
WHERE
GOOD
IDEAS
COME
FROM
STEVEN

Lawrence Lessig:

Laws that choke creativity

TED2007 · 18:56 · **Filmed** Mar 2007

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Dave Ackley Design@Large

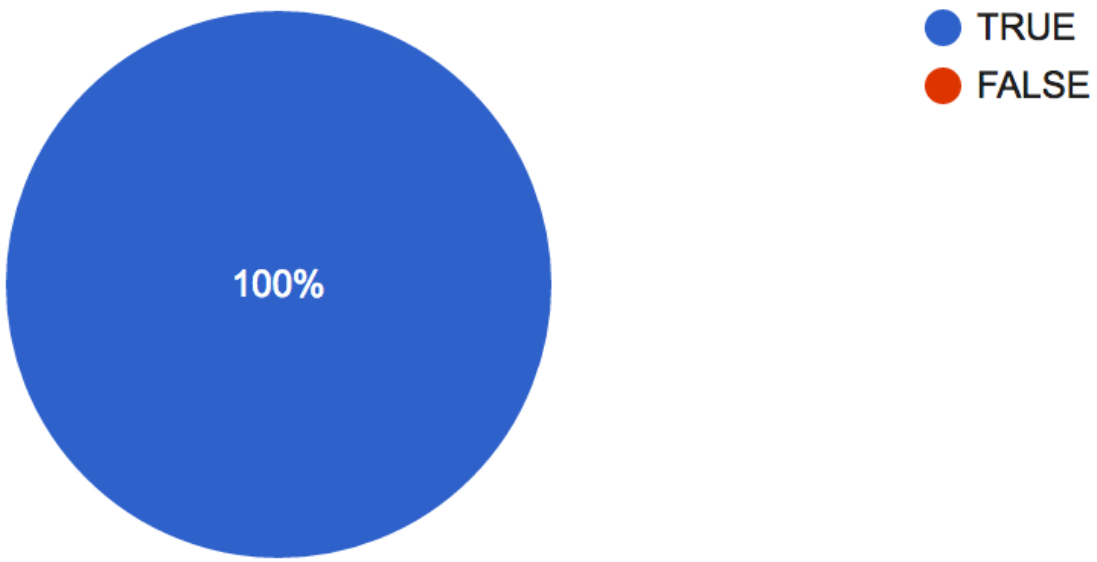
Wednesday 4PM CSE 1202

Thursday Guest Lecturer: Taylor Scott

Week 5 Quiz

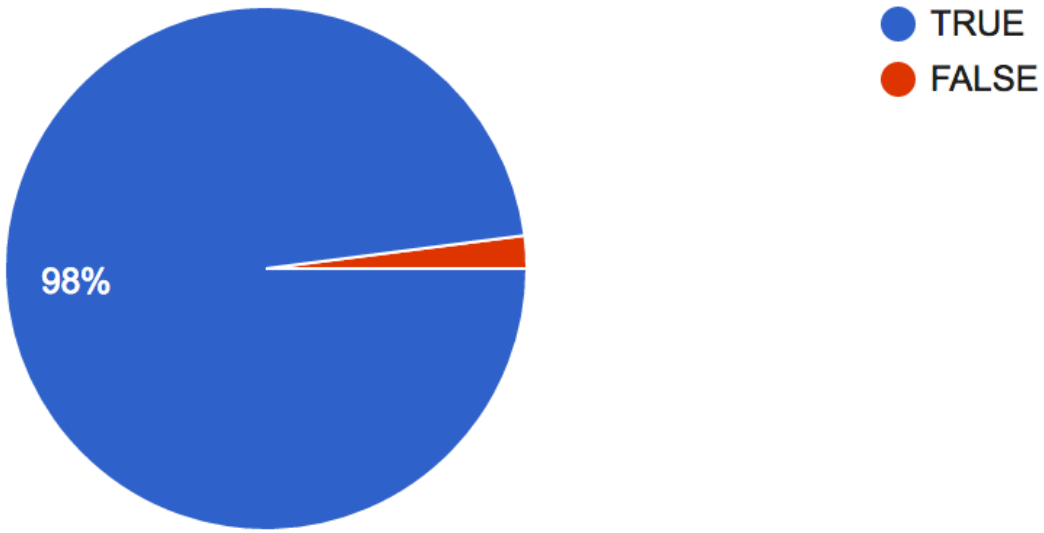
Good interview questions should be open-ended, neutral, sensitive, and understandable

(99 responses)

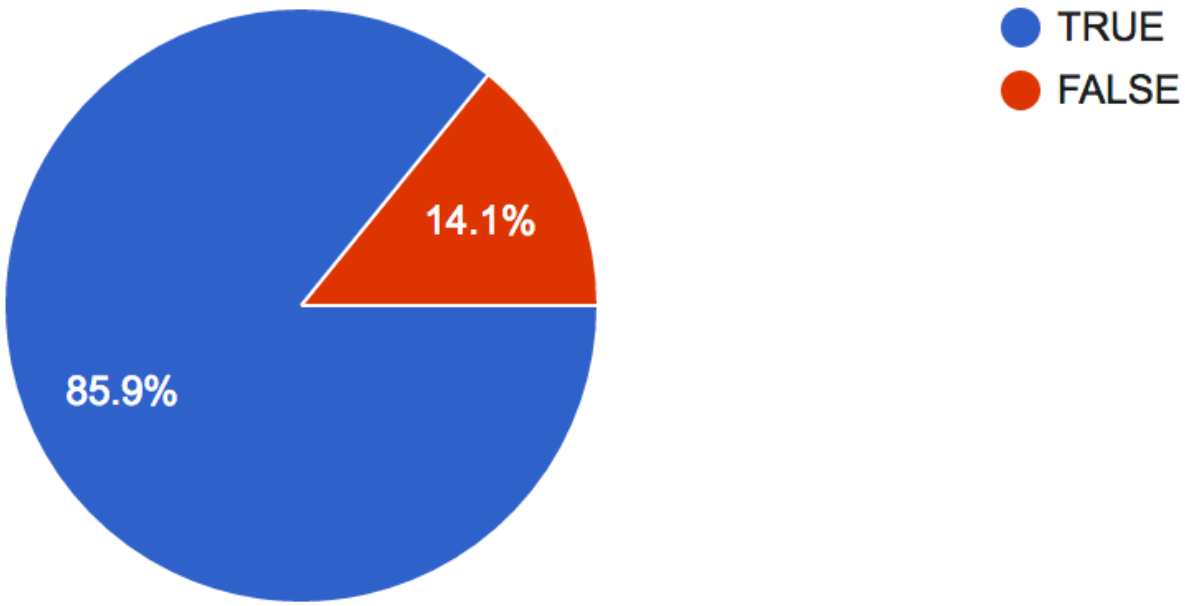


A strategic use of silence can be highly effective at getting respondents to contemplate their responses, talk more, elaborate or clarify particular issues

(99 responses)

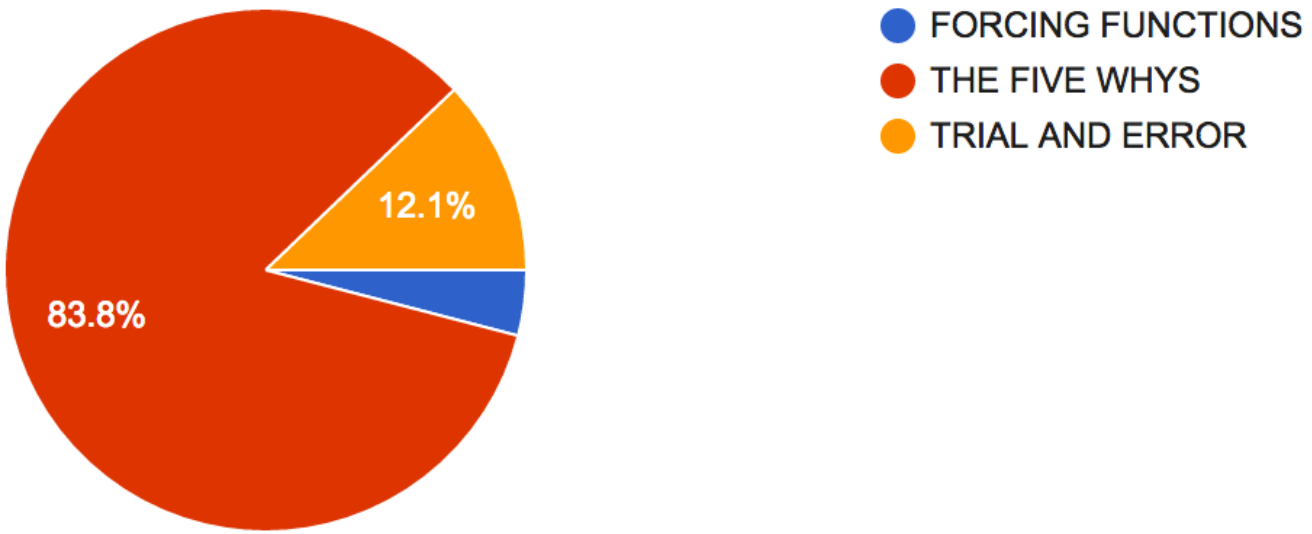


Anecdote is not the same as evidence (99 responses)



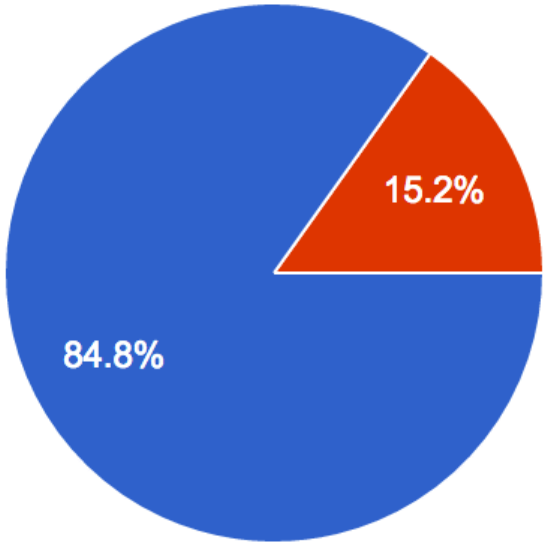
What technique might a designer best use to uncover the underlying causes for an incident?

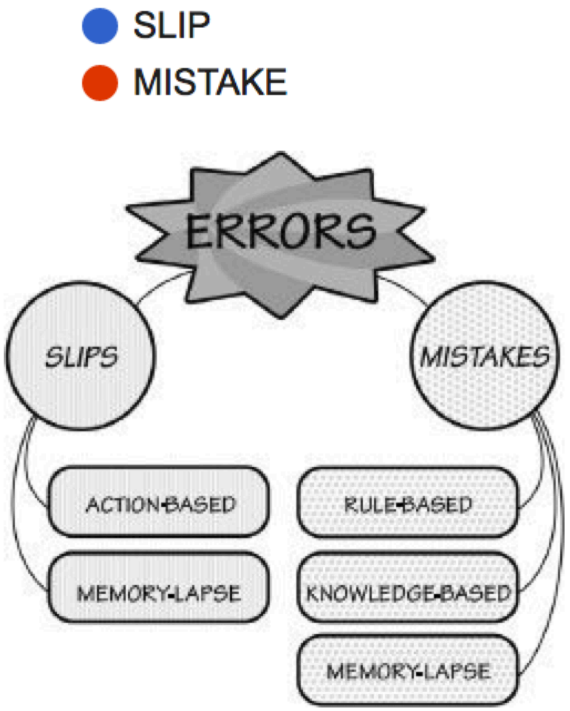
(99 responses)



You poured some cereal into my bowl, and then put the bowl into the cereal cabinet. This is an example of a...

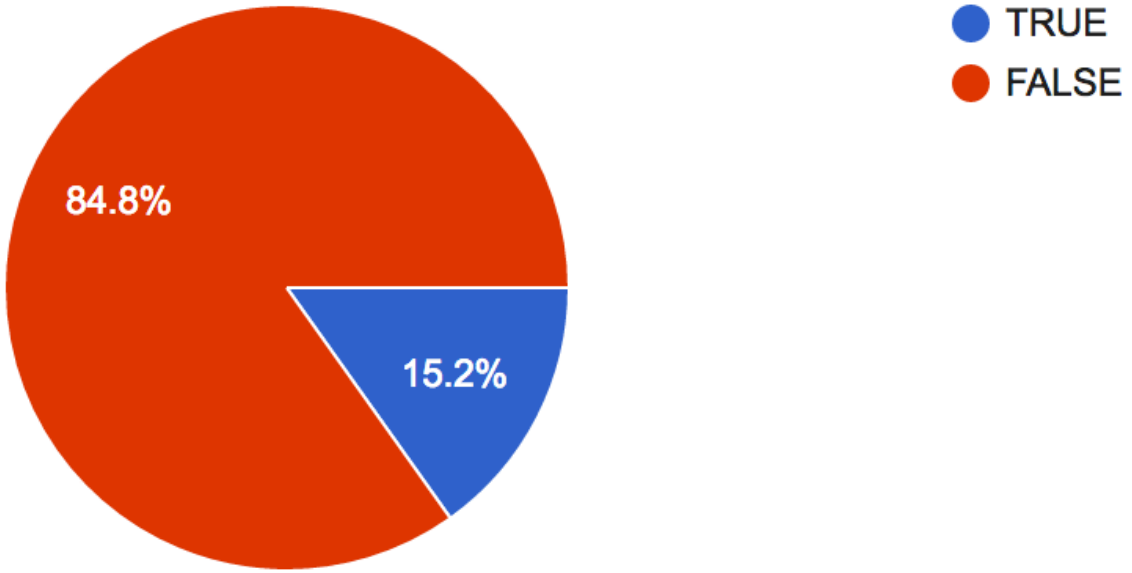
(99 responses)





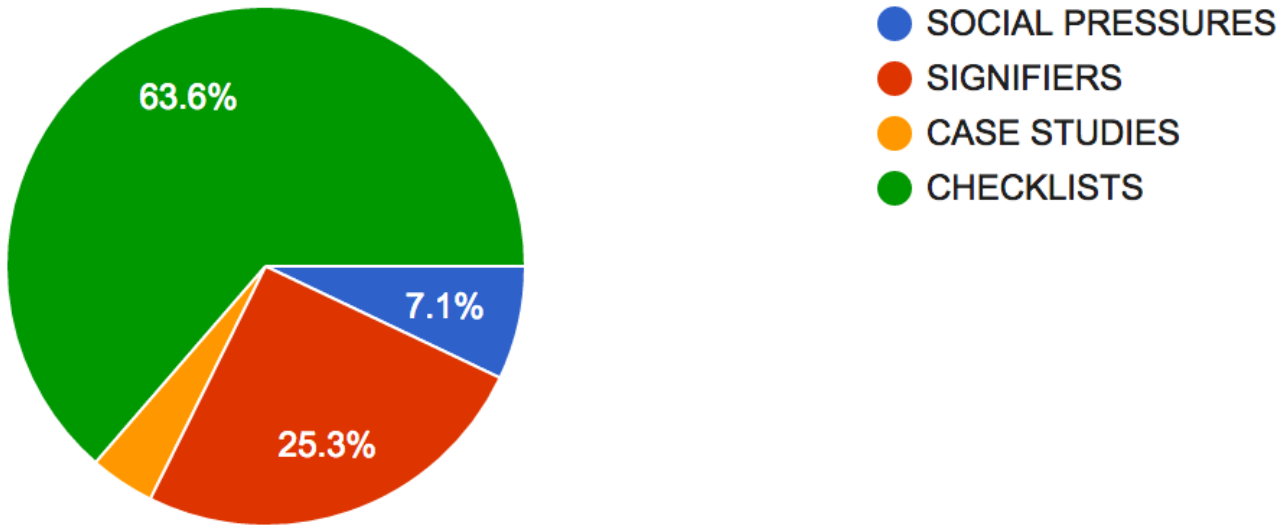
Social & institutional pressures are a good way to prevent people from making errors

(99 responses)



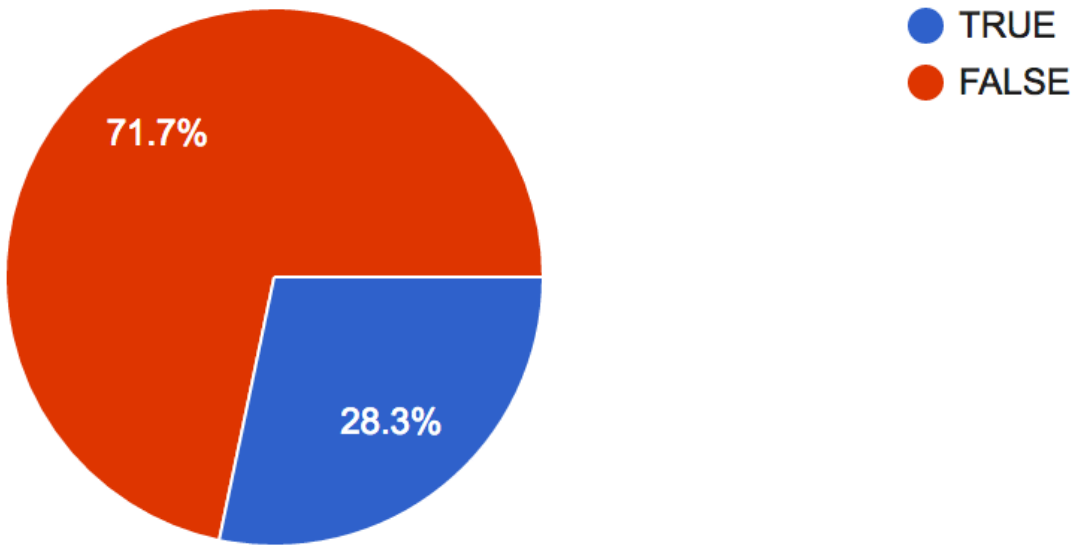
What tool has been shown to increase the accuracy of behavior and reduce error in situations with multiple, complex requirements and even interruptions?

(99 responses)

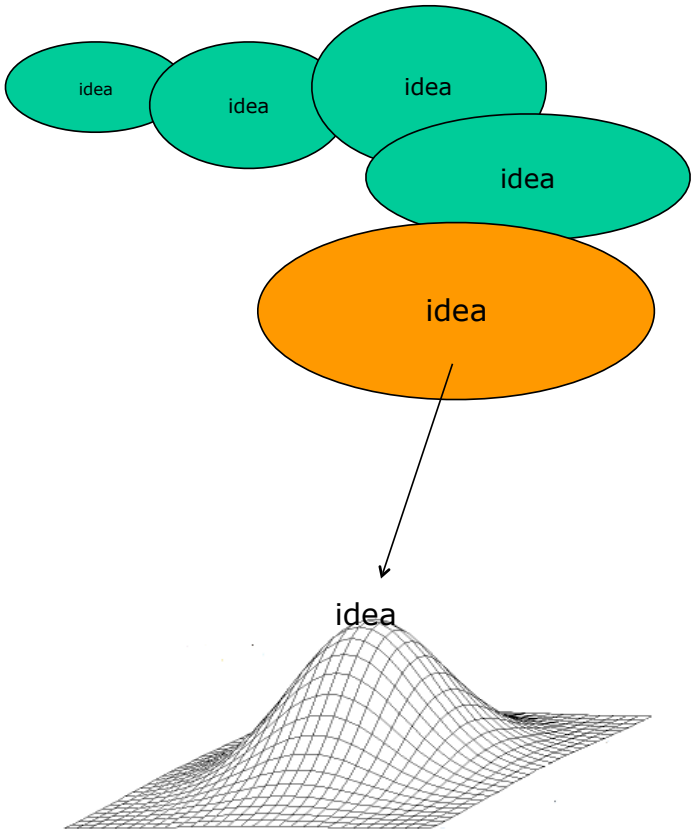


Don Norman suggests that we should not design specifically for error but instead design specifically only to detect error.

(99 responses)

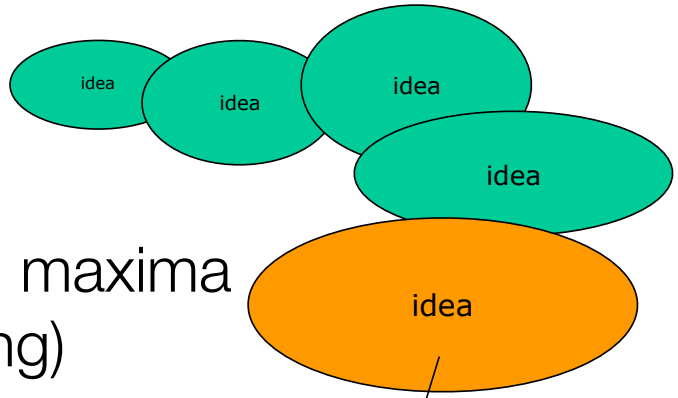


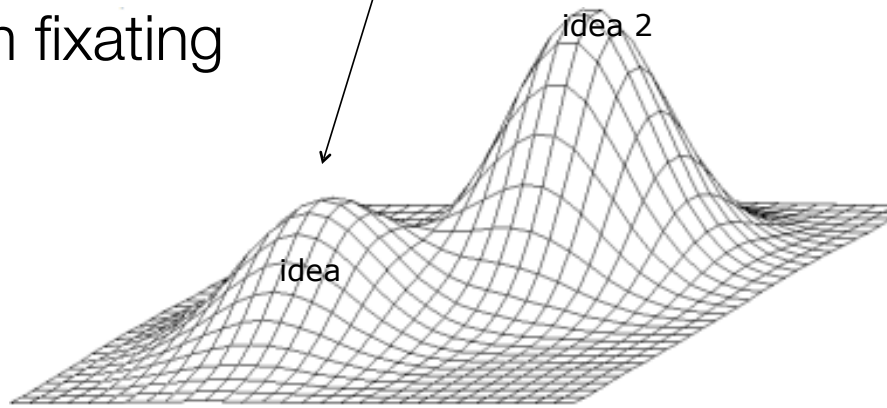
Exploring Design Space



Local vs. global maxima (local hill climbing)

Often results from fixating on a single idea





Exploring Design Space

Getting the Design Right

Generate an idea

Iterate and develop it

Getting the Right Design

Generate many ideas and variations

Reflect and choose

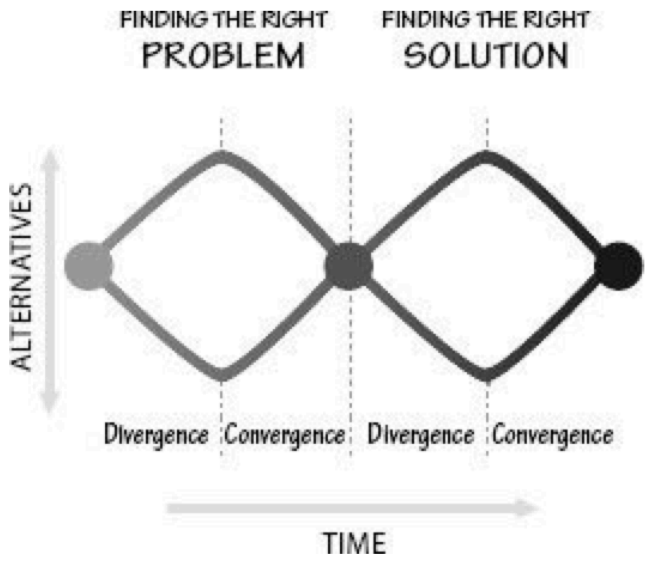
Iterate and develop your choice

Design Truisms

Design is as much about problem finding as problem solving.

Design is as much about getting the right design as getting the design right.

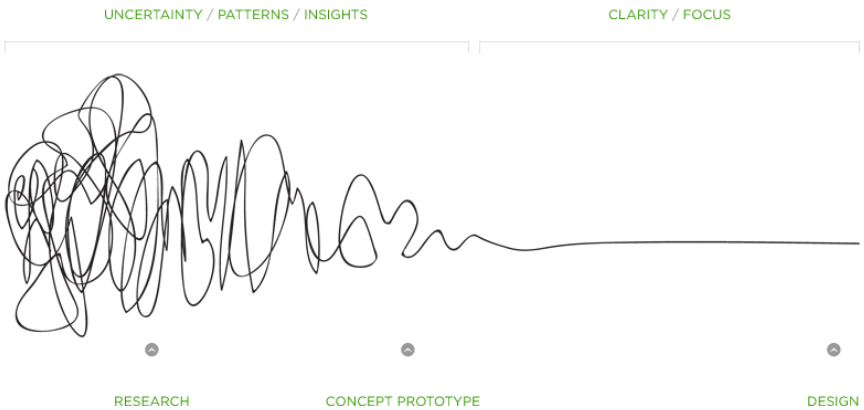
Double-Diamond Model of Design

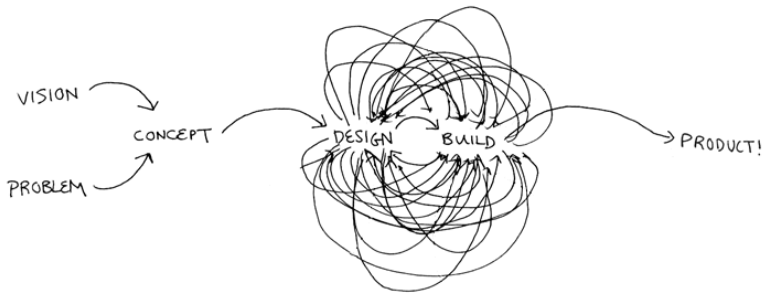


There are many people-centered design methods but all share a common core: iterating through stages of observing, generating ideas, prototyping, and testing.

Reading this week: Design Thinking

As designers you need to build a set of skills and a set of design perspectives.





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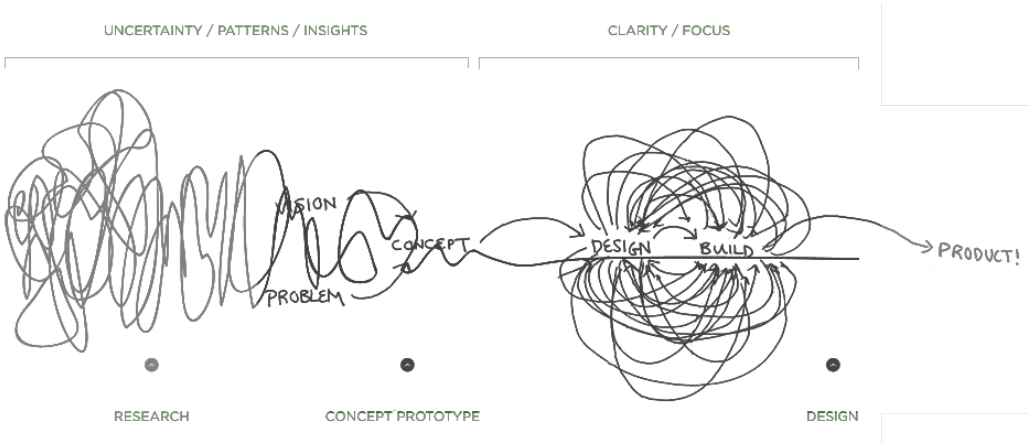

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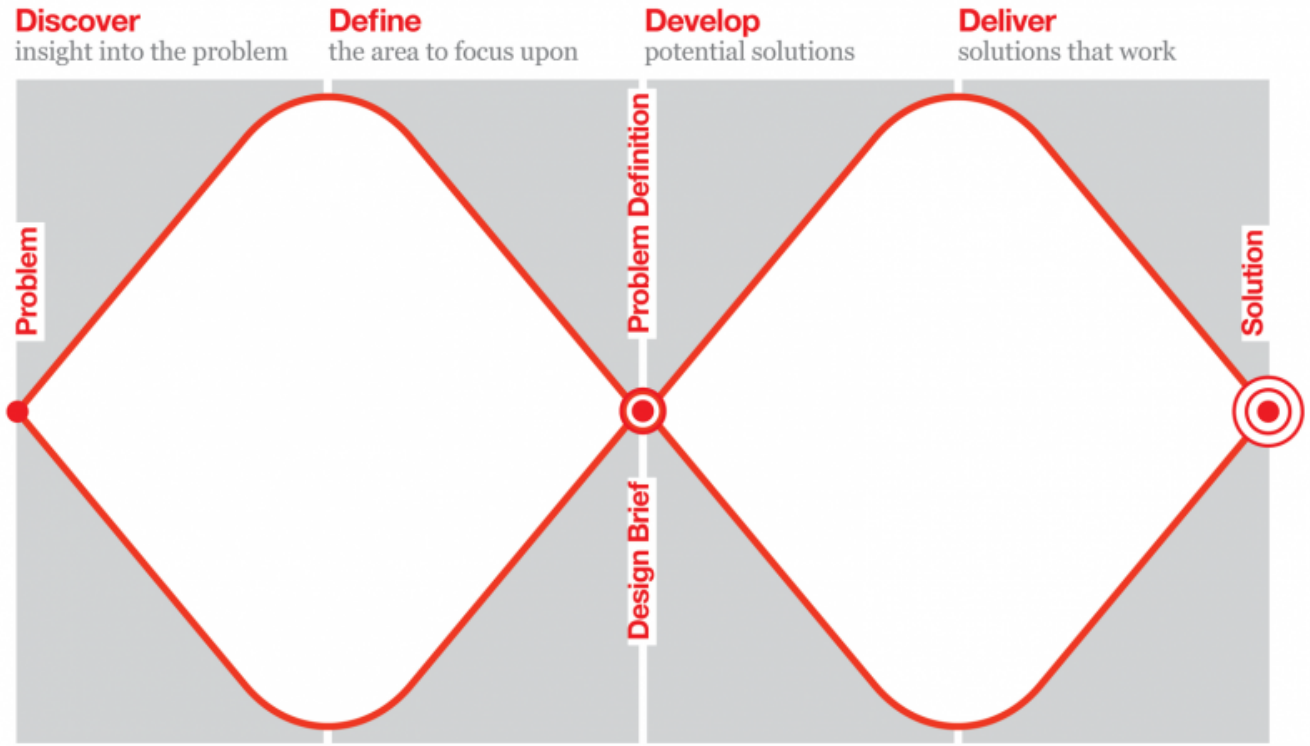

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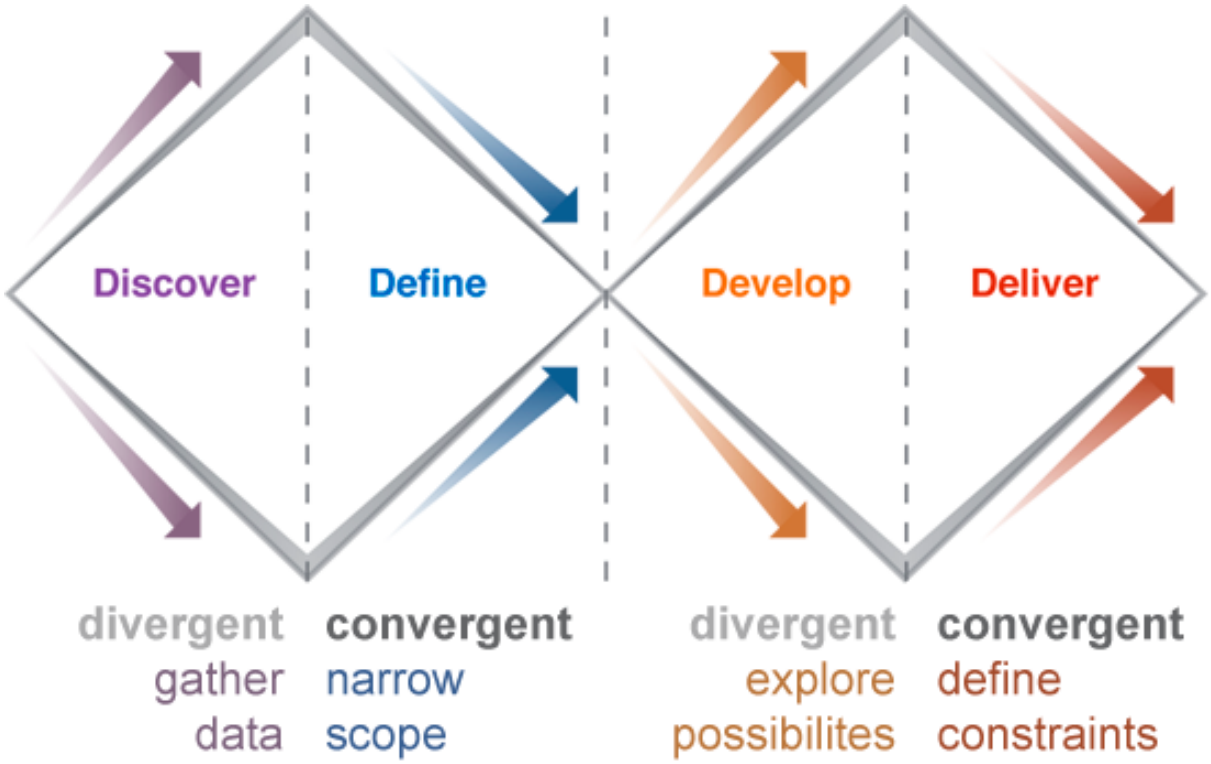

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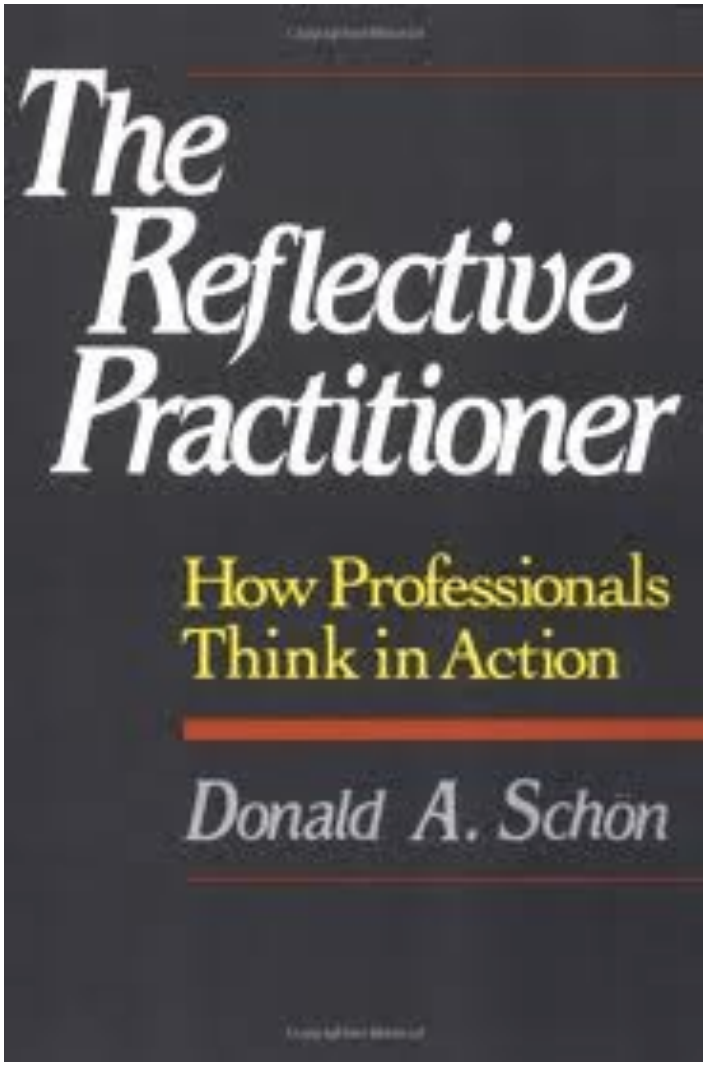
Design Perspective:
A Reflective Conversation

Donald Schön

reflective conversation with the situation

reflective conversation with materials



Problems Are Not Givens

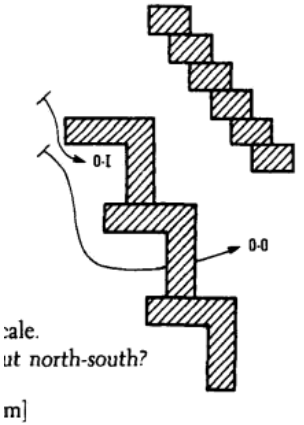
In real-world practice, **problems do not present themselves to the practitioner as givens.**

They **must be constructed** from the **materials of problematic situations** which are puzzling, troubling, and uncertain.

Problem setting is a **process** in which, interactively, we **name the things to which we will attend and frame the context** in which we will attend to them.

Naming and **framing** are central in Schön's view of design.

Reflective Conversation



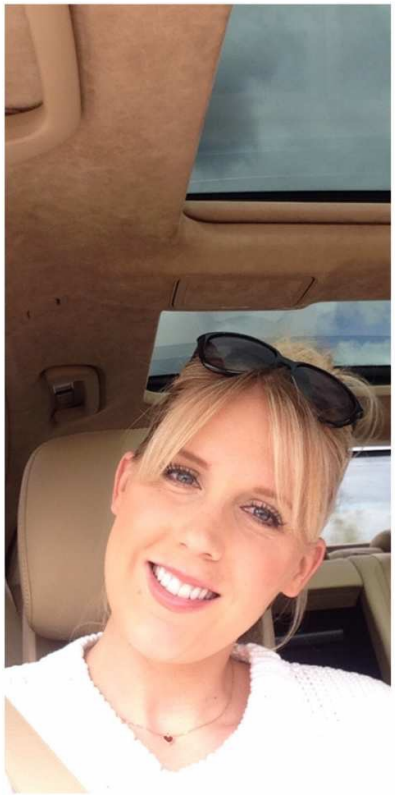
In their r**eflective conversations with design situations**, designers "**frame**" and "**reframe**" problems.

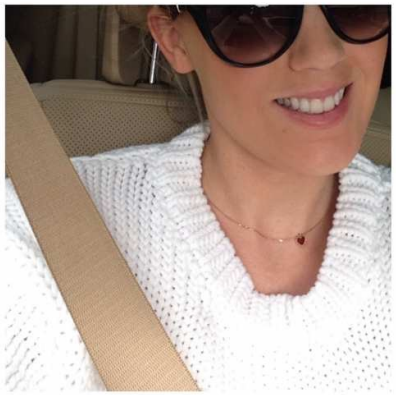
In such **conversations**, the practitioner's **effort to solve the reframed problem yields new discoveries which call for new reflection-in-action**. The process spirals. **The unique and uncertain situation comes to be understood through the attempt to change it.**

The **practitioners' moves also produce unintended changes** which **give the situation new meanings**.

The situation talks back, the practitioner listens, and as she appreciates what she hears, she reframes the situation once again.

A story of competition





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The supposed competitor

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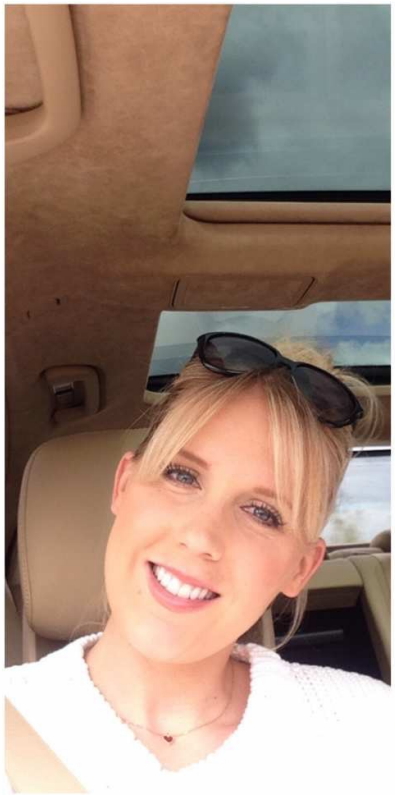
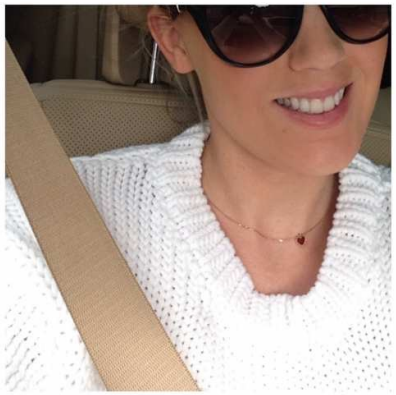
The real competitor





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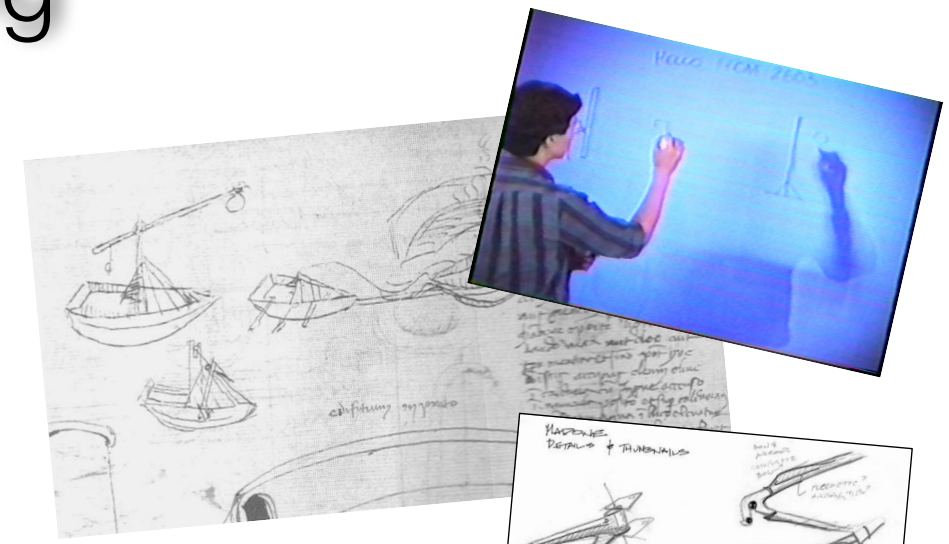
Design Perspective: Sketching


Design is about Sketching
Sketching is a great example of Schön's “Reflective Conversation with Materials”
Sketching is about Design

Sketching



Features of Sketching

Quick

Timely

Inexpensive

Disposable

Plentiful

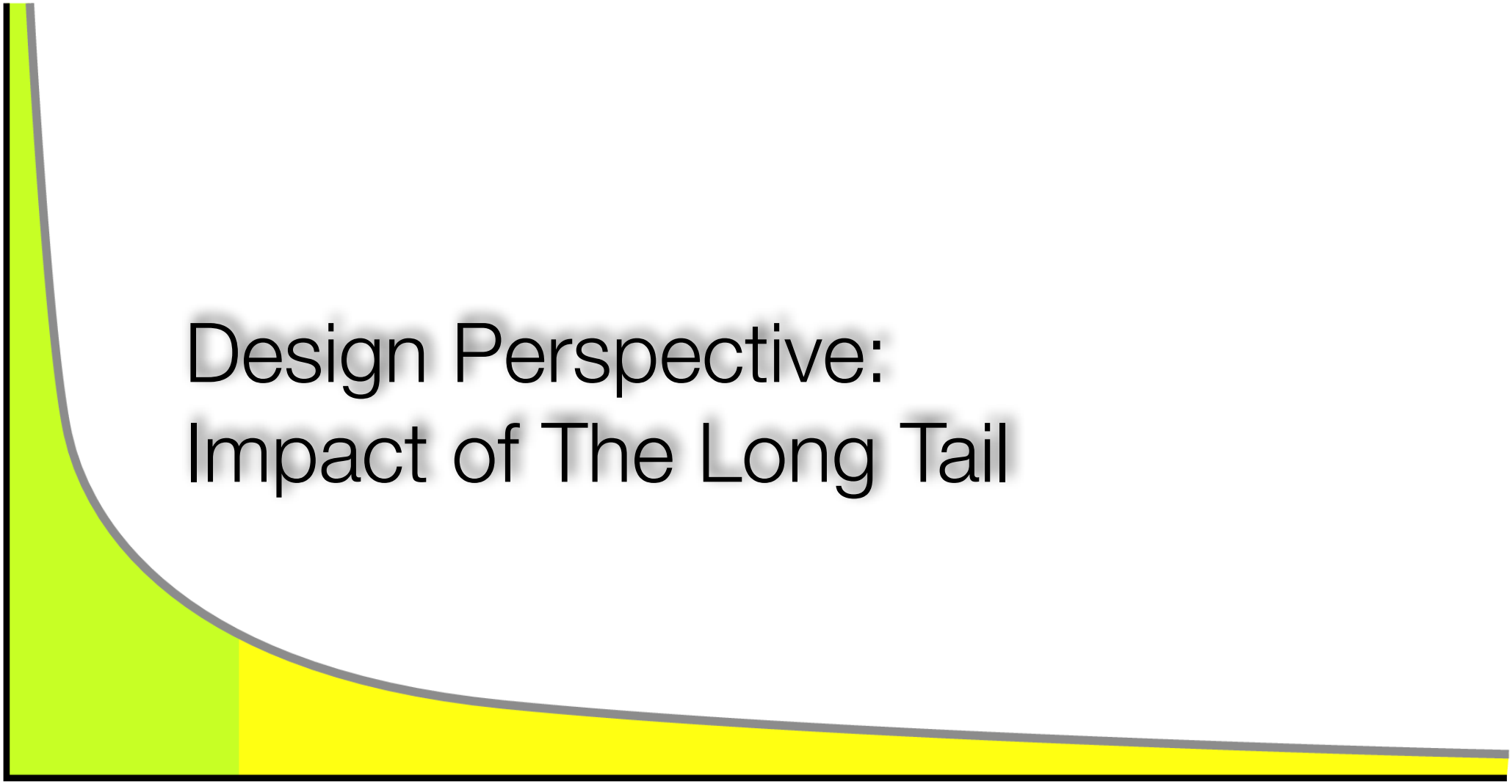
Minimal Detail

Sketches Suggest Rather than Confirm

Sketches vs Prototypes

SKETCH	PROTOTYPE
Evocative	Didactic
Suggests	Describes
Explores	Refines
Questions	Answers
Proposes	Tests
Provokes	Resolves
Tentative	Specific

Like most dichotomies best thought of as dimension

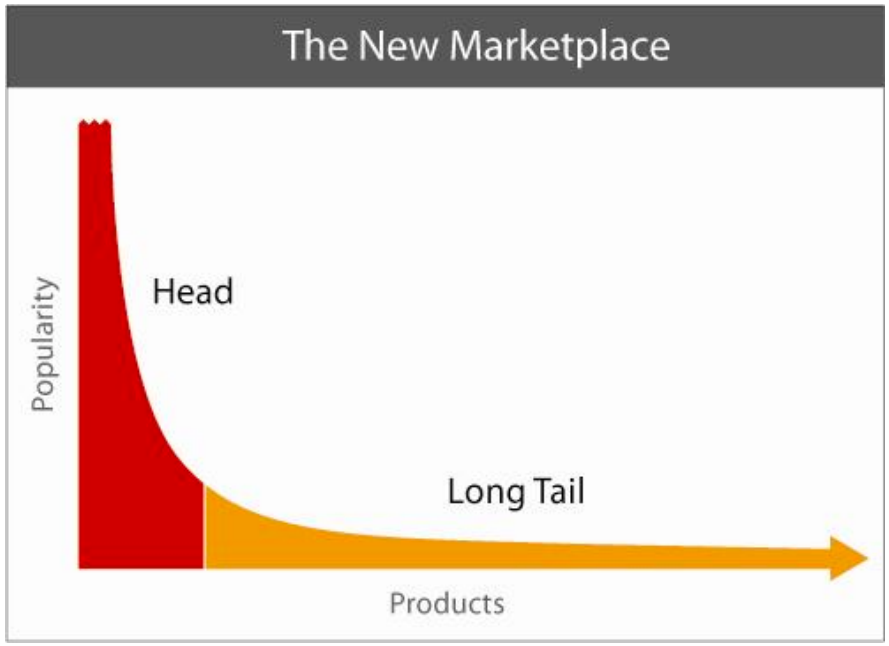


Design Perspective: Impact of The Long Tail

The Long Tail

WIRED Chris Anderson wrote **The Long Tail**, an article in Wired magazine, he expanded upon in his book, **The Long Tail: Why the Future of Business is Selling Less of More.**

The theory of the Long Tail is that our culture and economy is increasingly shifting away from a focus on a relatively small number of "hits" (mainstream products and markets) at the head of the demand curve and toward a huge number of niches in the tail. As the costs of production and distribution fall, especially online, there is now less need to lump products and consumers into one-size-fits-all containers.



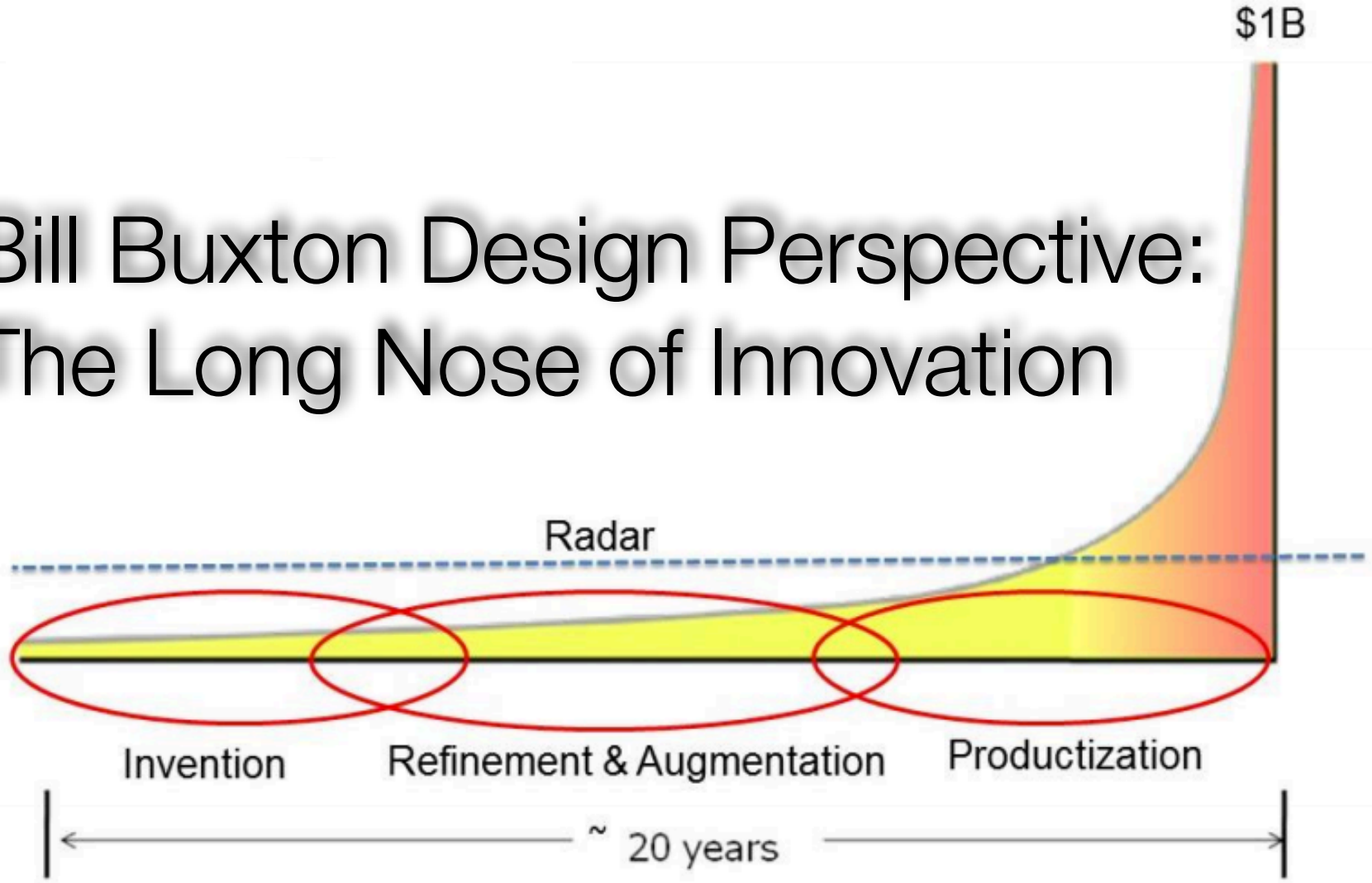
The Long Tail

What's really **amazing** about the Long Tail is the **sheer size** of it. **Combine enough nonhits** on the Long Tail and you've got a market **bigger than the hits**.

Books: A large bricks-and-morter bookstore shop might carry 100,000 titles. Yet more than half of Amazon's book sales come from outside its top 100,000 titles.

Music: Rhaposdy, now Napster, streams more songs each month beyond its top 10,000 than it does from its top 10,000.

Bill Buxton Design Perspective: The Long Nose of Innovation



The Long Nose of Innovation

The bulk of innovation behind the latest “breakthrough" (wow stuff like multitouch on the iPhone) is also low-amplitude and takes place over a long period—but well before the "new" idea has become generally known, much less reaches a tipping point.

This is what **Bill Buxton** calls **The Long Nose of Innovation**.

The important lesson is the value of drawing inspiration from the past.

The Long Nose of Innovation

Mouse: First built in around 1965 by William English and Doug Engelbart. Around 1973, Xerox PARC adopted a version as the graphical input device for the Alto computer.

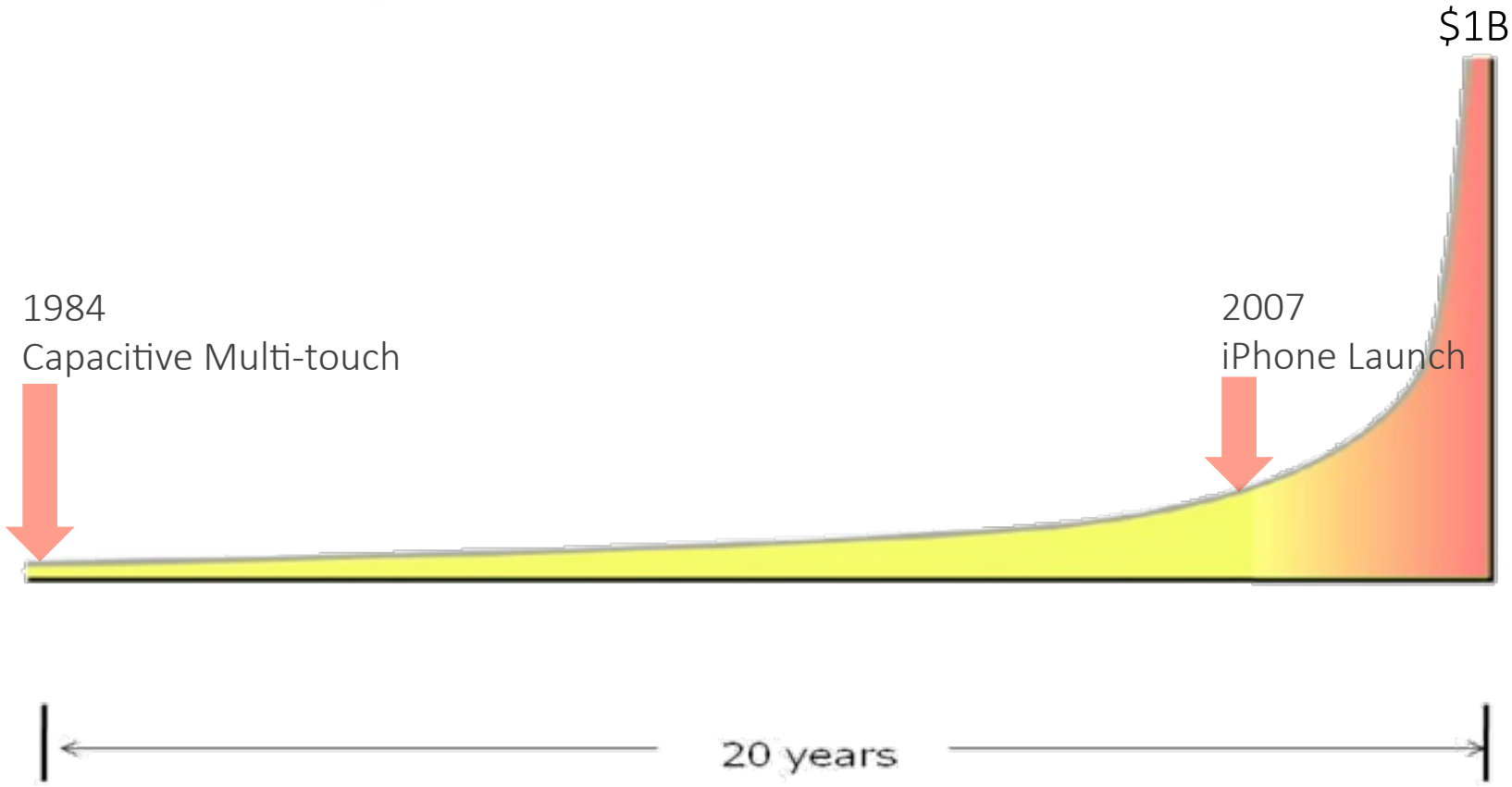
In 1980, 3 Rivers Systems of Pittsburgh released their PERQ-1 workstation, which was the first commercially available computer that used a mouse.

January, 1984, the first Macintosh—the computer that brought the mouse to the attention of the general public.

However it was not until 1995, with the release of Windows 95, that the mouse became ubiquitous.

“Mother of All Demos”
Doug Engelbart
1968

The Long Nose of Innovation



Commercial Success

Petitbled Roller Blade: Patented 1819

The Long Nose of the iPod

- Christmas 2004 could be called “iPod Christmas”
- Seemingly out of nowhere (for many), the iPod became the “must have” gift
- Released in July that year, it stormed the marketplace
- But was it really “out of nowhere”?
- No. It was actually the 4th generation of a product that had just hit the “tipping point”
- Up to then, it had just been following the Long Nose, below the radar.

July 2004

G1: October 2001

G2: July 2002

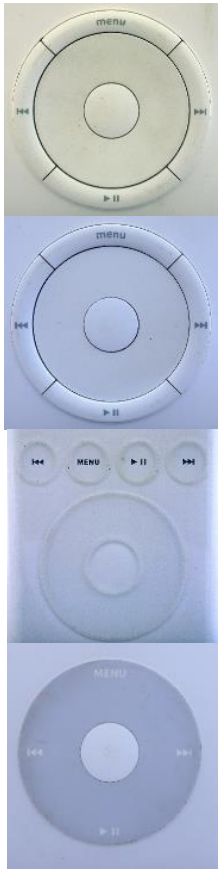
G3: April 2003

G4: July 2004

Observation 1:

It took 3 ¾ years and 4 generations for the iPod to become an “overnight” success.

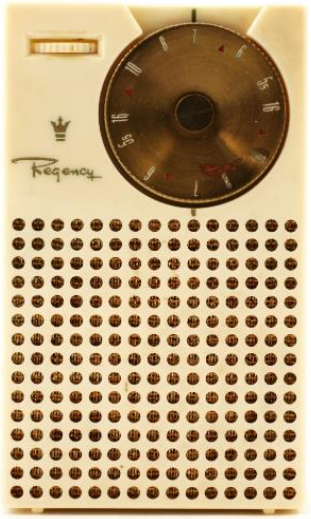
Observation 2:



Each generation tinkered with one of its most iconic features:
the scroll wheel.

What is the history of a portable music player where you can listen through headphones as you move around?

Regency TR-1 Transistor Radio (1954)



- World's first commercially available transistor radio.
- Designed by Painter, Teague and Peterfil

What about a portable music player on which you can store your own music?

Sony TPS-L2 Walkman (1978)

Used audio cassette technology

Introduced 1978

What about one that uses random access digital MP3 files rather than analogue, sequential audio cassettes?

Elger Labs MPMan F10 (1998)

- First portable music player using MP3 files
- Stored music in flash memory, enabling random access
- $250
- 32MB of memory
- could hold eight 4-minute songs.
- could upgrade the memory to 64MB by sending the unit back to Eiger labs with a check for $69 plus $7.95 shipping.

What about one that stores the MP3 files on a miniature hard drive, thereby increasing amount of music that you can store?

HanGo / Remote Solution Personal Jukebox PJB-100 (2000)

First hard-disk based portable MP3 Player

The original design was developed by Compaq starting in May 1998.

Compaq licensed the design to HanGo Electronics

Had 4.8GB vs the 32/64MB storage found on flash memory players of the time

Upped storage to over 1,000 songs.

Original price: $799. USD

What about roots of the form-factor / industrial design?

Regency TR-1 Transistor Radio, 1954
Painter, Teague and Petertil

Braun T3 Transistor Radio, 1958
Dieter Rams

Apple G4 iPod, July 2004
Jonathan Ive

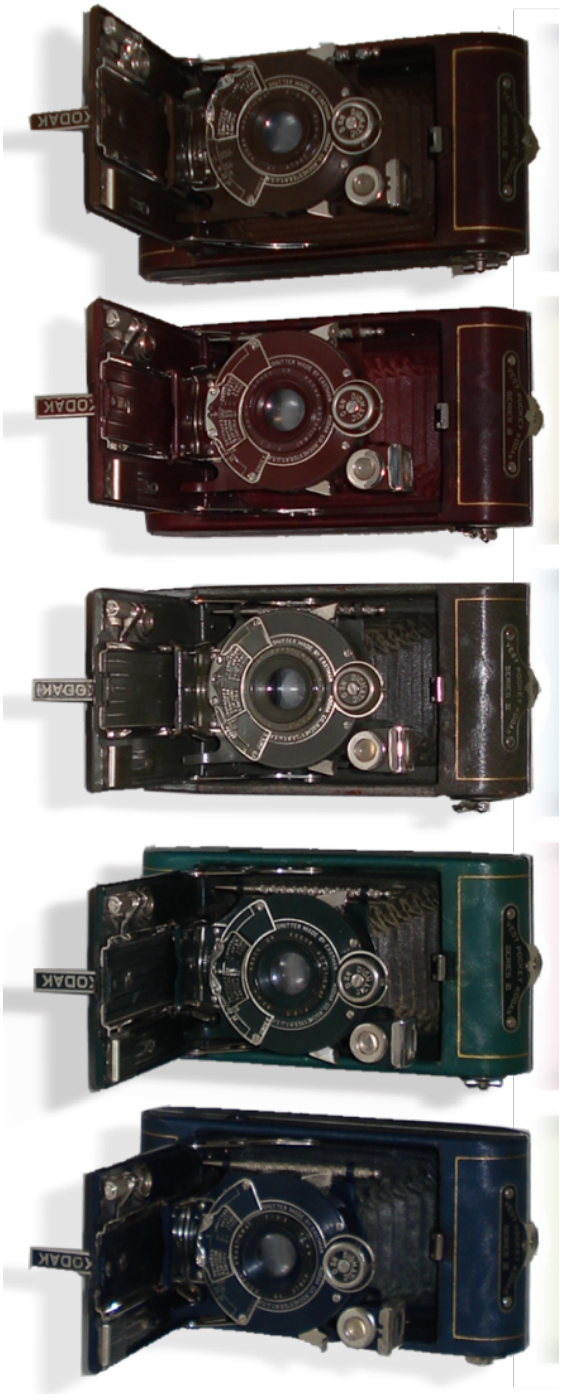
Typically, ideas do not advance in a single step; rather, in a linked chain of steps, each link building on the tradition of those preceding. Above are 3 steps in such a progression. A core part of design competence is the skill to search for, find, and appreciate such chains. **Recognizing a design as such a link is far more interesting and informative than thinking about it as the result of some divine creative flash of genius, and thus coming out of nowhere.** For the aspiring designer, this is also a relief, since I don't know anyone who can teach divine inspiration; however I do know that anyone can learn to mine the world for great traditions worthy of building upon.

Another design history example

Kodak Vest Pocket Series III (1926)

- In 1926, Kodak launched this black camera.
- It was successful
- However, it was selling mainly to men
- They wanted to extend the market
- So they engaged Walter Dorwin Teague to design a model that would appeal to women
- His solution was to release a version of the camera in 5 different colors, each packed in a pseudo-silk lined box, where the box and liner matched the color of the camera

Walter Dowrin Teague
Vanity Kodak (1928)



Apple G1 iPod, October 2001

- In 2001 launched this white iPod.
- It was successful
- However, it was selling more to men
- They wanted to extend the market
- So they designed a model that would better appeal to women
- Their solution was to release a smaller version of the iPod in 5 different colours.

Jonathan Ive
Apple iPod Mini (2004)

Walter Dowrin Teague
Vanity Kodak (1928)

- Same basic design brief
- Same use of color as part of the solution
- Same choice of base colors
- Same number of colors
- Same simultaneous release
- Coincidence?

Conclusions

- The Teague/Kodak example is a classic
- It would be known to virtually any trained industrial designer
- Jonathan Ive is nothing, if not an extremely well trained industrial designer, whose work shows a high level of fluency in the history of his craft.
- In his solution, he was doing what any competent designer would do: draw inspiration from the past.
- Rather than diminish respect for his solution, his choice of what to draw on, and how to shape it to his design brief, is cause to augment respect for his work.