

CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

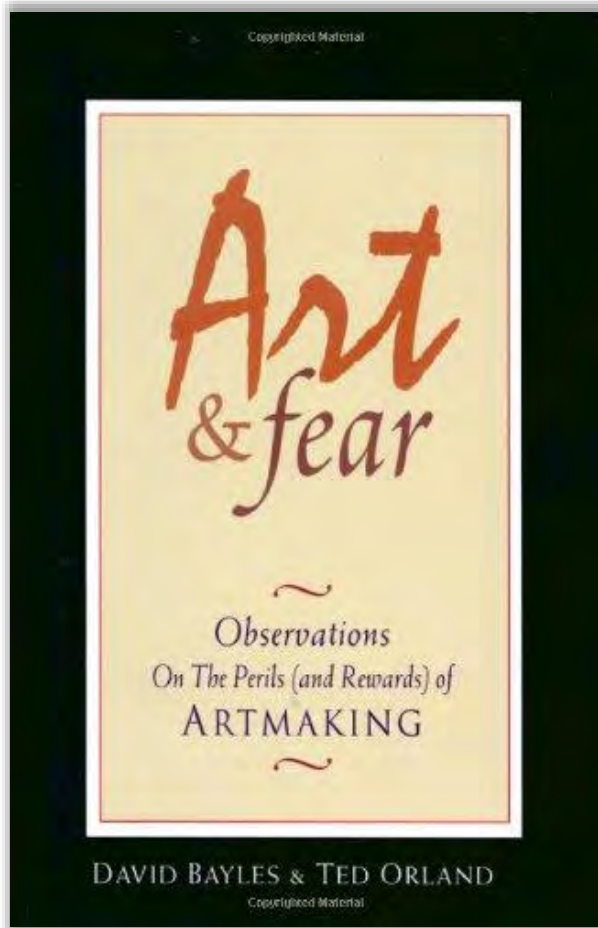
Lecture 06:
Design Diamond

James Fogarty
Alex Fiannaca
Lauren Milne
Saba Kawas
Kelsey Munsell

Tuesday/Thursday
12:00 to 1:20



Quantity versus Quality



One class told they will be graded on quality, another on quantity



Quantity versus Quality

The quantity class produces better pots. Why?

Quantity versus Quality

The quantity class produces better pots. Why?

“While the quantity group was busily churning out piles of work—and learning from their mistakes—the quality group had sat theorizing about perfection, and in the end had little more to show for their efforts than grandiose theories and a pile of dead clay”

Sketching User Experiences



Sketching

Movies

Theater: Shattuck Cinemas
 Phone: (510) 665-1342 Dist: 1.5 mi
 Address: 2122 Shattuck Ave
 Berkeley, 94709
 Cost: \$8.50 normal, \$6.00 senior, \$4.00 infant

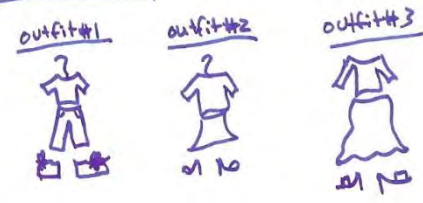
Map-IT

<u>Art of War</u>	☆☆☆
(10:00)-(1:00)-4:00-7:00-10:00	
<u>Bittersweet Motel</u>	☆☆☆☆
(11:00)-(1:30)-4:00-6:30-9:00	
<u>Godzilla</u>	☆☆
(10:30)-(2:00)-5:30-9:00	
<u>The Cell</u>	☆☆☆☆
(11:00)-(1:00)-3:00-5:00-7:00-9:00	

STORE FOR THE STYLE-CHALLENGED

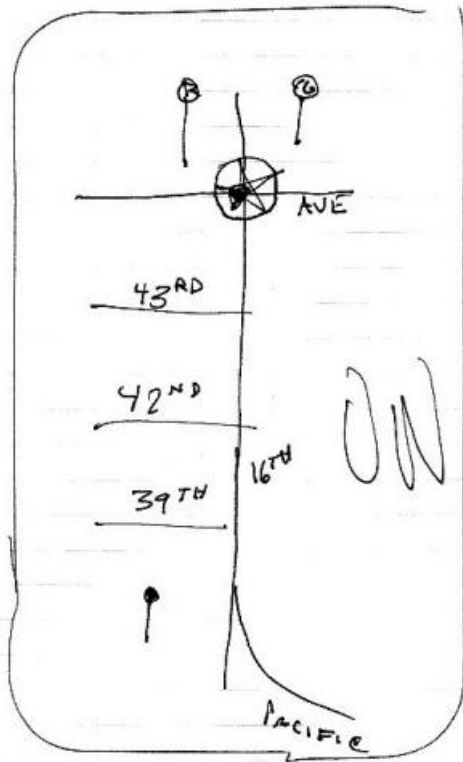


As it should be...

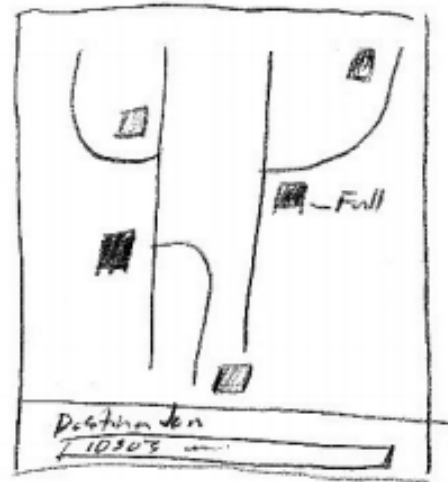


(pre-selected to match so you don't have to choose.)

Sketching

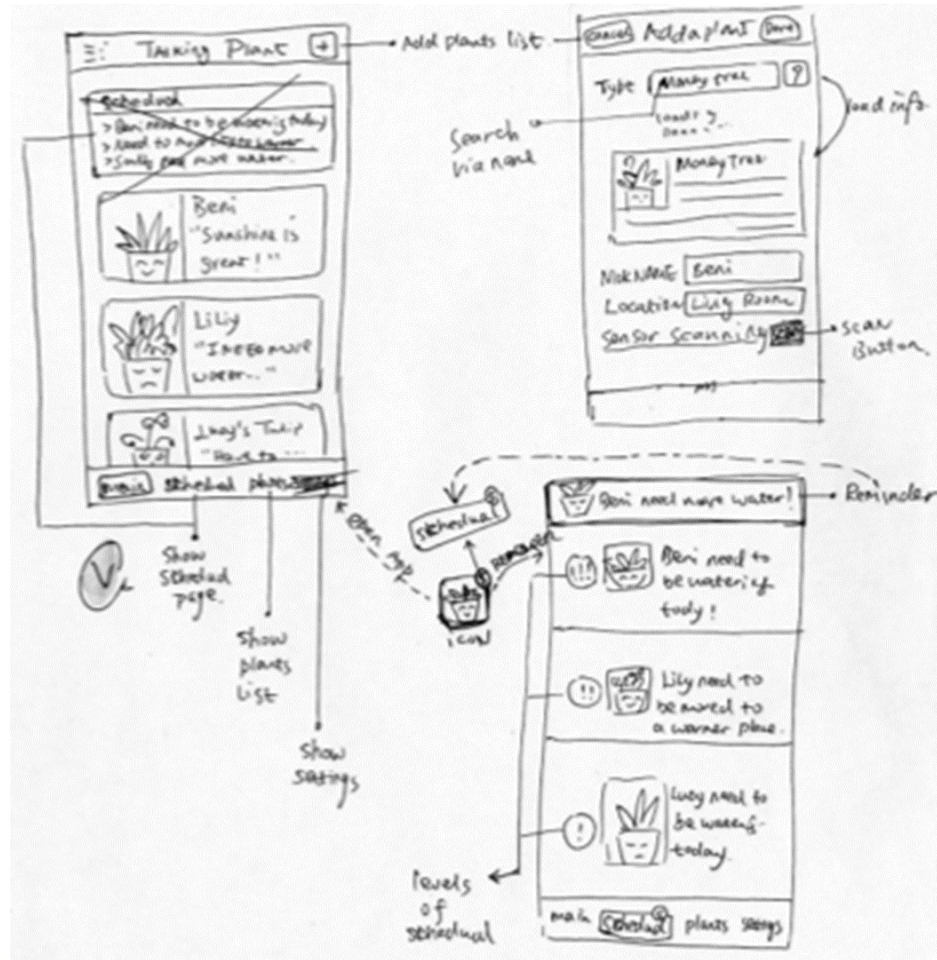


MAP SHOWING PARKING AVAILABILITY BASED ON INPUTTED DATA, INPUTTED ON MAP



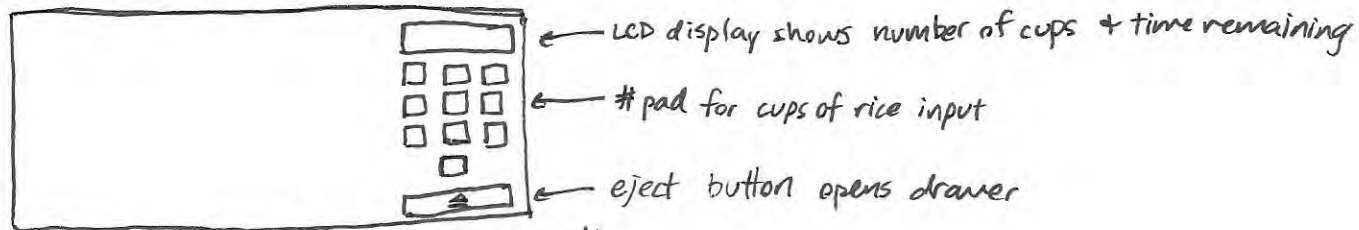
- Different colors
- highlights availability
-

Sketching

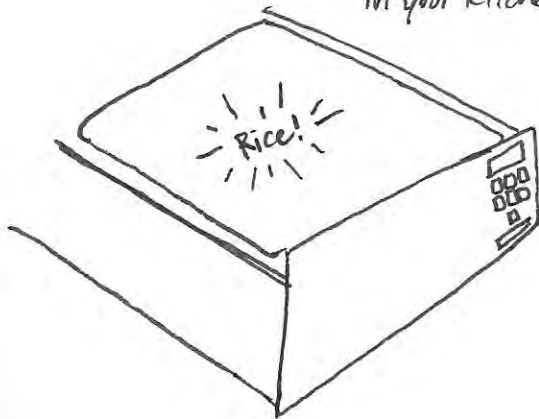


Sketching

UBIQUITOUS RICE COOKER



"Just another drawer"
in your kitchen

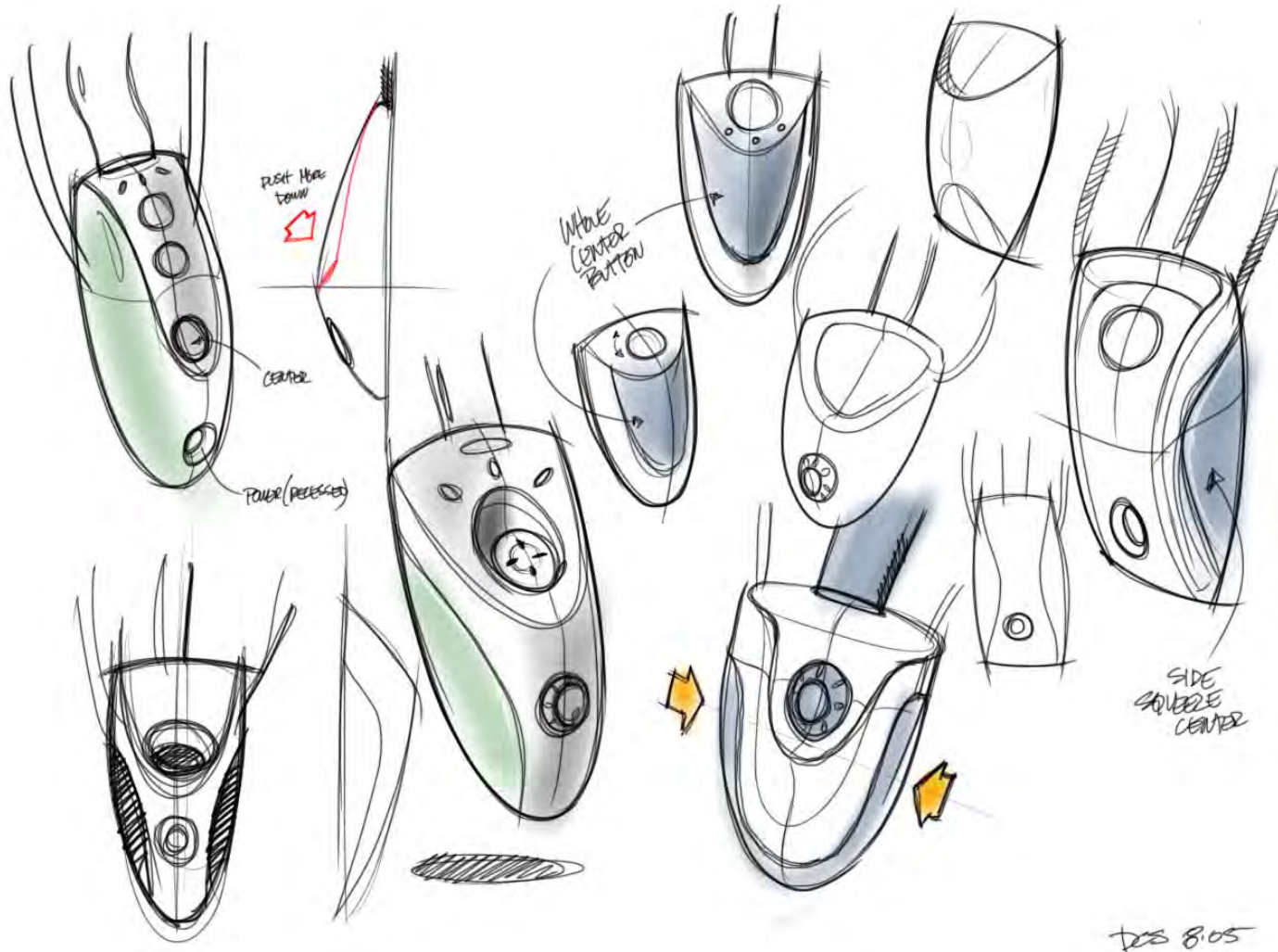


The uncooked rice is stored in a hidden reservoir.
Water is acquired through a hose attached to
your water source (similar to an espresso machine).

Sketching

A **process** that enables you to think through ideas and convey design ideas to others very early in the design phase

Quintessential Activity of Design



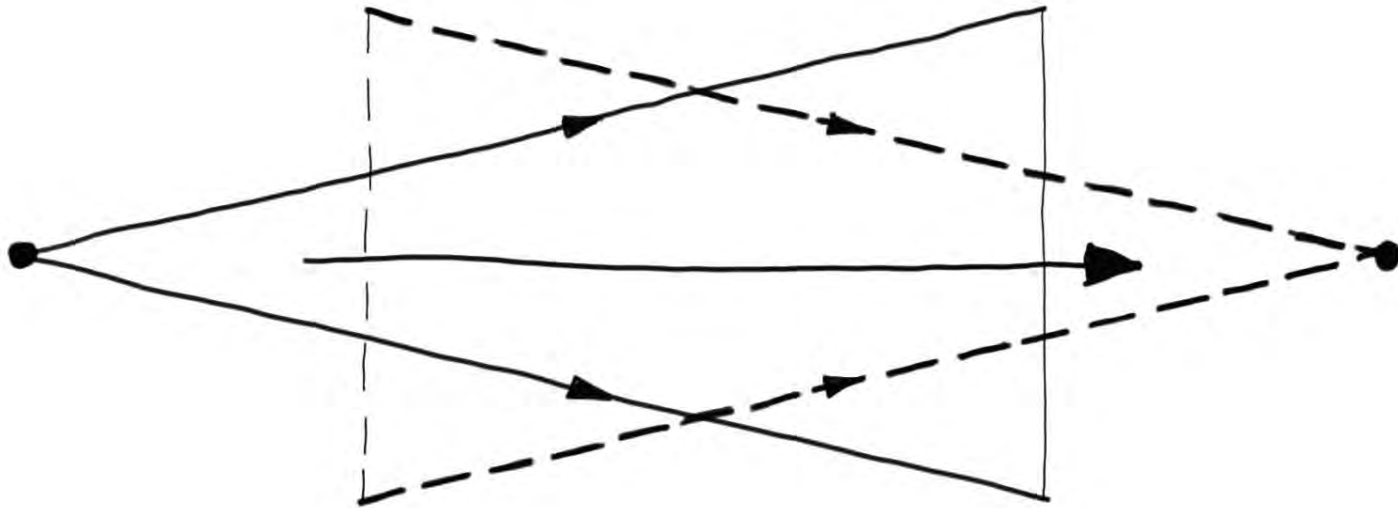
Design as Choice

Elaboration

palette of choices

Reduction

heuristics to choose



Design as Choice

Two openings for creativity

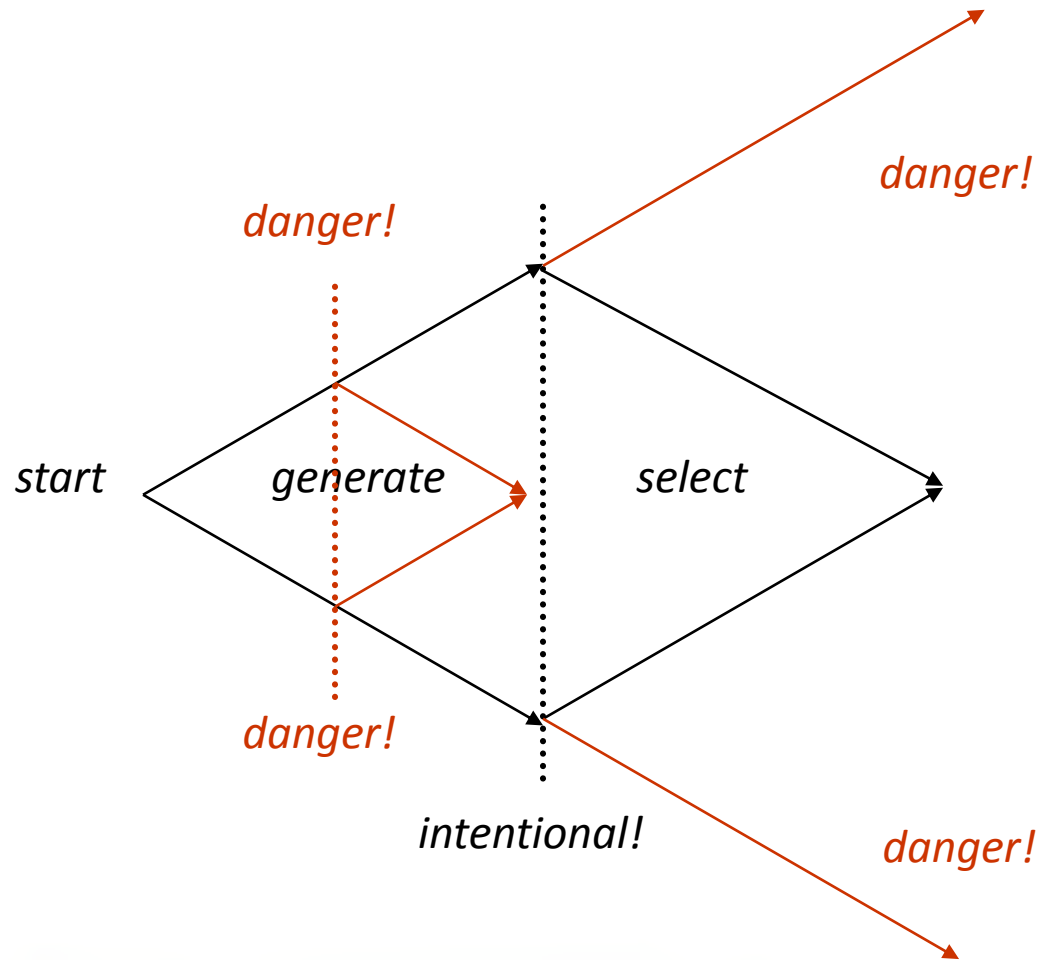
Palette of choices

Heuristics used to choose

Why is your contextual inquiry so important?

What you learn directly informs both of these, shaping everything you do this entire quarter

The Design Diamond



Properties of Sketches

Quick

Timely

Inexpensive

Disposable

Plentiful

Clear Vocabulary

Distinct Gesture

Minimal Detail

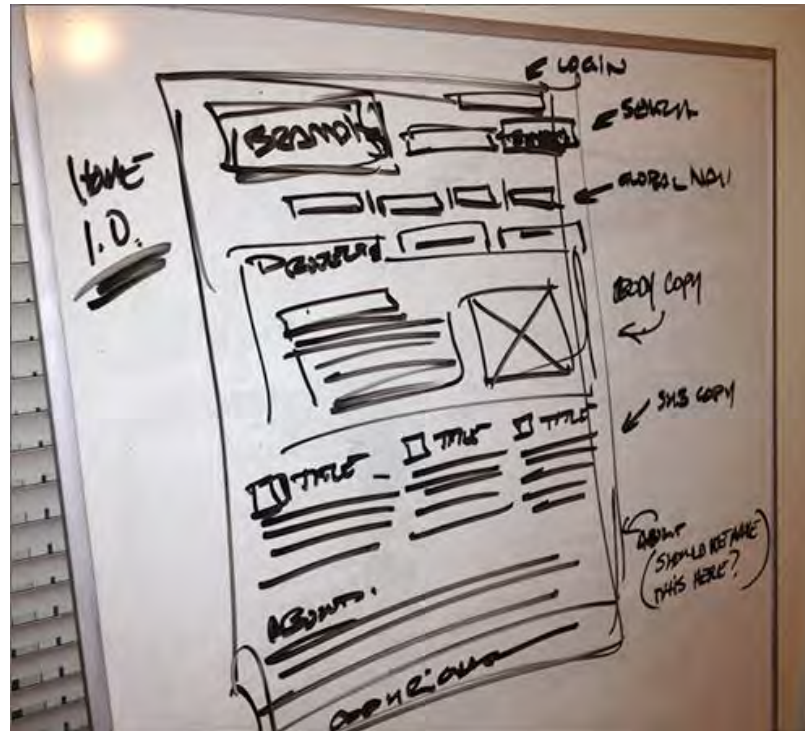
Appropriate Refinement

Suggest and Explore

Ambiguous

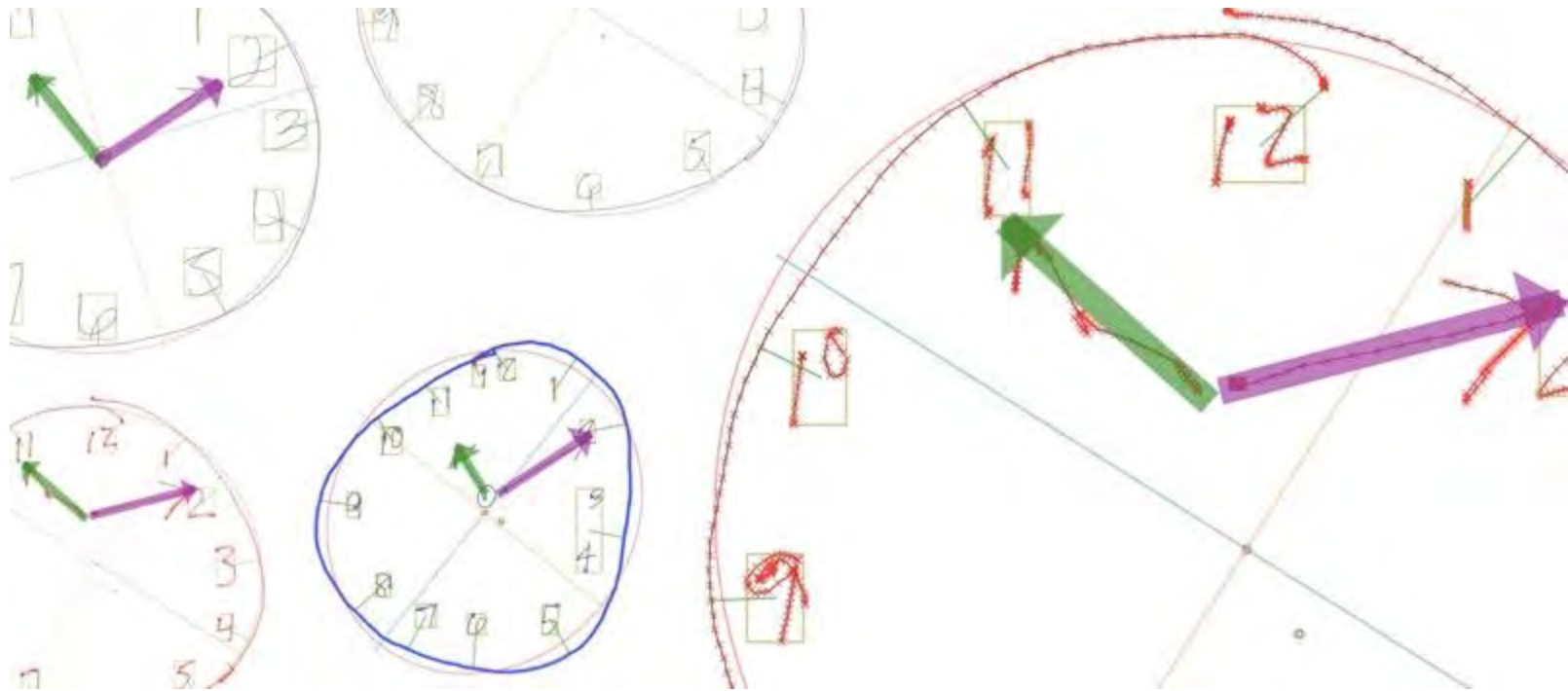
Quick

A sketch is quick to make,
or at least gives that impression



Timely

A sketch can be provided when needed



Inexpensive

Cost must not inhibit the ability to explore a concept, especially early in design



Disposable

If you cannot afford to throw it away,
then it is not a sketch

Investment is in the process,
not the physical sketch

But they are not "worthless"



Plentiful

Sketches do not
exist in isolation

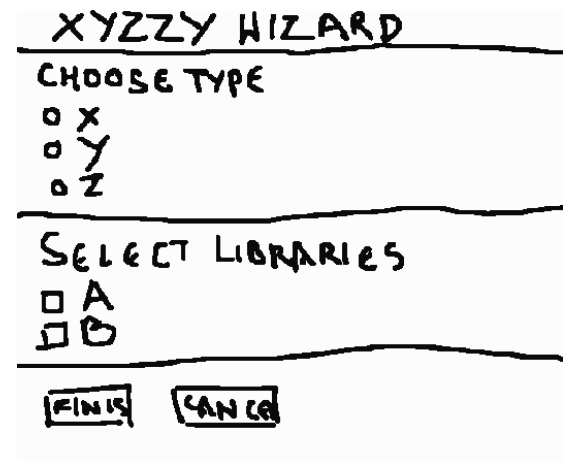
Meaning and relevance
is in the context of a
collection or series



Clear Vocabulary

The way it is rendered makes it distinctive that it is a sketch (e.g., style, form, signals)

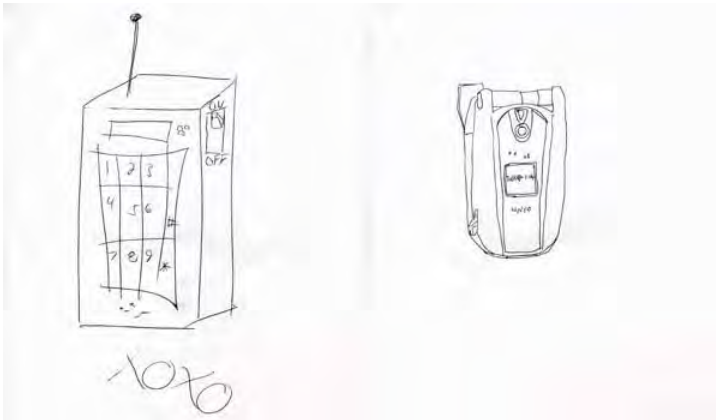
Could be how a line extends through endpoints



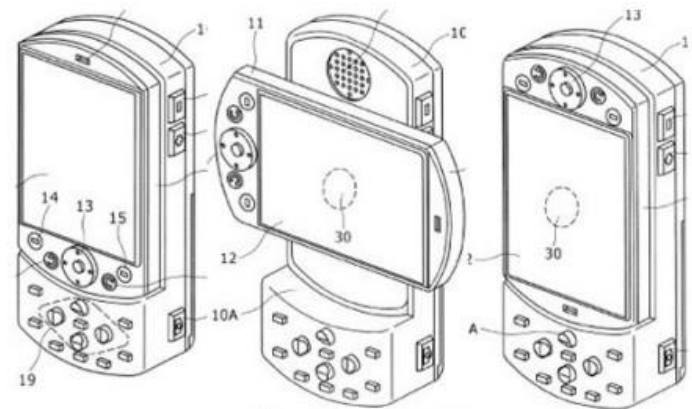
Distinct Gesture

Fluidity of sketches gives them
a sense of openness and freedom

Opposite of engineering drawing,
which is tight and precise



vs.



Minimal Detail

Include only what is required to render the intended purpose or concept



Create JSP for this page

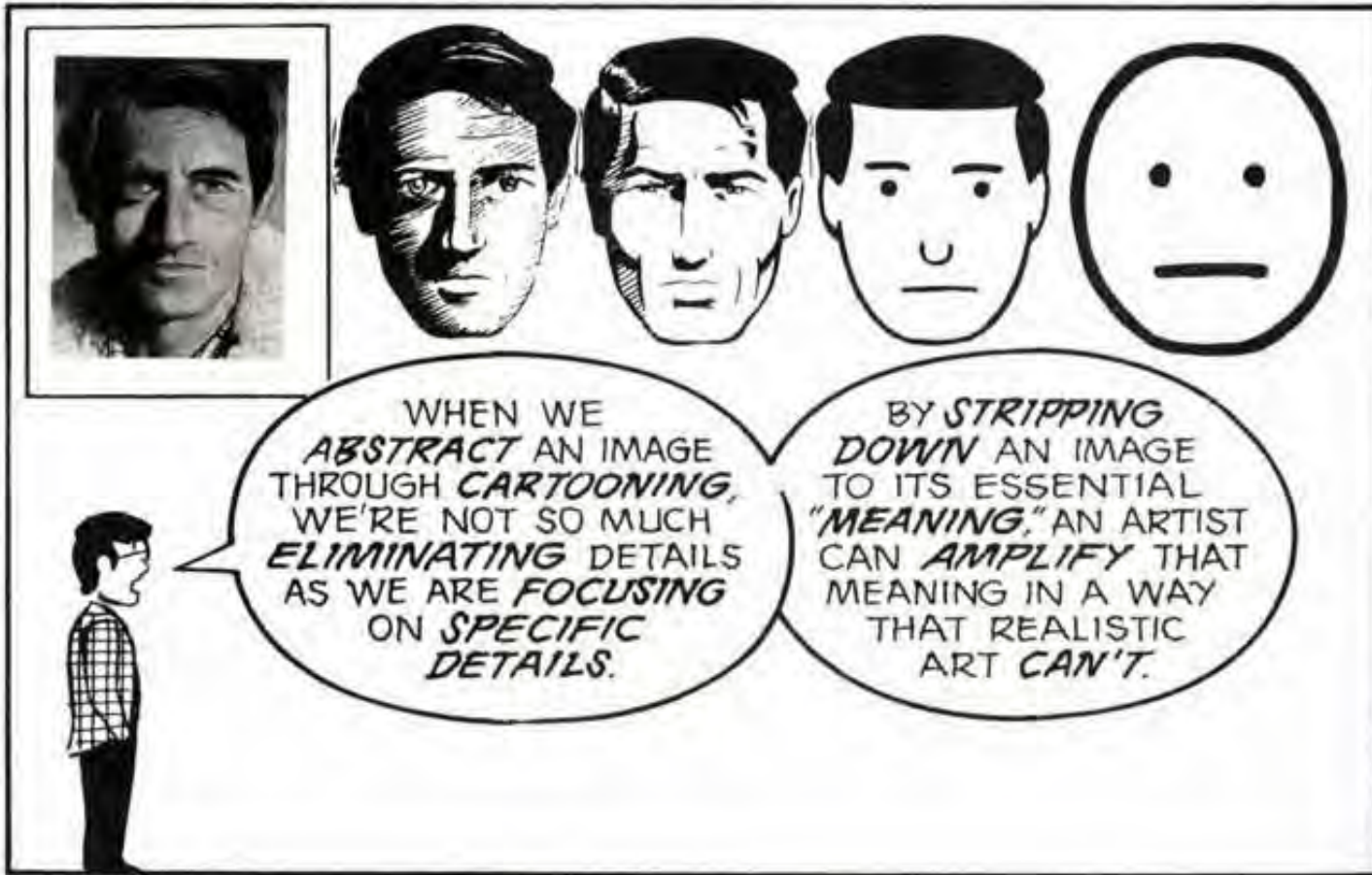
Name:

Number:

Category:

Price Range: to

Minimal Detail

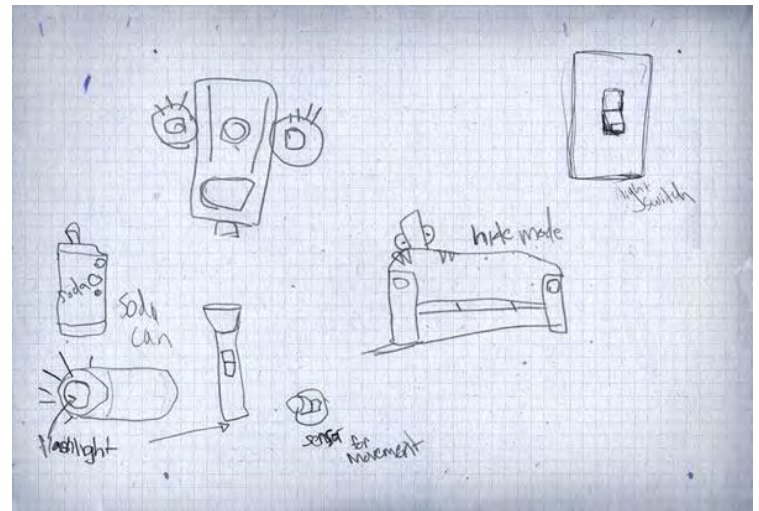


Appropriate Degree of Refinement

Make the sketch as refined as the idea

If you have a solid idea,
make the sketch look
more defined

If you have a hazy idea,
make the sketch look
rougher and less defined



Suggest and Explore Rather than Confirm

Sketch should act as a catalyst
to the desired and appropriate behaviors,
conversations, and interactions



Ambiguity

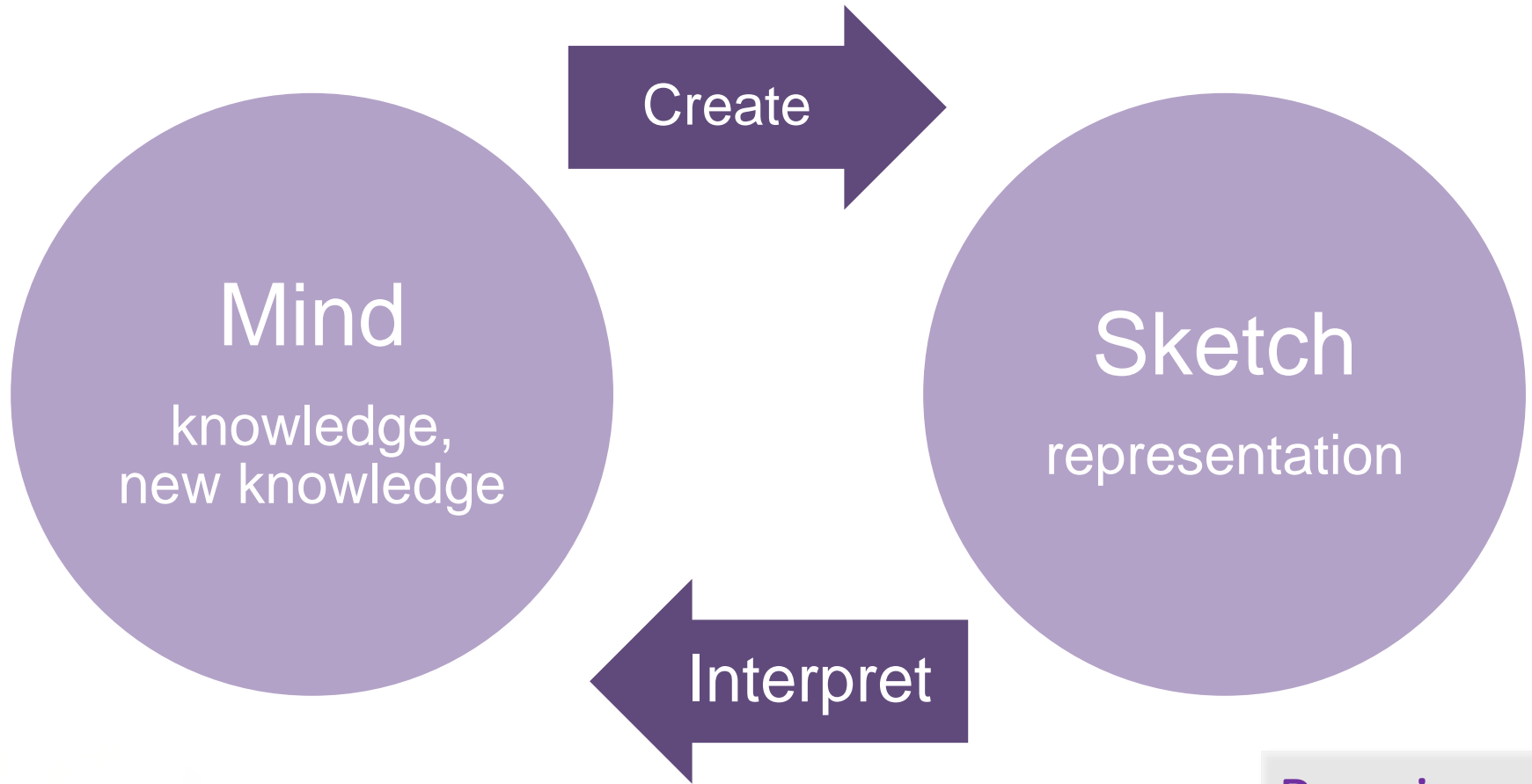
Intentionally ambiguous

Value comes from being able to be interpreted in different ways, even by the person who created them

Sketches have holes



Sketching as Conversation



Requires
ambiguity

Sketch vs. Prototype

Sketch	Prototype
Invite	Attend
Suggest	Describe
Explore	Refine
Question	Answer
Propose	Test
Provoke	Resolve
Tentative, non committal	Specific Depiction

The primary differences are in the intent

ABC News and IDEO's Deep Dive



Sketching the Mouse



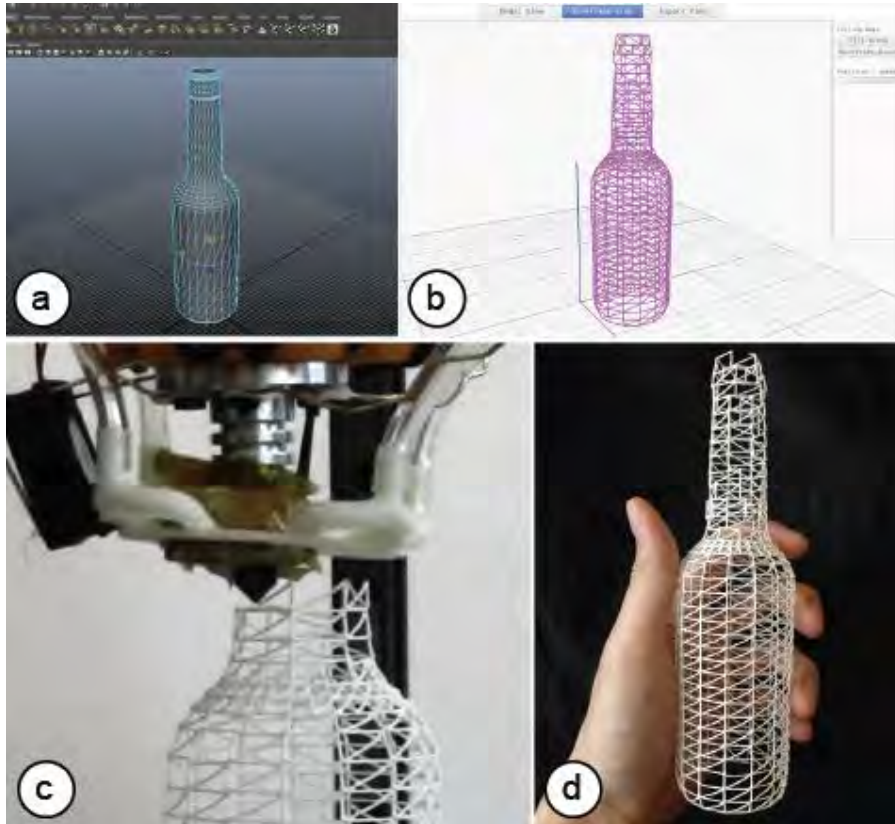
Sketching the Mouse



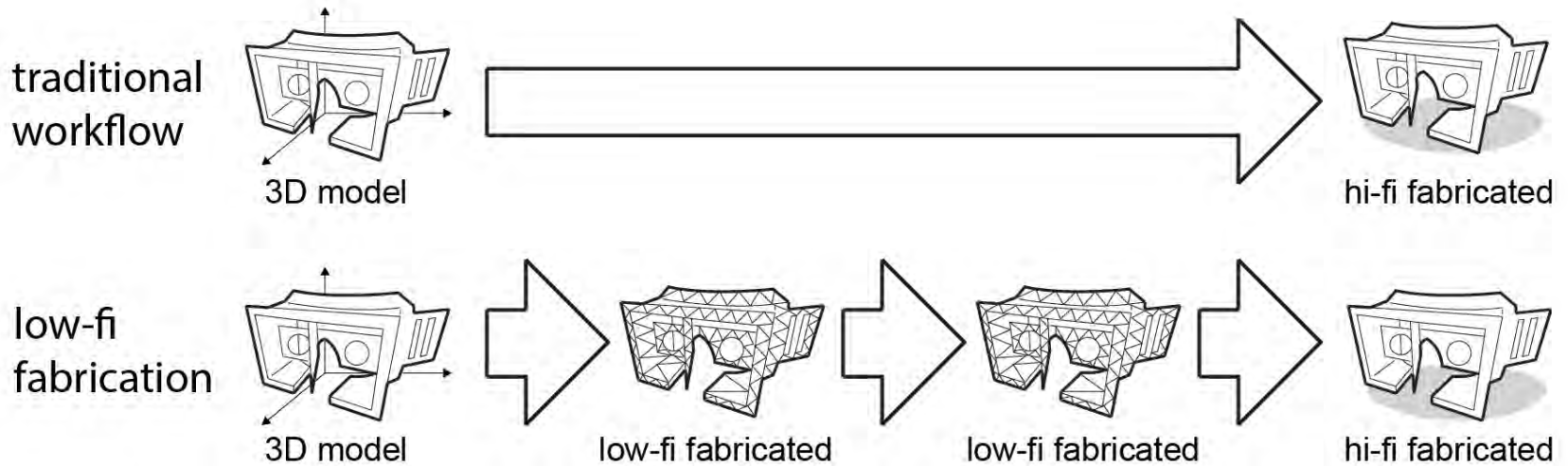
Physical Sketching



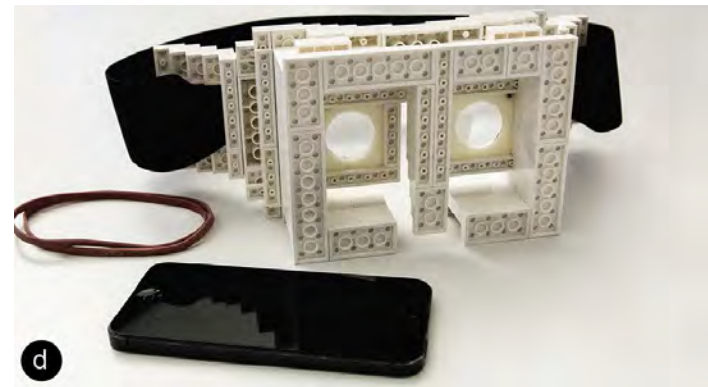
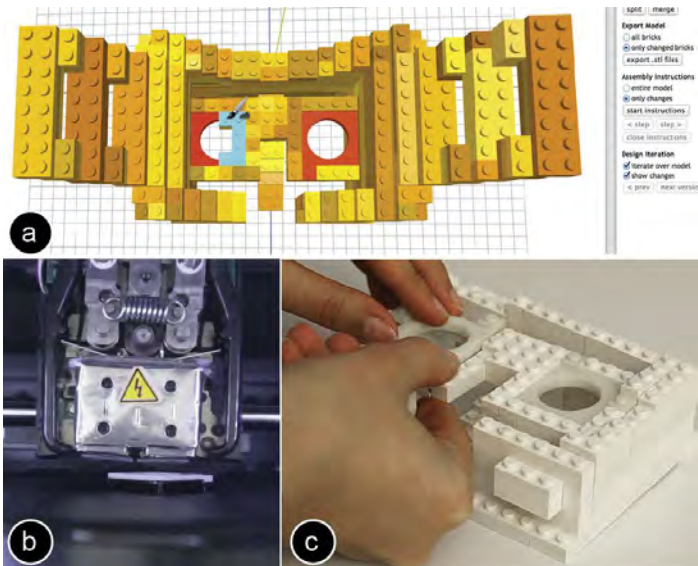
Physical Sketching



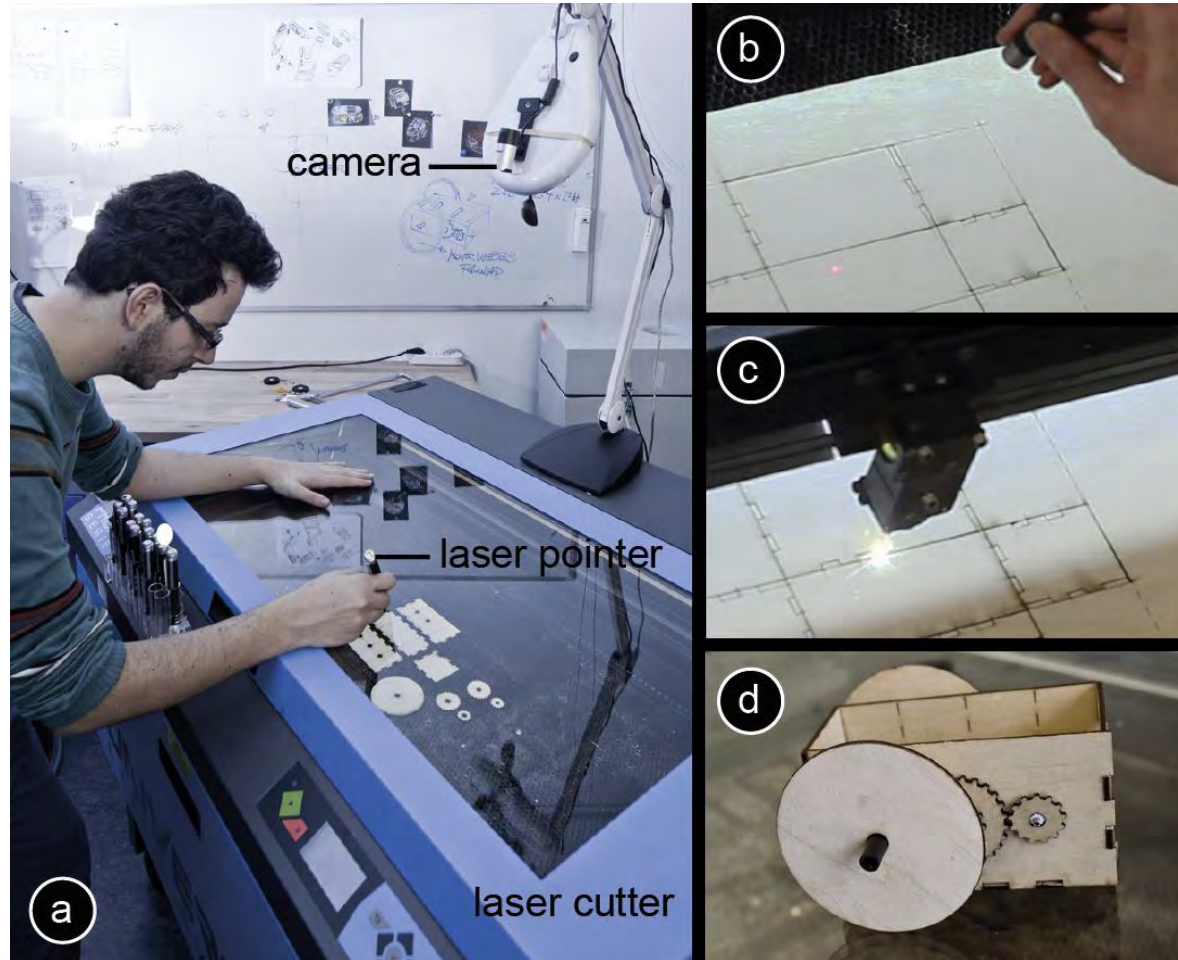
Physical Sketching



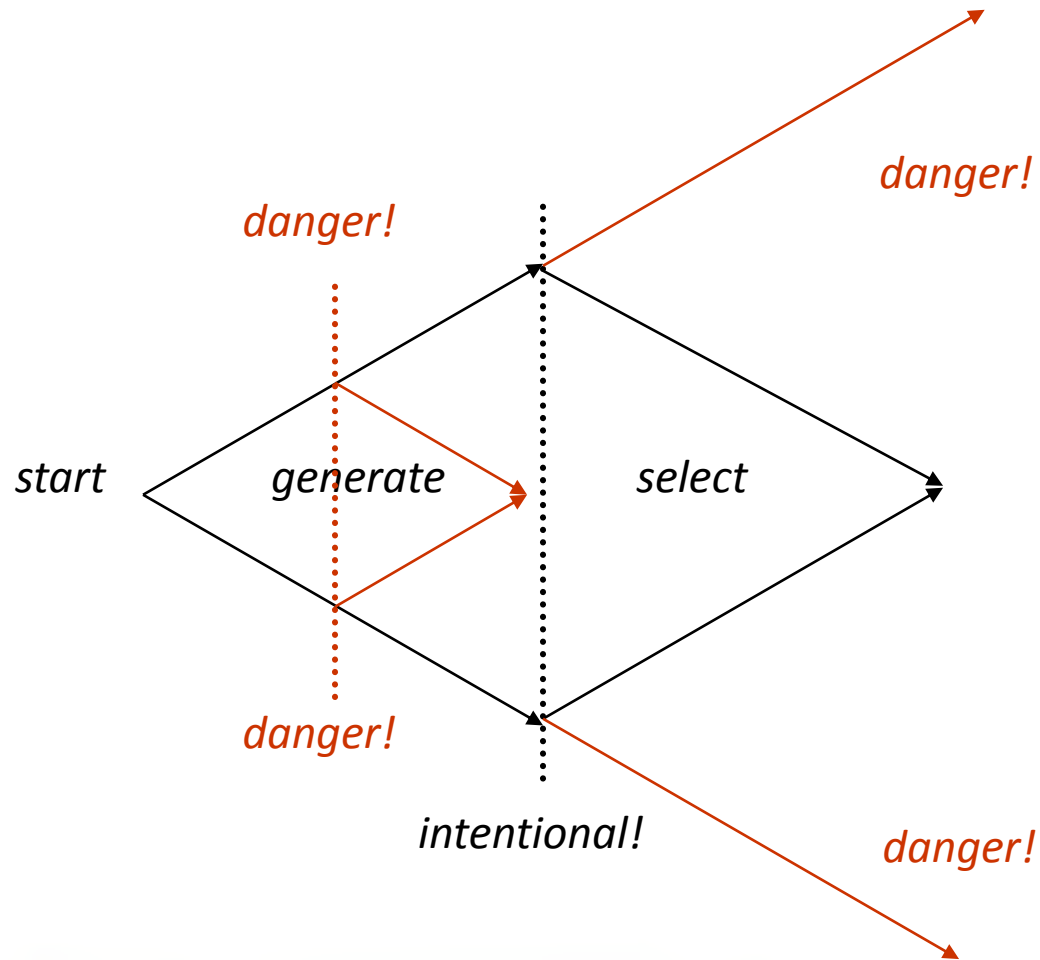
Physical Sketching



Physical Sketching



Idea Oscillation



Critiquing Sketches is Important

Ideas are both good and bad

Both are useful in design

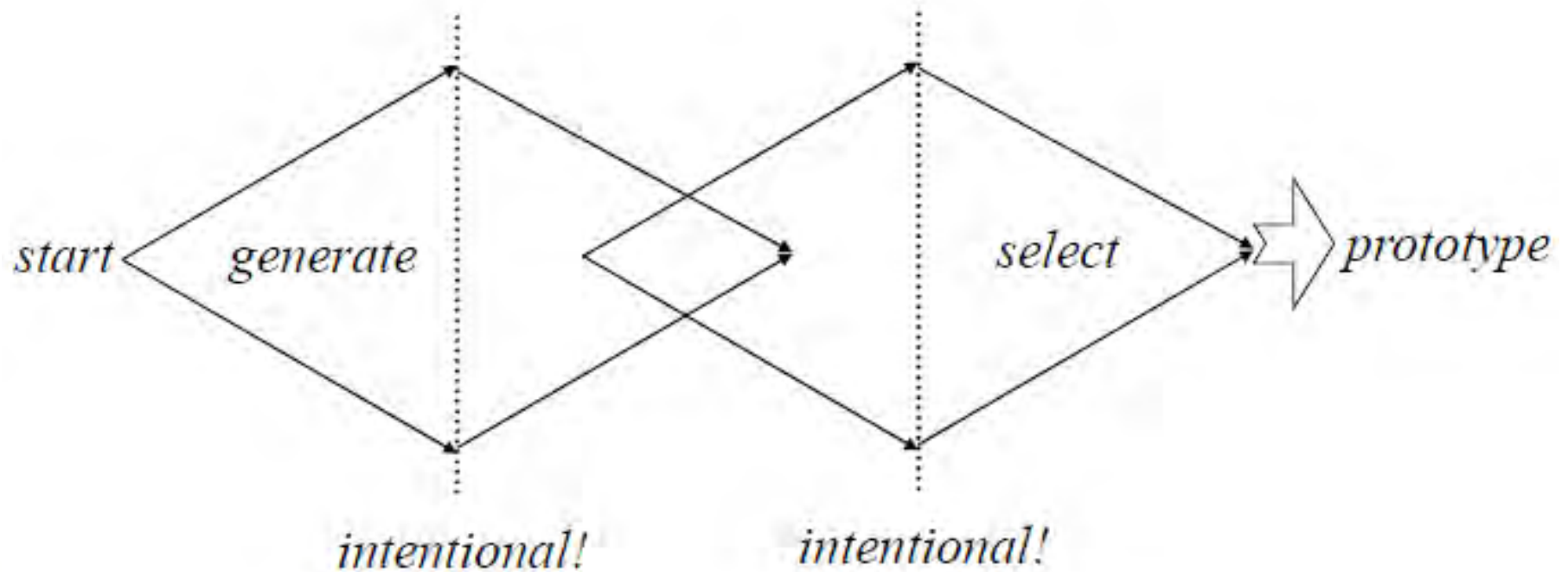
By making clear what is a bad design,
we can avoid actually implementing it

Bad ideas help you justify your good ideas

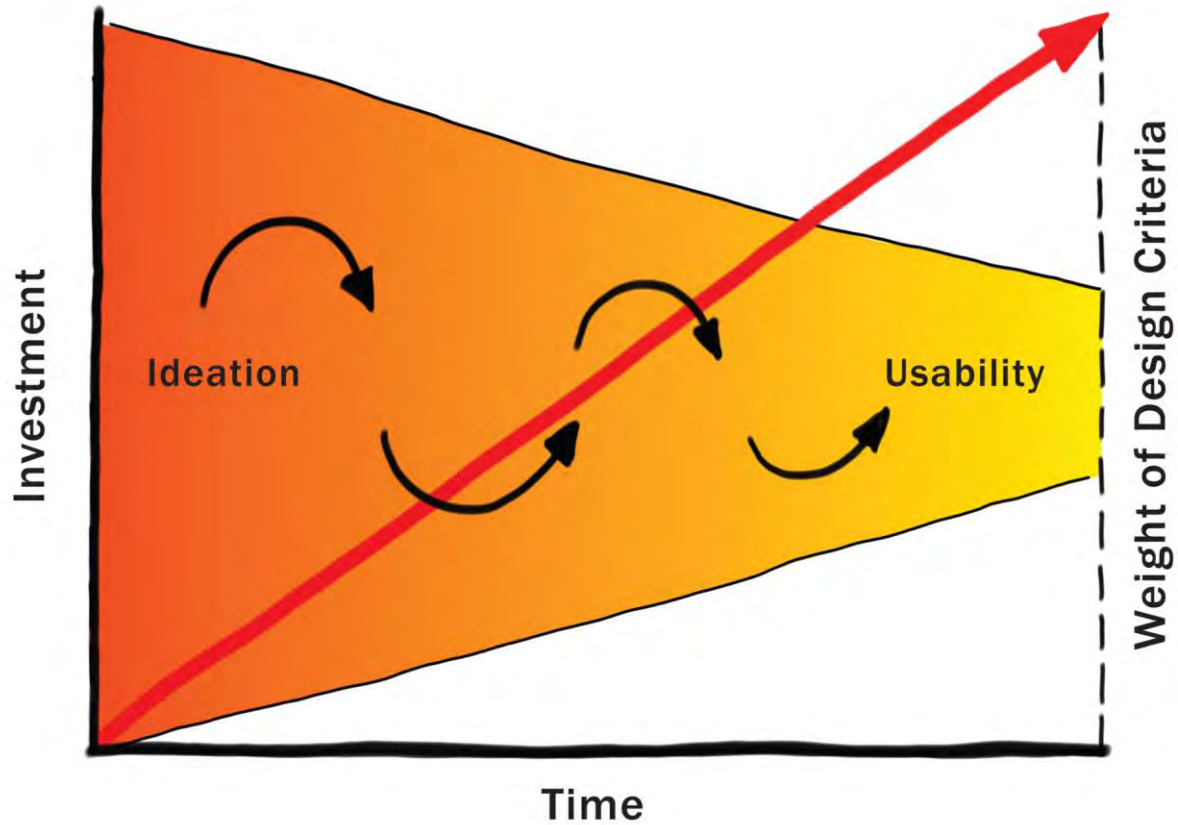
Feedback can turn a good idea into a great idea

Sketching generates too many ideas to implement

Idea Oscillation

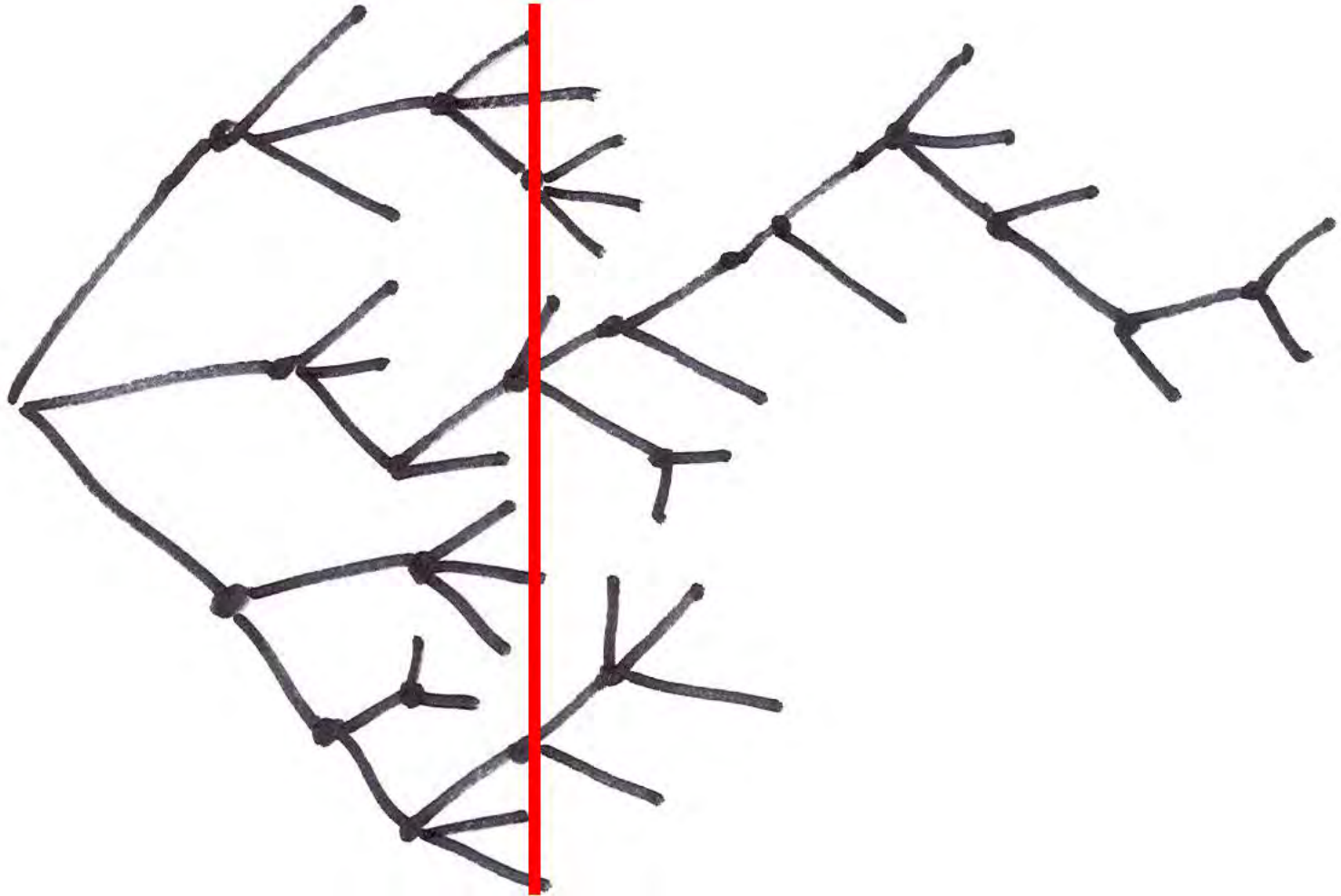


Iteration Toward a Design

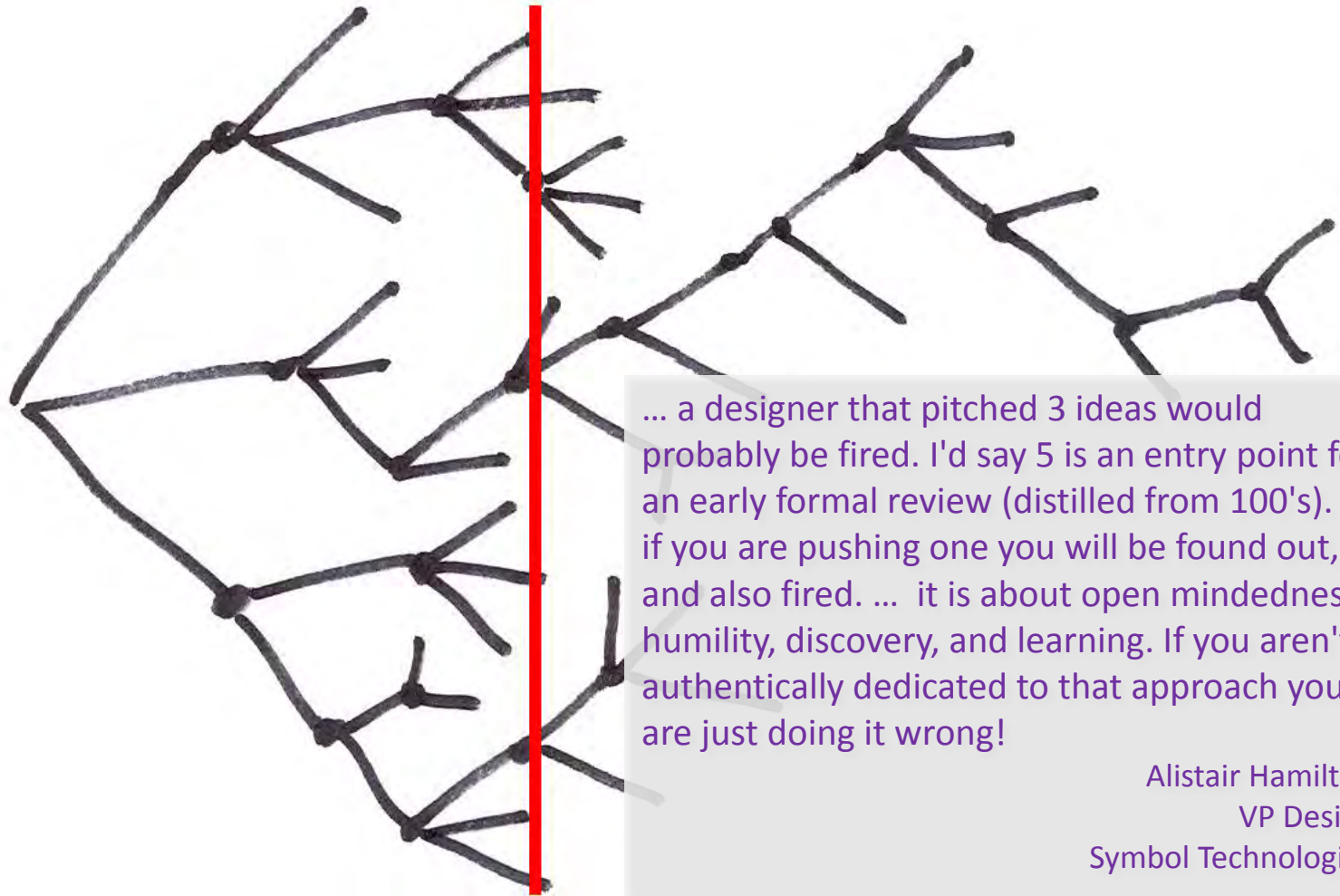


- Sketch
- Prototype

Exploration of Alternatives

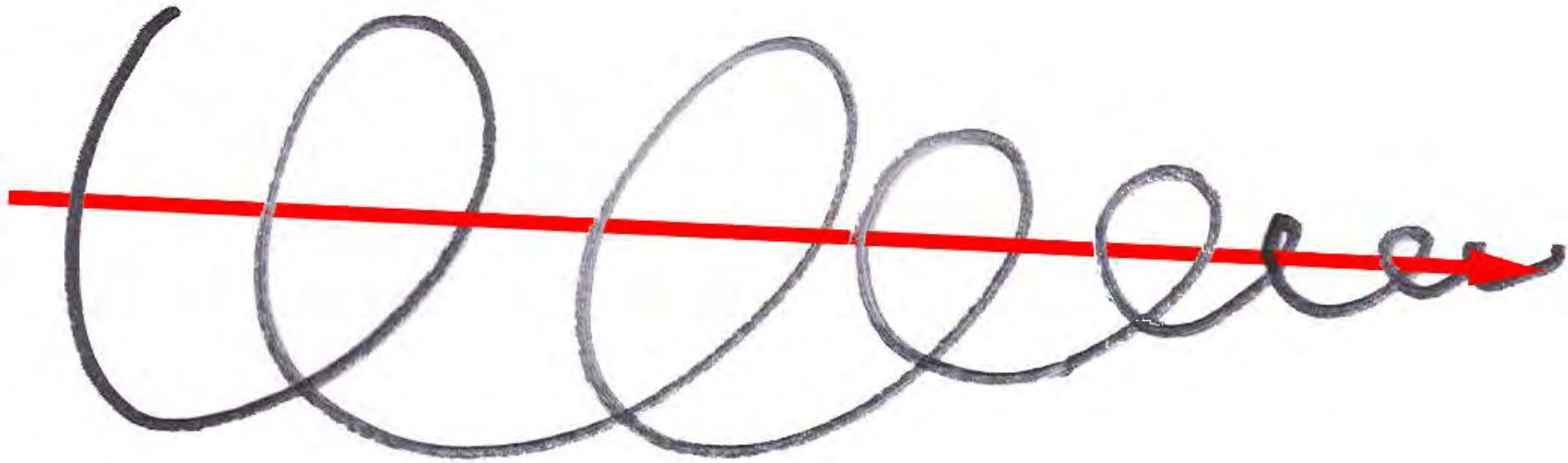


Exploration of Alternatives

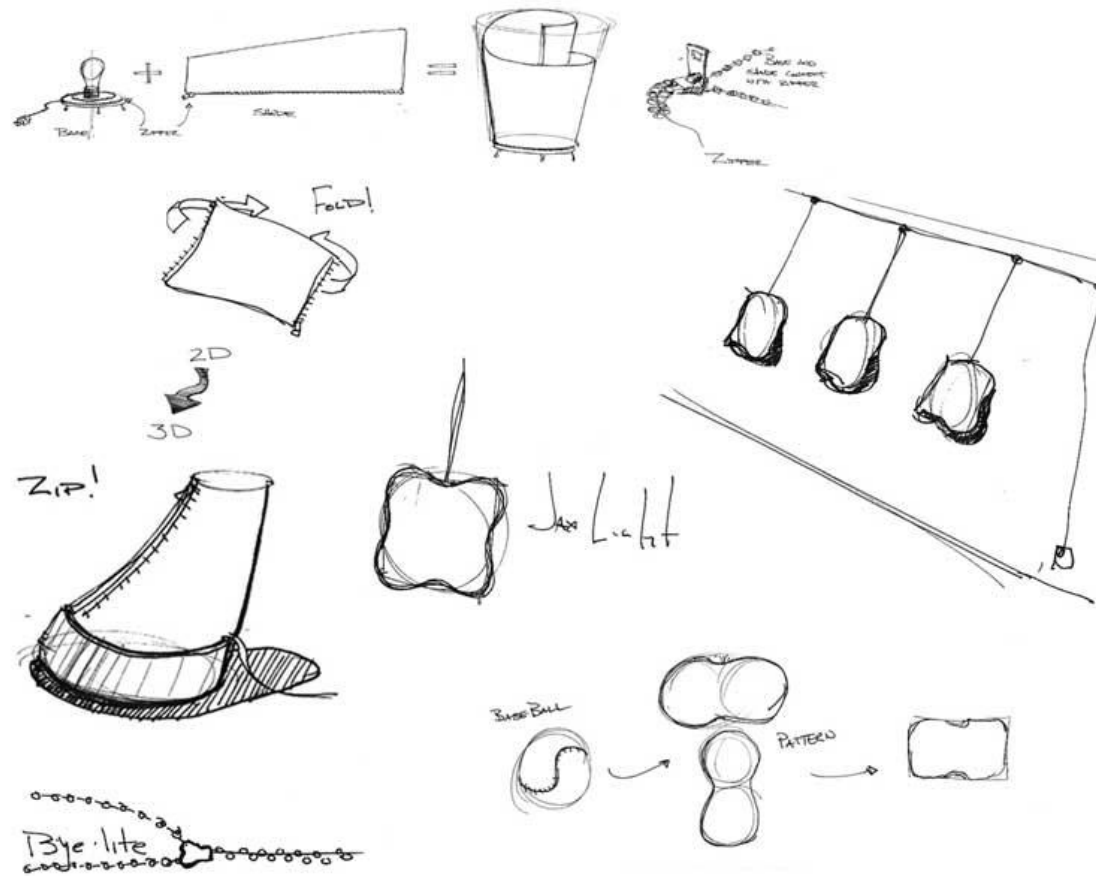


Alistair Hamilton
VP Design
Symbol Technologies

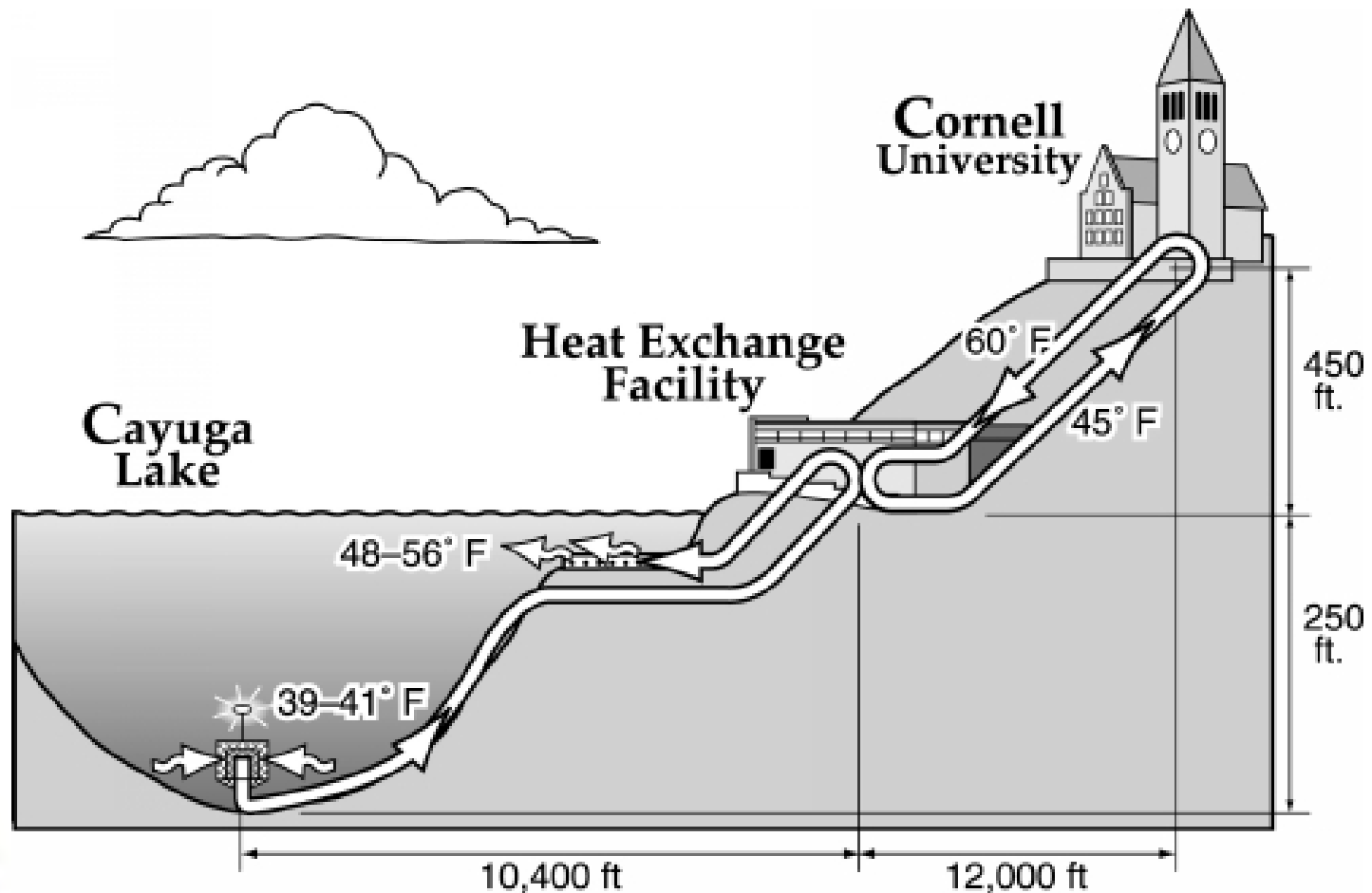
The Converging Path



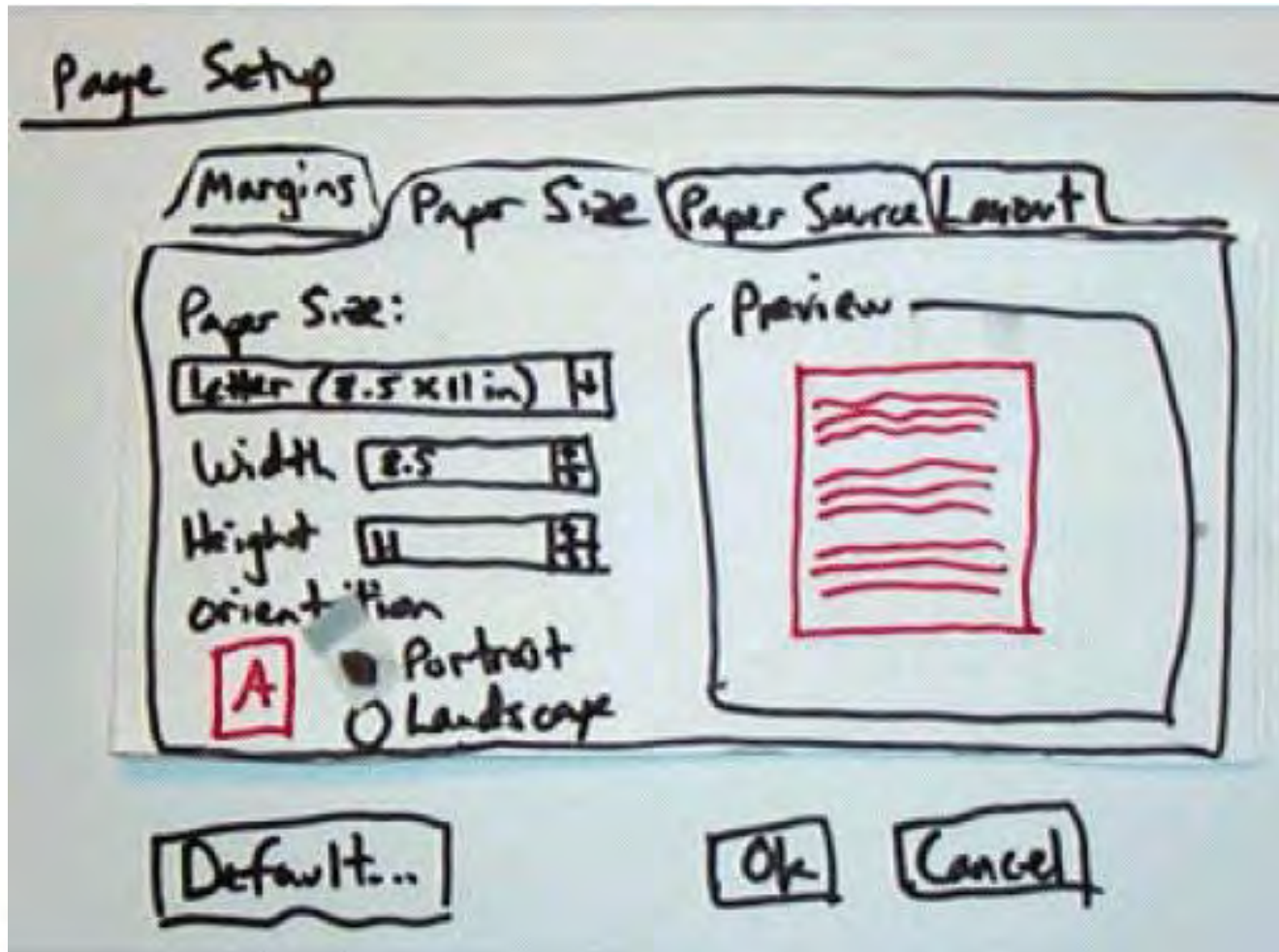
Is this a sketch? Why or why not?



Is this a sketch? Why or why not?



Is this a sketch? Why or why not?



Is this a sketch? Why or why not?



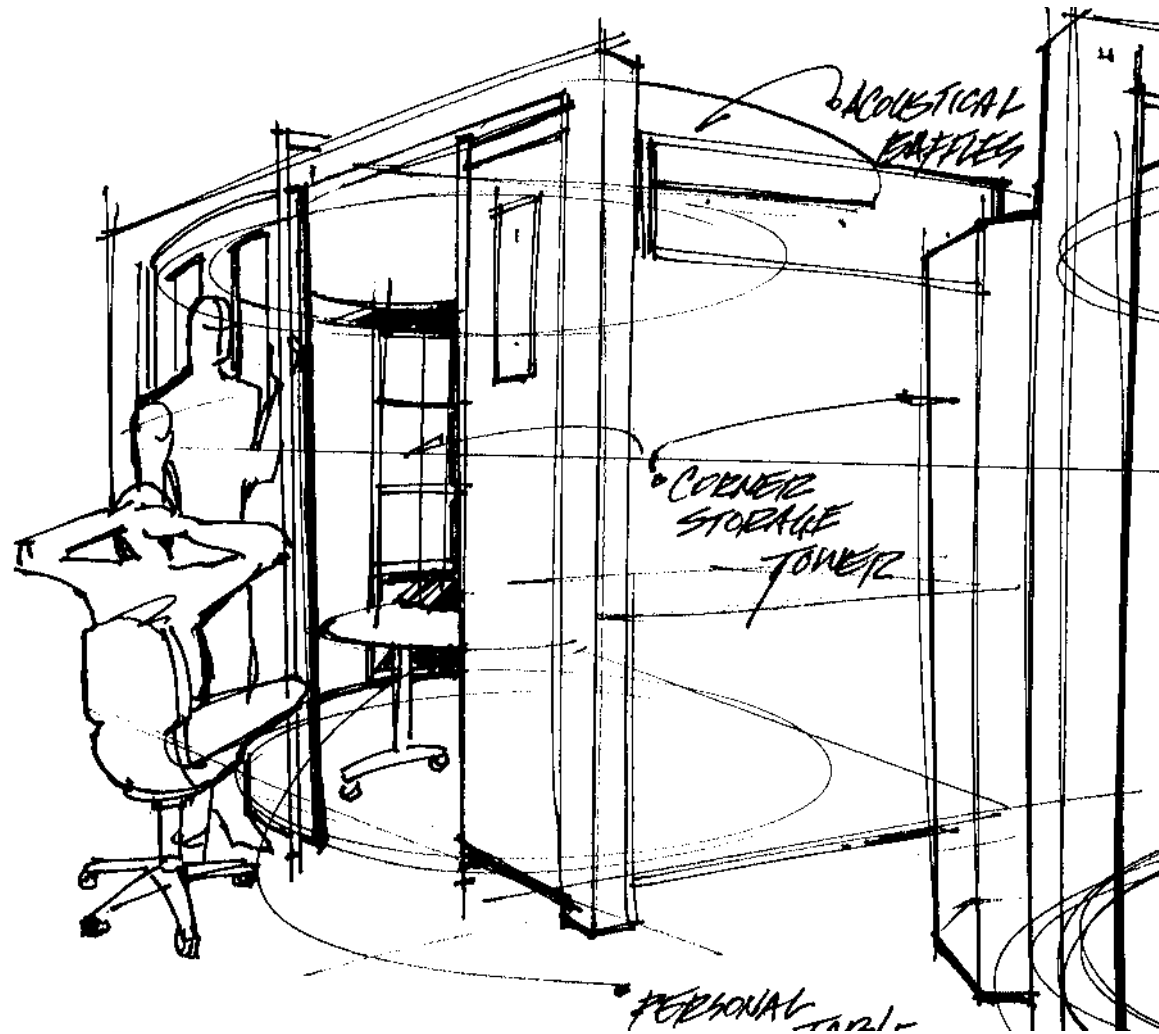
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Is this a sketch? Why or why not?



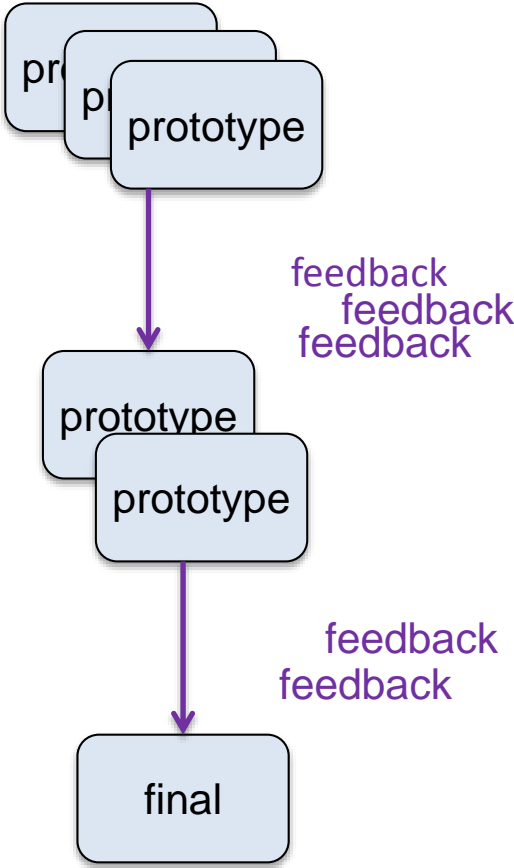
Some Evidence

Task:

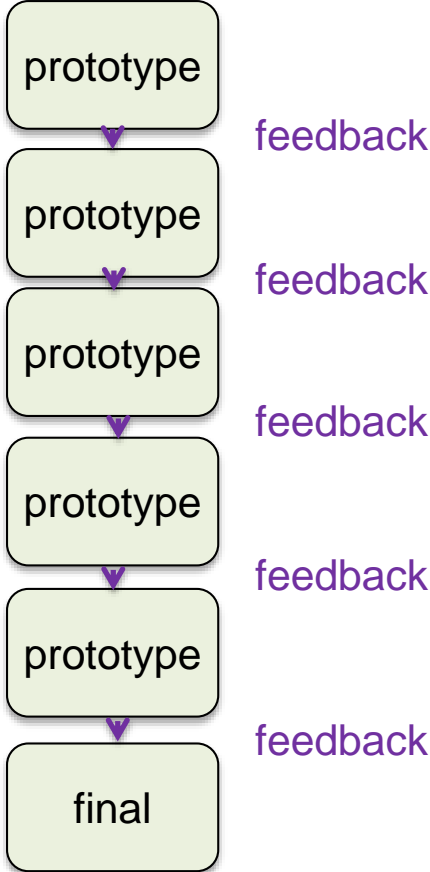
Create a web banner ad for Ambidextrous magazine.



Feedback in Parallel or Serial



Parallel condition



Serial condition

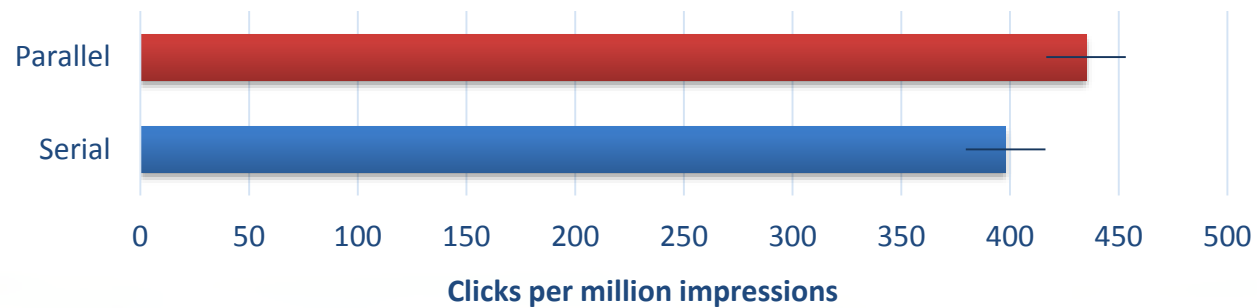
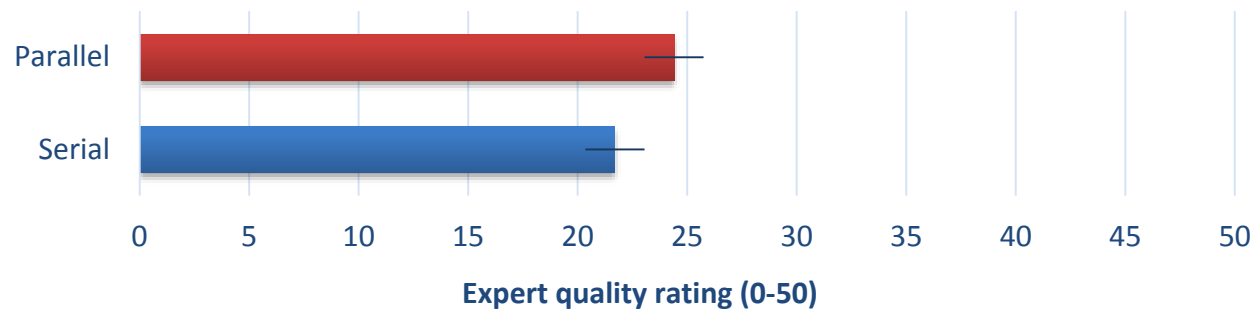
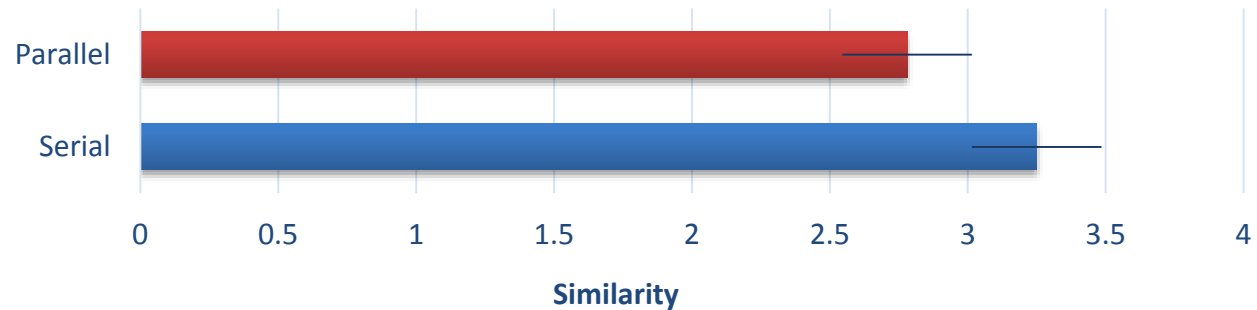
Procedure

serial
prototyping
condition

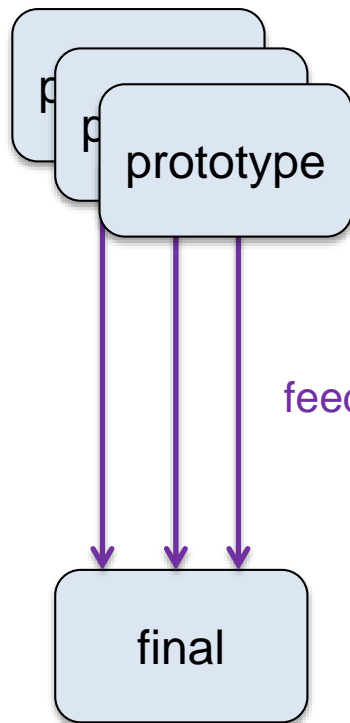
parallel
prototyping
condition



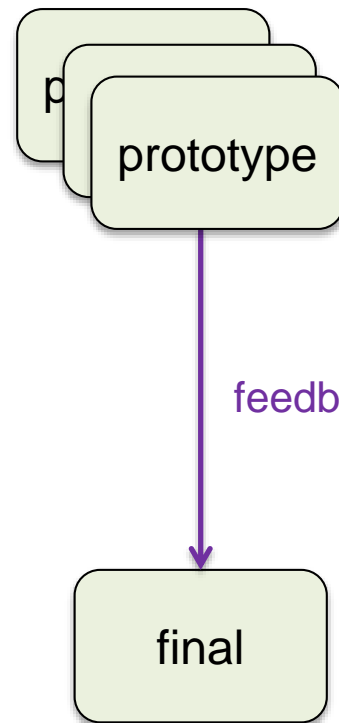
Parallel: more diverse, better, more clicks



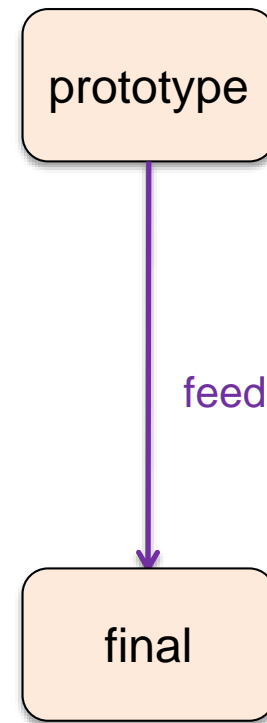
Share one or share your best?



Share multiple
condition

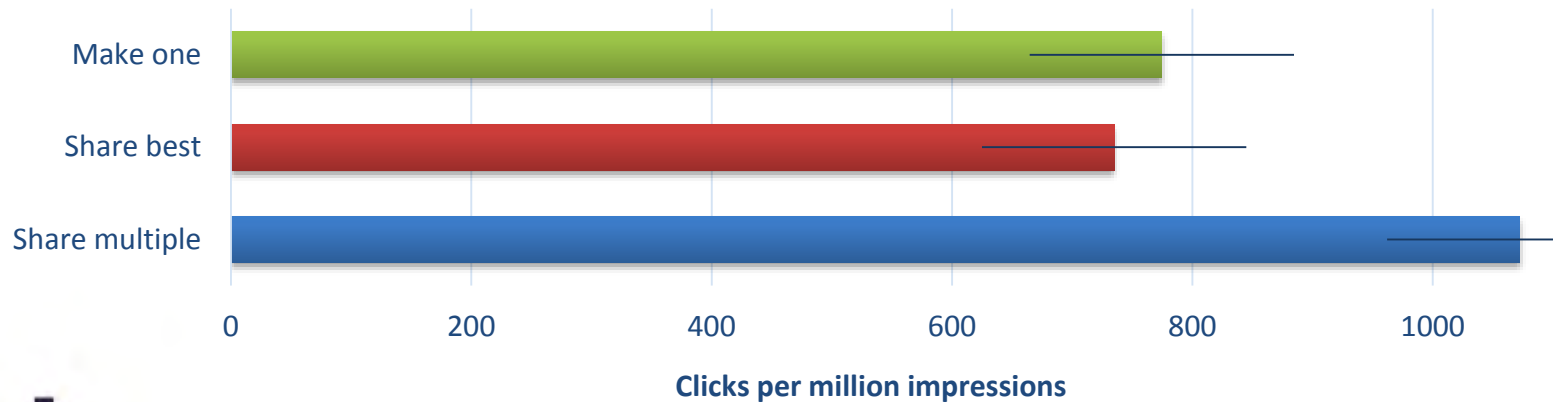
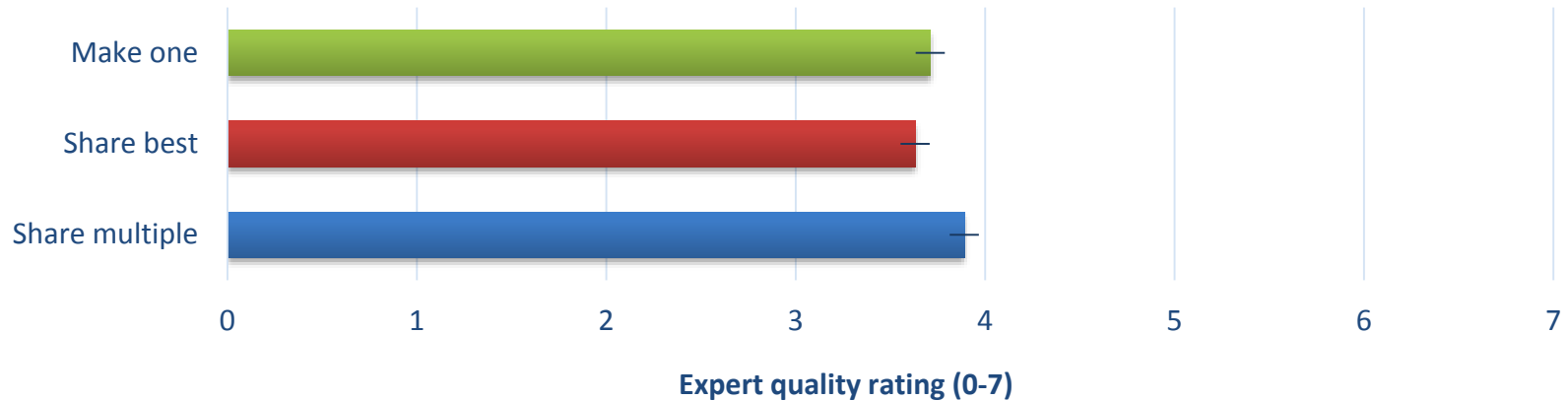


Share best
condition



Make one
condition

Share Multiple: better, more clicks



Some Evidence

Greater divergence in designs

Prevents sticking with the first idea

Allows mashing ideas together

Alternatives facilitate feedback

Enable comparison

Can improve tone of critique

Sketching and the Design Diamond

The design diamond is fundamental to understanding what you are doing here

Much of your education, including in CSE, has taught you to focus on having the right answer

Here it matters what you do long before the end

Most ideas get thrown out, including yours

Better ideas are great criticism, and frequently would never have come about otherwise

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