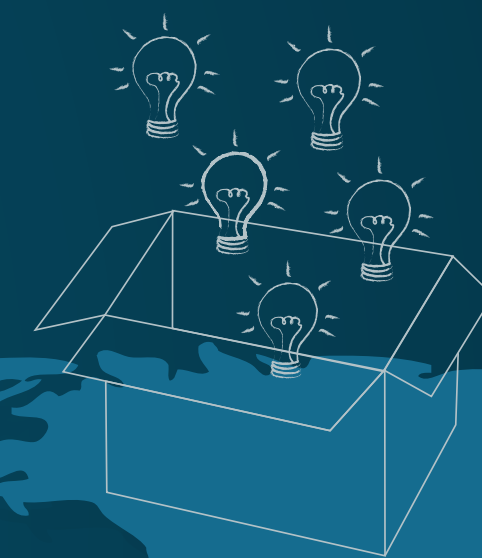


HUMAN-CENTERED
DESIGN

Designing Studies That You Can Learn From

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“Do You Like My Interface?”

“How much do you like
my interface?”

“This is a useful
interface: agree/disagree”

Please the Experimenter Bias

Developers are Valuable Testers

Getting beyond “*do you like my interface?*”

- What's the comparison?
- What's the yardstick?

Getting beyond “*do you like my interface?*”

- **Baselines:** How often does Y occur?
 - Requires measuring Y.

Getting beyond “*do you like my interface?*”

- **Base rates:** How often does Y occur?
 - Requires measuring Y.
- **Correlations:** Do X and Y co-vary?
 - Requires measuring X and Y.

Getting beyond “*do you like my interface?*”

- **Base rates:** How often does Y occur?
 - Requires measuring Y.
- **Correlations:** Do X and Y co-vary?
 - Requires measuring X and Y.
- **Causes:** Does X cause Y?
 - Requires measuring X and Y, and manipulating X.
 - Also requires somehow accounting for the effects of other independent variables (confounds)!

Let's introduce a few terms...

manipulations

Independent Variables

measures

Dependent Variables

precision

Internal Validity

generalizability

External Validity

IS MY COOL NEW APPROACH BETTER
THAN THE INDUSTRY STANDARD?

A Not-Very-Useful iPhone Keyboard Study

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Research firm User Centric has released a study that tries to gauge how effective the iPhone's unusual on-screen keyboard is. The goal is certainly a noble one, but I can't say that the survey's approach

results in data that makes much sense.

User Centric brought in twenty owners of other phones--half who had ones with QWERTY keyboards, and half who had ordinary numeric phone keypads. None were familiar with the iPhone. The research involved having the test subjects enter six sample text messages with the phones they already had, and six with an iPhone.

Logical end result: These iPhone newbies took twice as long to enter text with an iPhone as they did with their own phones, and made lots more typos.

Benefits and Drawbacks?



The screenshot shows the User Centric website. The header includes the User Centric logo, a language dropdown set to English, and the tagline "We believe experiences matter.™". The navigation menu has links for Home, Services, Experience, Facilities, About Us, News & Resources (which is highlighted), and Contact Us. A breadcrumb trail reads "User Centric > News & Resources > 2007 >". The left sidebar contains a "News & Resources" section with links to Overview, User Centric News, Publications, Webinars, Resources (including Glossary, Handbook of Global User Research, Newsletter, Usability Tips, and UX Masterclass), and a Blog. The main content area features the article "QWERTY texters demonstrated drop in efficiency when texting on iPhone" dated August 15, 2007. The article includes a "Related Services" link for "Mobile Device Usability Testing" and a section titled "Participants Texted using Both Conventional Phones and iPhones" which describes a study by Chicago-based usability consultancy User Centric, Inc. The study tested the iPhone's touch keyboard against conventional QWERTY and numeric phone keyboards. It mentions that in an earlier baseline study, User Centric had identified texting as potentially problematic for new iPhone customers. The goal of the current study was to determine how easy it was for conventional mobile phone users to text using the iPhone. The article also states that 20 participants were brought in for one-on-one usability sessions with a moderator, all of whom sent text messages at least 15 times per week. Ten participants owned a phone with a QWERTY keypad, and ten owned a phone with a numeric keypad. Those with a numeric keypad used the "multitap" method. The article concludes that during each session, participants were required to use their own phones, and they were provided with an iPhone for use during the study. None of the participants were iPhone owners, and all were compensated for their time. A section titled "Standardized Messages Were Provided for Texting" states that every participant entered six messages using their own phone and six messages on the iPhone. To the right of the article is a promotional image for "The Handbook of Global User Research" with a yellow callout box that says "scott will show in".

usercentric

English

We believe experiences matter.™

Home Services Experience Facilities About Us News & Resources Contact Us

User Centric > News & Resources > 2007 >

QWERTY texters demonstrated drop in efficiency when texting on iPhone

August 15, 2007

Related Services: [Mobile Device Usability Testing](#)

In late July, Chicago-based usability consultancy User Centric, Inc. tested the iPhone's touch keyboard in comparison with conventional QWERTY and numeric phone keyboards. In an [earlier baseline study](#), User Centric had identified texting as potentially problematic for new iPhone customers. The goal of the current study was to determine how easy it was for conventional mobile phone users to text using the iPhone.

Participants Texted using Both Conventional Phones and iPhones

A total of 20 participants were brought in for one-on-one usability sessions with a moderator. All sent text messages at least 15 times per week. Ten of the participants owned a phone with a QWERTY keypad, and ten of the participants owned a phone with a numeric keypad. Those who owned a numeric keypad used the "multitap" method of entering text messages rather than predictive text. To multitap, a user must press a particular key on the numeric keypad multiple times to get the desired character to appear.

During each session, participants were required to use their own phones. In addition, they were provided with an iPhone for use during the study. None of the participants were iPhone owners, and all participants were compensated for their time.

Standardized Messages Were Provided for Texting

Every participant entered six messages using their own phone and six messages on the iPhone. In their sessions, participants were asked to

scott will show in

The *Handbook of Global User Research* collects insight from user experience professionals in over 20 countries. This book is a must-read for professionals working on global research projects. [More Info](#)

- Manipulation: Input Style
- Measure: Words per minute
- External validity: not so much

A better version: actual users

- Manipulation: Input Style
- Measure: Words per minute
- ...and error rate

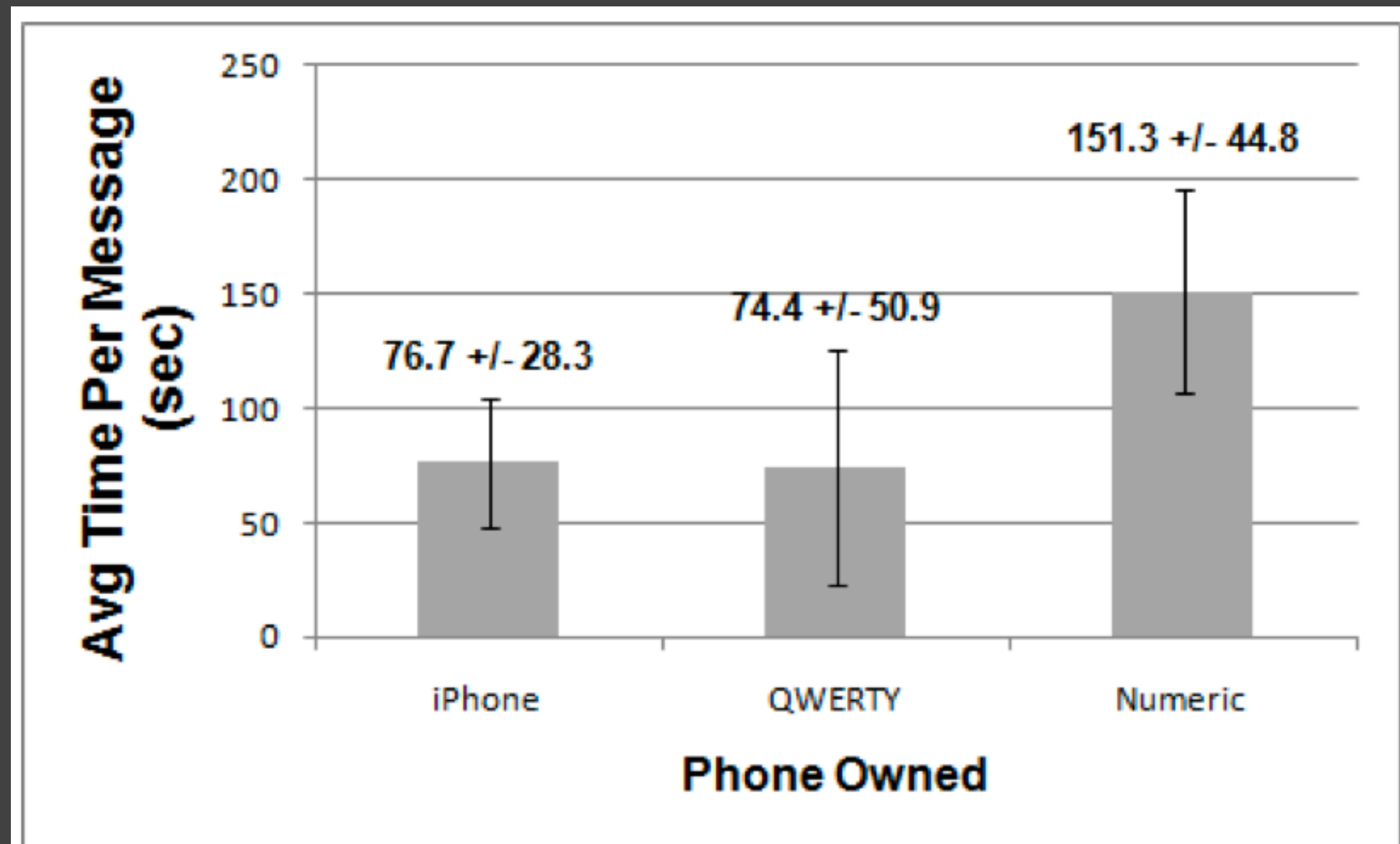


Figure 1. Average time to type a message on phones owned by the participants ($M \pm SD$).

iPhone & Qwerty users similar speed, but make more errors

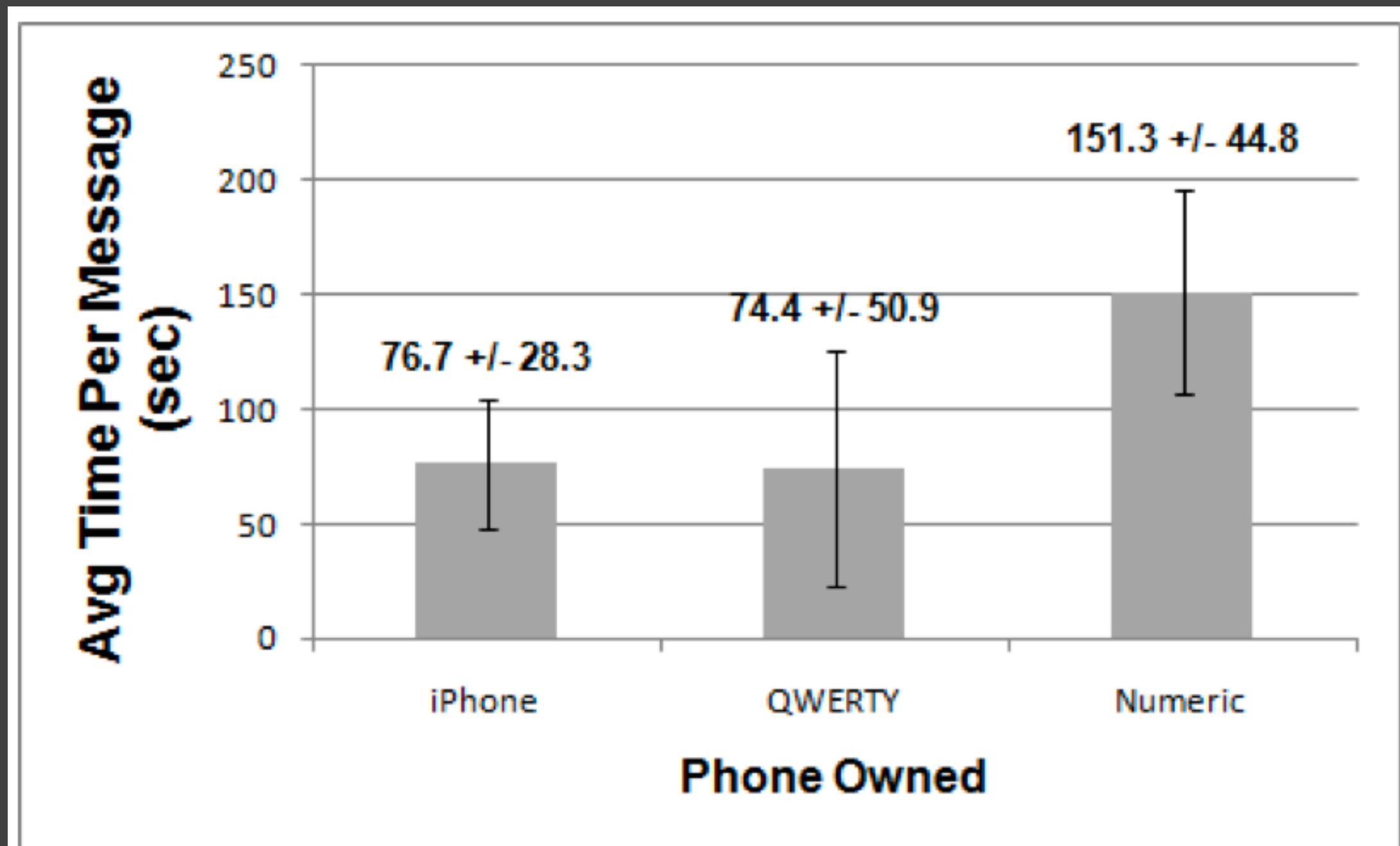


Figure 1. Average time to type a message on phones owned by the participants ($M \pm SD$).

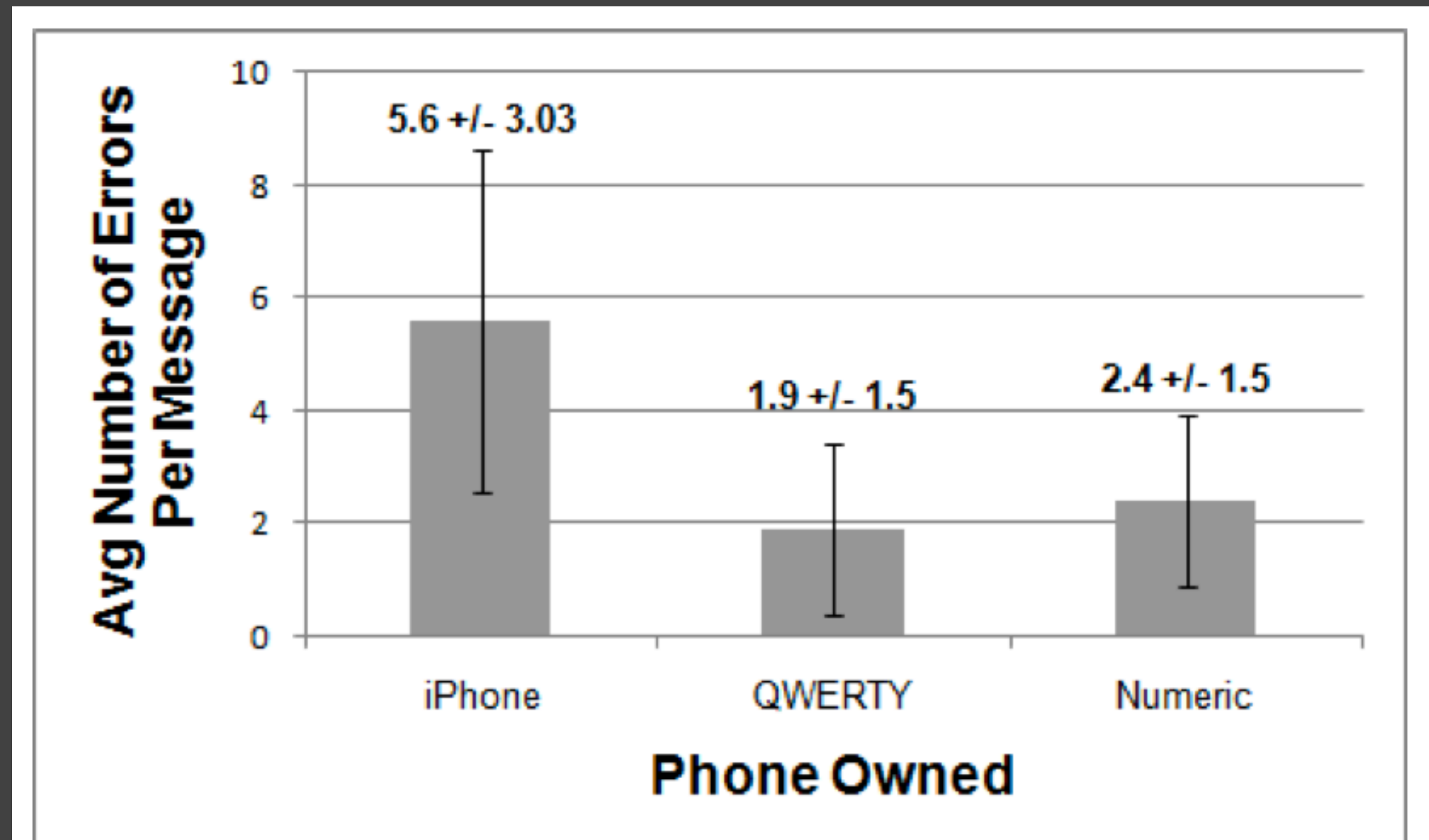


Figure 2. Average number of total errors per message made by participants using their own phones ($M \pm SD$).

Strategies for fairer comparisons

- Insert your new approach into the production setting
- Recreate the production approach in your new setting
- Scale things down so you're just looking at a piece of a larger system
- When expertise is relevant, train people up

IS INTERFACE X BETTER
THAN INTERFACE Y?

Most often, the answer is
“it depends”

The question is “on what”?

CONTROLLED COMPARISON
ENABLES CAUSAL INFERENCE
(a fancy way of saying you can learn stuff)

I USED TO THINK
CORRELATION IMPLIED
CAUSATION.



THEN I TOOK A
STATISTICS CLASS.
NOW I DON'T.



SOUNDS LIKE THE
CLASS HELPED.

WELL, MAYBE.



<http://xkcd.com/552>