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EVALUATION:  
OBSERVING  
INTERACTION

human-computer interaction  
CSE 440 WINTER 2015



University of  
Washington

FEB 12 - WEEK 6 - THURSDAY

# Today

- Evaluation
  - Heuristic evaluation recap and reflection
  - Observing interaction
- Presentation feedback

## **Tomorrow (section):**

- Usability testing checkin: Bring your paper prototypes!

# Heuristic evaluation

**expert**  
**get information from the user**

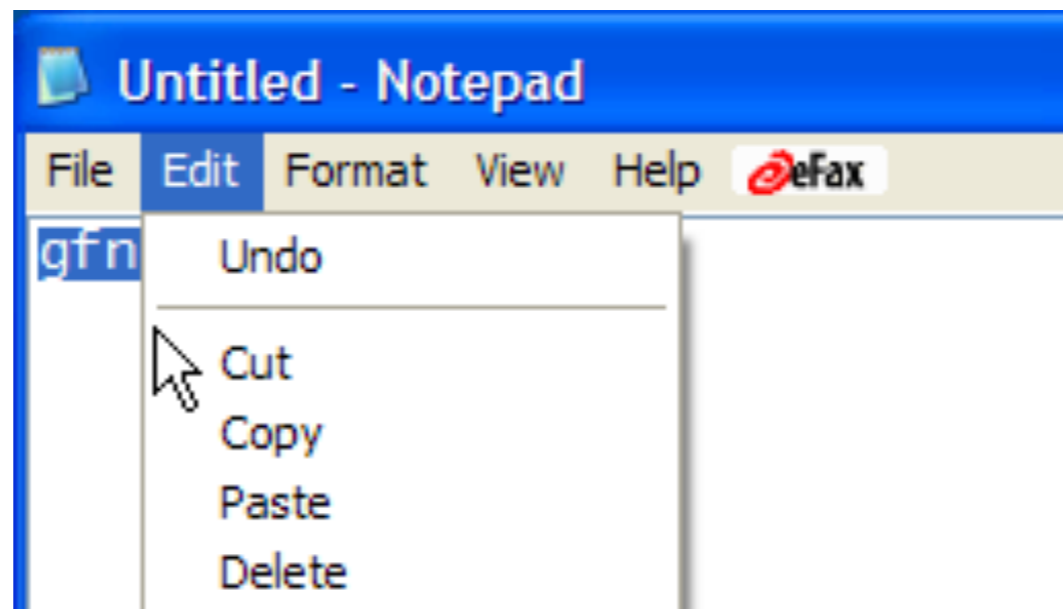
# Heuristic evaluation

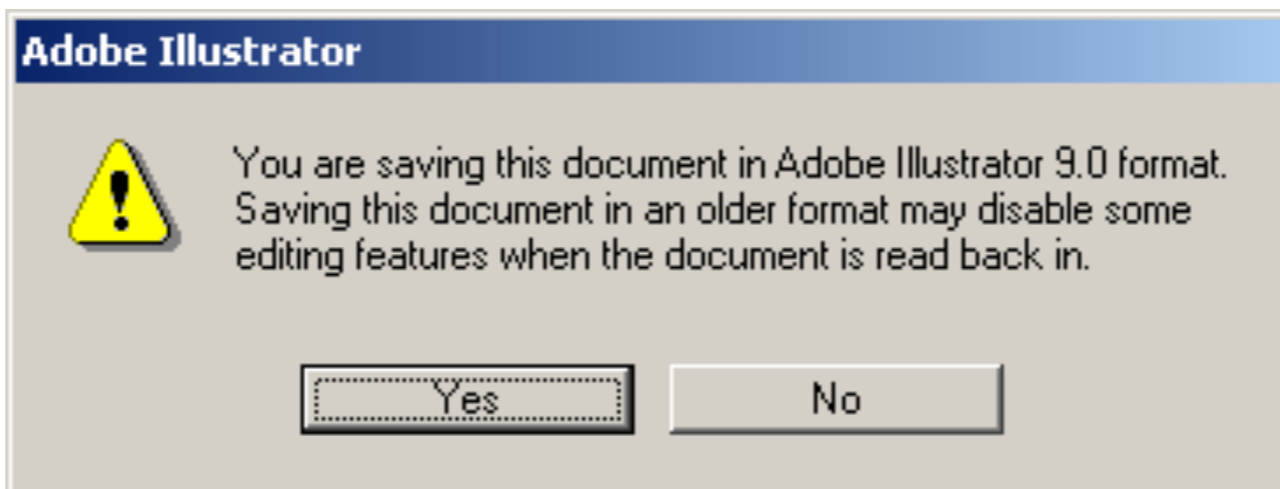
- Have evaluators go through the UI twice
- Ask them to see if it complies with heuristics
  - note where it doesn't & say why
- Combine the findings from 3 to 5 evaluators
- Have evaluators independently rate severity

# Nielsen's heuristics

- Visibility of system status
- Match between system and the real world
- User control and freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- Help recognize, diagnose, and recover from errors
- Help and documentation











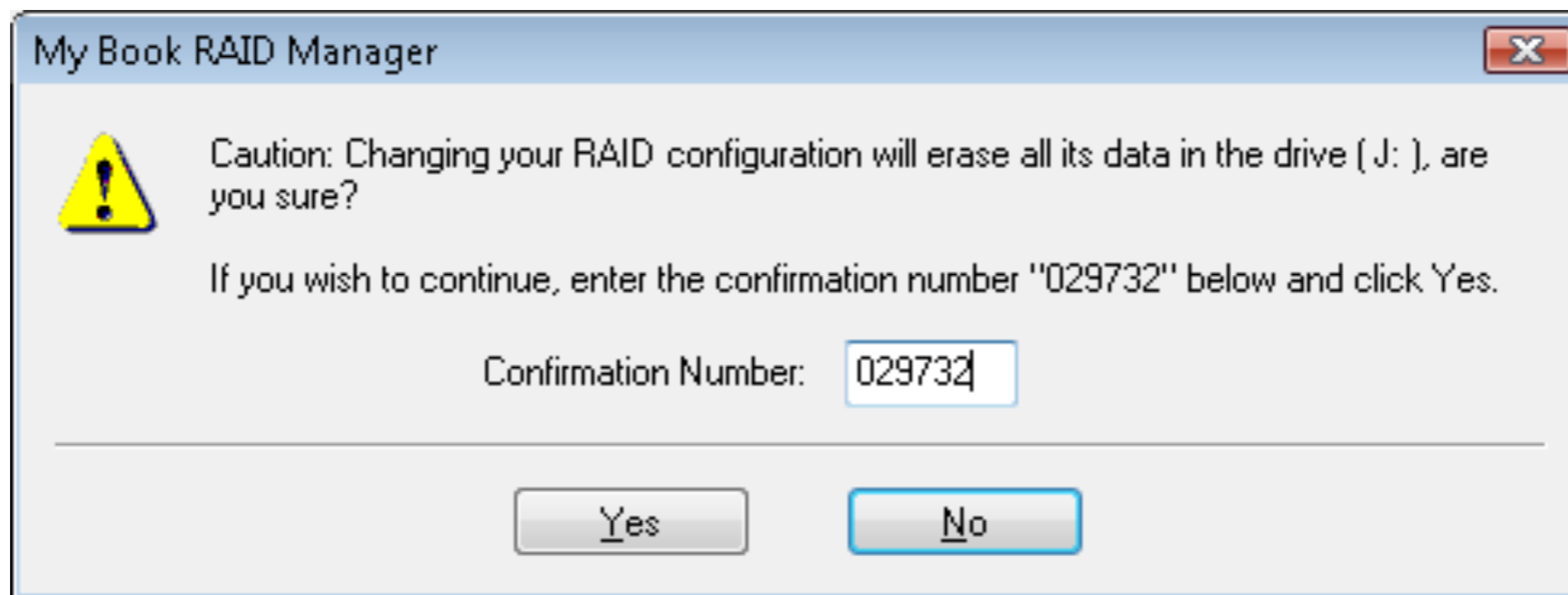


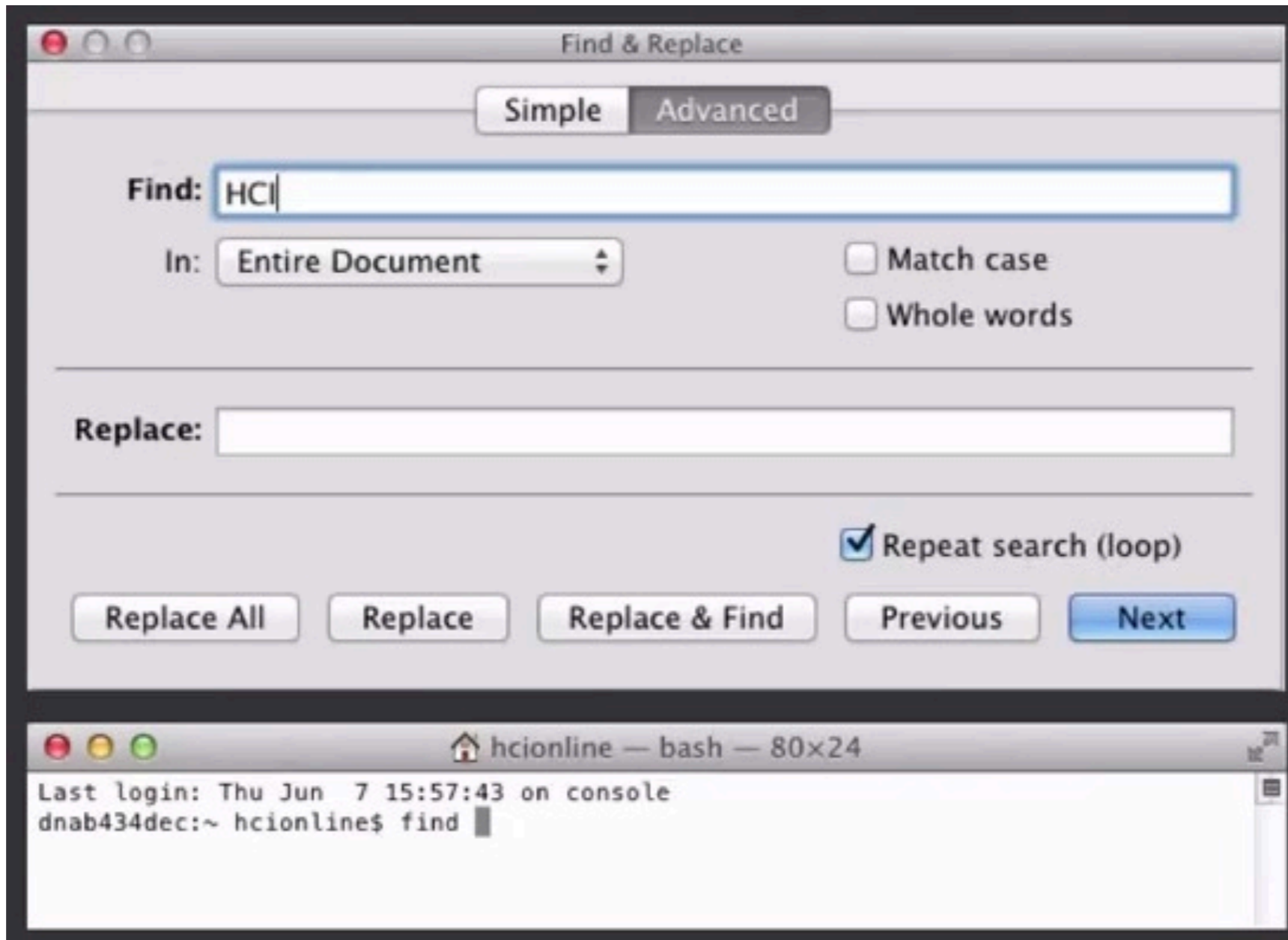
**Are you sure you want to change the extension from ".do" to ".pdf"?**

If you make this change, your document may open in a different application.

Keep .do

Use .pdf







Heuristic  
evaluation

-vs-

User  
testing

# Heuristic evaluation

*-vs-*

# User testing

Much faster	
-------------	--

# Heuristic evaluation

-vs-

# User testing

Much faster	
Doesn't require interpreting user actions	



# Heuristic evaluation

-vs-

# User testing

Much faster	
Doesn't require interpreting user actions	
	Far more accurate

# Heuristic evaluation

-vs-

# User testing

Much faster	
Doesn't require interpreting user actions	
	Far more accurate

*Combine two methods!*

# OBSERVING INTERACTION



# Evaluation Techniques (re-cap)

- Asking users
  - Questionnaires, interviews, focus groups
- Observing users
  - Passive observation, think-aloud protocol, ethnography, empirical user studies
- Make users observe themselves
  - Diaries, experience sampling
- Ask experts
  - Heuristic evaluation, cognitive walkthrough

# Evaluation Techniques (re-cap)

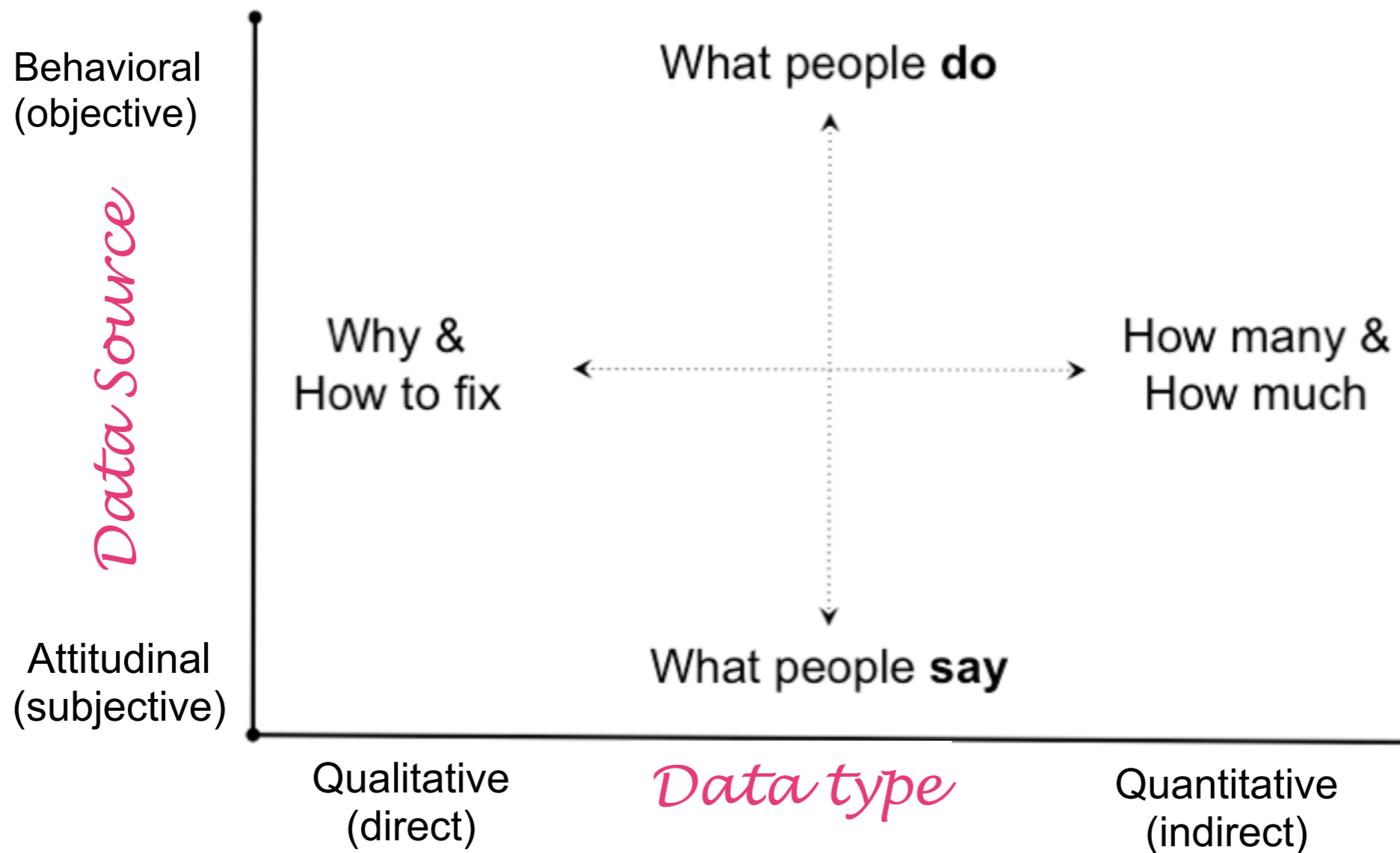
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# What to measure or observe?

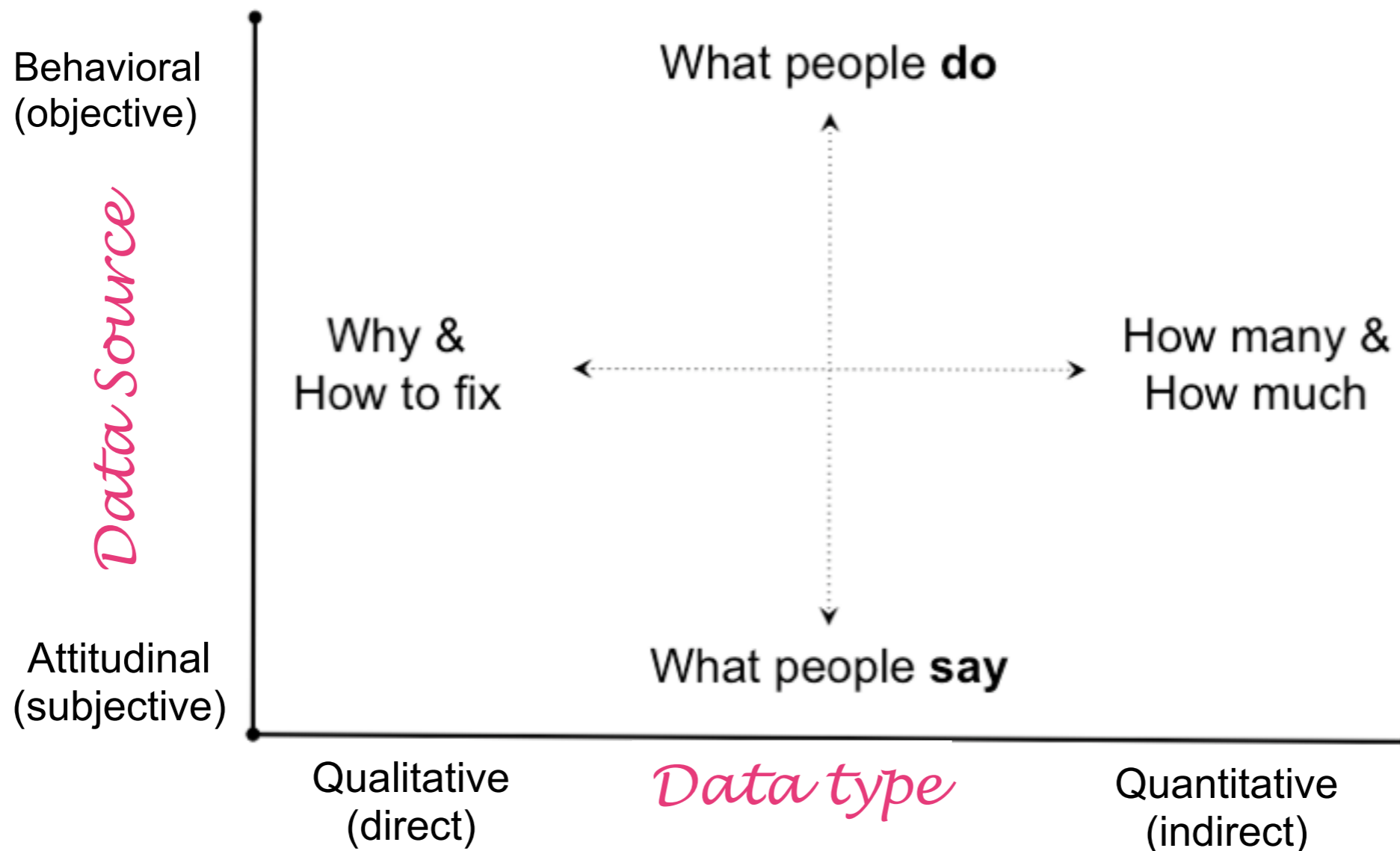
...at what granularity?



© 2008 by Christian Rohrer

# What to measure or observe?

...at what granularity?



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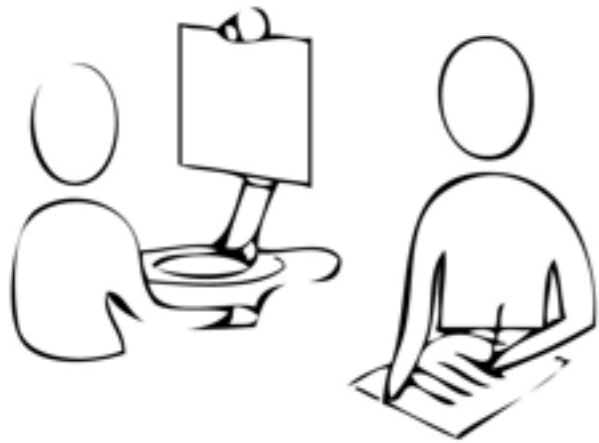
*Depends on your goal!*



# User Satisfaction vs. Performance Metrics



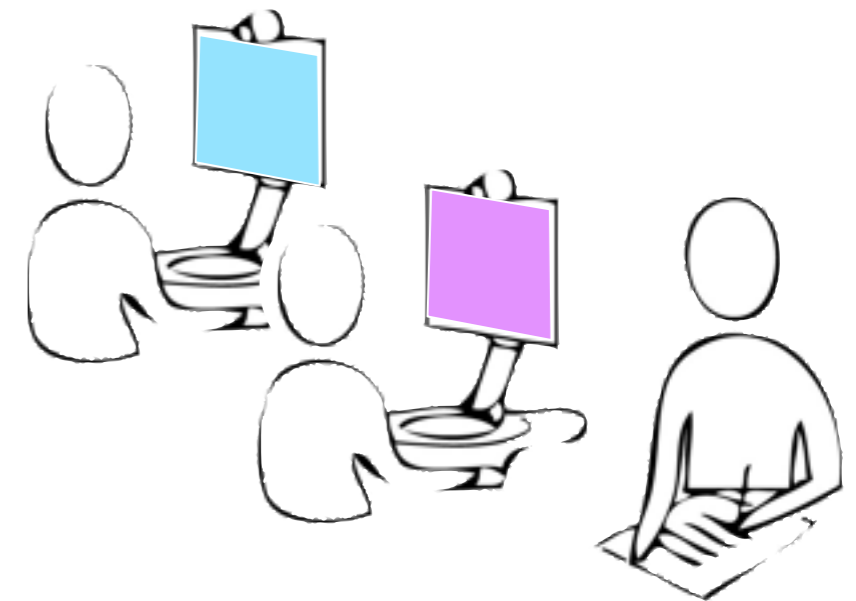
# Methods for observing interaction



Passive observation

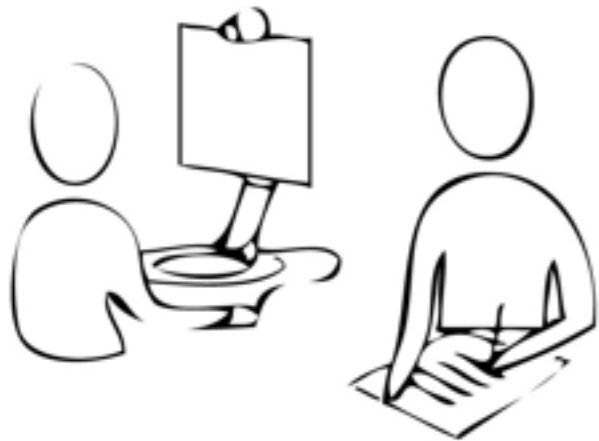


Think-aloud protocol



Comparative study

# Methods for observing interaction

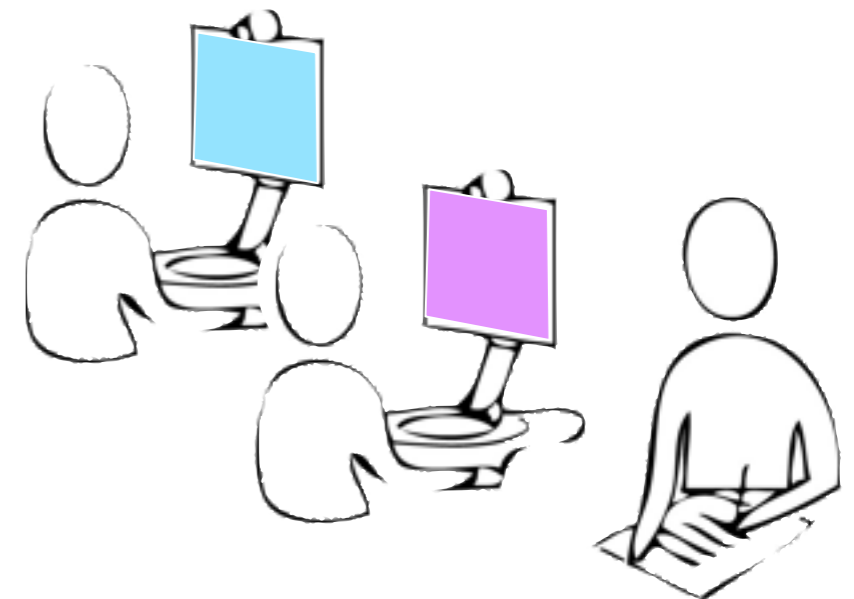


Passive observation

*hmmmm  
blah blah  
blah bla*





Think-aloud protocol



Comparative study





# Use case: "If this then that"



**if**  **then** 

Send ifttt any text message from \_\_\_\_\_

Create a link note in your notes

created about 1 hour ago  
last triggered 41 minutes ago  
triggered 1x



**if**  **then** 

Every month on the 3rd at 02:00 PM

Add file from URL to Josh Haas's dropbox





   

created about 1 hour ago  
last triggered Never

**if**  **then** 

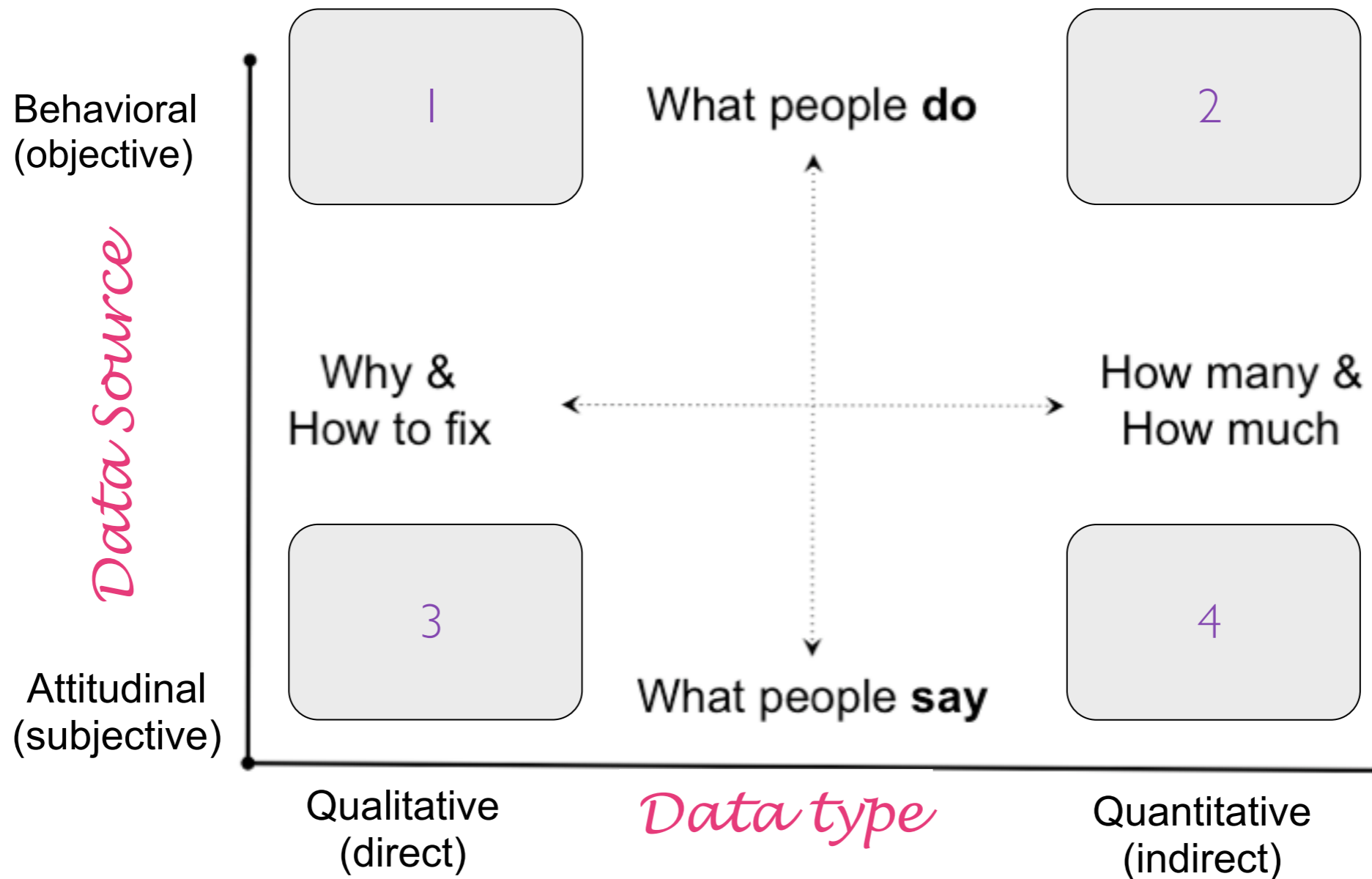
Send trigger@ifttt.com an email tagged \_\_\_\_\_ from \_\_\_\_\_

Send me a text message at \_\_\_\_\_

created about 2 hours ago  
last triggered about 2 hours ago  
triggered 4x

# Passive observation



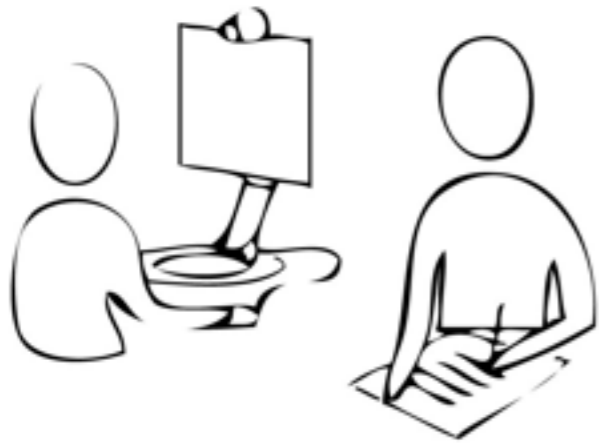
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# Exercise



- Get in pairs
  - one person is the observer
  - the other is the participant
- Participant task: Write a recipe that sends you an email everyday at 9pm to tell you tomorrow's weather
- Observer: Observe, take notes, and ask questions at the end

# Methods for observing interaction

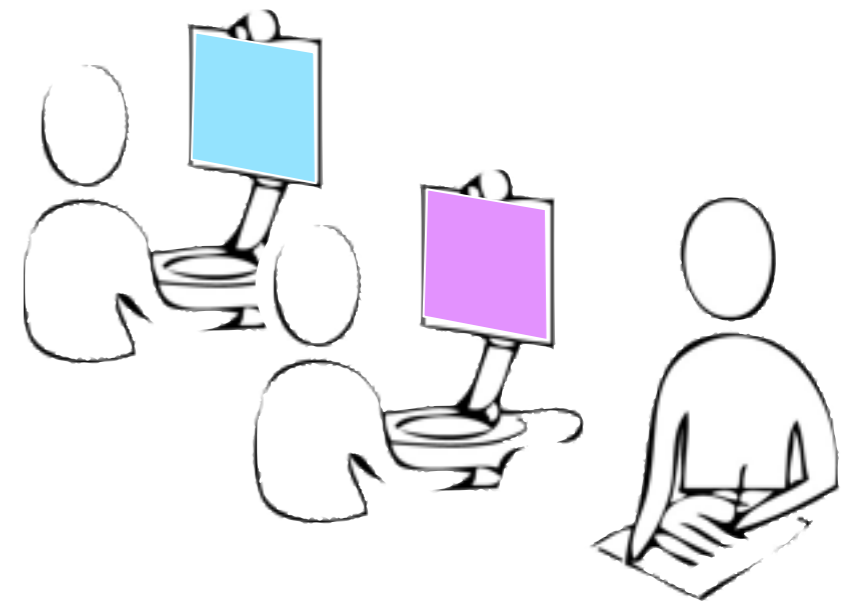


Passive observation

*hmmmm  
blah blah  
blah bla*



Think-aloud protocol



Comparative study

# Think-aloud

"Thinking aloud may be the single most valuable usability engineering method."

J. Nielsen



# Explaining the think-aloud

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- *All you do is speak your thoughts as you work.*

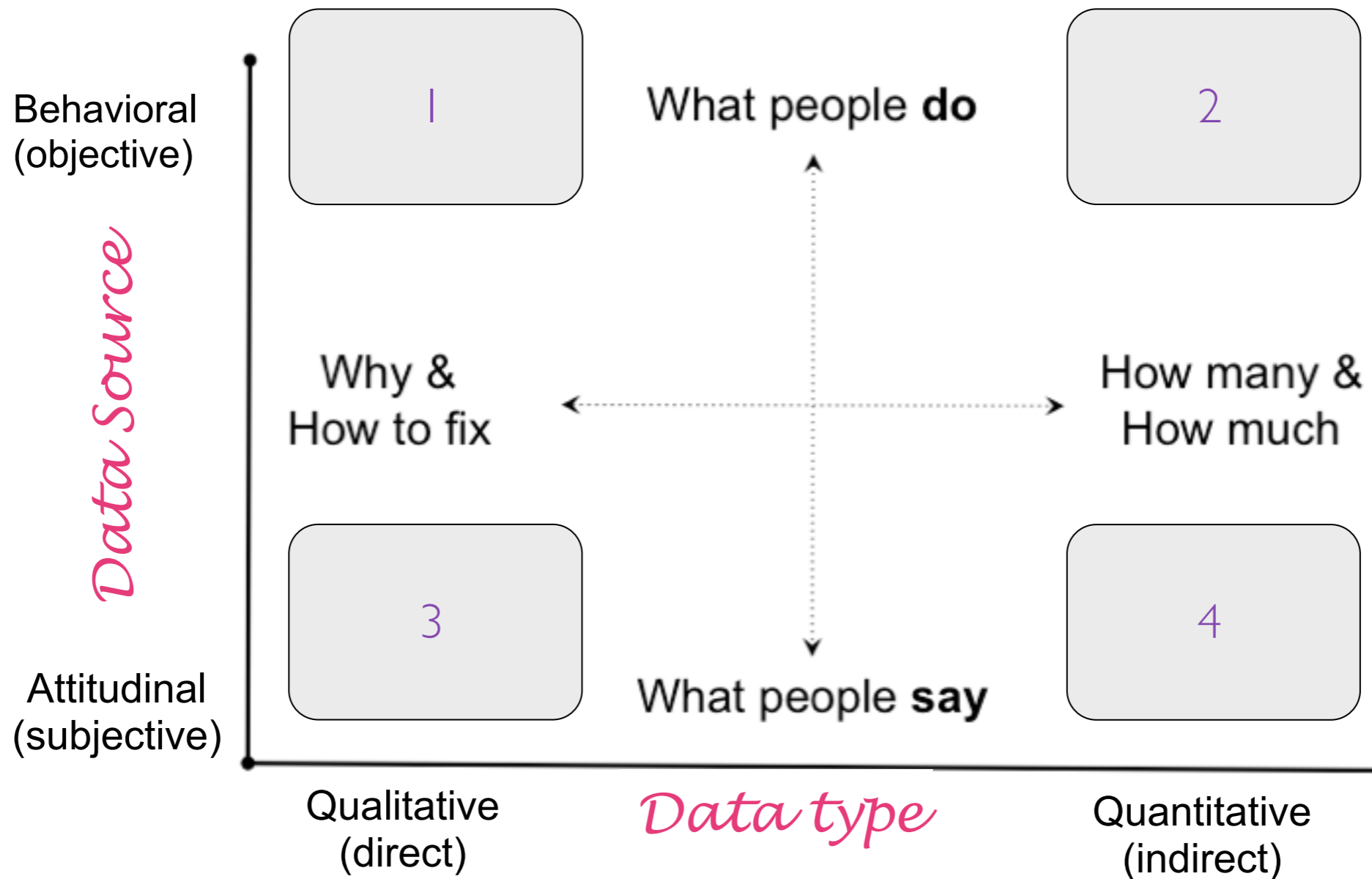
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- *If you forget to think aloud, I'll remind you to keep talking.*

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- *All you do is speak your thoughts as you work.*
- *If you forget to think aloud, I'll remind you to keep talking.*
- *Would you like me to demonstrate?*

# Think-aloud observation



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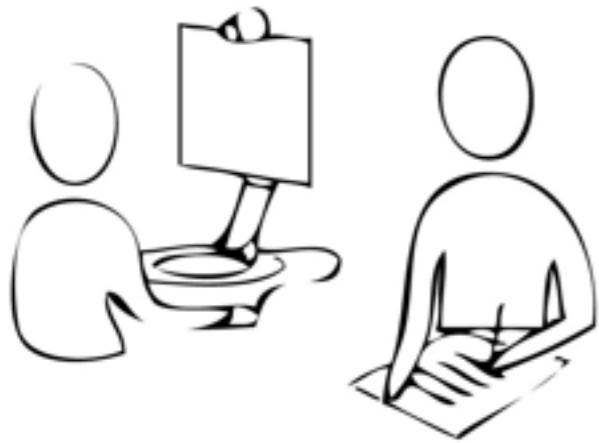
# Exercise



- Get in pairs
  - one person is the observer
  - the other is the participant
- Participant task: Write a recipe that sends you an email when a new listing for “mountain bike, seattle” is posted on Craigslist. **Think aloud!**
- Observer: Observe, take notes, and ask questions at the end

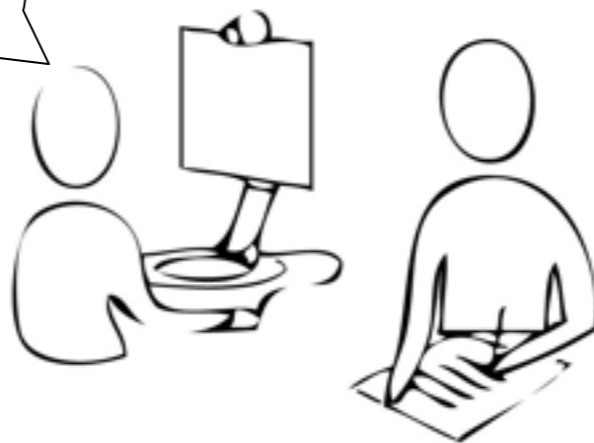


# Methods for observing interaction

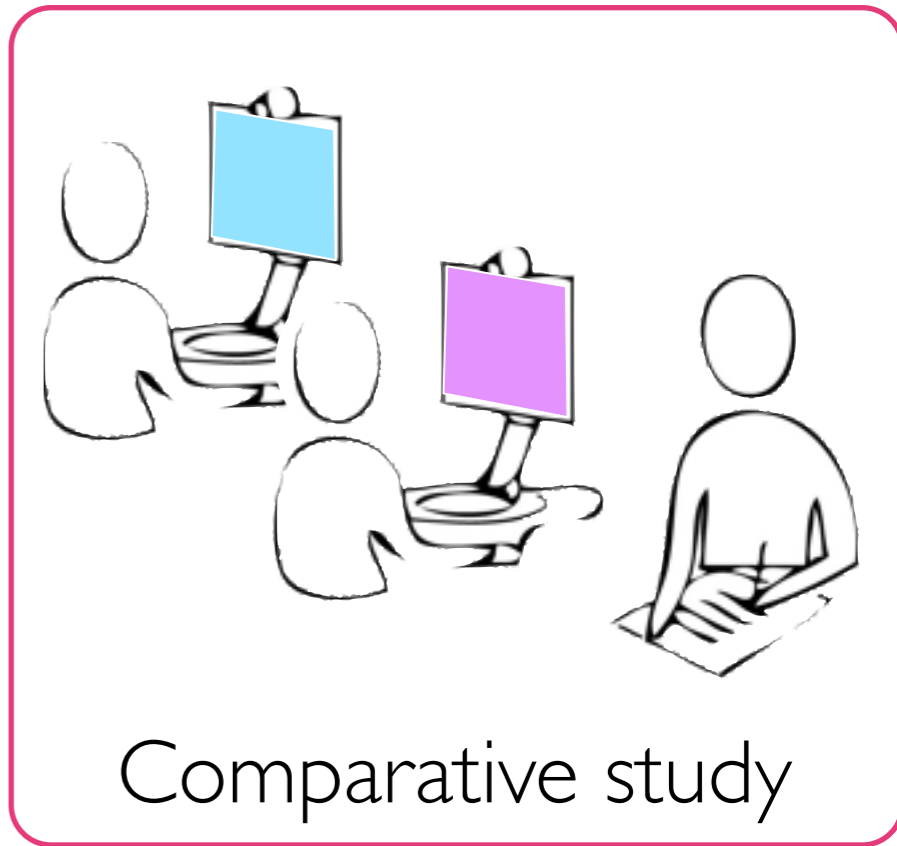


Passive observation

*hmmmm  
blah blah  
blah bla*

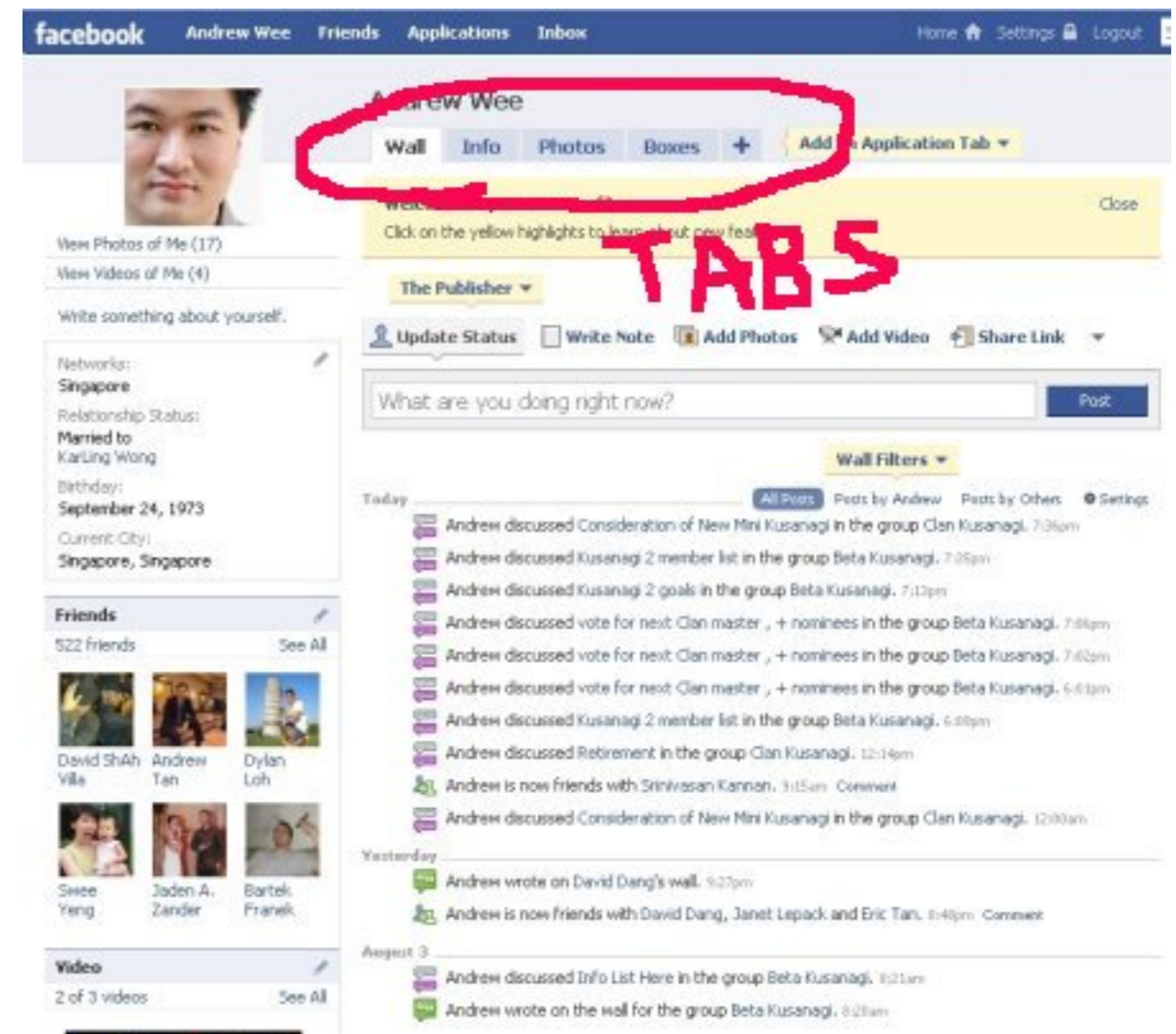


Think-aloud protocol



Comparative study

# A/B testing



# A/B testing

amazon.com Hello, James Landay. We have [recommendations](#) for you. ([Not James?](#))  
James's Amazon.com | [Today's Deals](#) | [Gifts & Wish Lists](#) | [Gift Cards](#)

Shop All Departments Search All Departments

Shopping Cart for James Landay ([If you're not James Landay, click here.](#))

See more items like those in your Cart **subtotal = \$219.99**  
Make any changes below

### Shopping Cart Items--To Buy Now

Item added on September 2, 2009 **Microsoft Windows 7 Ultimate Upgrade** - Microsoft Software; DVD-ROM  
Condition: New  
Available for Pre-order

Save for later Eligible for FREE Super Saver Shipping  
Delete

Add gift-wrap/note [\(Learn more\)](#)

### About the Shopping Cart

- Items in your Shopping Cart always reflect the most recent price displayed on their product
- Items remain in your Shopping Cart for 90 days.
- [Learn more](#) about the Shopping Cart and how to buy items at Amazon.com

Redeeming a gift card or gift certificate? We'll ask for your claim code when it's time to pay.

Recommendations based on cart content?

Pro: cross-sell more items

Con: distract people at check out

### Customers Who Bought Items in Your Shopping Cart Also Bought

Microsoft Windows 7 Professional Upgrade \$199.99

Microsoft Windows 7 Home Premium Upgrade \$119.99

Mac OS X version Snow Leopard ★★★★★ (58) \$25

# A/B testing

The screenshot shows the Amazon.com shopping cart interface. At the top, it says "amazon.com" and "Hello, James Landay. We have recommendations for you. (Not James?)". Below this are links for "James's Amazon.com", "Today's Deals", "Gifts & Wish Lists", and "Gift Cards". A search bar is visible with "All Departments" selected. The shopping cart is for "James Landay" and shows a subtotal of \$219.99. The main item in the cart is "Microsoft Windows 7 Ultimate Upgrade" with a price of \$199.99. Below the item are buttons for "Save for later", "Delete", and "Add gift-wrap/note". A section titled "About the Shopping Cart" lists three bullet points: "Items in your Shopping Cart always reflect the most recent price displayed on their product", "Items remain in your Shopping Cart for 90 days.", and "Learn more about the Shopping Cart and how to buy items at Amazon.com". At the bottom, there is a section titled "Customers Who Bought Items in Your Shopping Cart Also Bought" which displays three recommended products: "Microsoft Windows 7 Professional Upgrade" for \$199.99, "Microsoft Windows 7 Home Premium Upgrade" for \$119.99, and "Mac OS X version Snow Leopard" for \$25 with a 5-star rating from 58 reviews.

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Highest Paid Person's Opinion  
"Stop the project!"

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Pro: cross-sell more items

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Highest Paid Person's Opinion  
"Stop the project!"

Simple experiment was run,  
wildly successful

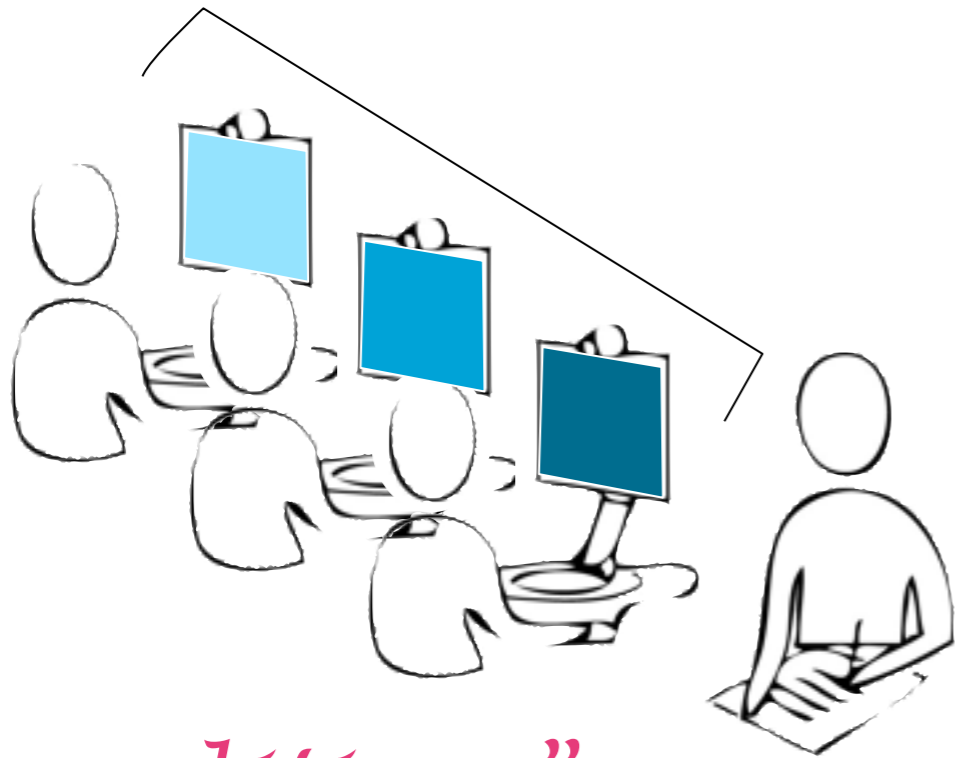
# A/B testing

The screenshot displays the Amazon.com homepage with the following elements:

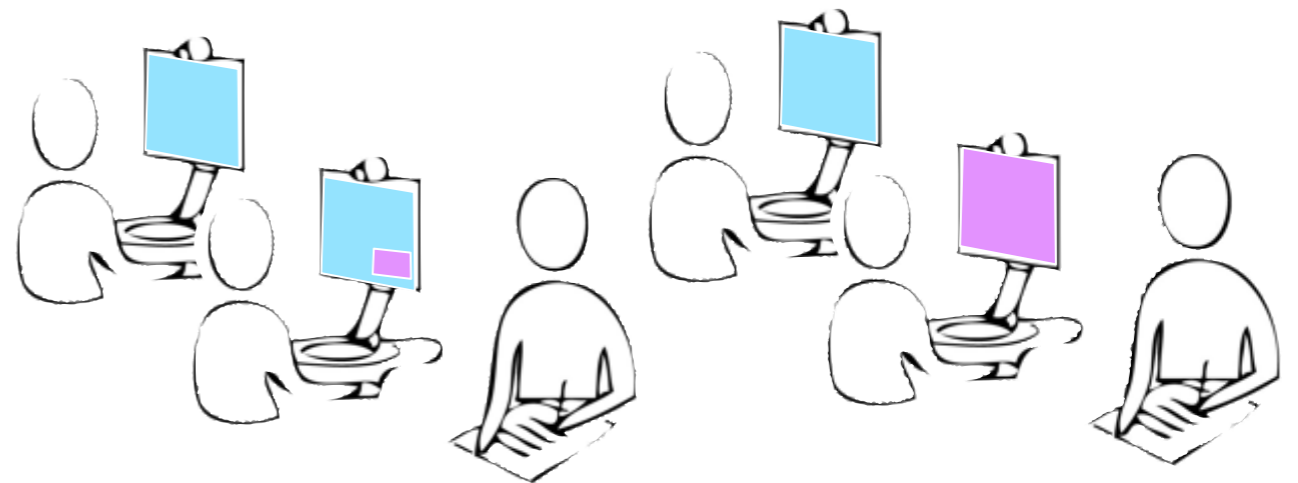
- Header:** Amazon logo, navigation links (Maya's Amazon.com, Today's Deals, Gift Cards, Sell, Help), and user account options (Hello, Maya, Your Account, Try Prime, Cart, Wish List).
- Left Sidebar:** A menu for 'Shop by Department' listing categories like Unlimited Instant Videos, Kindle Books & E-readers, and Books & Audible.
- Main Banners:** A large banner for 'Lighter than Air' Kindle Fire HDX 8.9, and another for 'Amazon Fashion WOMEN'S JACKETS + COATS'.
- Right Side:** Promotional ads for 'St. Patrick's Day', 'Prilosec', and 'SANDAL SHOP'.
- Product Listings:** Two rows of 'Related to Items You've Viewed' and 'More Items to Consider' featuring various smartphones (Google Nexus 5, Motorola Moto G, LG E960) and tablets (ASUS Google Nexus 7, MoKo Google New Nexus 7 FHD 2nd Gen., Samsung Galaxy Tab 3).
- Best Sellers:** A section titled 'Watches: Luxury Watches' listing five Rolex watches.



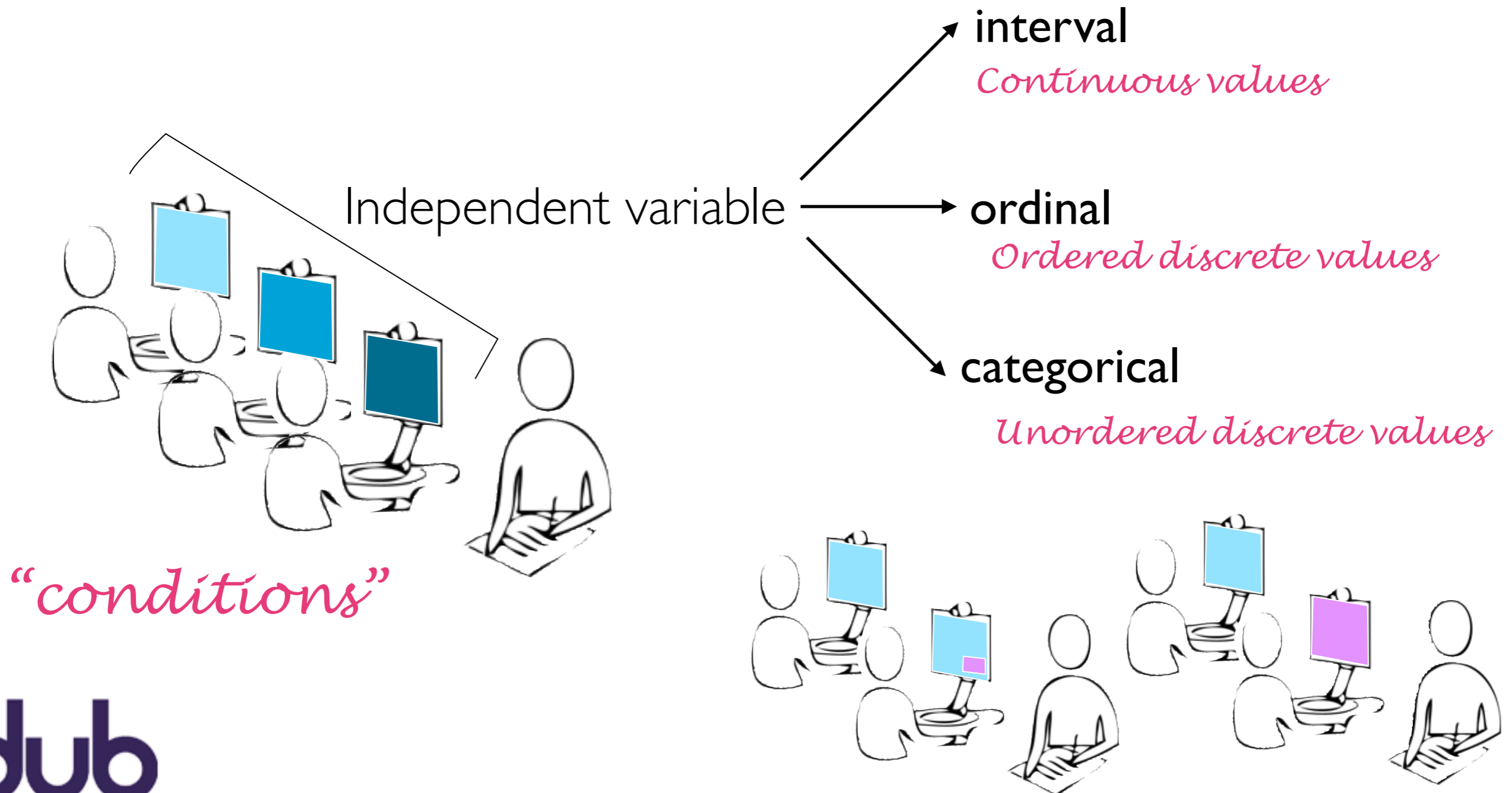
# What is being compared?



*“conditions”*

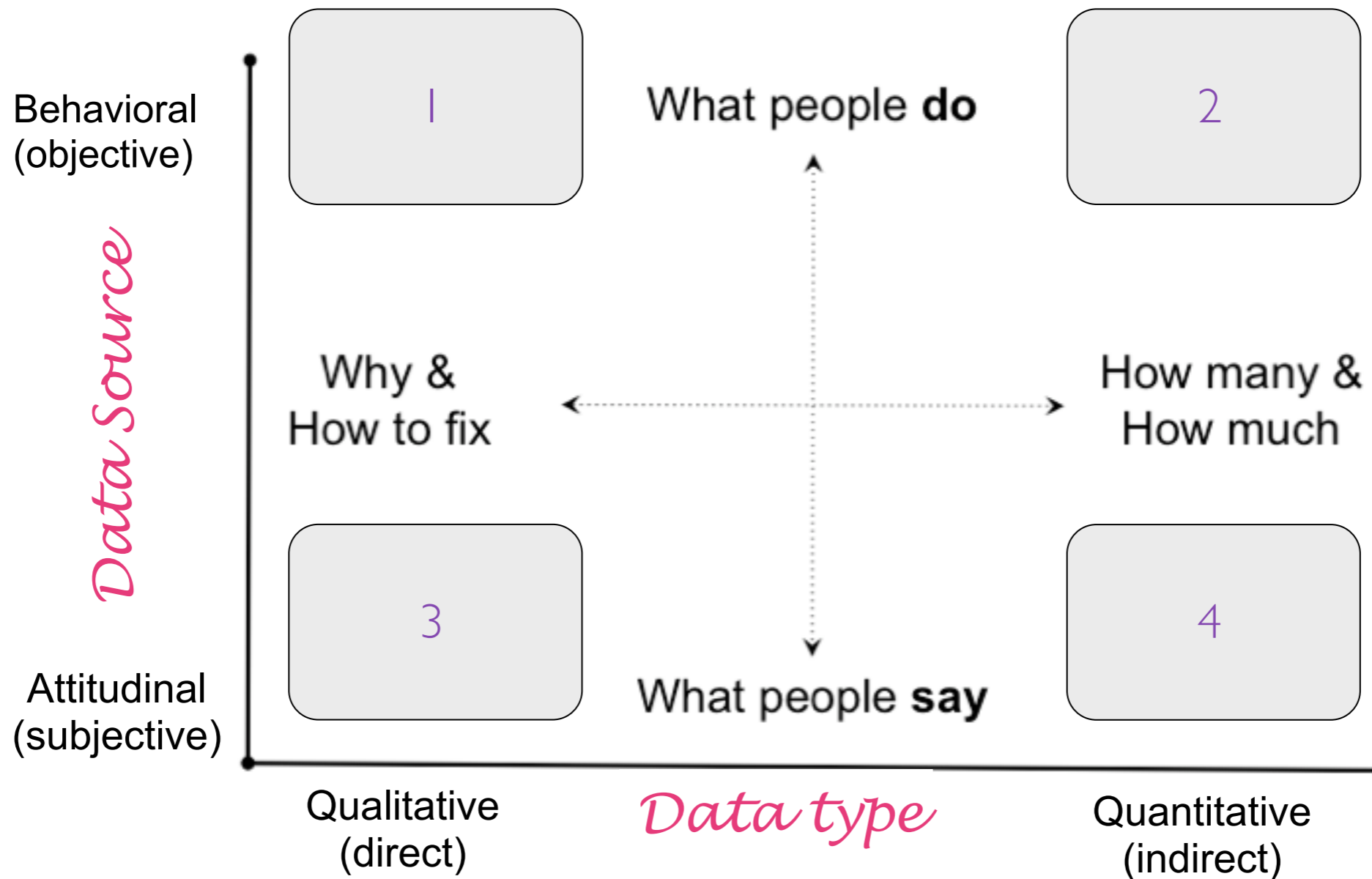


# What is being compared?





# Comparative observation



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# PRESENTATION FEEDBACK



# Timing

- 8 minutes is very short
- Plan the timing ahead
- Practice, practice, practice

# Nerves

- Even Obama gets nervous before a speech
- More severe at the beginning
  - Think about exactly what to say on the first few slides
- Practice, practice, practice

# Respecting other presenters

- When someone is presenting, put your phones and laptops away
- Presented in class, did not come to section :-)

# Content

- Contextual inquiry
  - Participants, process
  - Findings, themes
  - Implications for tasks
  - Implications for design
- Tasks as verbs from user perspective
- Storyboards: walk-through

# Ooops, out of time!

- Will come back to it next week...