

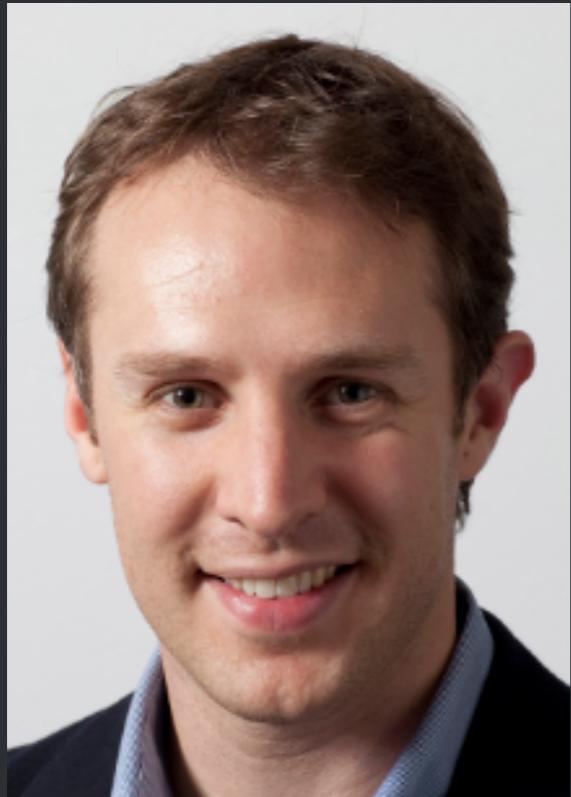
HUMAN-CENTERED DESIGN

Creating and Comparing Rates

Scott Klemmer

UC San Diego
The Design Lab

Creating and Comparing Alternatives



Steven Dow *et al.*

Prototyping Dynamics: Sharing Multiple Designs Improves Exploration, Group Rapport, and Results, Steven P Dow, Julie Fortuna, Dan Schwartz, Beth Altringer, Daniel L Schwartz, and Scott R Klemmer. *CHI: ACM Conference on Human Factors in Computing Systems, 2011.*

Parallel Prototyping Leads to Better Design Results, More Divergence, and Increased Self-Efficacy, Steven P Dow, Alana Glassco, Jonathan Kass, Melissa Schwarz, Daniel Schwartz, Scott R Klemmer. *ACM Transactions on Computer-Human Interaction, 2010*

The Efficacy of Prototyping Under Time Constraints,

Quantity v. Quality?



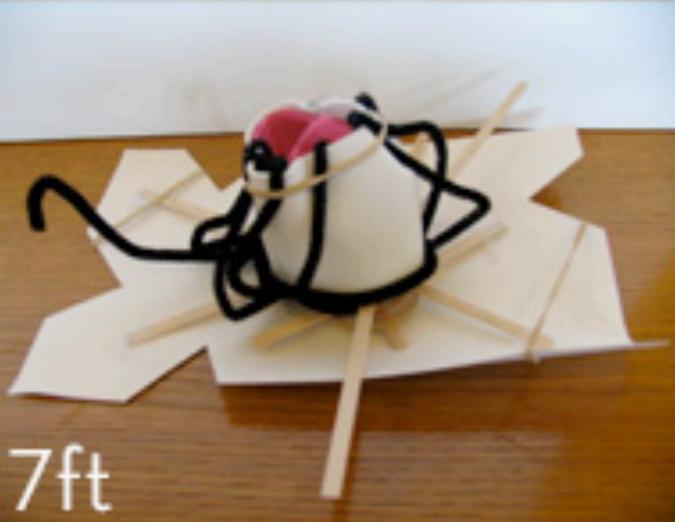
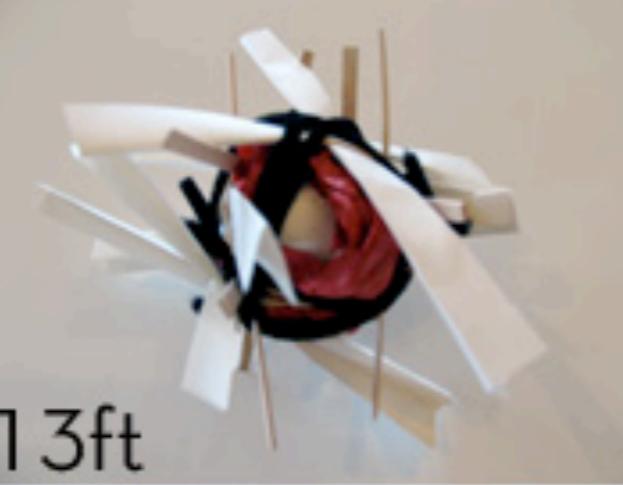
Bayles and Orland, 2001

Quantity v. 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”

Design an Egg Drop Device





Participants picked their concept



INTERACTION
PARTICIPANT

"This isn't just they type of participation that establishes the relationship, it's by a definition just had

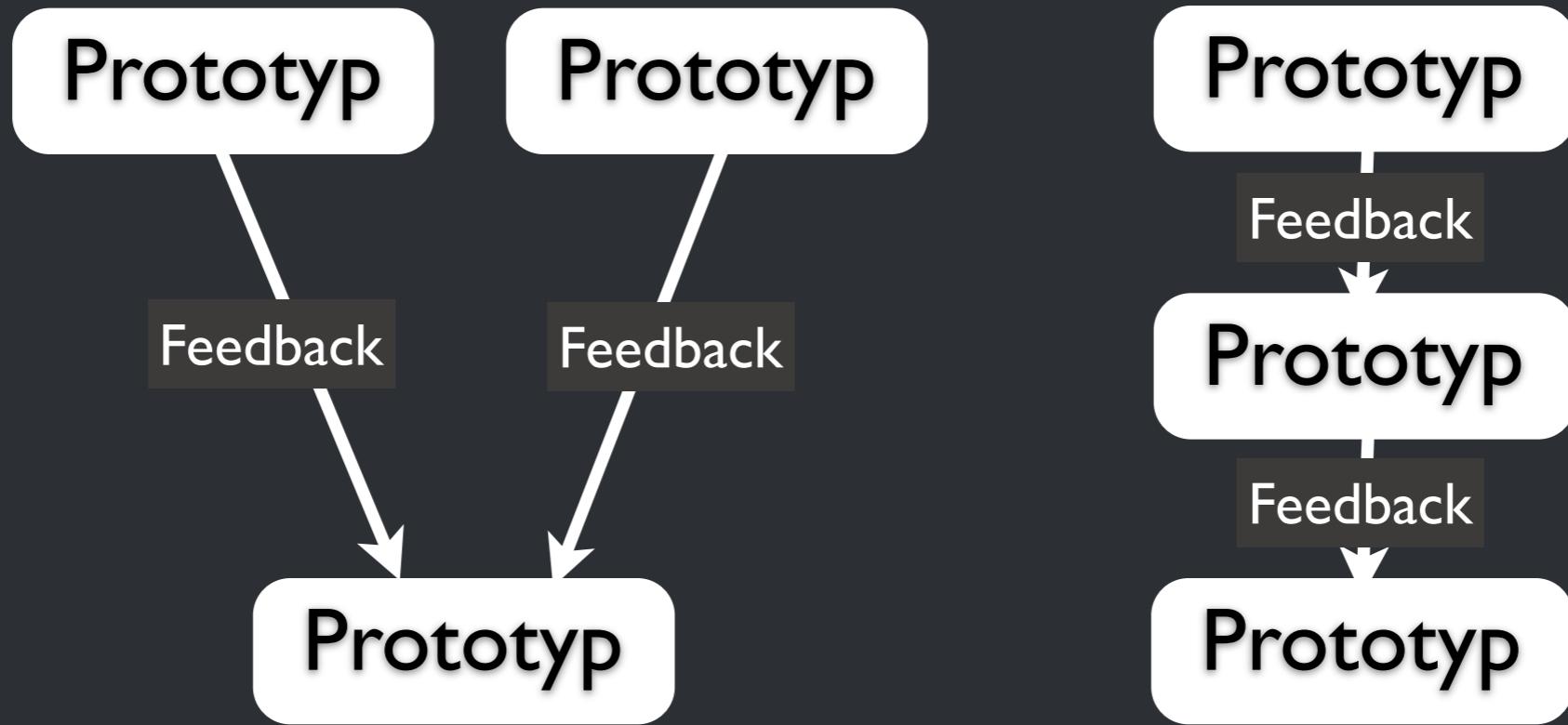
Functional Fixation



Duncker, 1945

Research question

How does parallel design
– rather than a serial approach –
affect performance?



PARALLEL

SERIAL

Task: design an advertisement

The screenshot shows the homepage of the Ambidextrous website. The header features a large, textured orange title "AMBIDEXTROUS". Below the title is a navigation bar with links: "subscribe", "issues", "blog", "store", and "contact us". To the left, there's a thumbnail image of "issue 11" which has a dark cover with the word "SPACE" at the bottom. The main content area includes a heading "issue 11", a sub-heading "Spring 2009: Space", and a descriptive paragraph about the issue. To the right of the text is a small graphic element consisting of a white square with a green 'L' shape inside it.

AMBIDEXTROUS
STANFORD UNIVERSITY'S JOURNAL OF DESIGN
ISSUE ELEVEN
SOMMERTIME, SPRING 2009
#15 USD

SPACE

issue 11

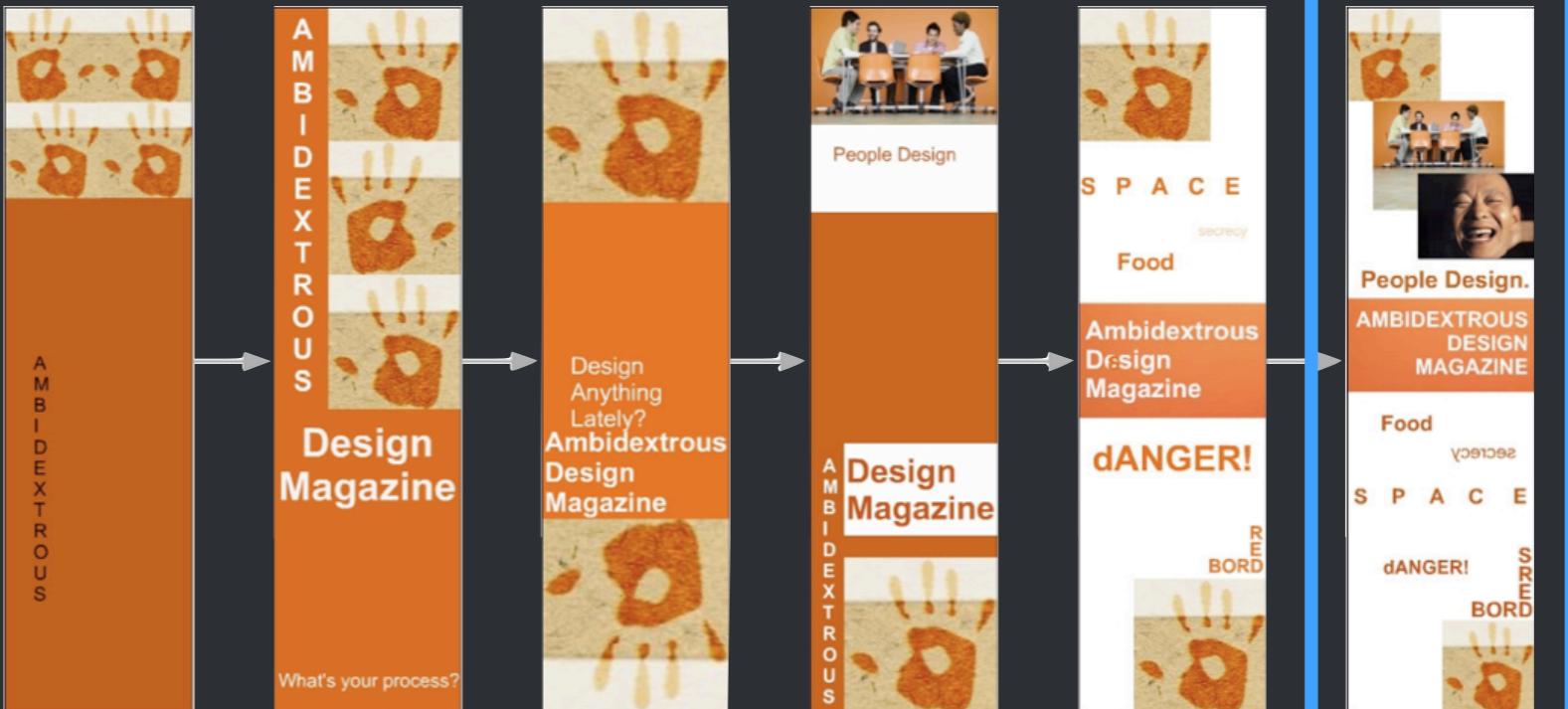
Spring 2009: Space

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.

An Ode to White Space
Ellen Lupton

Procedure (N=33)

serial
prototyping

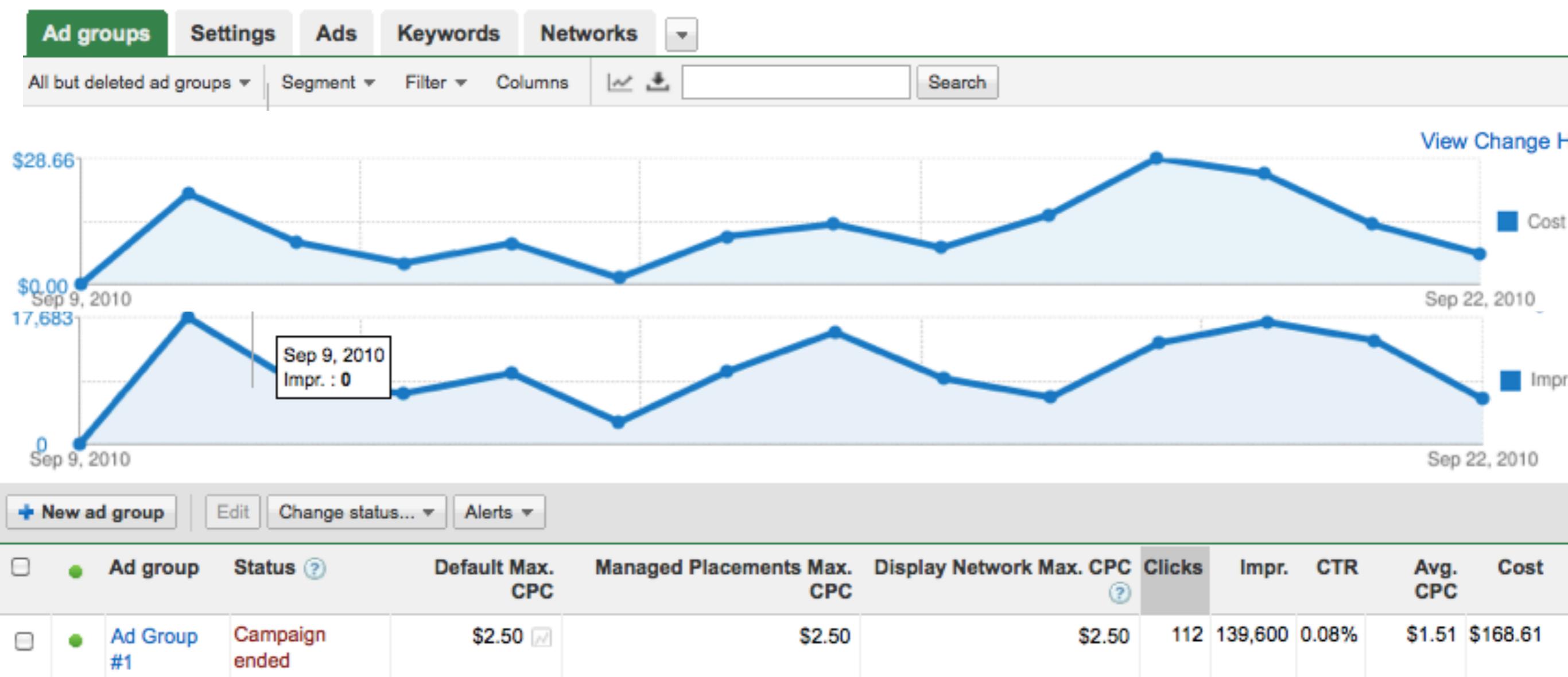


parallel
prototyping



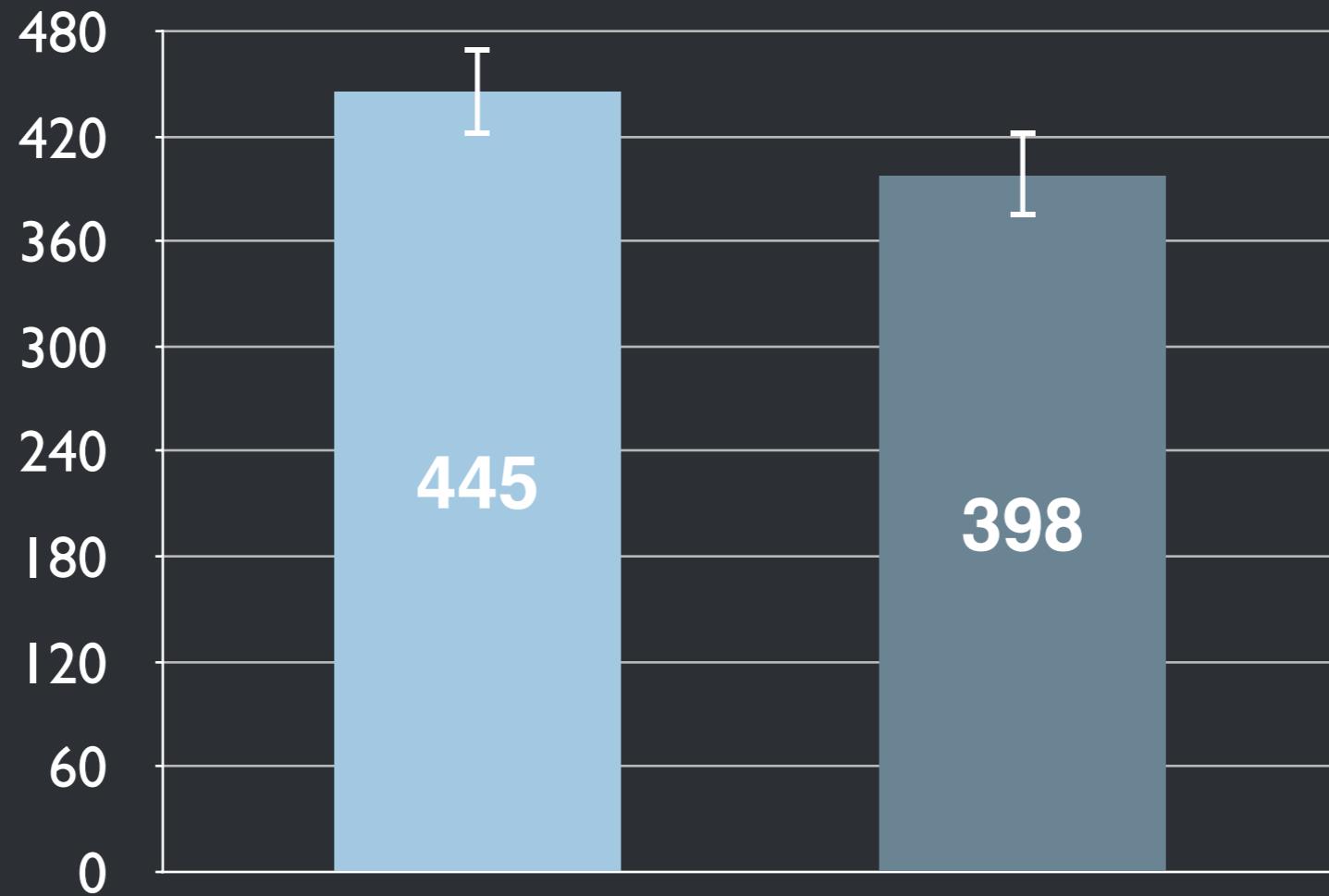


Web advertising analytics



Parallel design -> more

Clicks per
million
impressions



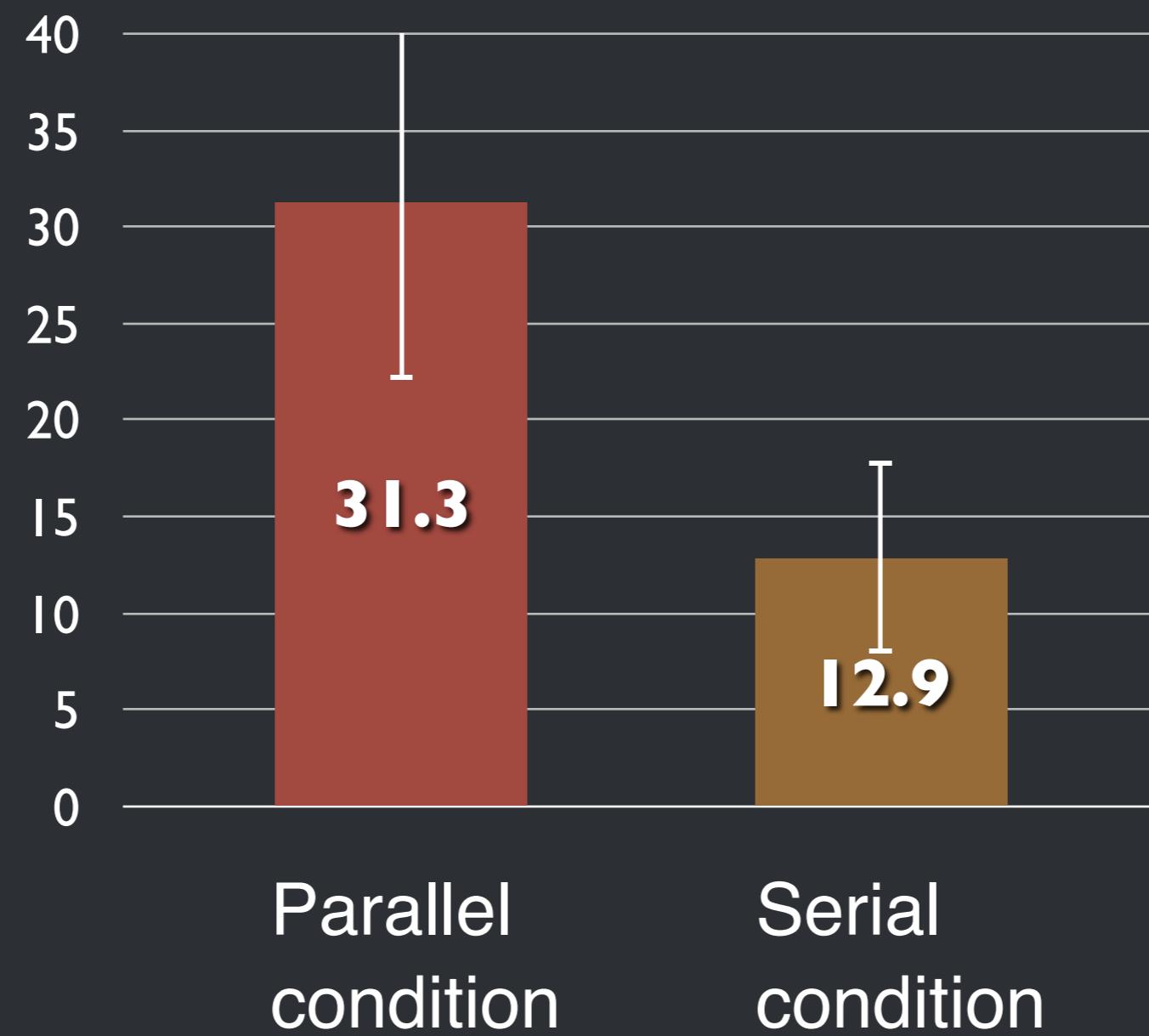
Parallel

Serial

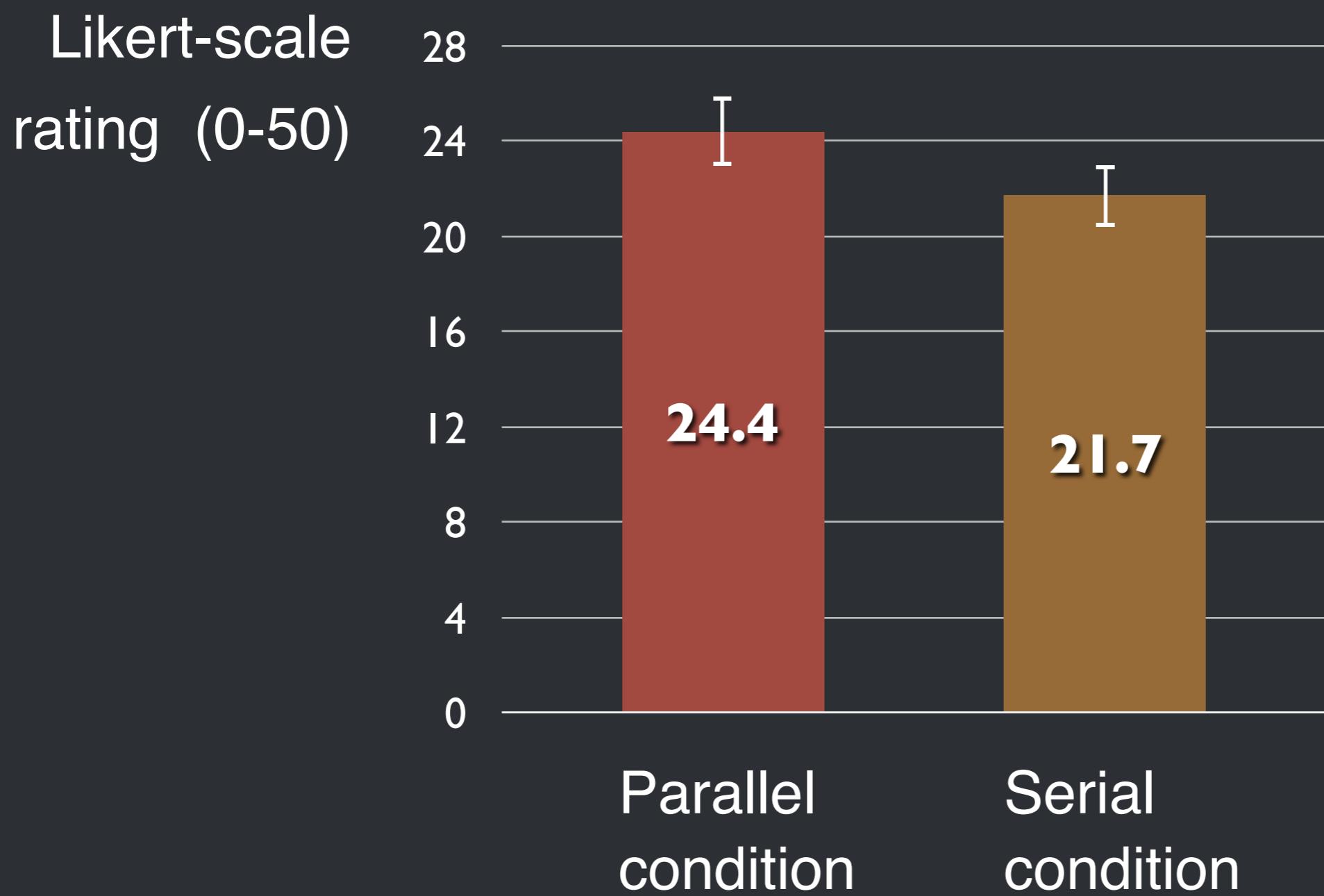
$F(1,30)=4.227$
 $p<.05$

...and more time on the site

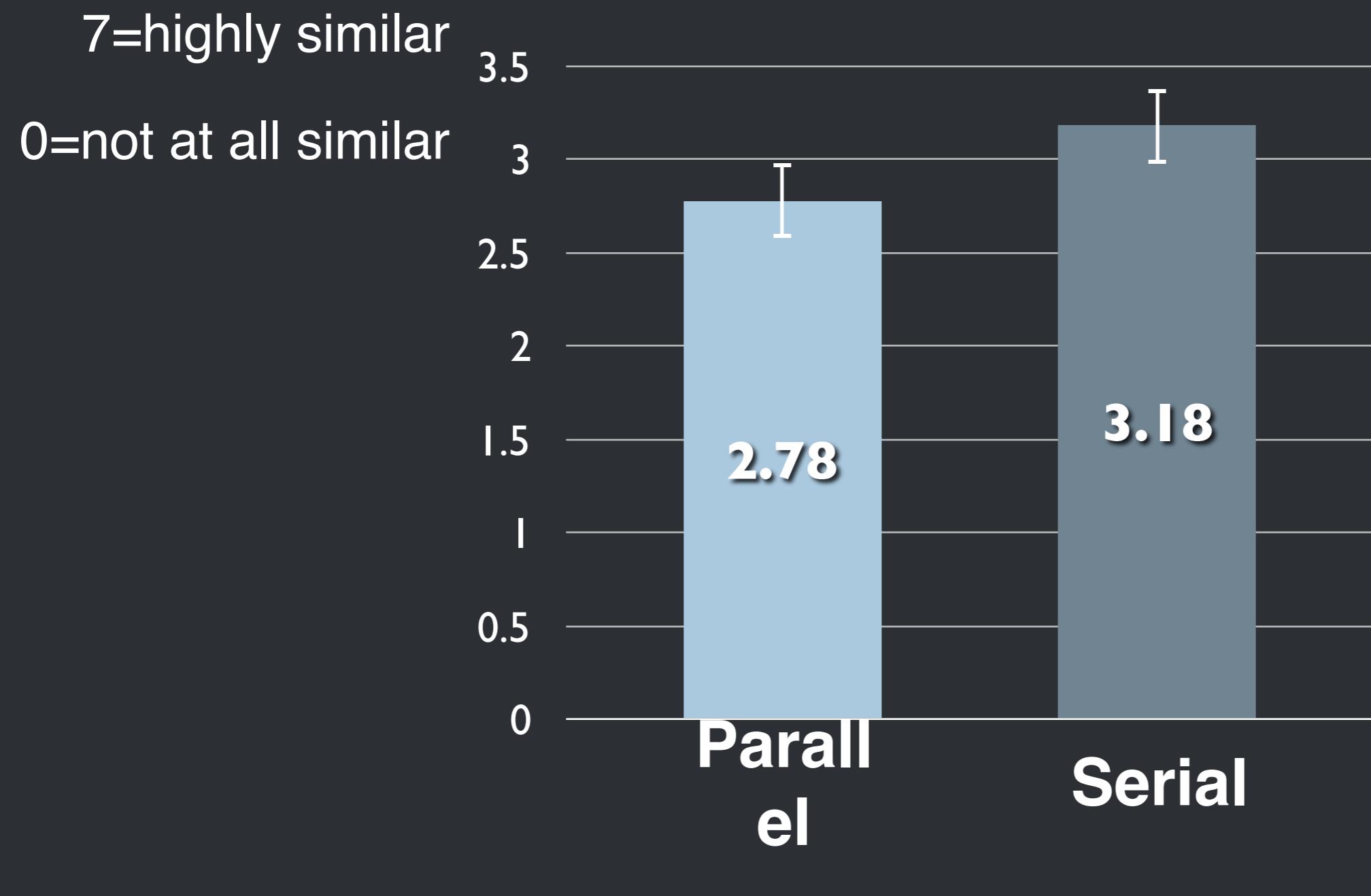
Average time
on client site
per visitor



...and higher expert ratings



...and more diverse designs



Why does a parallel
approach yield
better results?

Separating *Ego*

from *Artifact*

Parallel encourages
comparison and
transfer

Comparison aids learning

training session

SEPARATE CASES

CASE#1

“Describe the solution.”

CASE#2

“Describe the solution.”

COMPARISON CASES

CASE#1

CASE#2

“Describe the
parallels of
these solutions”

~ 3x

learning outcome

Solutions to a landlord-renter lease

Does *sharing* multiple
prototypes improve
design results?

Three Conditions (n=84)

- Share Multiple
- Share Best



The image shows a screenshot of the FACE AIDS website. At the top left, there's a white box containing the text "REAL FACES. REAL FEARS. REAL HOPE." in red, next to a small photo of a young child. To the right is the "FACE AIDS" logo with a stylized 'F' icon and the tagline "A student campaign to fight AIDS in Africa". Below this, a black banner features a photo of a person holding a red ribbon and the text "Together. Together we can. Together we can FACE AIDS." In the middle section, there's another photo of two children and a red ribbon, with the text "In 2006, young people accounted for 40% of new HIV infections." and "Help us change this. FACE AIDS.". The bottom section contains the "FACE AIDS" logo again and the tagline "A student campaign to fight AIDS in Africa", along with a photo of three people.

REAL FACES.
REAL FEARS.
REAL HOPE.

FACE AIDS
A student campaign to fight AIDS in Africa

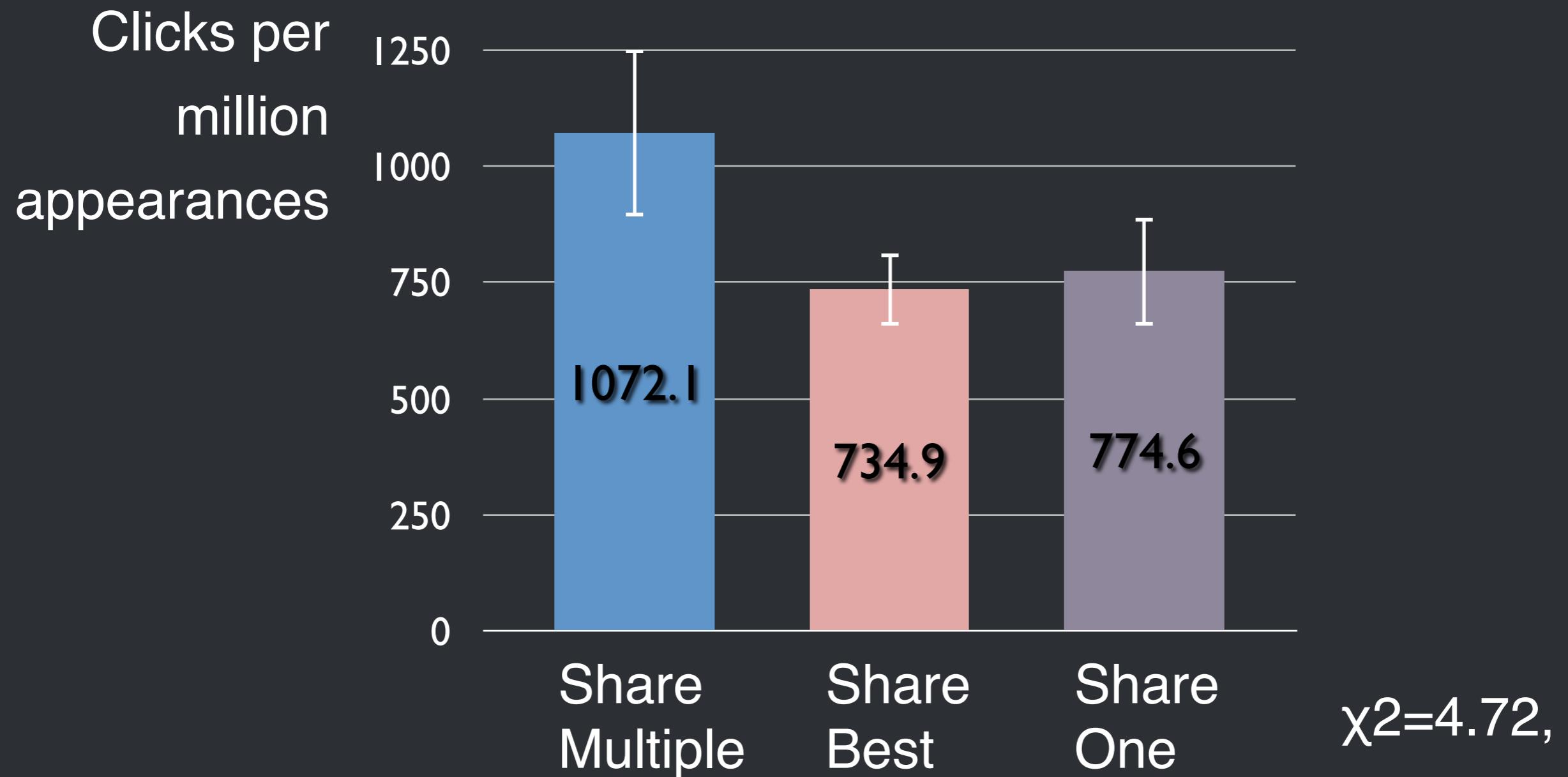
Together.
Together we can.
Together we can **FACE AIDS.**

In 2006, young people accounted for 40% of new HIV infections.

Help us change this. **FACE AIDS.**

FACE AIDS | A student campaign to fight **AIDS** in Africa

Share Multiple → More Clicks

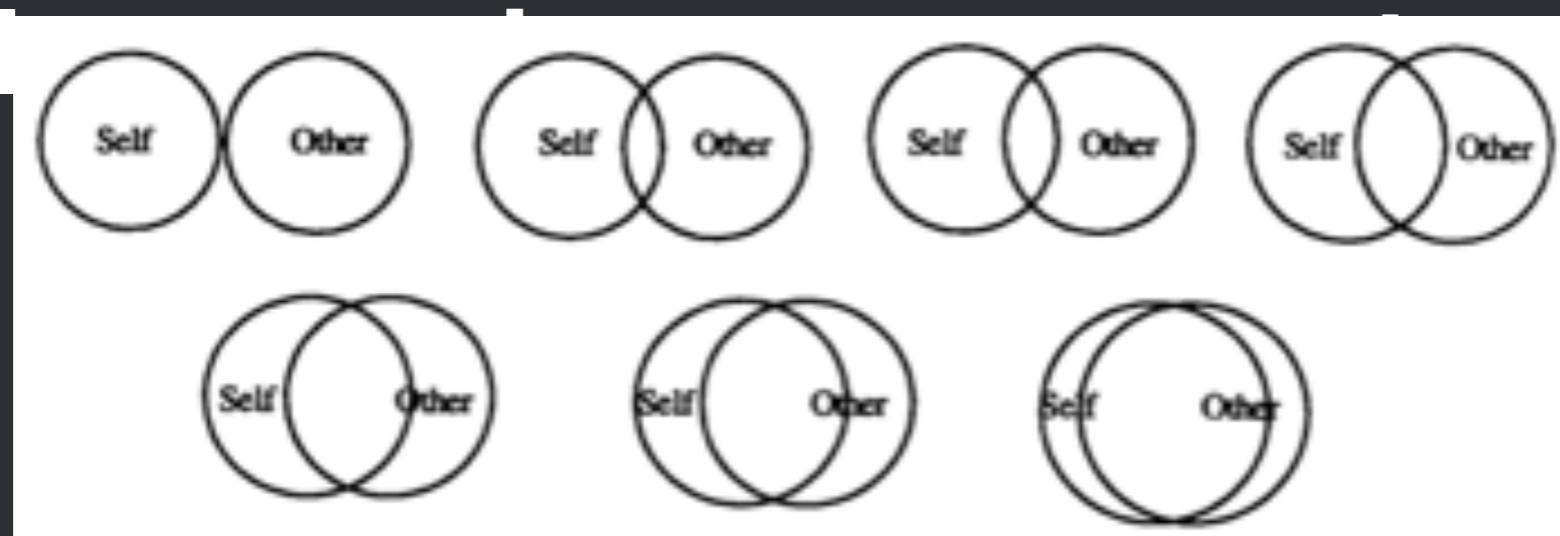


Benefits of sharing multiple

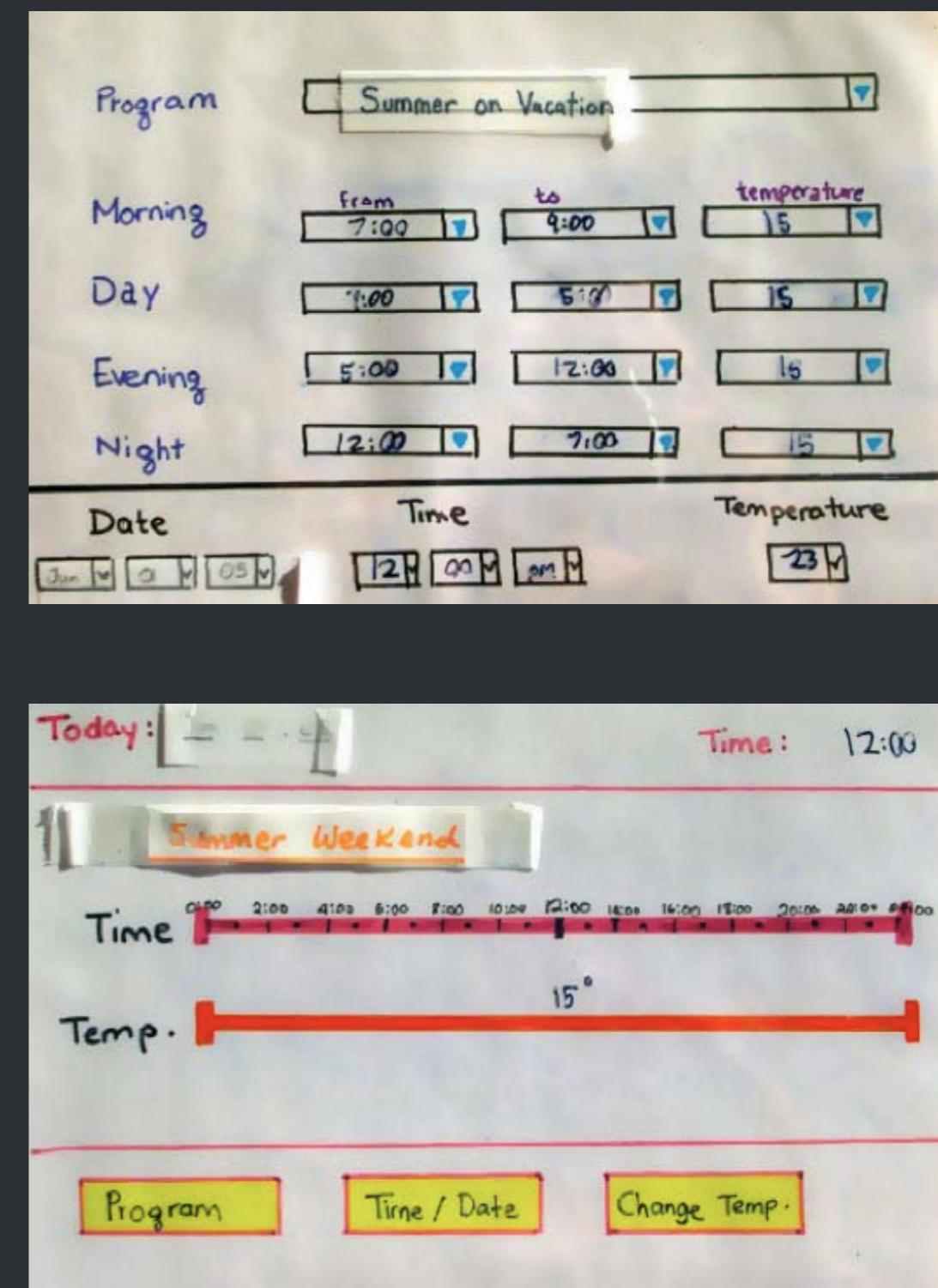
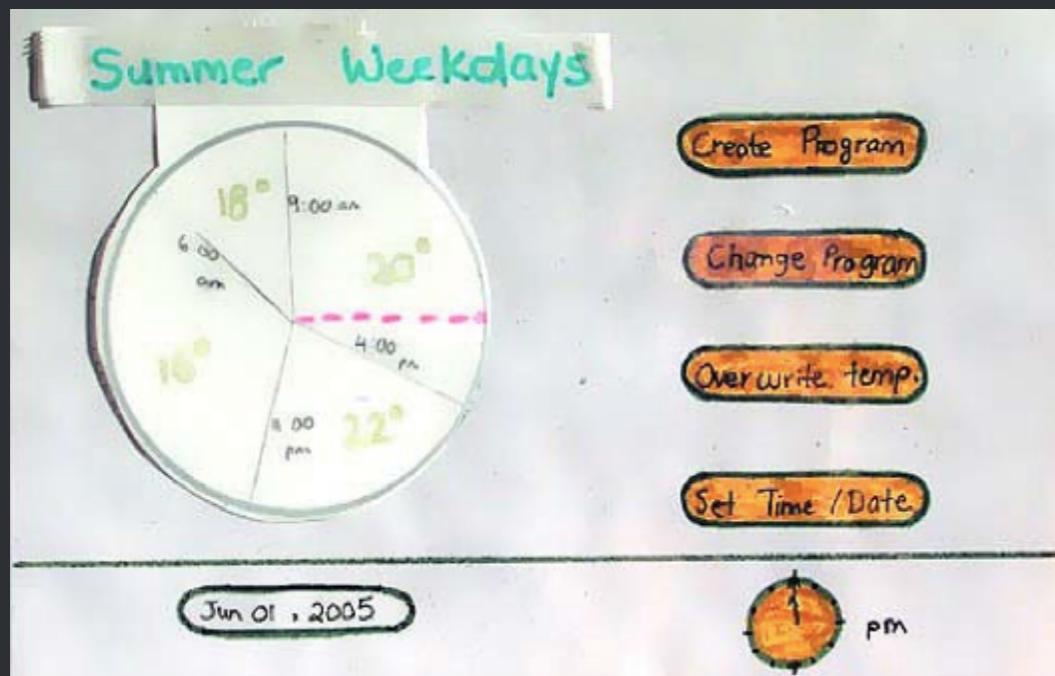
- More individual exploration
- More feature sharing
- More conversational turns
- Better consensus
- Increase in group rapport

Benefits of sharing multiple

- More individual exploration
- More feature sharing
- More conversational turns
- Better consensus
-



Alternatives Provide a



Tohidi, Buxton, Baecker,