



**INSTITUTE FOR SOCIAL RESEARCH • SURVEY RESEARCH CENTER**  
**SURVEY RESEARCH OPERATIONS**  
UNIVERSITY OF MICHIGAN

# Enhancing Response Usability in a Web-based Survey, But Did Anyone Use It?

Ryan Yoder

PDMG



# Survey Design

- The balancing act
  - Project limitations
  - Client ideas
  - Design best practices
  - What respondents will actually do



# Study Background

- Army Study to Assess Risk and Resilience in Servicemembers
  - All Army Study
- Investigating Soldier suicide risk by understanding predictors of suicide



# The Problem

- Session characteristics
  - Group administered – various sizes
  - Each Soldier has his or her own laptop
- Uncertainty in the data collection setting
  - Physical space was often unpredictable







# A Possible Solution?

- Enhanced Navigation
- New JavaScript code enabled Soldiers to navigate the instrument using only the keyboard
  - Arrow keys + spacebar
  - Additional instruction per page if necessary
- Highlighting was added to show Soldiers the active field on the web page



# A Couple of Questions

- Did the Soldiers use keyboard-only navigation?
- Did different question types lead to more or less keyboard-only navigation?
- Did the different types of navigation lead to more or less backing-up in the instrument?
- Was keyboard-only navigation faster than other types of navigation?



# Answers in Paradata

- Navigation use was recorded in an individual x webpage-level keystroke file
- Types of navigation
  - Mouse-only
  - Keyboard-only
  - Both mouse and keyboard
- Examined questions from the first two sections of the instrument
- Only examined pages that had responses



What is your primary language?

- English
- Spanish
- Some other language

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<b>Radio Button – Short List</b>		
Mouse-Only	Keyboard-Only	Both
81.7%	5.5%	12.8%

Which of the following best describes your current Army career intentions?

- I will definitely stay in the Army until retirement.
- I will probably stay in the Army until retirement.
- I will definitely stay in the Army beyond my present obligation, but not necessarily until retirement.
- I am undecided whether to stay in the Army after my present obligation.
- I will probably leave the Army after my present obligation.
- I will definitely leave the Army after my present obligation.

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<b>Radio Button – Long List</b>		
<b>Mouse-Only</b>	<b>Keyboard-Only</b>	<b>Both</b>
<b>72.1%</b>	<b>7.0%</b>	<b>20.9%</b>

The next questions are about physical pain in any part of your body in the past 30 days. Using a scale from 0-to-10 where 0 means "no pain" and 10 means "pain as bad as could be," how would you rate the severity of your physical pain on average over the past 30 days?

0 - No pain      1      2      3      4      5      6      7      8      9      10 - Pain as bad as could be

<b>Radio Button – Horizontal Presentation</b>		
Mouse-Only	Keyboard-Only	Both
90.2%	5.1%	4.7%

First, please answer a few questions about yourself. How old are you?

ENTER Age

25

After answering, press the "ENTER" key to move to the "NEXT" button.

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Text Box		
Mouse-Only	Keyboard-Only	Both
4.5%	23.2%	72.3%

What is your race? (Mark all that apply.)


- White
- Black or African American
- American Indian or Alaskan Native
- Asian (e.g., Chinese, Filipino, Indian)
- Native Hawaiian or other Pacific Islander
- Other

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Check Boxes		
Mouse-Only	Keyboard-Only	Both
45.1%	5.2%	49.7%

About how old were you the very first time you had sleep problems for one month or longer? *(Your best estimate is fine if you cannot remember your exact age.)*

Select 

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About how old were you the very first time you had sleep problems for one month or longer? (Your best estimate is fine if you cannot remember your exact age.)

19

- Select
- Less than 13
- 13-15
- 16-17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

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Drop-Down Box		
Mouse-Only	Keyboard-Only	Both
89.8%	5.4%	4.8%

The next questions are about your health.

How often in the past 30 days did you have each of the following problems?

	All or almost all the time	Most of the time	Some of the time	A little of the time	None of the time
Balance problems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ringing in the ears	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changes in your sense of taste or smell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sensitivity to noise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sensitivity to light	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Radio Button Grid**

Mouse-Only	Keyboard-Only	Both
85.3%	5.6%	9.1%

About how many months has your pain been going on?

- Less than one month
- 1
- 2
- 3
- 4
- 5
- 6
- 7-9
- 10-11
- 12 or more months

How persistent has your pain been over this time?

- It comes and goes
- It is almost always there and varies quite a bit in severity
- It is almost always there and varies somewhat in severity
- It is almost always there and does not vary much in severity

How much has your pain changed over this time?

- It has gotten quite a bit better over time
- It has gotten a little better, but not much
- No change
- It has gotten a little worse over time, but not much
- It has gotten quite a bit worse over time

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Multiple Questions / Page		
Mouse-Only	Keyboard-Only	Both
91.8%	5.1%	3.1%

About how old were you the very first time in your life you had a head, neck, or blast injury that knocked you out?

When was the most recent time you had a head, neck, or blast injury that knocked you out?

- Past 30 days
- 1-6 months ago
- 7-12 months ago
- 1-2 years ago
- 3-5 years ago
- 6 or more years ago



Multiple Questions / Page		
Mouse-Only	Keyboard-Only	Both
92.3%	4.5%	3.2%

About how old were you the very first time in your life you had a head, neck, or blast injury that...

knocked you out?

didn't knock you out, but caused you to be dazed, confused, or to "see stars"?

perforated your eardrum?

caused you to have a lapse in memory of events before, during, or after the injury?

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**Drop-Down Box Grid**

Mouse-Only	Keyboard-Only	Both
90.6%	6.2%	3.2%



# Did Behavior Change By The End?

	Mouse-Only	Keyboard-Only	Both
Radio Button – S.L			
Beginning	81.7%	5.5%	12.8%
End	88.4%	8.7%	2.9%
Radio Button – L.L.			
Beginning	72.1%	7.0%	20.9%
End	87.4%	8.9%	3.7%
Radio Button Grid			
Beginning	85.3%	5.6%	9.1%
End	86.3%	8.4%	5.3%





# More Results

- Soldiers were NOT more likely to be backing up in the instrument based on the navigation method they chose
  - $\chi^2(2, N = 204,222) = 4.0, p = 0.14$



# More Results

- Questions answered with keyboard-only navigation were answered faster than questions with mouse-only navigation

Average Time in Page		
Mouse-Only	Keyboard-Only	Both
19.6	14.3	15.0



# Conclusions

- Our facilitator instruction about navigation did not appear to have an impact
- Soldiers couldn't really give up the mouse
  - Those who did were faster
- Implications
  - Power of paradata!
  - Generate questions and identify information required for answers before data collection



# Administration & Funding

- Supported by NIH Cooperative Agreement U01MH87981.
- Funds provided by the Department of the Army (\$50M) & National Institute of Mental Health (NIMH: \$15M).
- Army STARRS is being conducted by a consortium of investigators—from the Uniformed Services University of the Health Sciences (USUHS), the University of California-San Diego (UCSD), Harvard Medical School (HMS), & the University of Michigan (UM)—in collaboration with the NIMH.
  - Co-PIs: R. Ursano (USUHS) & M. Stein (UCSD)
  - Site-PIs: R. Kessler (HMS) & S. Heeringa (UM)
  - Collaborating NIMH Scientists: L. Colpe & M. Schoenbaum
  - Consulting Army Scientists: K. Cox & S. Cersovsky
- Army STARRS in-theater research was conducted under a protocol reviewed and approved by the U.S. Army Medical Research and Materiel Command (MRMC) Institutional Review Board, and in accordance with the approved protocol.