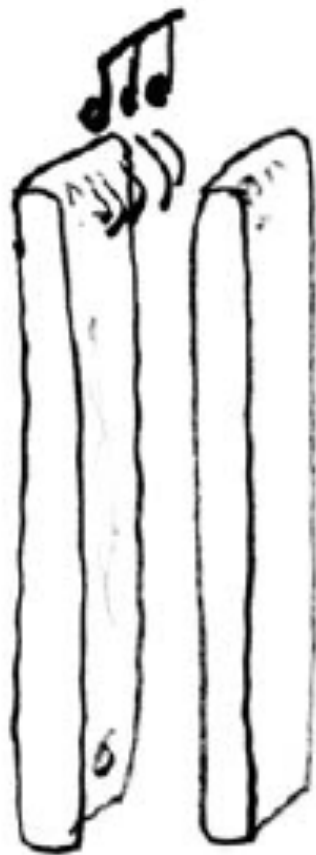
Faint musical sound played on one device picked up by the other device

Generate 10 competing concepts

viii) Light / dark patterns
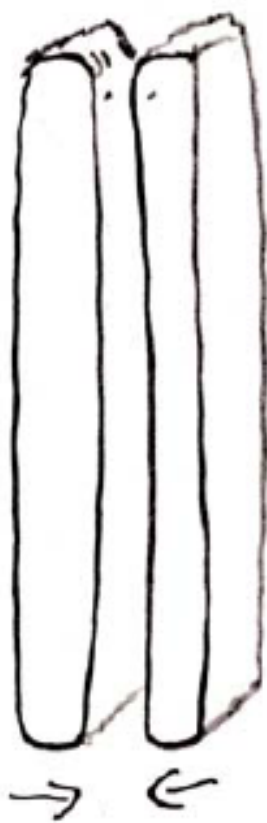
Ambient
light
sensor

Touch
Surfaces
together
in a pattern;
Both detect
same light/
dark pattern

Generate 10 competing concepts

ix) Three simultaneous taps

3 simultaneous taps on both phones
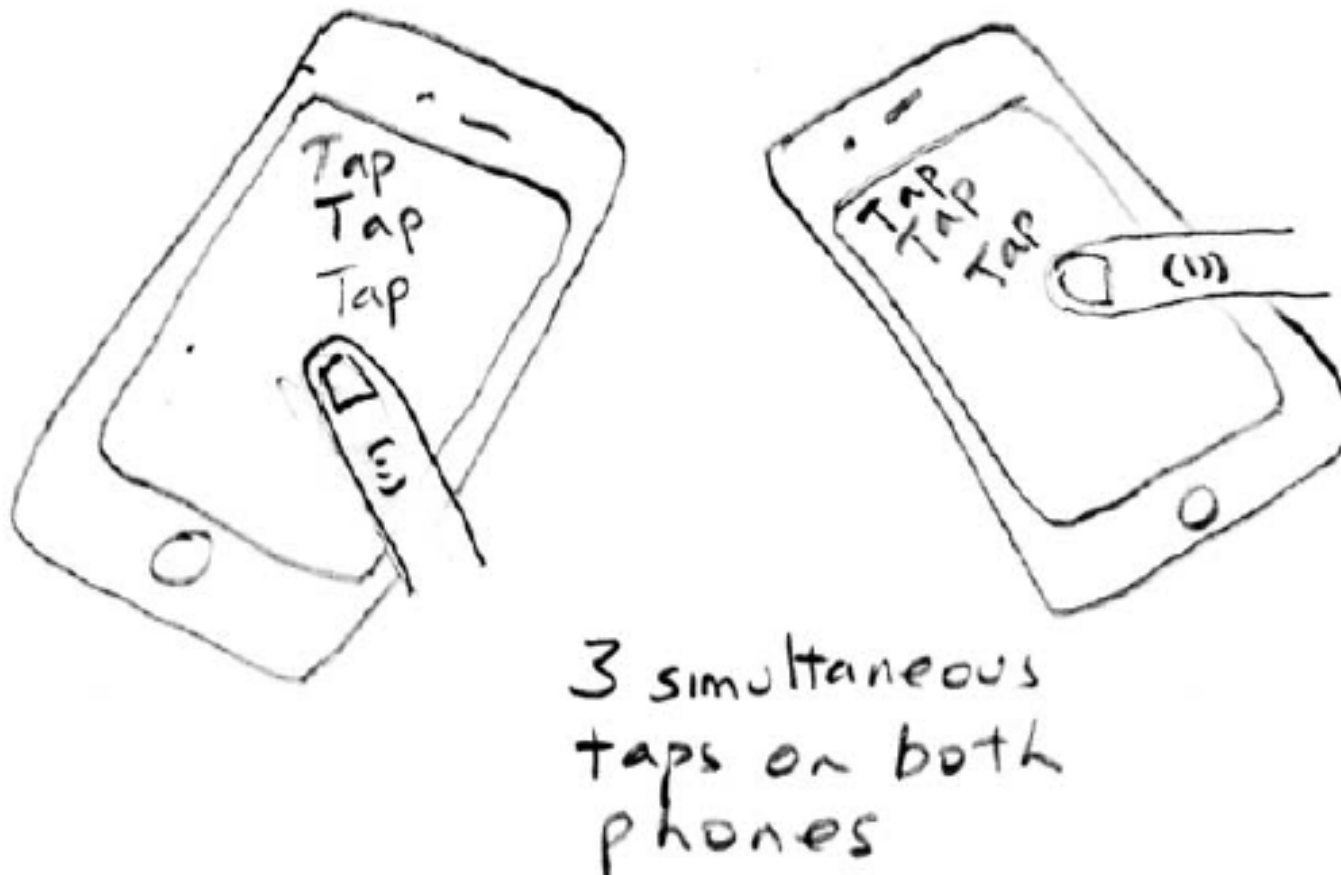
Generate 10 competing concepts

x) Take a picture of an identifying feature on the other person's phone
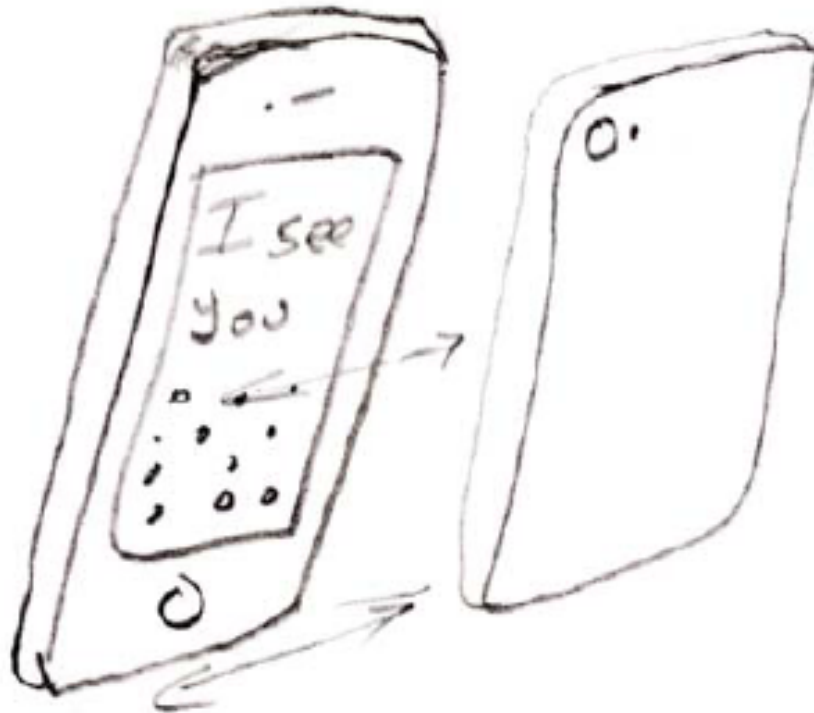
Mutual Video/photos captures identifying images such as tags via camera

Example: Reduce and / or repeat

Theme:

you and the person perform some action that both phones recognize as a 'handshake' affirming a full connection is desired. That is, it exploits social convention where you both agree to do something.

Repeat ?

other variations based on this notion *or* other themes?

Example: Choose (Reduce)

Choice

Cameras are lowest common denominator, so choose:

mutual
video/photos
captures
identifying
images such
as tags via
camera

Example: Choose (Reduce)

i) Detail a

Both Start Connect! App

SALLY

Connect!
One of you take a picture of the other's screen

FRED

Connect!
One of you take a picture of the other's screen

start up dialog
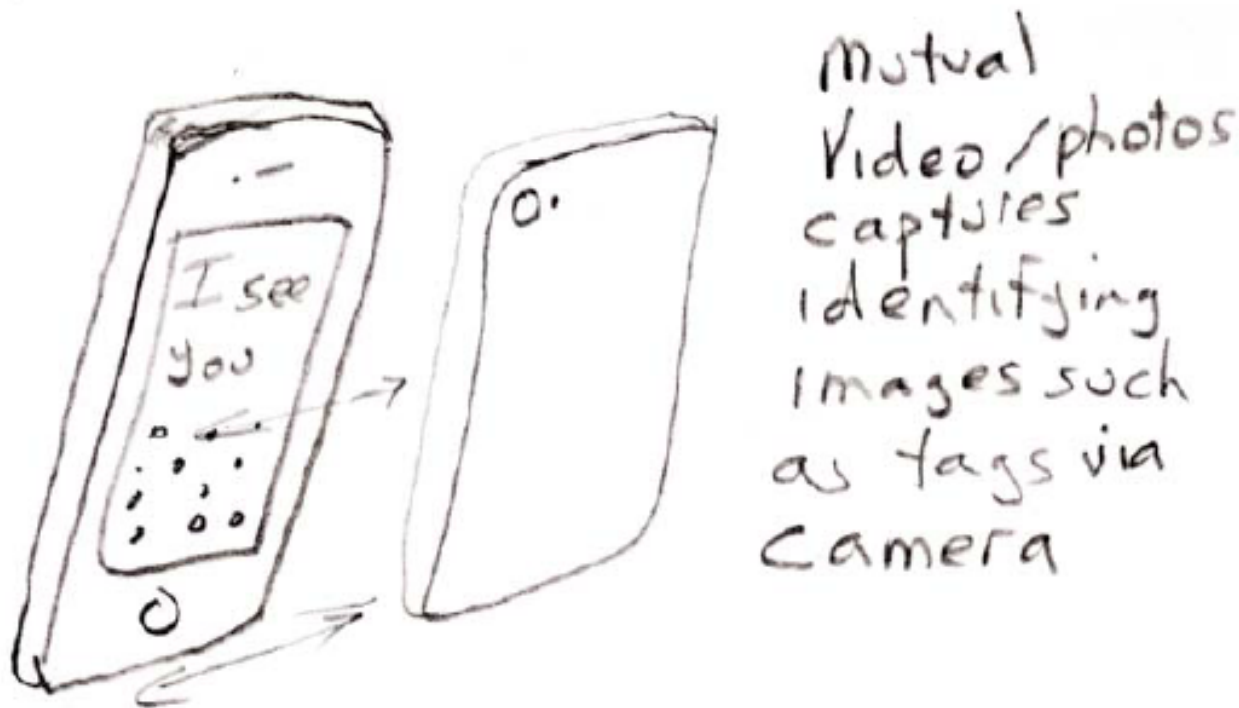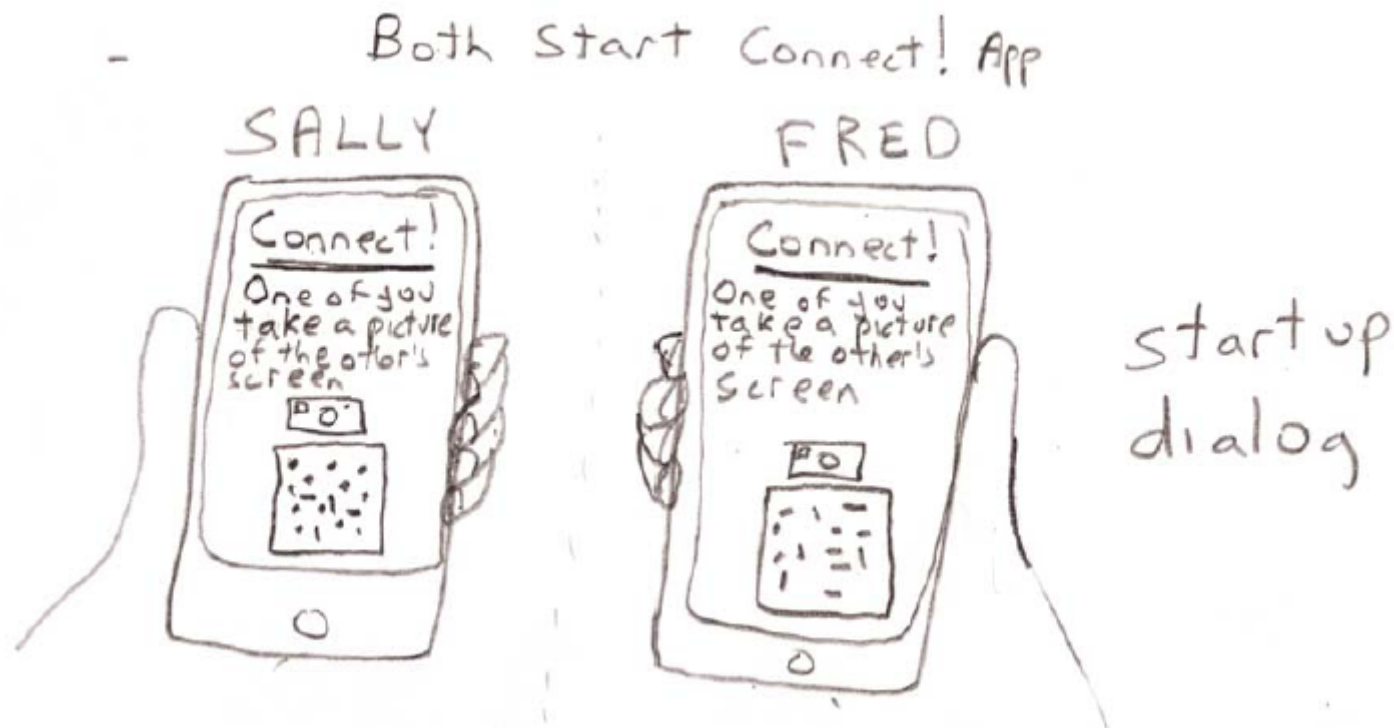
Example: Choose (Reduce)
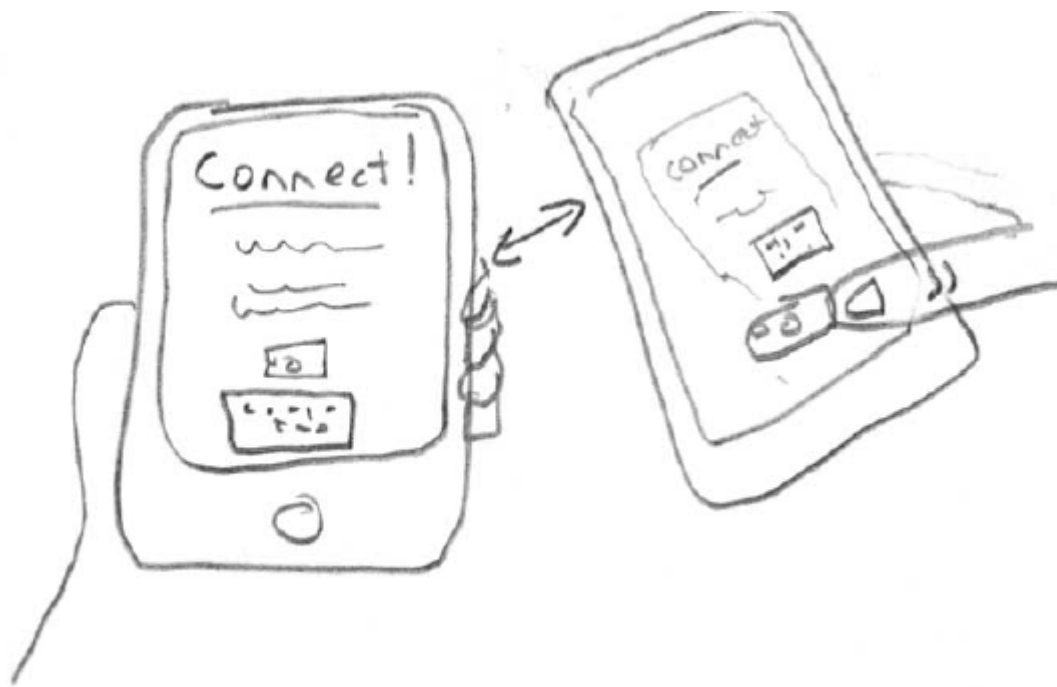
i) Detail b

One person takes picture of the other's screen

Example: Choose (Reduce)

i) Detail c
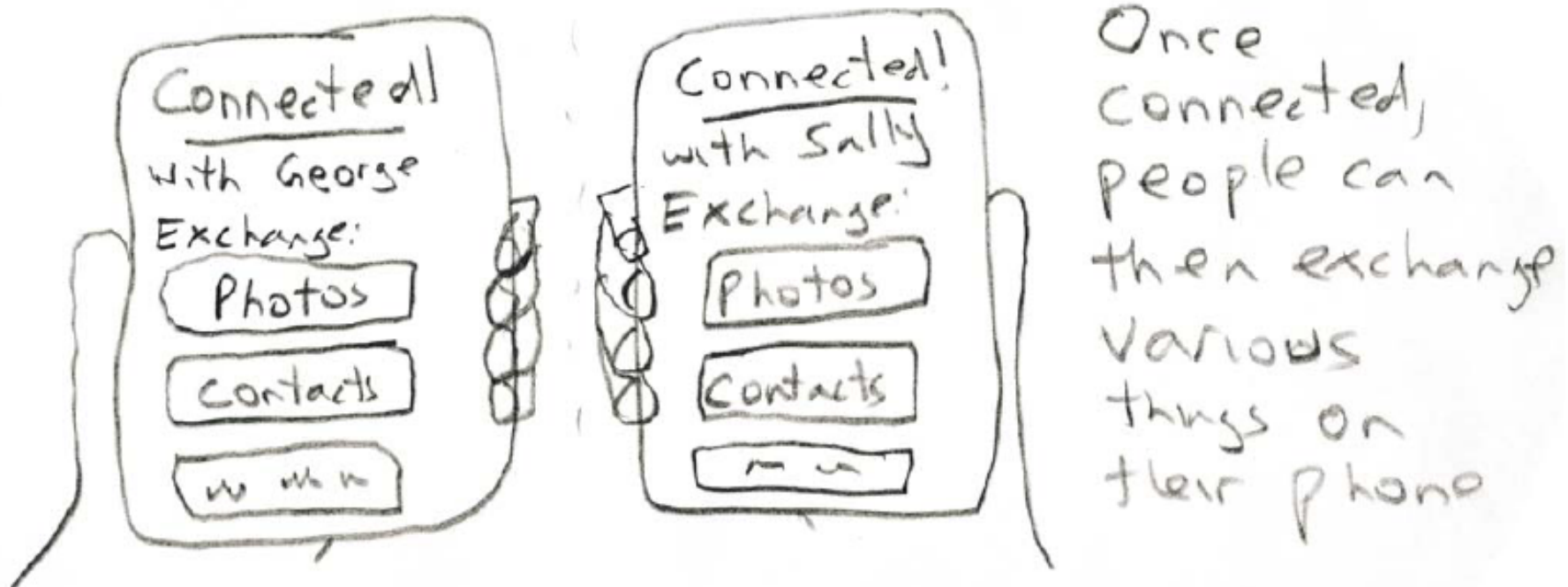
Example: Choose (Reduce)

ii) Variation: Flashing patterns

Flashing screen

Both screens flash patterns, both cameras recognize patterns.

Alternate: Use strobe light
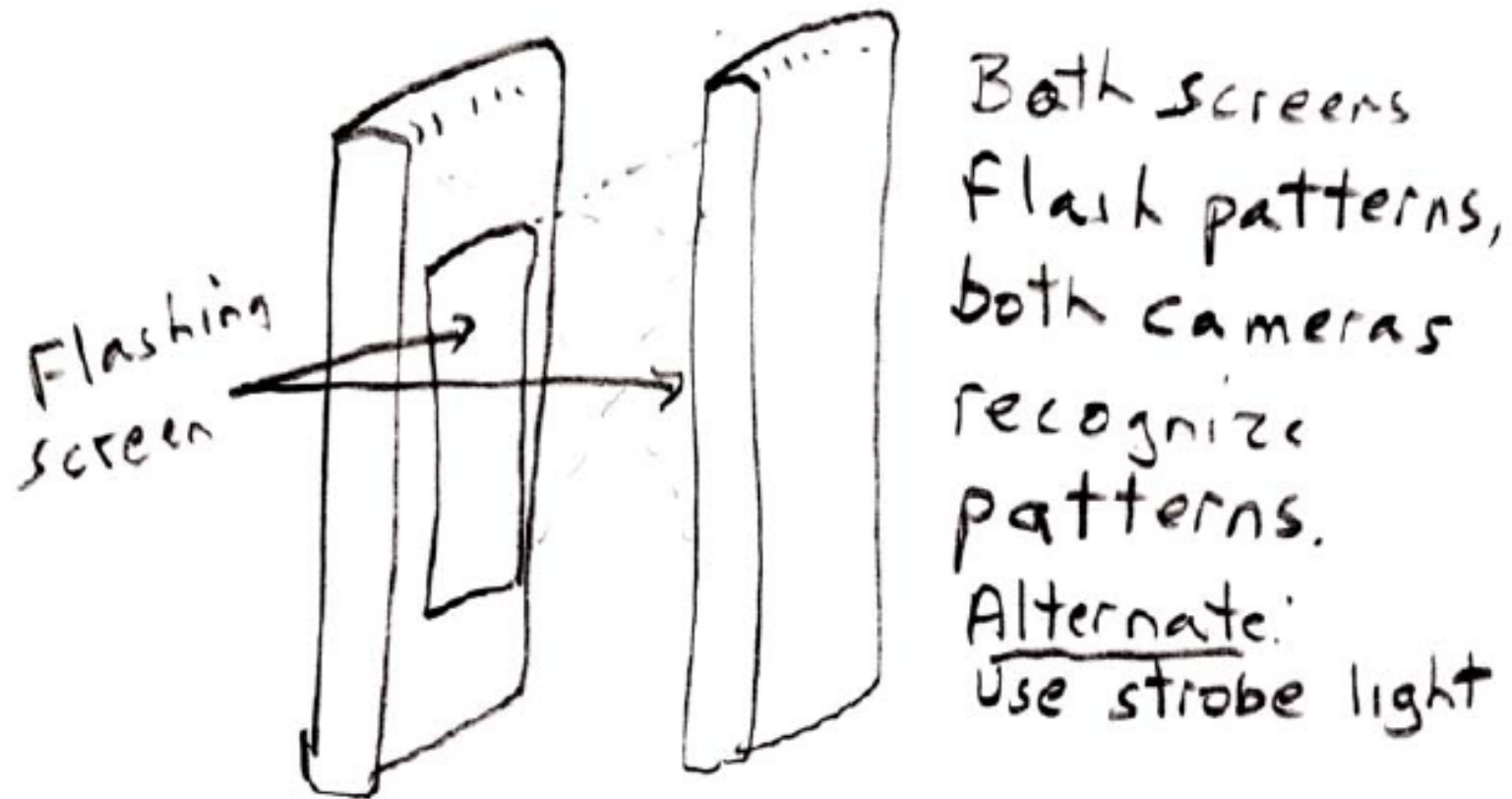
Example: Choose (Reduce)

iii) Variation: Fiduciary Tags

Note: for added security, both phones would have to do it
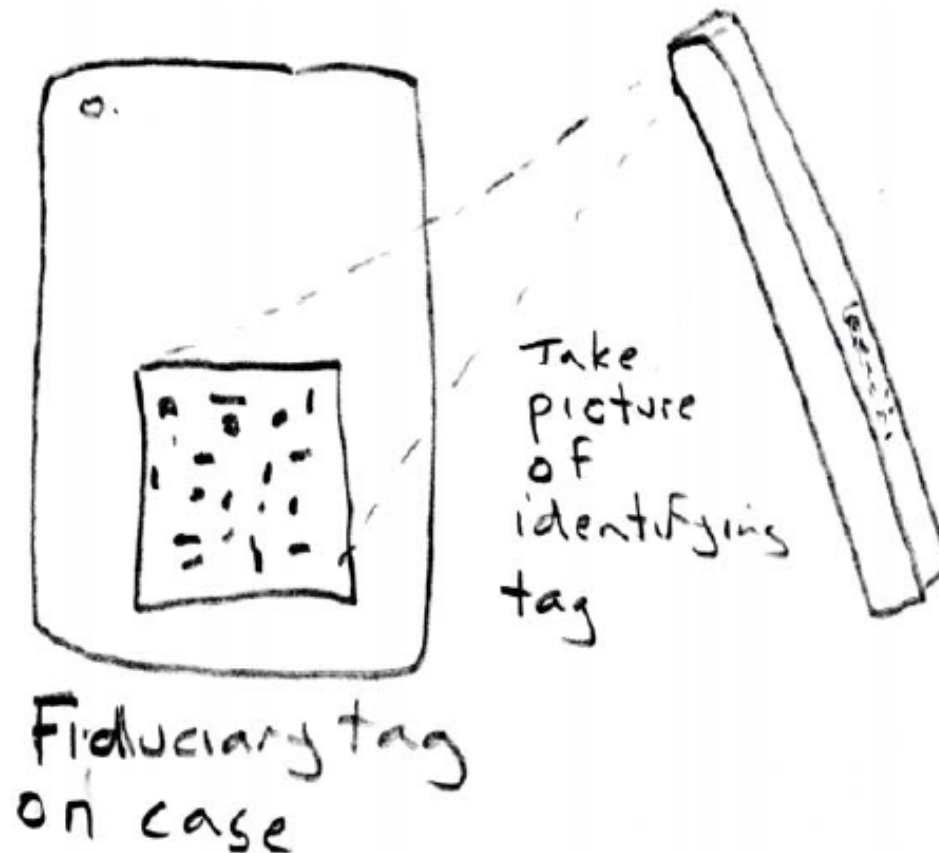
Example: Choose (Reduce)

iv) Variation: Cooperative Panorama

Mutual panorama, Person 1 starts a panorama, Person 2 continues it, Person 3 completes it.
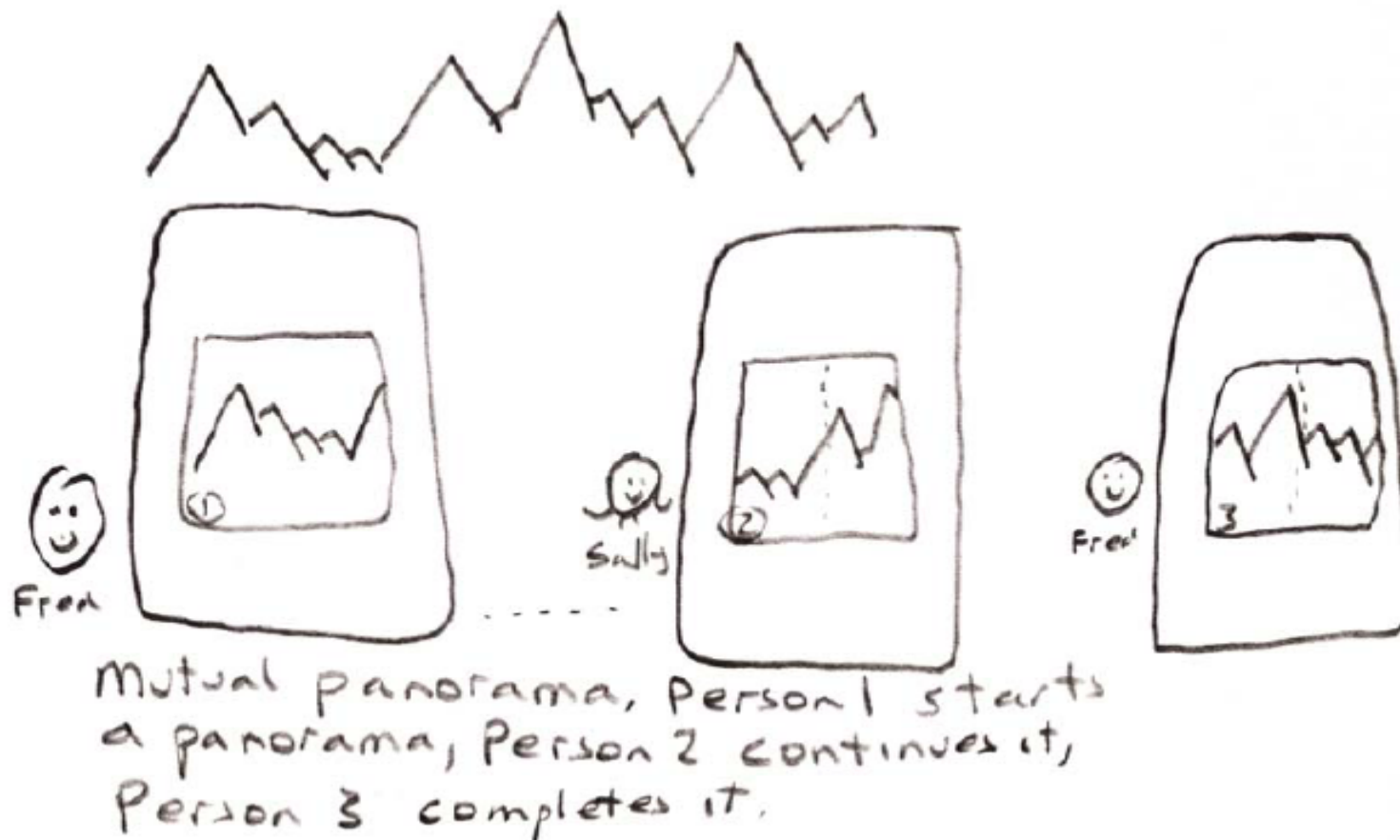
Example: Choose (Reduce)

v) Variation: Same picture
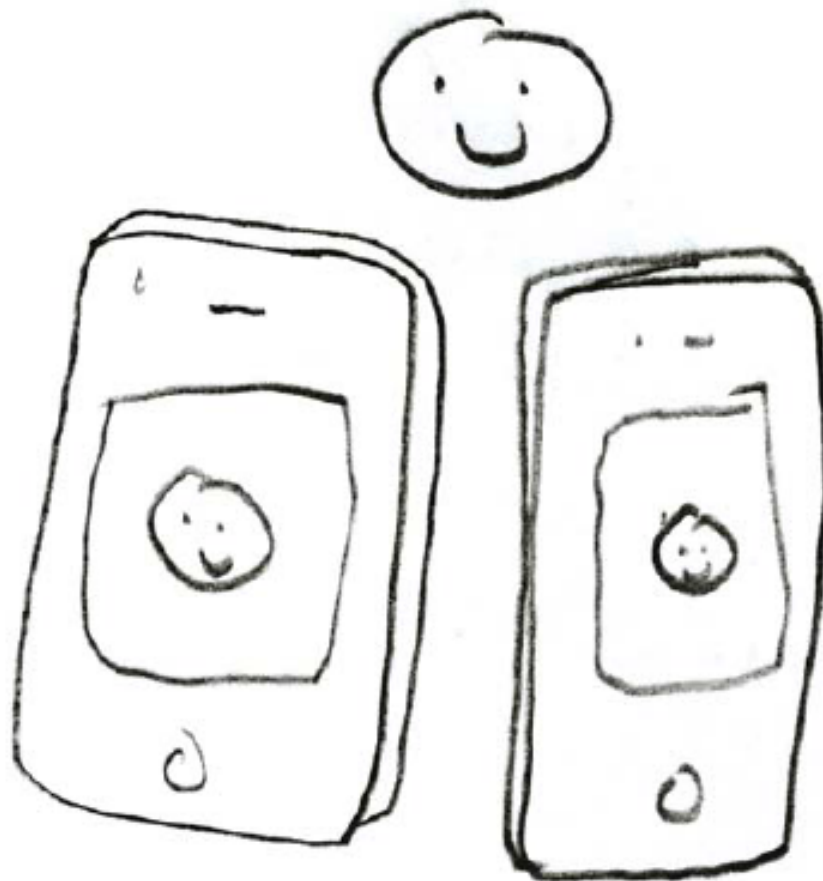
Take picture of the same thing at the same time.

You now know

10 + 10

- method to descend the design funnel
  - first 10: elaboration
  - choosing: refinement
  - second 10: elaboration on refinement

- a cycle with no hard boundaries

Permissions