

# Parallel Prototyping

MICHAEL BERNSTEIN

CS 247

THANKS TO SCOTT KLEMMER AND MANEESH AGRAWALA

# Let's design an ad for learning to code

30-minute activity

# Find a critique partner

- Pair up with a partner.
- You'll be critique partners (but will create ads individually).
- I will be announcing timepoints for critiques every few minutes. Do the critiques, then keep designing!

# Critiquing

- You have a set of critique feedback items on the page.
- When you critique a poster, use the items on the page to critique your partner's designs.

# Design process

- Visit [hci.st/247stepzero](https://hci.st/247stepzero)
- Click “Get Started” at the bottom
- Create an account or use the account:
  - [cs247@cs.stanford.edu](mailto:cs247@cs.stanford.edu) / hcirocks
- Click through the tutorial
- Visit [hci.st/247stepone](https://hci.st/247stepone)
- Make a learn to code poster

# Process

- By the first timepoint (at 16min), you must complete two different concept drafts of your poster.
- When I call the timepoint, show them to your partner.
- For each draft, your partner will choose a critique.  
Critiques should be 2 min per partner.

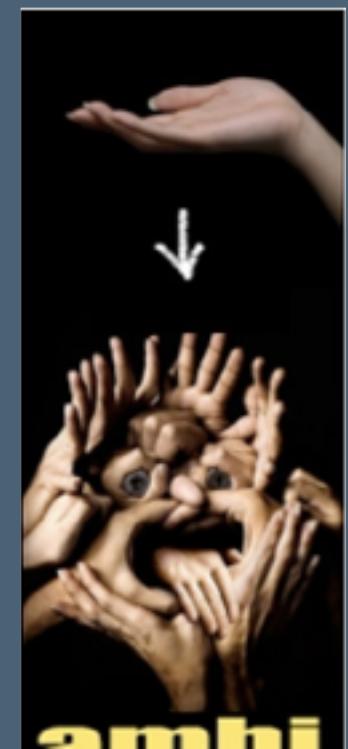


[hci.st/247stepzero](http://hci.st/247stepzero)

# Process

- By the second timepoint (at 30min), complete one final draft of your poster.
- 2 in 16min, trade critiques for 4 minutes, 1 in 10min.

Got it?



[hci.st/247stepzero](http://hci.st/247stepzero)

# Design!

Start!

# Timepoint

Complete your critiques in 2 minutes per partner

Swap! Second partner  
critique now.

Complete your critiques in 2 minutes per partner

# Design!

# STOP

Download your final poster as an image or take a screenshot.  
Upload it to: [hcist247.learntocode](https://hcist247.learntocode)

# Prototype science

Or, why I always ask you to generate a ton of observations, ideas, and prototypes.

# Quantity or Quality?



Bayles and Orland, 2001

# Quantity or Quality?

“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”

Does creating parallel  
prototypes improve the final  
design?

# Task: design an advertisement

The screenshot shows the homepage of the Ambidextrous website. At the top, the word "AMBIDEXTROUS" is written in large, bold, orange, textured letters. Below it is a navigation bar with links: "subscribe", "issues", "blog", "store", and "contact us". On the left side, there's a thumbnail image of the journal cover for "issue 11" (Spring 2009), which features a dark, abstract photograph of what looks like a robotic arm or a series of pipes. The journal cover has the title "AMBIDEXTROUS" at the top, followed by "STANFORD UNIVERSITY'S JOURNAL OF DESIGN", "ISSUE ELEVEN", "SPRING 2009", and "N15.050". Below the image, the word "SPACE" is printed in large, bold, white letters. To the right of the journal image, the text "issue 11" is displayed in a large, bold, black font. Underneath it, the text "Spring 2009: Space" is written in a smaller, bold, black font. A paragraph of text follows: "As children some of you may have dreamed of becoming astronauts, or at least vied for a spot in Space Camp. Maybe you were inspired by the worlds of Flash Gordon or those created by Frank Lloyd Wright. In this issue of *Ambidextrous*, we tackle space and beyond in all of its frontiers." At the bottom of the page, there's a small white box containing the text "An Ode to White Space" and "Ellen Lupton".

# Procedure

serial prototyping condition



parallel prototyping condition

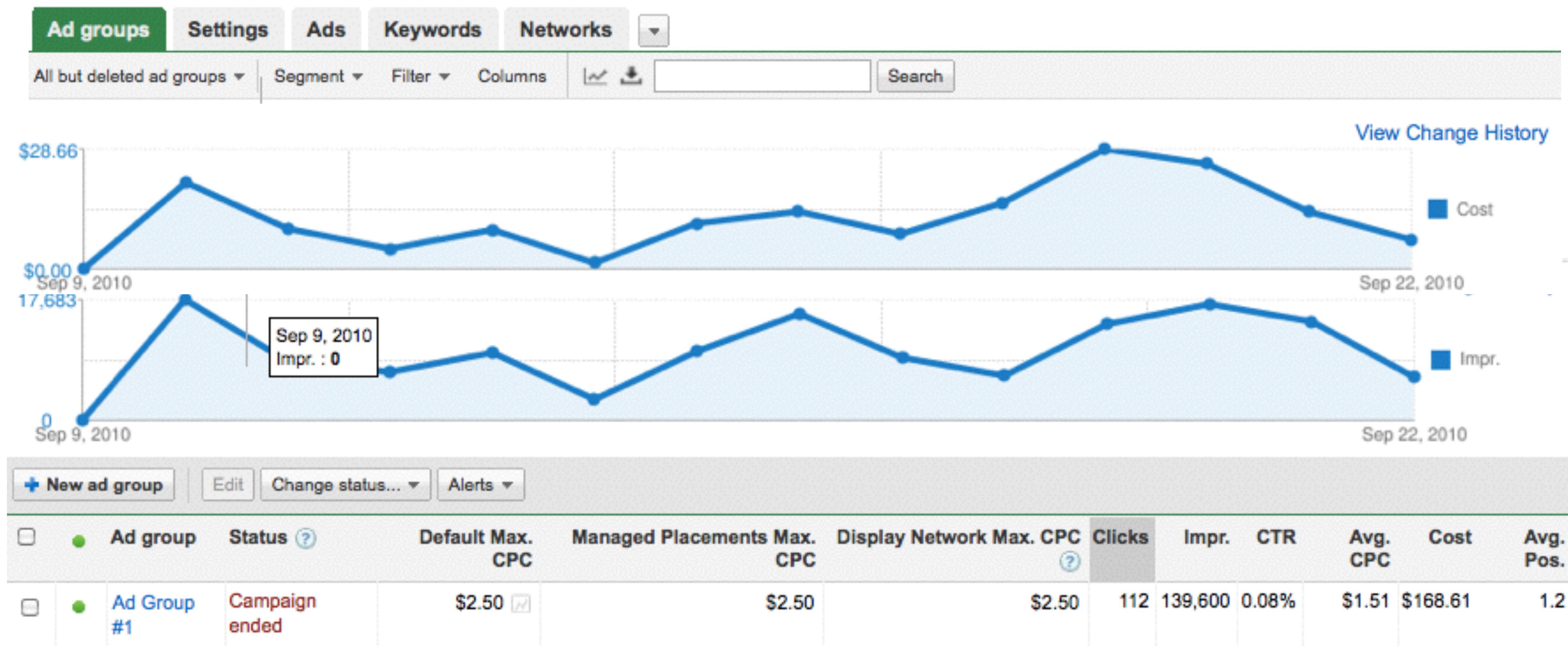




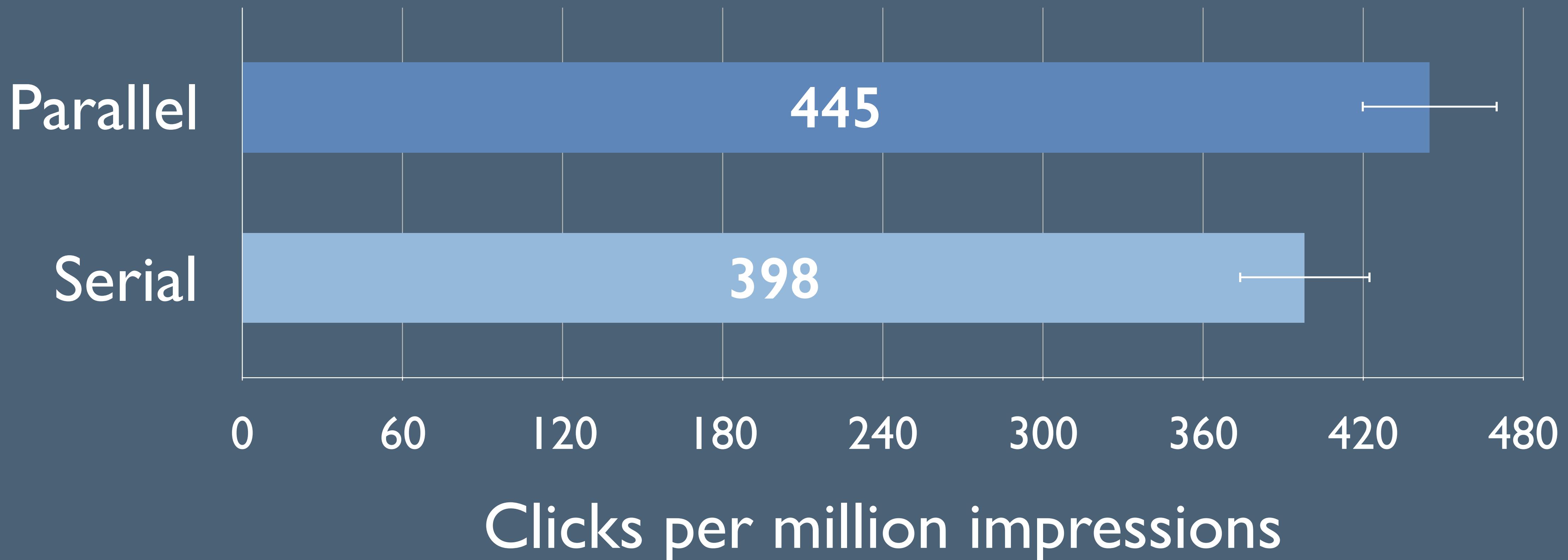
# Which group did better?

- I'll be getting your ads evaluated by paid crowd members on Amazon Mechanical Turk.
- Next week, let's revisit the results.

# Web advertising analytics

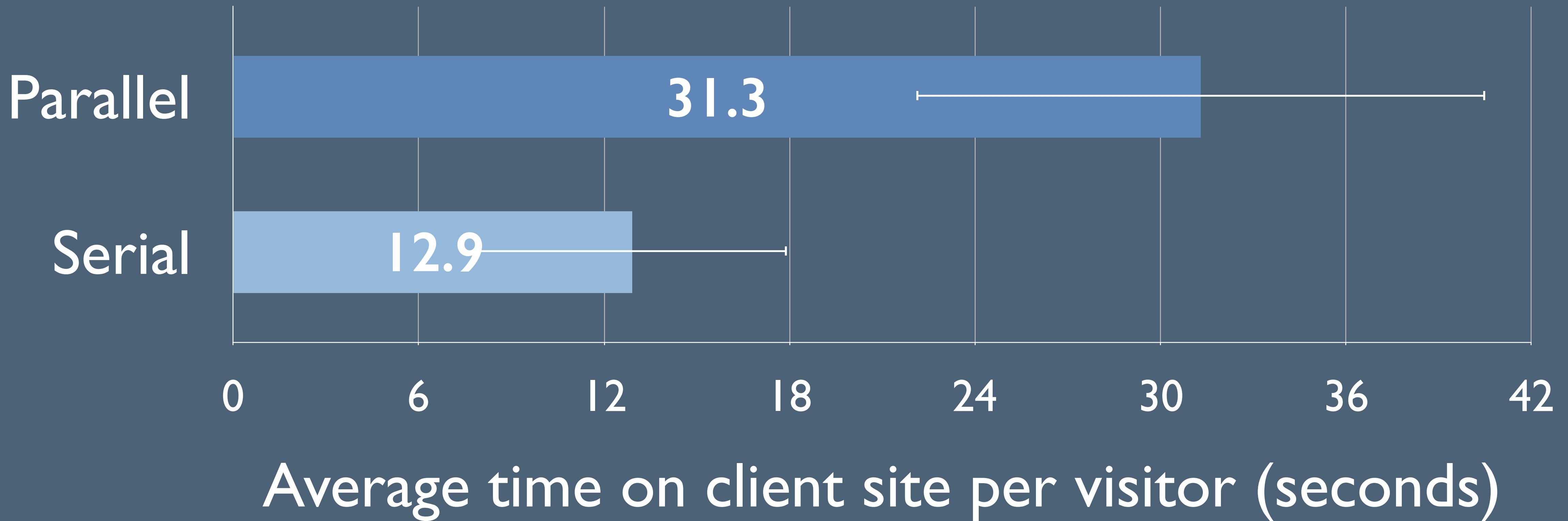


# Parallel design → more clicks



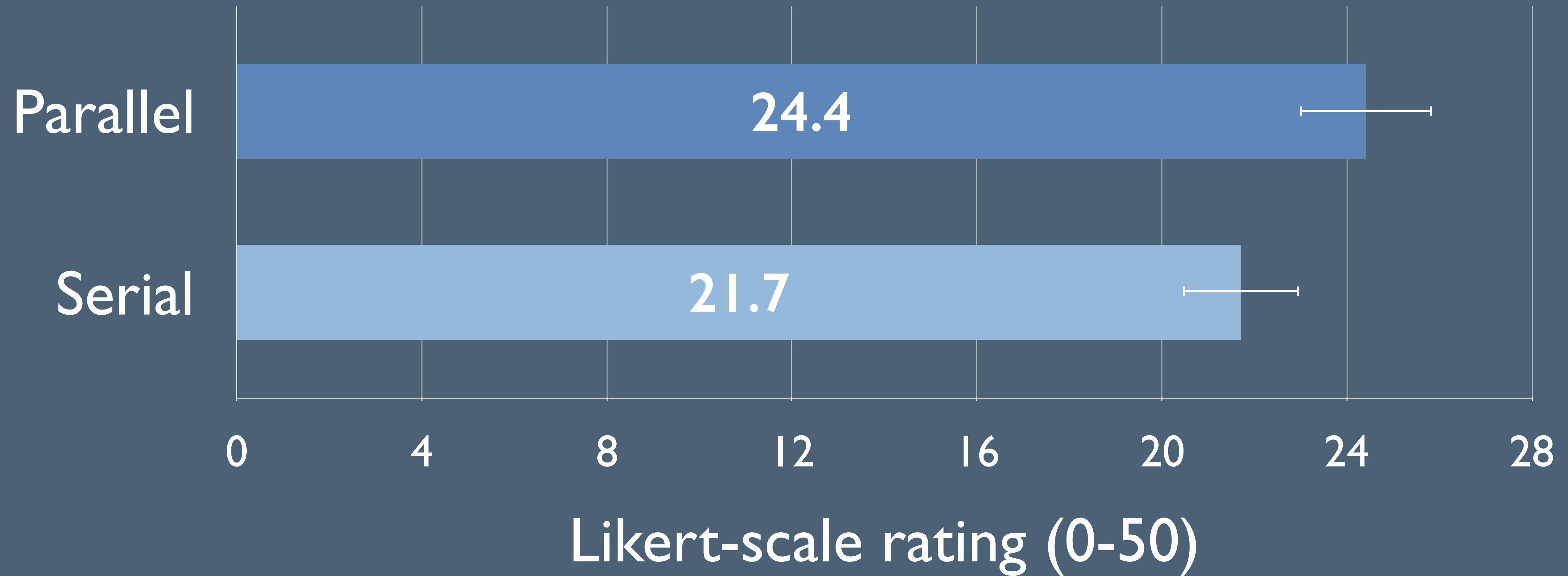
$F(1,30)=4.227, p<.05$

# Trend toward more time on site



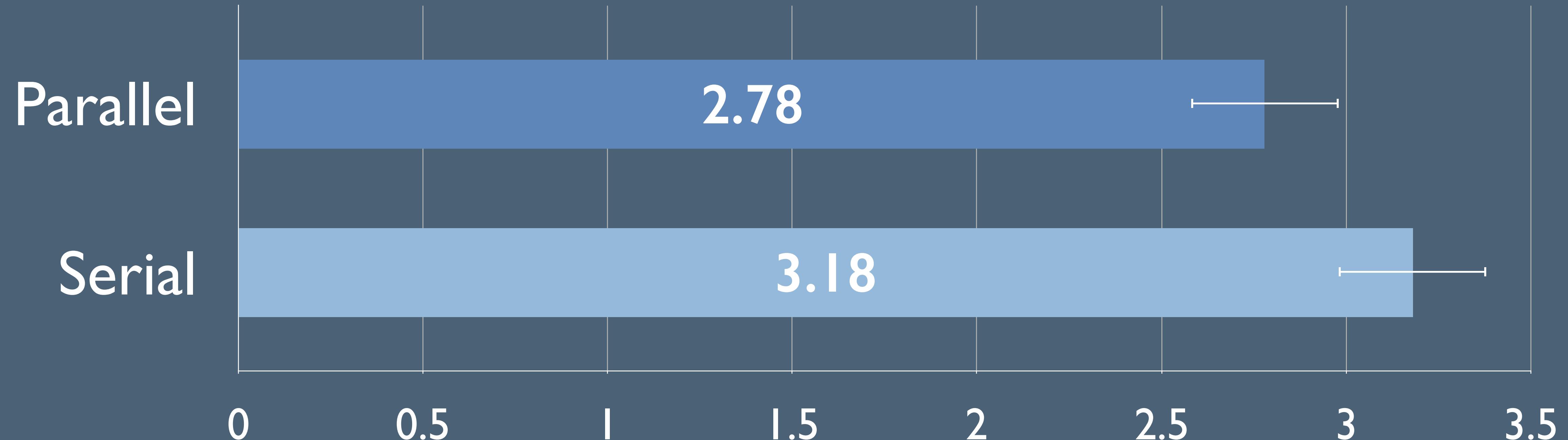
$F(1,493)=3.172, p=0.076$

# Higher expert ratings



$$F(1,5)=7.948, p<0.05$$

# More diverse designs



0 = not at all similar, 7 = highly similar

F=182, p<0.001

# Comparison aids learning

## Serial case condition

case 1

“Describe the solution.”

case 2

“Describe the solution.”

Face-to-face negotiation

## Parallel case condition

case 1

case 2

“Describe the parallels of these solutions.”

Face-to-face negotiation

>3x more likely  
to transfer the  
technique from  
training

# Get better feedback, too

- Having alternatives lessens the pressure to be nice

