

Web-Based Research

Advantages

- Ability to collect data quickly and from a large participant pool
- Depending on exclusion/inclusion criteria specified in REB, study panels offer extremely specific sampling
- As the dust settles, most findings point to comparable effects from online and in-lab samples (even response time based)

Disadvantages

- Inability to personally monitor participants is a bit terrifying – necessitates building in several diverse assessments of compliance
- Data can be noisier, fear of “bots”
- Limited to particular questions (almost exclusively behavioral research)

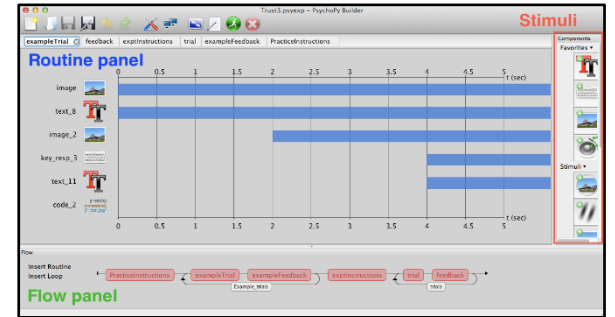
Steps

1. Programming the task
- 2. Uploading the task to a server**
3. Recruiting participants

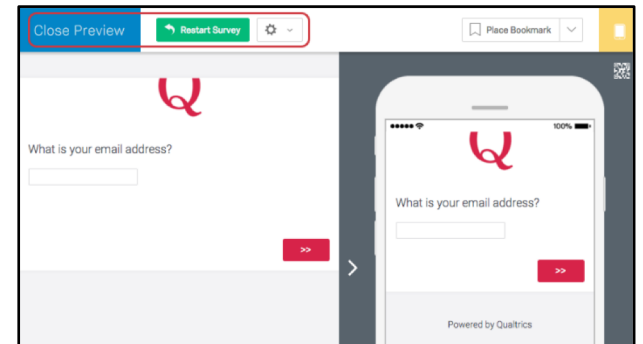
Timeline

1. Programming the task

- Free vs. paid
- Flexibility
- Ease of use



```
1 <!doctype html>
2 <html>
3 <head>
4 <title>My experiment</title>
5 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js"></script>
6 <script src="jspsych-5.0.3/jspsych.js"></script>
7 <script src="jspsych-5.0.3/plugins/jspsych-text.js"></script>
8 <link href="jspsych-5.0.3/css/jspsych.css" rel="stylesheet" type="text/css"></link>
9 </head>
10 <body>
11 </body>
12 </script>
13
14 var hello_trial = {
15   type: 'text',
16   text: 'Hello world!'
17 }
18
19 jsPsych.init({
20   timeline: [ hello_trial ]
21 })
22 </script>
23 </html>
```



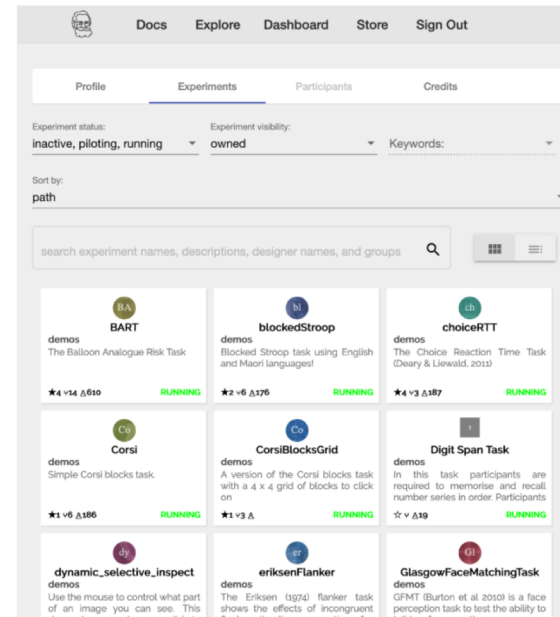
Timeline

2. Hosting the task

- Free vs. paid
- Flexibility
- Ease of use
- Data privacy



Pavlovia.org
where behavior is studied



JATOS
(just another tool
for online studies)



Set up your own
physical (or virtual)
server

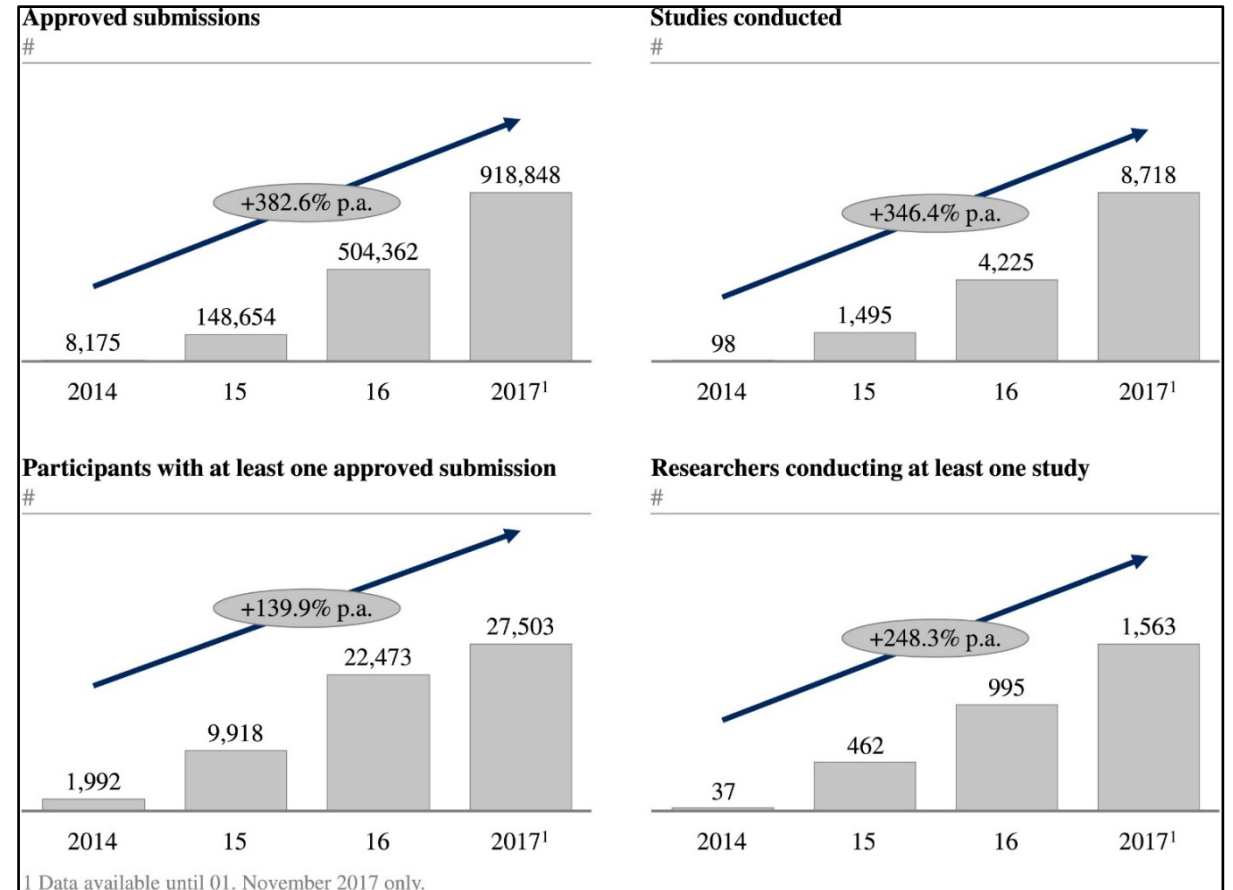
Timeline

3. Recruiting Participants

Standard methods
Online platforms



- > 100k workers
- > 2k active at any given moment



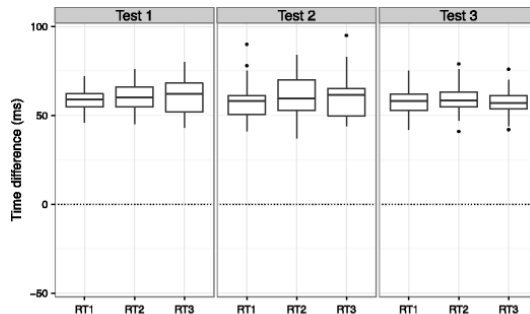
Can we trust web-based response time data?

Measuring Triplet Keystrokes

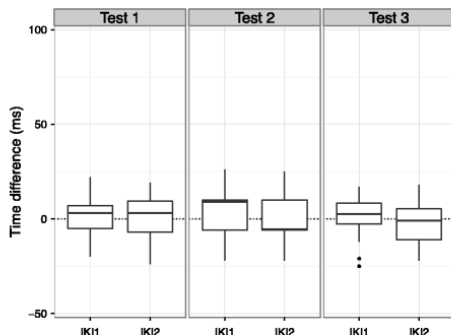
Using jsPsych with a Black Box Toolkit (BBTK):

1. ~60ms delay
2. ~0ms inter-keystroke interval (IKI)

Delay

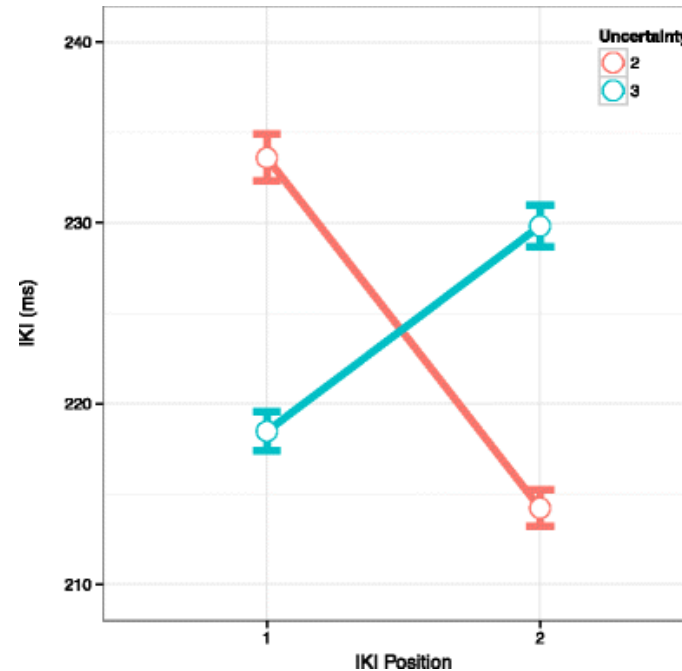


IKI



Replication of Rosenbaum et al. (1984)

n=541



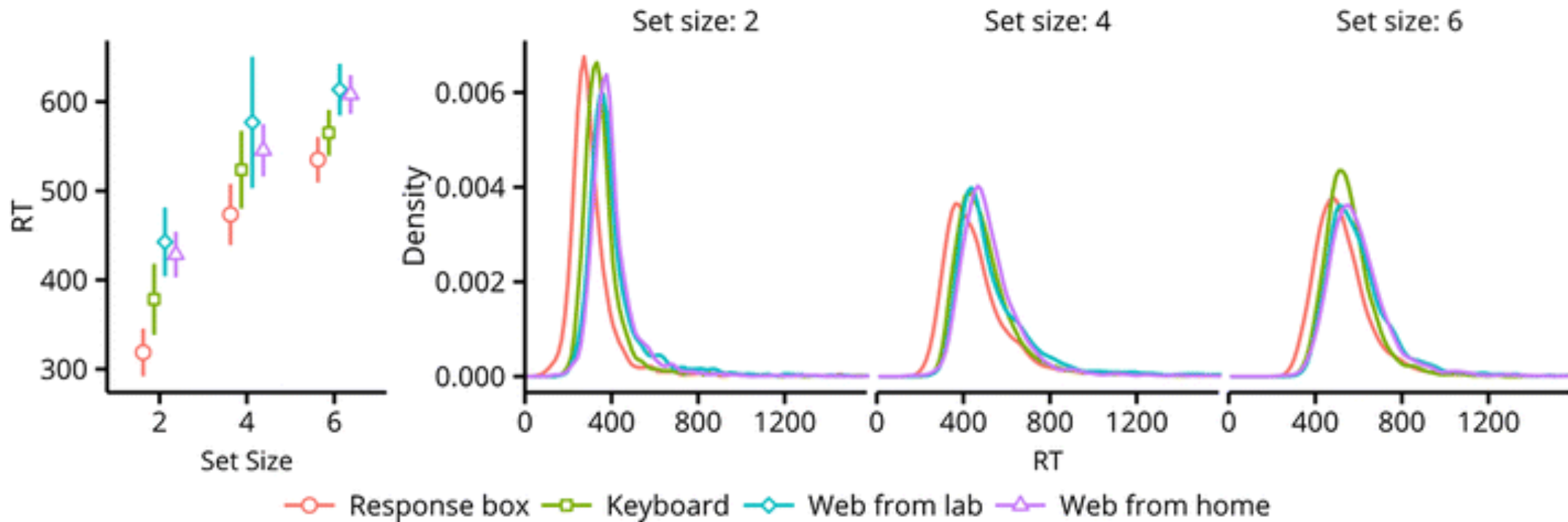
Uncertainty = hand switch

- Typing triplets
- Hand switches slow down the prior keystroke
- Size of effect is pretty small, but helped by large n and within-subject design

Pinet et al. (2017) *Behavior Research Methods*

Comparing In-Lab and Web-Based Results

Visual Search Paradigm



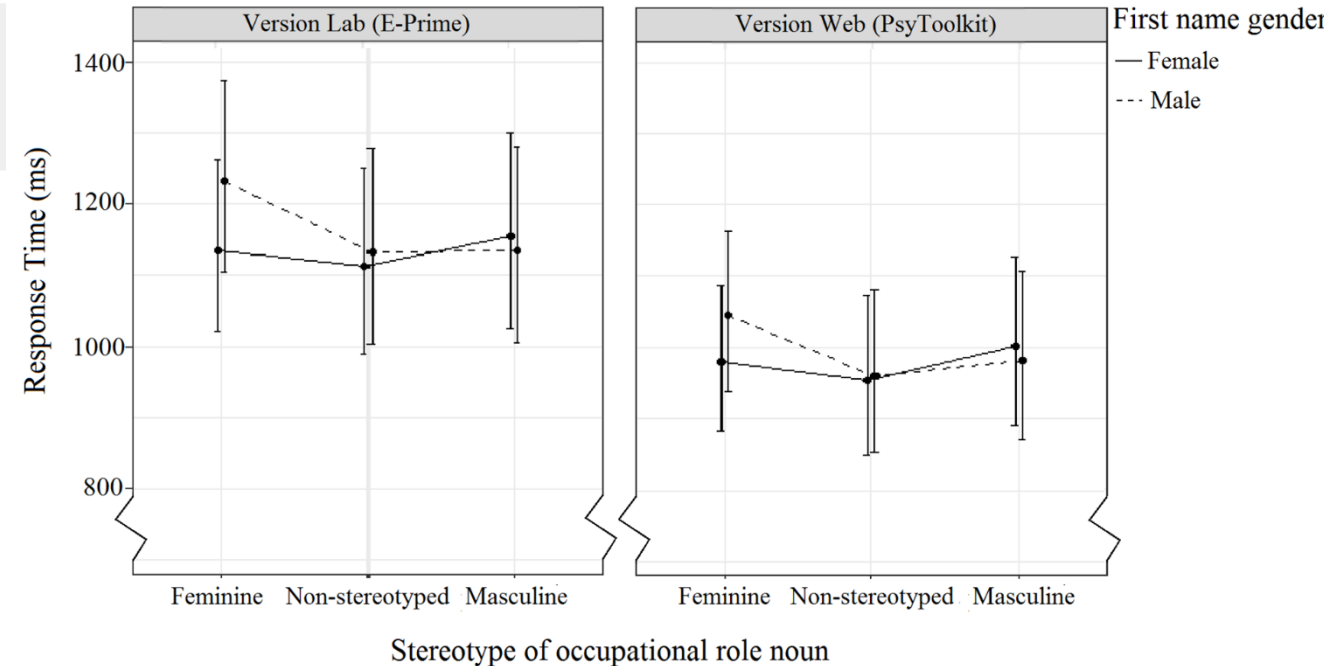
Chetverikov & Upravitelev (2016) *Behavior Research Methods*

Comparing In-Lab and Web-Based Results

Testing the effectiveness of the Internet-based instrument PsyToolkit: A comparison between web-based (PsyToolkit) and lab-based (E-Prime 3.0) measurements of response choice and response time in a complex psycholinguistic task

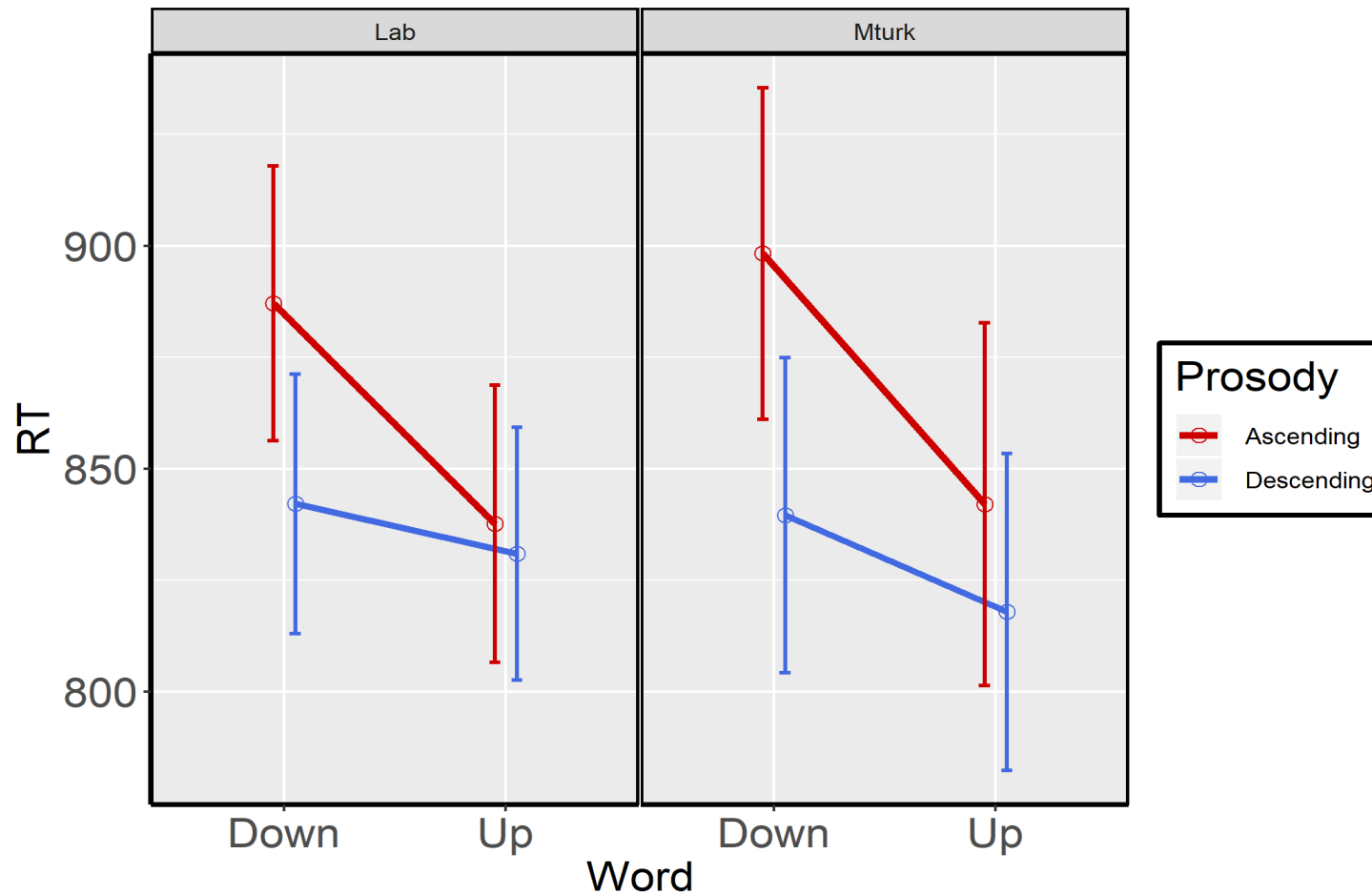
Jonathan Kim, Ute Gabriel, Pascal Gyga

Published: September 4, 2019 • <https://doi.org/10.1371/journal.pone.0221802>



Robert-Nurses Robert-Firefighter
Mary-Nurses Mary-Firefighter

Comparing In-Lab and Web-Based Results



N=38 Lab (Matlab)
N=26 Online (jsPsych)

Hands-On Tutorial

1. Go through coding a simple jsPsych experiment
2. Upload to Pavlovia (GitLab)
3. Test!

Shakespeare or Tupac?

https://run.pavlovia.org/vanhedger_demos/shakespeare/

Sound Tester:

https://run.pavlovia.org/vanhedger_demos/sound-tester/