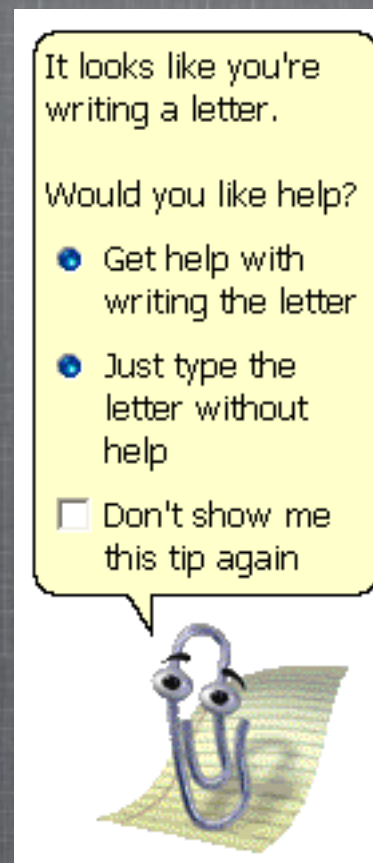


HUMAN-COMPUTER INTERACTION



LAY OF THE LAND

- Introduction, caveats
- Needfinding
- Prototyping
- Principles of effective designs
- Visual design
- Evaluating interfaces

INTRODUCTION, CAVEATS

- Coursera, Stanford.
- 2 months, 16 hours of lectures, 5 assignments
- Sources: course, assignments, SUW
- I cannot cover everything
 - Even if I did...



BLUFFER'S BLUFFER'S GUIDE

- Iterative, exploratory, empirical
- Users, what they **do**, not what they **say**
- Holistic - people's tasks, goals, values
 - O RLY?

LAY OF THE LAND

- ~~Introduction, caveats~~
- *Needfinding*
- **Prototyping**
- **Principles of effective designs**
- *~~Visual design~~*
- **Evaluating interfaces**

LAY OF THE LAND

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NEEDFINDING

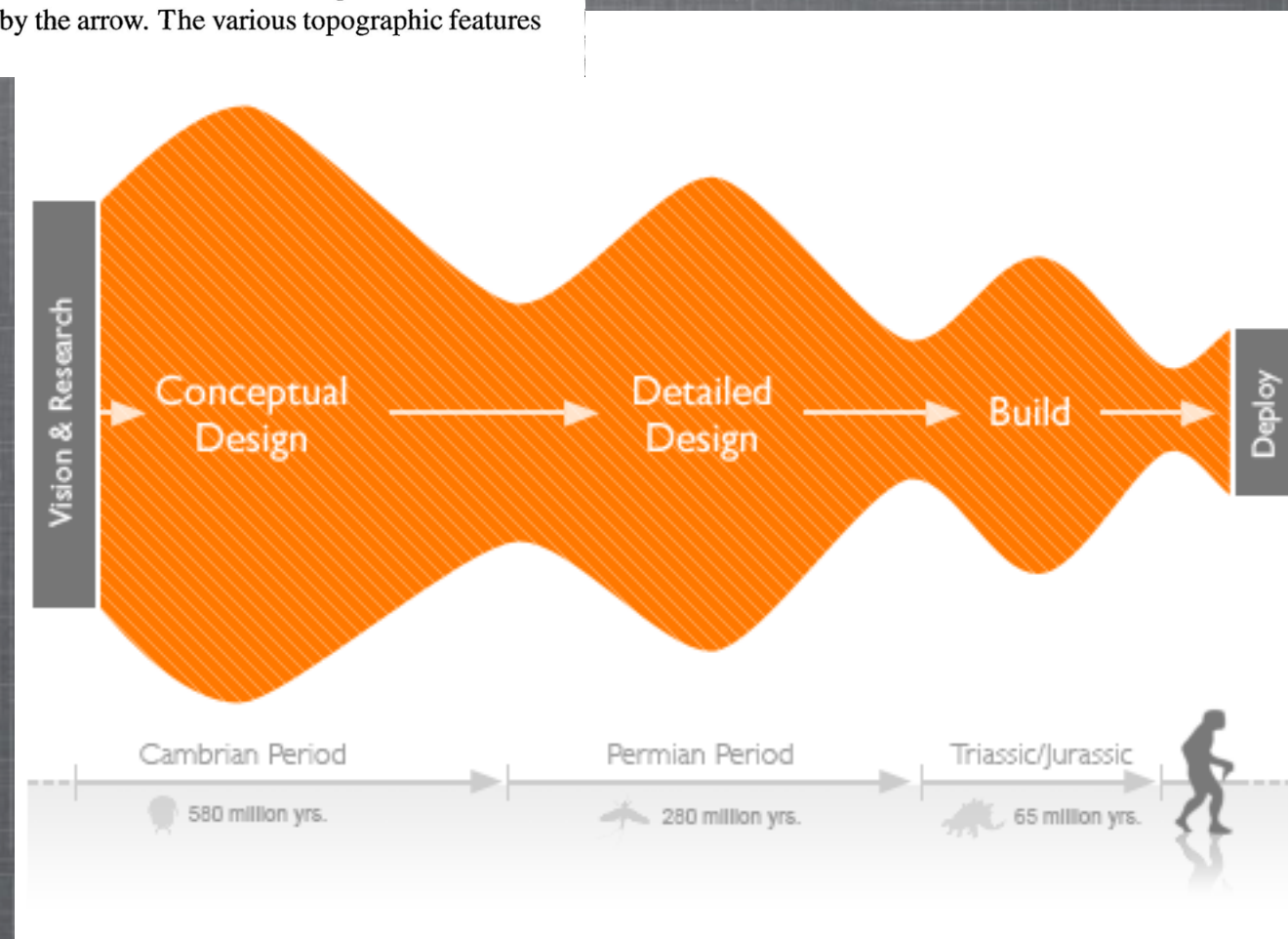
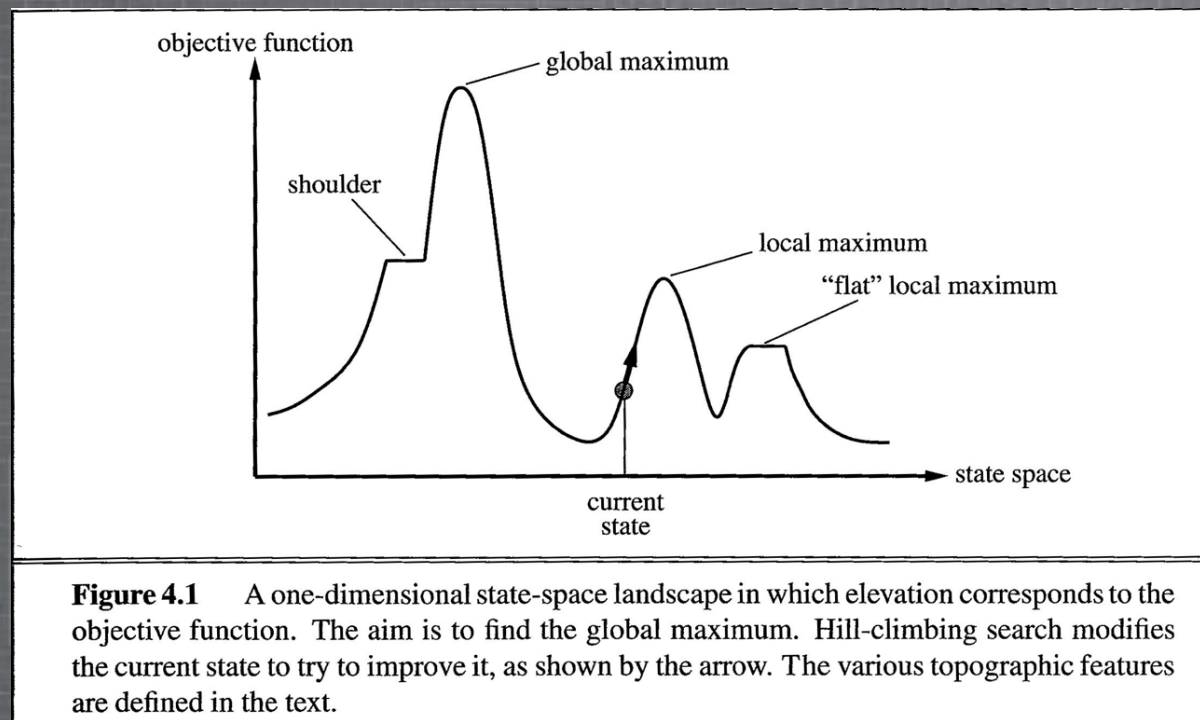
- What people **say** and what people **do**.
- Deep hanging out
 - Workarounds, hacks, errors
- Lead / extreme users
- Personas
 - Detail. Context.

LAY OF THE LAND

- ~~Introduction, caveats~~
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PROTOTYPING

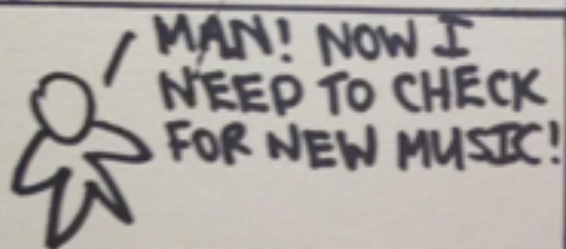
- Conversation with material; Socratic dialogue!
- Goal is not artifact, it is feedback.
- Rights of a prototype
 - Gets to be incomplete
 - Gets to retire



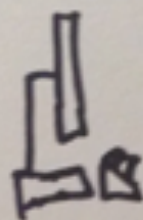
...SIMULATED ANNEALING!

STORYBOARDING

- First, **don't focus on UI** - focus on **tasks**.
- Storyboarding, spectacularly low-resolution.
- Ideas. Goals. **People**.
- Settings. Sequence. Satisfaction.
- (more than one!)



DJ JODIE NEEDS TO CHECK
FOR NEW MUSIC EVERY DAY!
SHE'S INTO MINIMAL HOUSE.



ALL I NEED
TO DO IS
GO TO THAT
SITE!

SHE CAN GO TO JUST ONE
SITE, LOGIN, AND SEE NEW
MUSIC BY HER CRITERIA.

JODIE'S NEWS

#1 ~

#2 ~

☒ SORT...

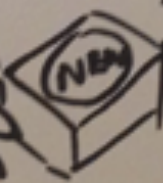
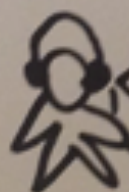
SHE'S PICKY: SHE SEARCHES
BY RECORD LABEL, ARTIST,
PRICE, AND MORE.

WANTLIST

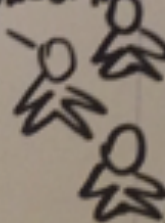
COOL
TUNE
:

BUY

SHE CAN EASILY ~~BE~~ BUY
NEW RECORDS FROM JUST
ONE SITE...



AWESOME!



...AND GET BACK TO MIXING
SWEET, NEW BEATS IN NO
TIME!

PROTOTYPING

- Still low fidelity. Extension of storyboarding.
- Paper prototyping.
- Wizard-of-oz prototyping.
- Digital: Balsamiq, Justinmind, Axure.
- (still many! in parallel!)

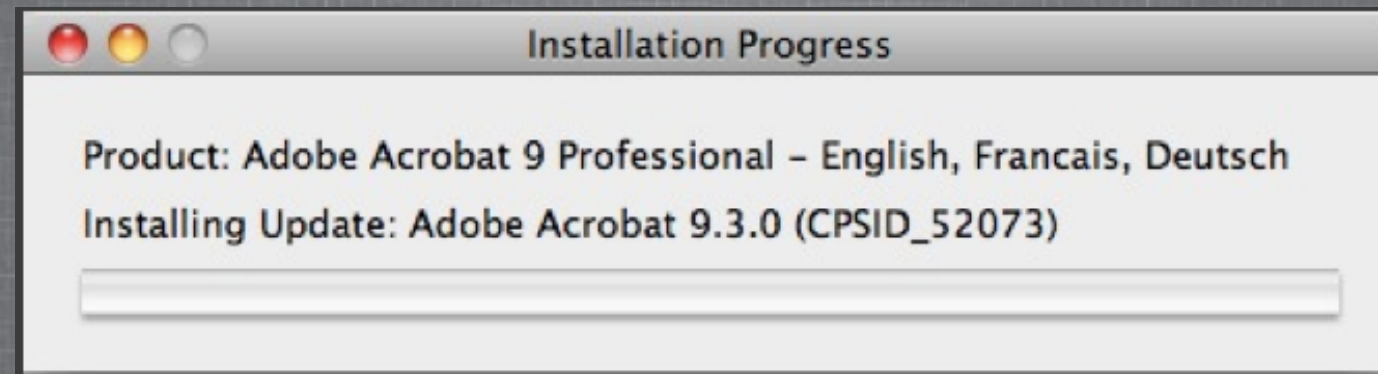
DEMO..?

LAY OF THE LAND

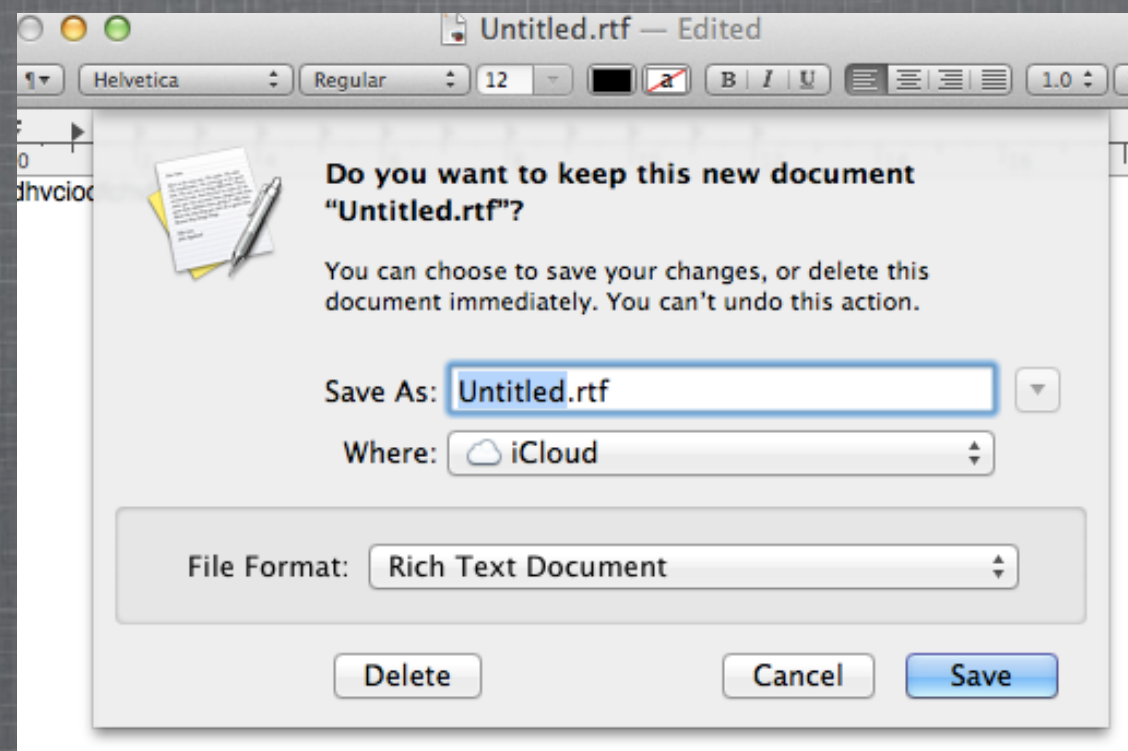
- ~~Introduction, caveats~~
- ~~Needfinding~~
- ~~Prototyping~~
- **Principles of effective designs**
- ~~Visual design~~
- Evaluating interfaces

PRINCIPLES

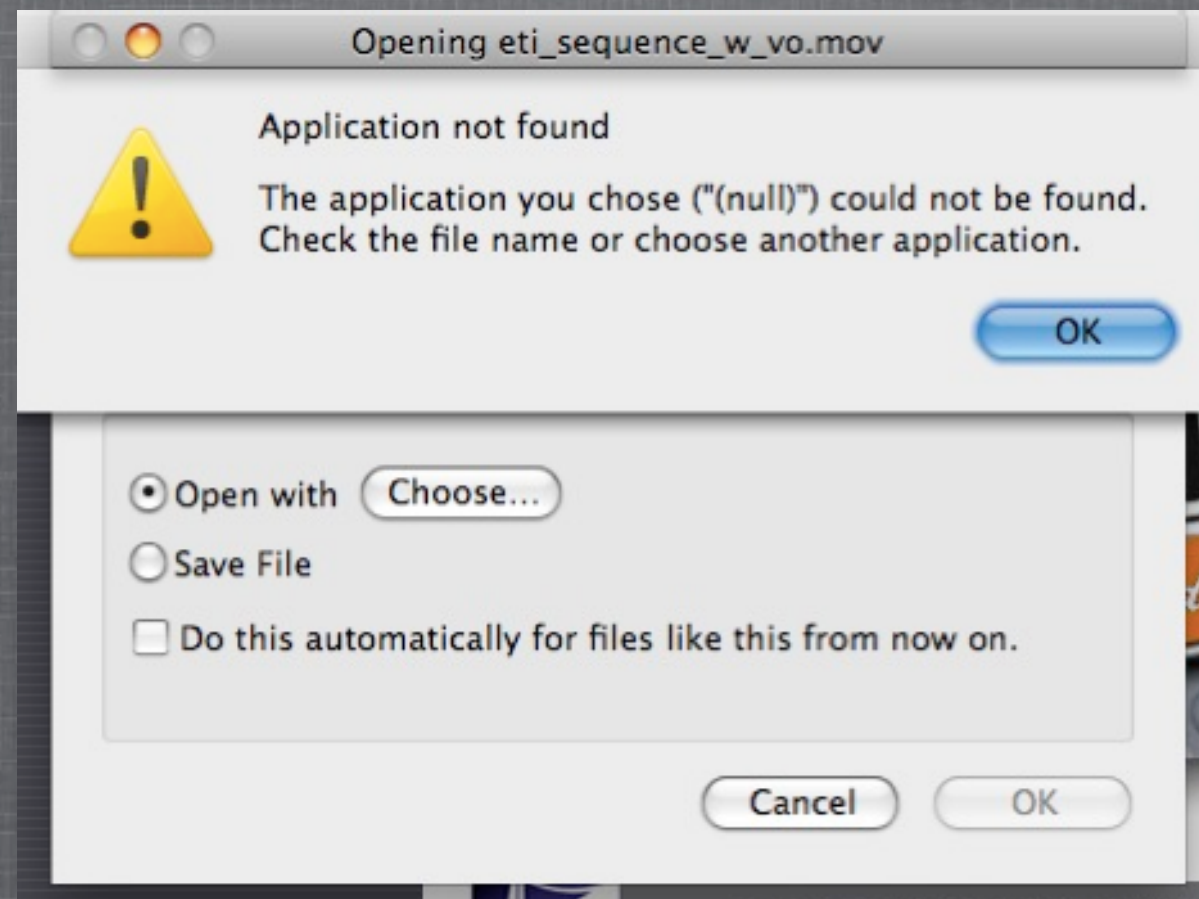
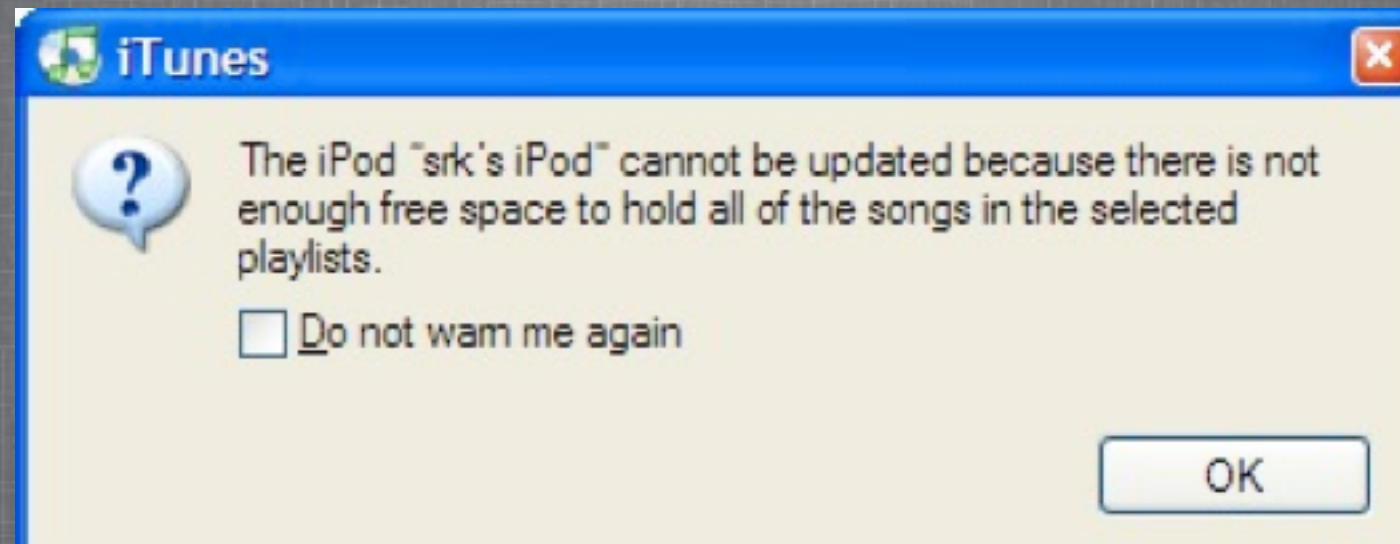
- How do evaluate prototypes?
 - Could keep going back to users, but expensive.
- **Heuristic evaluation** [Nielsen 1999].
 - Train 3-5 people.
 - (10) Rules of thumb.
 - Rate by severity, frequency, cost.



27% full
Using 2.8 GB of your 10.1 GB



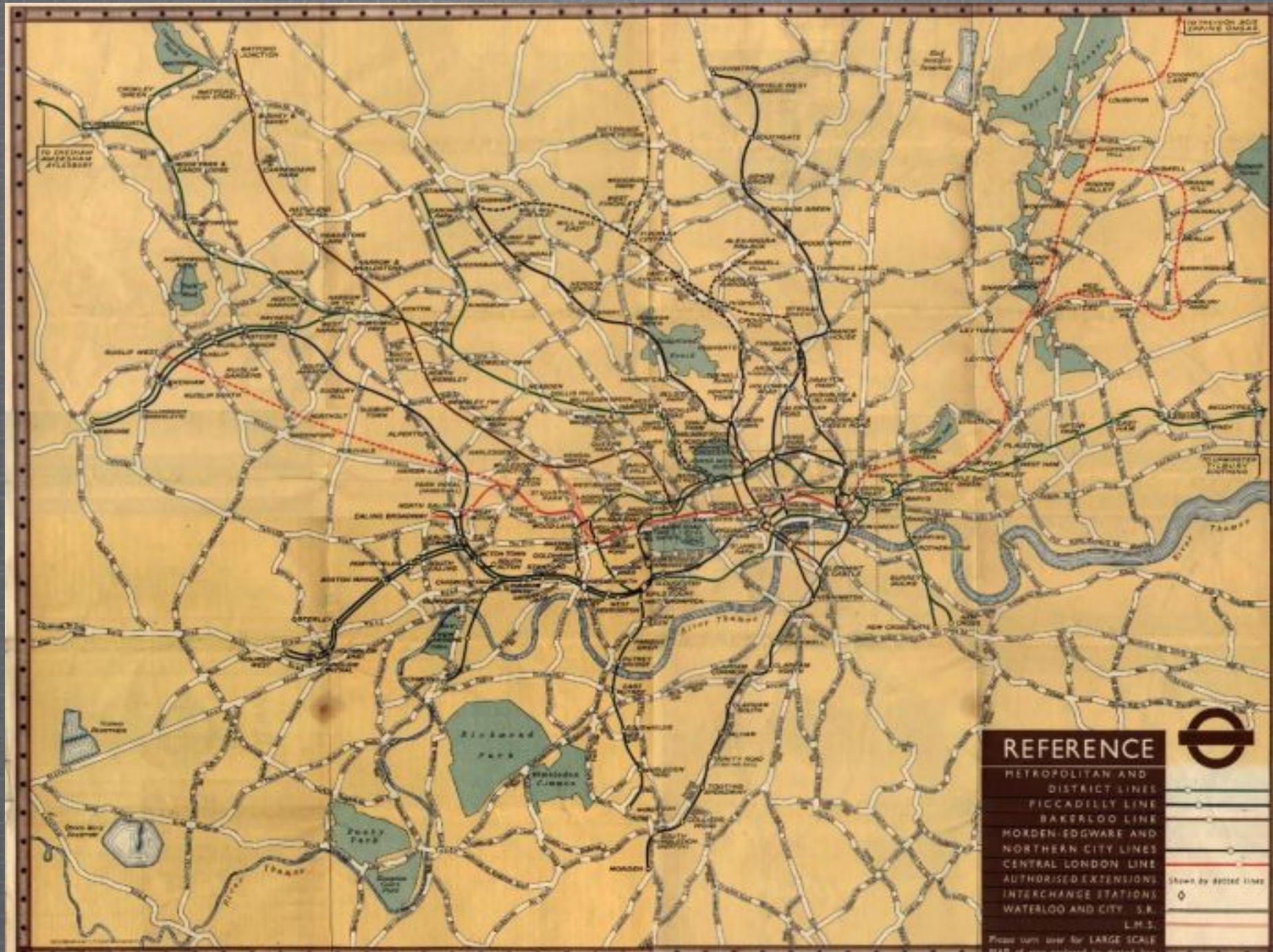
SHOW SYSTEM STATUS



RECOGNISE, DIAGNOSE, AND RECOVER FROM
ERRORS

REPRESENTATION

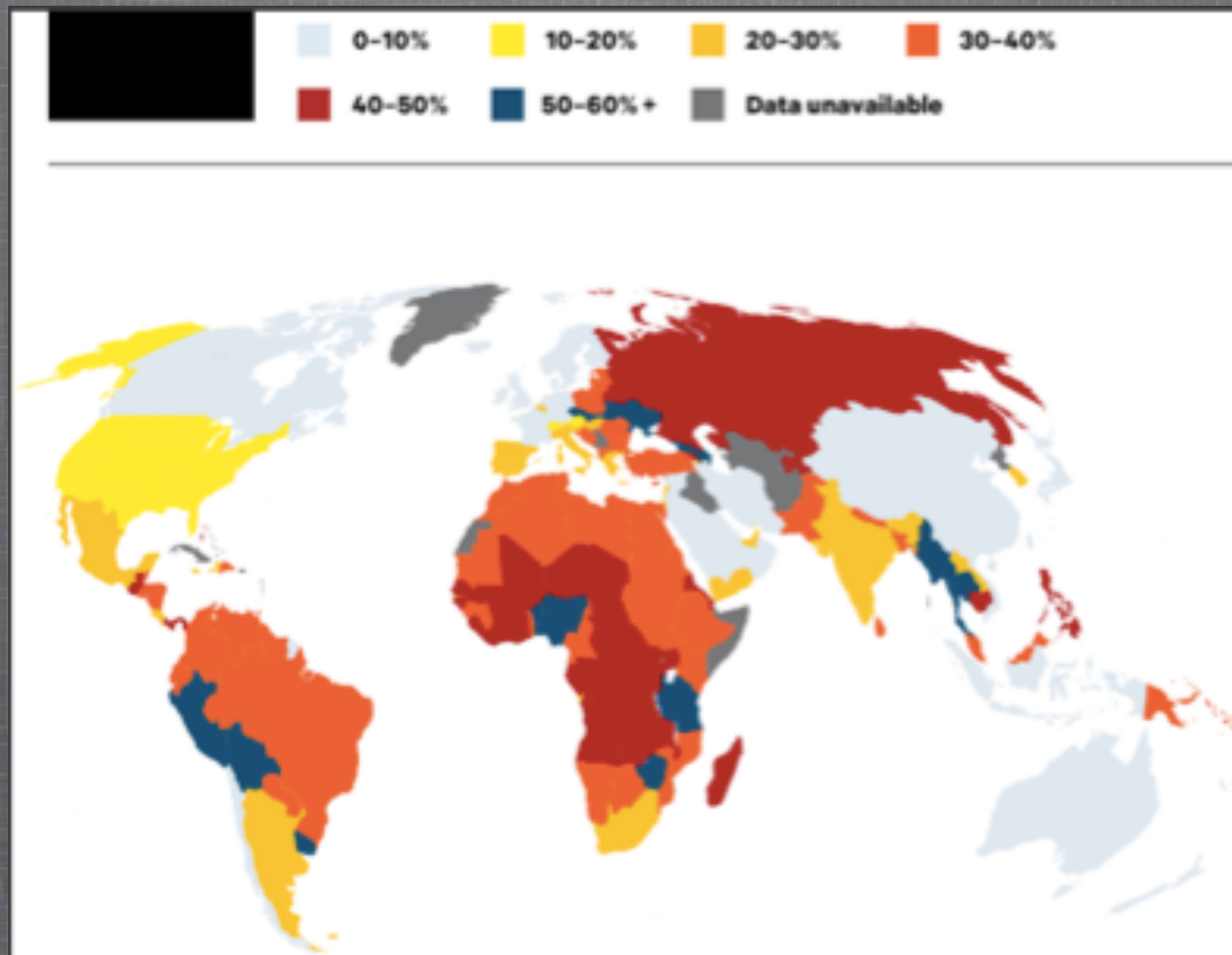
- Representation matters.
- Informational equivalence $\neq$ Computational equivalence.



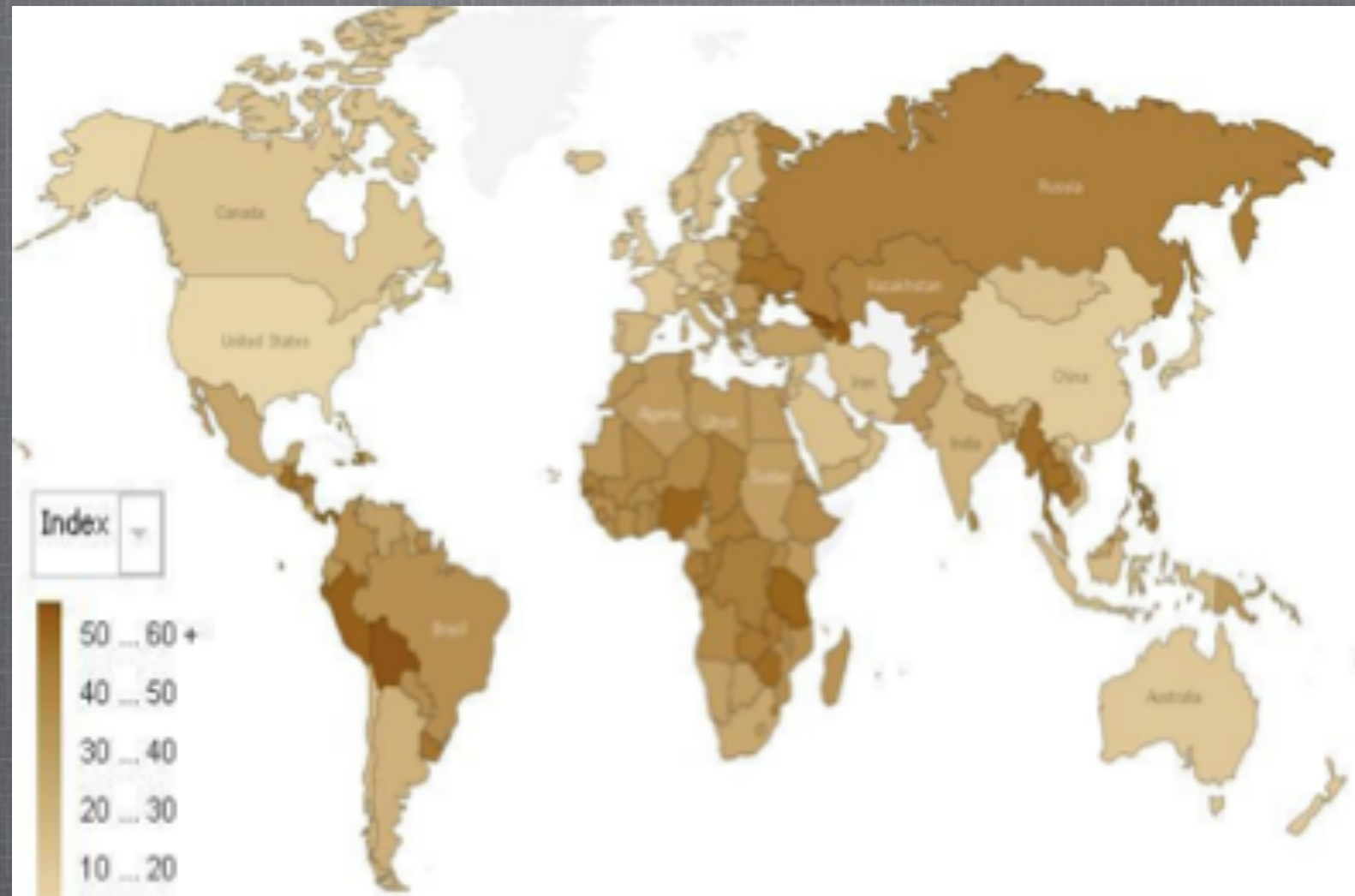
LONDON UNDERGROUND, TYPICAL OF METRO
MAPS ~1900



LONDON UNDERGROUND MAP, 1938



ORDINAL DATA WITH HUE



ORDINAL DATA WITH LUMINANCE

LAY OF THE LAND

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EVALUATING INTERFACES

- Yes, heuristics and principles, but...
- **Empiricism.** Users.
- So how you run a design study?

EXPERIMENTS

- Specific measures, concrete questions.
- Wrong: “Do you like my interface?”
- Wrong: “How much do you like my interface?”
- Cultural perception of power bias.

EXPERIMENTS

- **Independent variables:** we manipulate, not users.
 - Layout, content, sequence.
- **Dependent variables:** what user does.
 - Task completion time, error rate, knowledge recall.
- **Internal validity:** how reliable on repeats?
- **External validity:** generalisability.

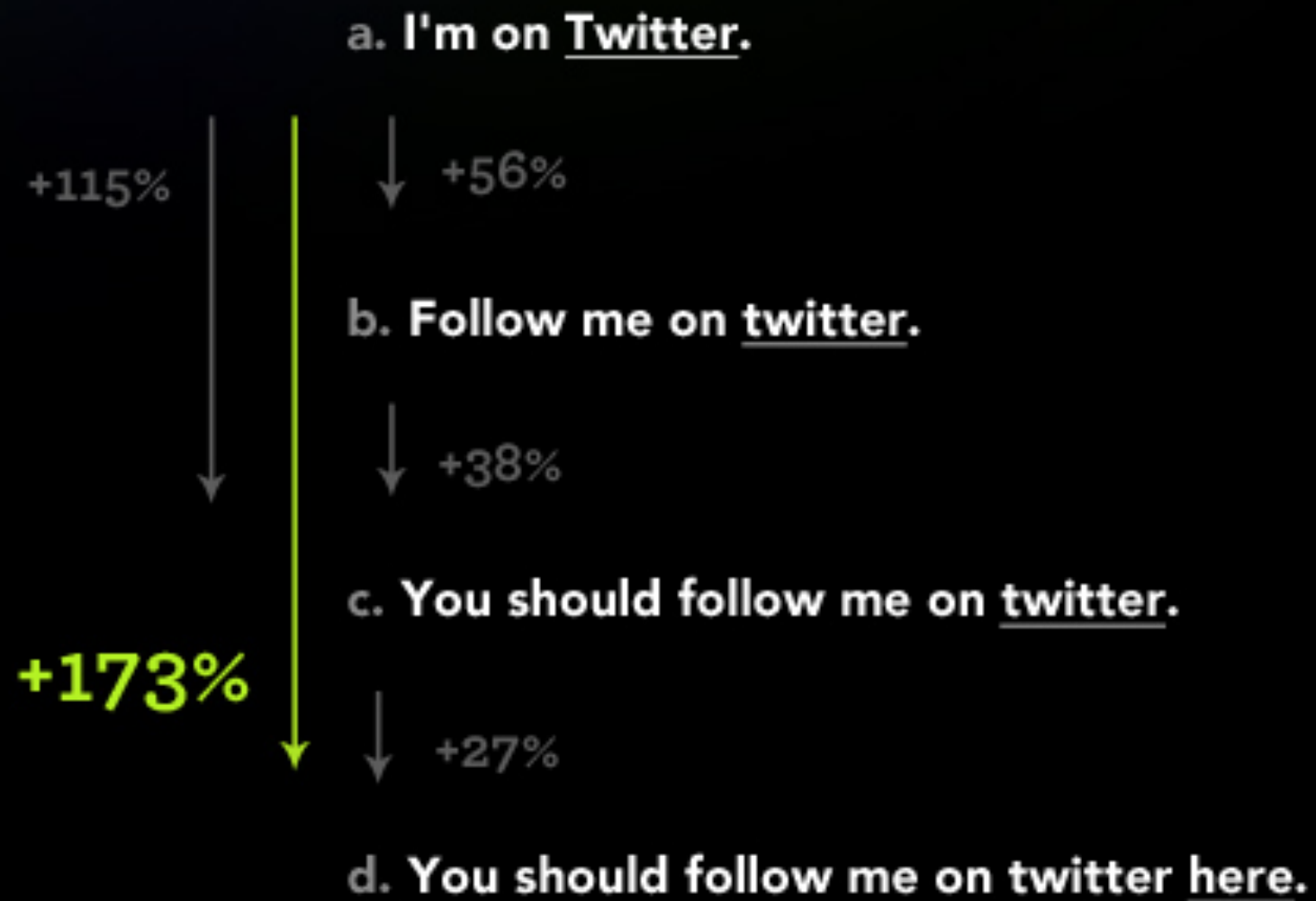
EXPERIMENTS

- Many details.
- Ultimately, have clearly defined goals and variables.

A/B TESTING

- Web experiments.
 - But still an experiment; need clearly defined goals and variables.
- Even small changes can have big differences.
- Random, but durable and independent.
 - Per user, not per view.

RESULTS Change in clickthrough rate



DUSTIN CURTIS, TWITTER A/B TEST

http://www.dustincurtis.com/you_should_follow_me_on_twitter.html

THANK YOU!