

CSE440: Introduction to HCI

Methods for Design, Prototyping and Evaluating User Interaction

Lecture 11:
Testing

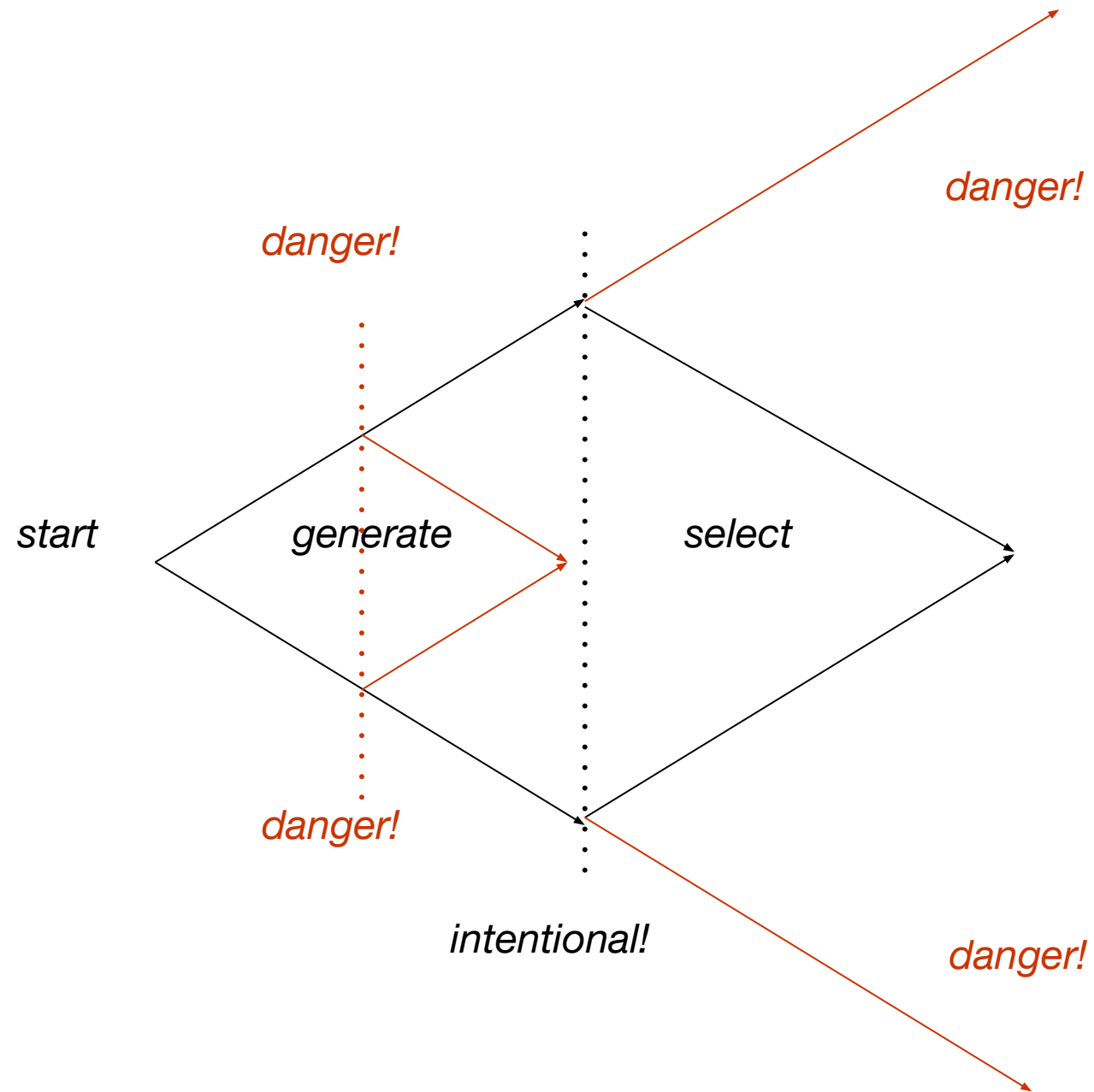
Nigini Oliveira
Manaswi Saha
Liang He
Jian Li Zheng
Jeremy Viny

What we will do today

Design sprint

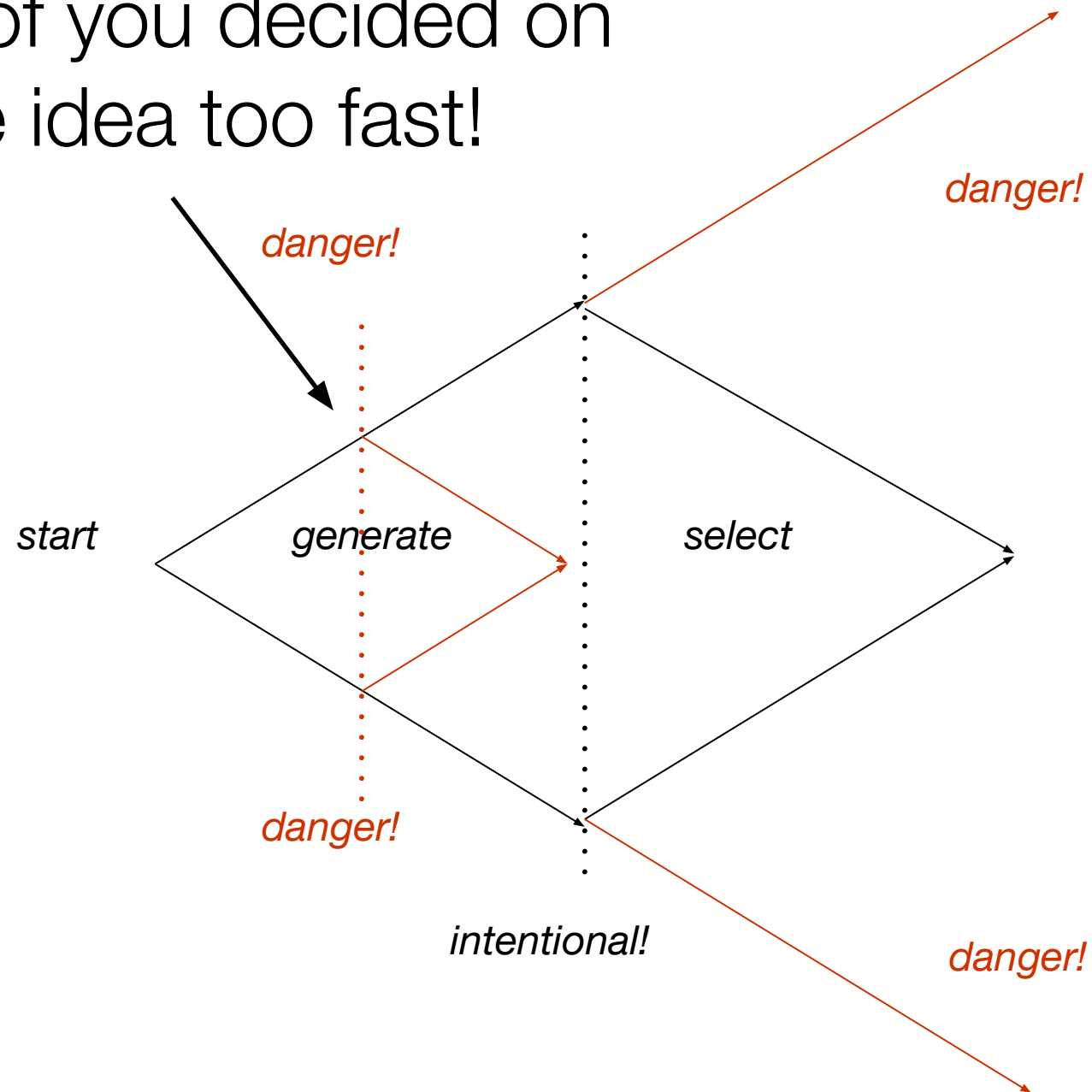
Testing (beyond paper prototypes)

But first a reminder

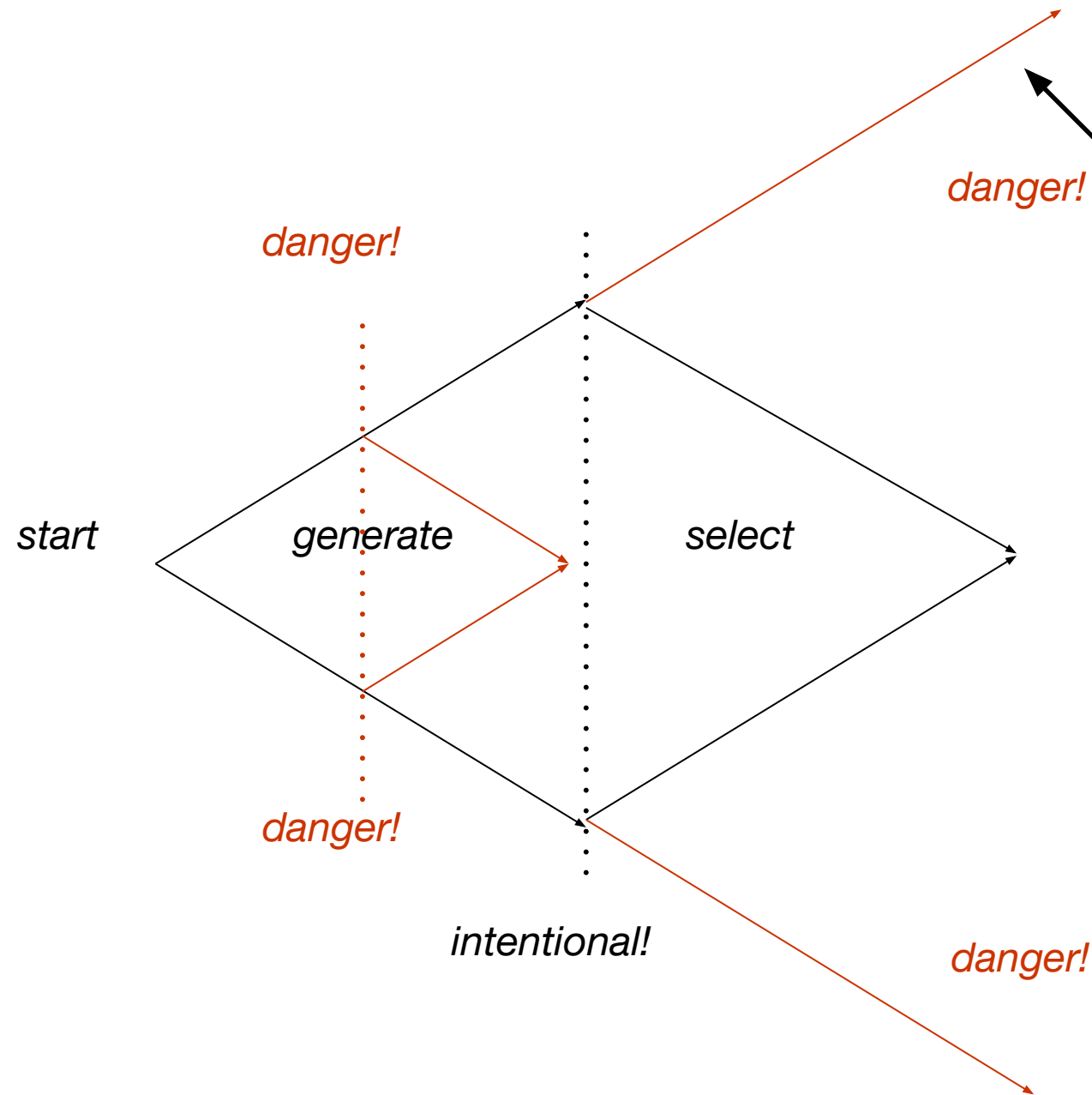


But first a reminder

Some of you decided on one idea too fast!

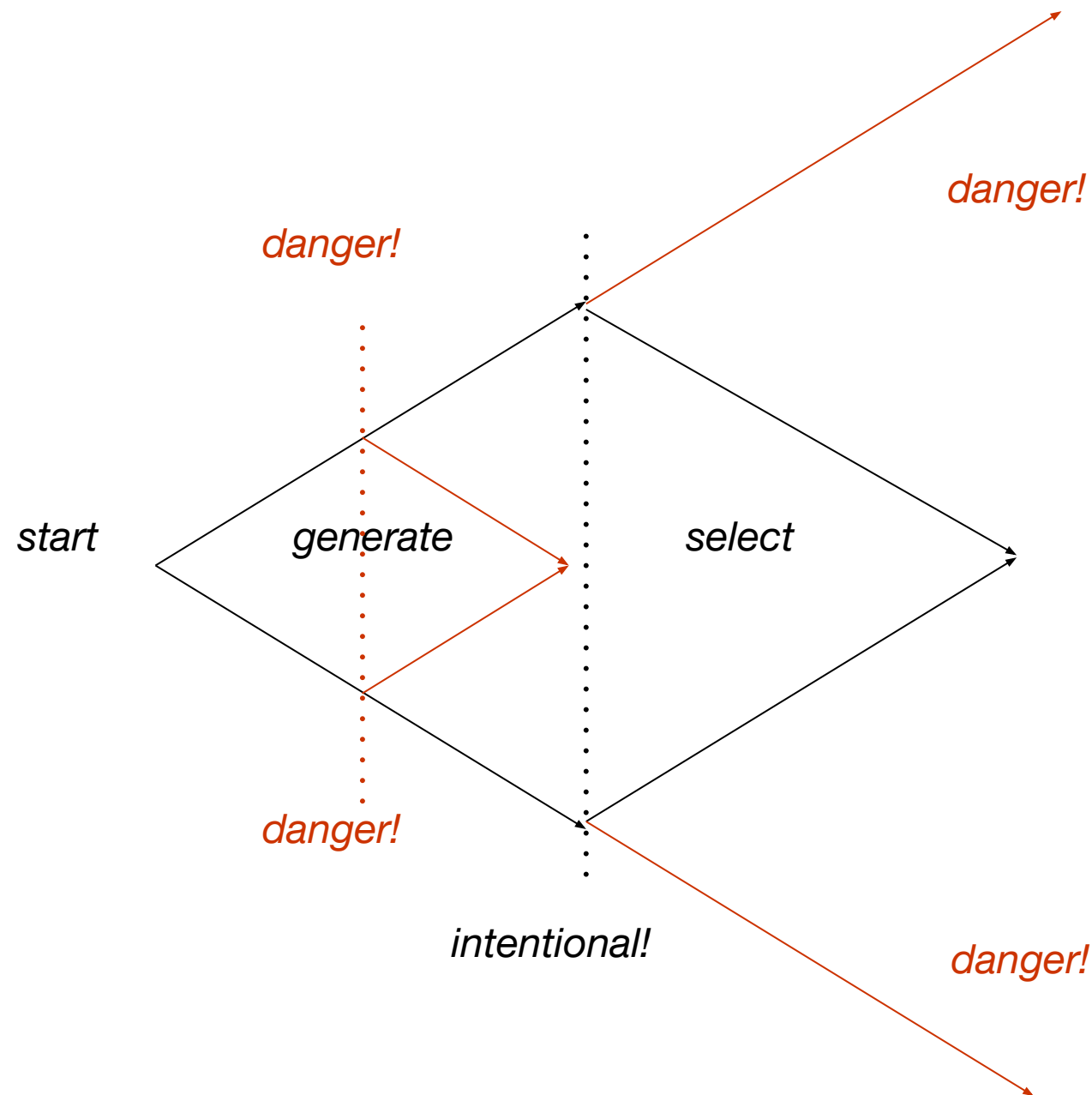


But first a reminder



Some of you are not deciding on one idea fast enough

But first a reminder



Make sure to meet in your team and decide!

You still have time to adjust/explain things in your **final report.**

Upcoming

Oct 29

Reading 2: Storyboarding and Video Prototyping

Oct 30

Paper Prototyping
11:30 - 12:50 | OUG 141

Oct 31

2g - Design Review
Nigini's office hours
10:00 - 12:00
CSE 218

Nov 1

Testing
11:30 - 12:50 | OUG 141

Nov 2

Section
10:30 - 11:20 | PAR 112
11:30 - 12:20 | OUG 136
1:30 - 2:20 | MGH 295
2:30 - 3:20 | MGH 295

2h - Getting the Right Design

Nov 5

Nigini at CSCW
3a - Paper Prototype

Nov 6

Nigini at CSCW
Heuristic Evaluation
11:30 - 12:50 | OUG 141

Nov 7

Nigini at CSCW
3b - Heuristic Evaluation

Nov 8

Nigini at CSCW
Accessibility
11:30 - 12:50 | OUG 141
Reading 3: Usability Testing

Nov 9

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3c - Usability Testing Check-In

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Design Sprint

Design Sprint (30 minutes)

Form groups of 3

(find at least one member who is not usually in your usual groups)

Read through the handout

5 minutes: Sketch out a few designs and decide on one

15 minutes: Prototype your design

5 minutes: Test your design with one of the TAs, myself, or with a member of another group

Design Sprint (30 minutes)

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Discussion

What worked well during the paper prototyping?

What did you learn about coffee ordering?

How would you change your design?

What did you come up with?

Testing

Testing

User tests vs. Usability tests

Different ways for gaining insights

- Quick and dirty: informal discussions with users
sometimes done using paper prototypes/Wizard-of-Oz testing
- Usability tests in lab
e.g., Human Task Performance Measures
- Remote usability tests
e.g., using recording software
- A/B testing

Remote Usability Testing

Conferencing-based testing

Use tools like video conferencing, instant messaging, and screencasting to test with a remote participant

Unmoderated remote testing

Automatic logging and some analysis of usage

Controlled online A/B experiments

Carefully measure results of showing different versions to different sets of live customers

Unmoderated Remote Usability Test

Move usability testing online

- participants access the “lab” via web

- answer questions & complete tasks in “survey”

- records actions or screens for playback

- can test many people completing many tasks

Analyze data individually or in aggregate

- playback individual sessions

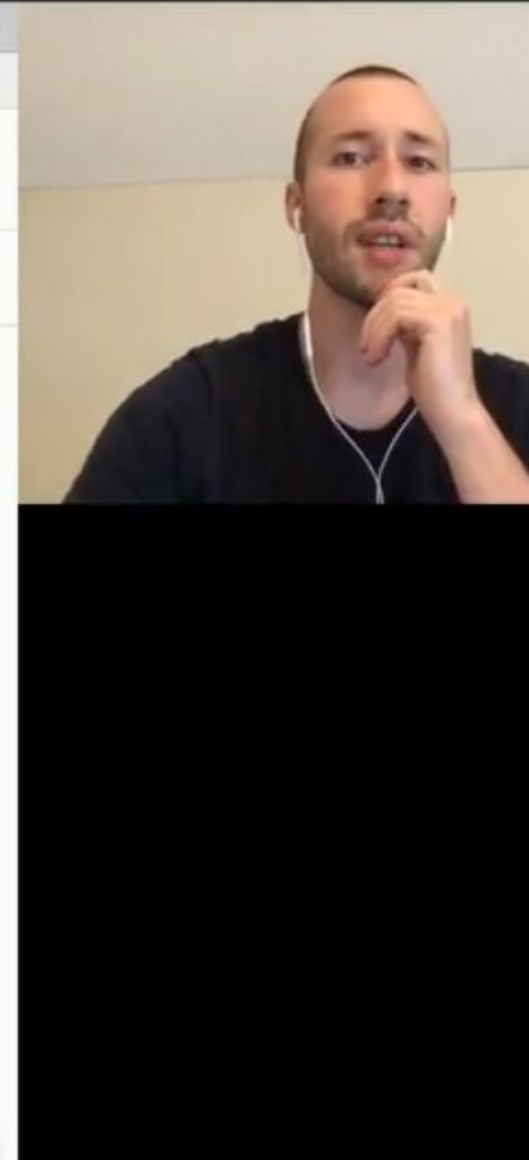
- find general problem areas

- if needed, look more closely with traditional methods

Unmoderated Remote Usability Test

Userlytics | Website User Testing"

The screenshot shows the Airbnb website interface for San Francisco, CA. A task overlay is present, instructing the user to find accommodations within a specific price range and to describe the process. The task text reads: "Using the site, please find accommodations that cost between \$50-\$250 per night near or in San Francisco. Next, within that range, try and find the cheapest lodging out of all of those options. Please describe the process out loud as you do it. When you feel you've completed this task, please click Next." A blue "NEXT" button is visible at the bottom right of the task overlay. Below the task, the website shows "Explore San Francisco" with categories for Homes, Experiences, and Restaurants. A section titled "49 Airbnb Plus homes in San Francisco" is visible, featuring four property listings with images and descriptions.



Unmoderated Remote Usability Test



Controlled A/B Experiments

Many names for concept

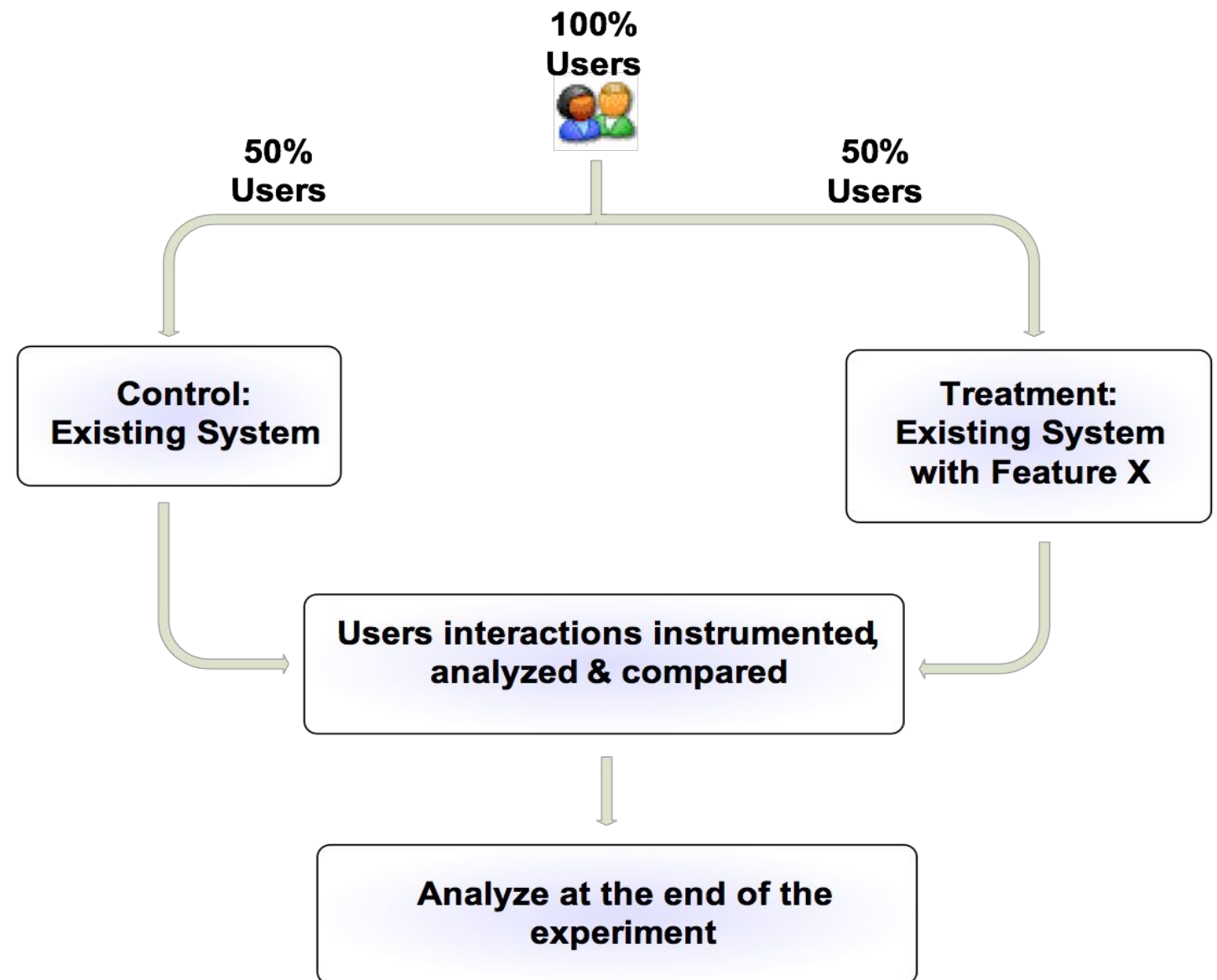
A/B tests or
Control/Treatment

Randomized
Experimental Design

Controlled experiments

Split testing

Parallel flights



Controlled A/B Experiments

Example: Amazon Shopping Cart Recommendations

Add an item to your shopping cart

Most sites show the cart

At Amazon, Greg Linden had idea to show recommendations based on cart items

Controlled A/B Experiments

Evaluation

Pro: cross-sell more items

Con: distract people from checking out

Highest Paid Person's Opinion:

Stop the project

Simple experiment run:

Wildly successful

Checkout Page

Conversion rate is percentage of visits that include purchase

Doctor FootCare™ Shopping Cart

Home | Products | Learn More | Tips | Testimonials | About Us | Contact Us | 1-866-211-9733

Shop With Confidence

- ✓ Satisfaction Guaranteed
- ✓ 30-day, hassle-free Returns
- ✓ 100% Safe, Secured shopping
- ✓ We assure your Privacy

100% Secured Checkout

Continue Shopping > Proceed To Checkout

Item Name	Item Number	Quantity	Remove	Unit Price	Subtotal
Trial Kit	FFCS	1		\$0.00	\$0.00

Update Total: \$0.00

Select Shipping Method Standard (\$5.95)

100% Secured Checkout

Continue Shopping > Proceed To Checkout

Home | Products | Learn More | Tips | Testimonials | FAQ | About Us | Contact Us | Shopping Cart

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100% Secured Checkout

Continue Shopping > Proceed To Checkout

Item Name	Item Number	Quantity	Remove	Unit Price	Subtotal
Trial Kit	FFCS	1		\$0.00	\$0.00

Discount \$0.00

Total \$0.00

Enter Coupon Code

Select Shipping Method Standard (\$5.95)

100% Secured Checkout

Recalculate Continue Shopping > Proceed To Checkout

Home | Products | Learn More | Tips | Testimonials | FAQ | About Us | Contact Us | Shopping Cart

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Which version has a higher conversion rate?

Checkout Page

Conversion rate is percentage of visits that include purchase

The image shows two versions of a checkout page for Doctor FootCare. Version A (left) and Version B (right) are compared. Red circles highlight specific elements in both versions.

Version A (Left):

- Shopping Cart icon: [Shopping Cart](#)
- Navigation: [Home](#) | [Products](#) | [Learn More](#) | [Tips](#) | [Testimonials](#) | [FAQ](#) | [About Us](#) | [Contact Us](#) | 1-866-211-9733
- Shop With Confidence: Satisfaction Guaranteed, 30-day, hassle-free Returns, 100% Safe, Secured shopping, We assure your Privacy
- 100% Secured Checkout
- Buttons: [Continue Shopping](#), [Proceed To Checkout](#)
- Table:

Item Name	Item Number	Quantity	Remove	Unit Price	Subtotal
Trial Kit	FFCS	<input type="text"/>		\$0.00	\$0.00

- Buttons: [Update](#), [Total: \\$0.00](#)
- Select Shipping Method:
- Buttons: [Continue Shopping](#), [Proceed To Checkout](#)
- Footer: [Home](#) | [Products](#) | [Learn More](#) | [Tips](#) | [Testimonials](#) | [FAQ](#) | [About Us](#) | [Contact Us](#) | [Shopping Cart](#)
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Version B (Right):

- Shopping Cart icon: [Shopping Cart](#)
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- Shop With Confidence: Satisfaction Guaranteed, 30-day, hassle-free Returns, 100% Safe, Secured shopping, We assure your Privacy
- 100% Secured Checkout
- Buttons: [Proceed To Checkout](#)
- Table:

Item Name	Item Number	Quantity	Remove	Unit Price	Subtotal
Trial Kit	FFCS	<input type="text"/>		\$0.00	\$0.00

- Buttons: [Discount](#), [\\$0.00](#)
- Buttons: [Enter Coupon Code](#)
- Select Shipping Method:
- Buttons: [Recalculate](#), [Continue Shopping](#), [Proceed To Checkout](#)
- Footer: [Home](#) | [Products](#) | [Learn More](#) | [Tips](#) | [Testimonials](#) | [FAQ](#) | [About Us](#) | [Contact Us](#) | [Shopping Cart](#)
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- Item Table:

Item Name	Item Number	Quantity	Remove	Unit Price	Subtotal
Trial Kit	FFCS	1		\$0.00	\$0.00
- Buttons: [Continue Shopping](#), [Proceed To Checkout](#), [Update](#), [Total: \\$0.00](#)
- Shipping: [Select Shipping Method](#) Standard (\$5.95)
- Footer: [Home](#) | [Products](#) | [Learn More](#) | [Tips](#) | [Testimonials](#) | [FAQ](#) | [About Us](#) | [Contact Us](#) | [Shopping Cart](#)

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Which version has a higher conversion rate?

Coupon Code decreases by factor of 10

Office Online Feedback

A

Please let us know if this content was helpful.

Rate this content:
☆☆☆☆☆

Tell us why you rated the content this way (optional):

Remaining characters: 650

B

How helpful was this information?
Click a star.

Not helpful ☆☆☆☆☆ Very helpful

Click to rate: 3 out of 5 stars

How helpful was this information?
Click a star.

Not helpful ★★★★★ Very helpful

Why did you rate the information this way?

Remaining characters: 650

Which one has a higher response rate? By how much?

Office Online Feedback

A

Please let us know if this content was helpful.

Rate this content:
☆☆☆☆☆

Tell us why you rated the content this way (optional):

Remaining characters: 650

B

How helpful was this information?
Click a star.

Not helpful ☆☆☆☆☆ Very helpful

Click to rate: 3 out of 5 stars

How helpful was this information?
Click a star.

Not helpful ★★★★★ Very helpful

Why did you rate the information this way?

Remaining characters: 650

Which one has a higher response rate? By how much?
B gets more than double...

Another Feedback Variant

Call this variant C. Like B, also two stage.

Which one has a higher response rate, B or C?

Was this information helpful?

Yes

No

I don't know

How was this information helpful?

Back

Submit

What are you trying to do?

Back

Submit

How can we make this information more helpful?

Back

Submit

Another Feedback Variant

Call this variant C. Like B, also two stage.

Which one has a higher response rate, B or C?

Was this information helpful?

How was this information helpful?

What are you trying to do?

How can we make this information more helpful?

C outperforms B by a factor of 3.5

Obama Campaign

CONTROL

OBAMA BIDEN

OBAMA CLASSIC

You could be there

Michael Jordan. Patrick Ewing. Steve Nash. Carmel Anthony. And many, many more. Legendary players are all competing in an Obama-Classic Classic.

You and a friend will make the "Final Four" and shoot hoops with some of the best basketball players in the world.

OBAMA CLASSIC

Contribute

First name: _____ Last name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone number: _____

Select amount

\$15 \$25 \$50 \$100 \$250 \$500 \$1,000

Credit card

Card number: _____ Expiration: Month _____ Year _____

Make this a recurring donation to support the campaign in the long run. (You'll be able to cancel this any time.)

Employment

Product and services we sell are not used to collect and report the names, mailing addresses, occupations, and employer of individuals whose contributions exceed \$100 in an election cycle.

Employment: _____ Occupation: _____

DONATE NOW

"SEQUENTIAL"

OBAMA BIDEN

OBAMA CLASSIC

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Michael Jordan. Patrick Ewing. Steve Nash. Carmel Anthony. And many, many more. Legendary players are all competing in an Obama-Classic Classic.

You and a friend will make the "Final Four" and shoot hoops with some of the best basketball players in the world.

OBAMA CLASSIC

How much would you like to donate today?

Select amount

\$15 \$25 \$50 \$100 \$250 \$500 \$1,000

Other amount: _____

CONTINUE

↑ +5%

<http://kylerush.net>

<http://o04151985.kylerush.net/blog/optimization-at-the-obama-campaign-ab-testing/>

Data-Driven Methods Not Just Online



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

1999

Made from cardboard, the first Netflix mailer weighs more than an ounce. But with only 100,000 customers, reducing material and shipping costs is not yet a priority for the company.

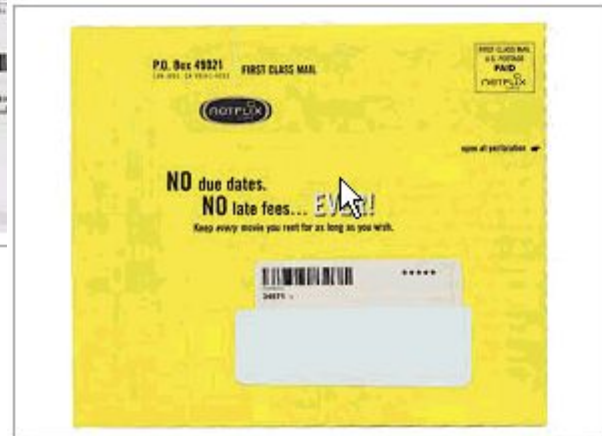


[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2000

Thick paper replaces cardboard. DVDs are inserted and removed from the top rather than the side.



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2000

Full-color printing is introduced. Top-loading is abandoned in favor of side-loading, which is judged more convenient.

NUCCI STUDIO

[NEXT >>](#)

Data-Driven Methods Not Just Online



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2000

Customers are asked to peel off a sticker to reveal Netflix's return address. The design is eventually deemed too complex.



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2000

Made from plastic instead of paper, this mailer is cheaper, but it sometimes inflates when transported on airplanes.



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2001

An airhole (the black dot on the left side of the mailer) is added to prevent the package from inflating.



[PREVIOUS](#) [NEXT](#)

[Back to story](#)

2001

Netflix returns to paper because it's easier to recycle. Foam padding is added to reduce breakage.

[NEXT](#)

NUCCI STUDIO

Data-Driven Methods Not Just Online



2001
Foam padding is dropped because the benefits don't justify the cost. The company gives top-loading another try.

2001
Marking a return to side-loading, this mailer is a direct ancestor of the one the company uses today.

2003
Instead of sealing the entire top and bottom, Netflix introduces a circular sticker, affixed only on the top.

2004
A window shows the disc bar code. Speculation is that this enables storing discs in mailers prior to shipping.

NUCCI STUDIO

Navigation: PREVIOUS, NEXT, Back to story, NEXT>>

Limitations

Drives hill-climbing, but not overall design

A design may be better, but is it good?

Impossible for new designs to compete

Can be difficult to scale to many features

Ask me something!

Ideation and Evaluation

Case Video:
Phone Button Lay-Out

<http://www.youtube.com/watch?v=kCSziExvbTQ>