The Impact of the Respondent Computer Environment on Web Questionnaire Design

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Preparation for Presentation

- Of the authors, the least technically knowledgeable is giving the presentation.

- This presentation was difficult to prepare:
  - Prospects ranged from utter despair to glimmers of hope.
Browser Display

- The way we design a browser interface depends on:
  - Questions and methodology
  - Whether the survey is only web or part of a multimode effort
  - Standards of the survey organization
  - Client demands
  - Technical possibilities

✦ This is the focus of today’s talk
Motivation for Presentation

- Computer-Assisted Interviewing has always had its difficulties
  - But you controlled its computing environment
  - MPR rigorously controls all its interviewer desktops
- In web-based surveys the respondent is using his or her own environment
  - It is not always clear to various players how this impacts their options
Motivation for Presentation

- MPR Web Standards Report
  - Pierzchala, Sonnenfeld, Brinkley, and Wright
  - Reference for Project Staff and Clients
  - Technical Appendix on this issue

- Statement of Tradeoffs
  - Methodology vs. Technology
  - Populations of interest
  - Types of Surveys
Web Computing Environment

- Technical aspects
  - Scripting language JavaScript
  - Cookies
  - Pop-ups
  - Connect speed
  - Screen resolution
  - Browser brand/version and Desktop Operating System
  - HTML version
  - Other aspects of R’s desktop
Web Computing Environment

- The respondent’s
  - Attitude
  - Motivation
  - Computer skills
  - Patience
  - Behavior

- You don’t want the respondent to quit early
  - Frustration with a particular data type
  - Slow web-survey performance
Web Computing Environment

- Does not cover Section 508 accessibility
  - For MPR this is another appendix entirely
  - Would be its own session
  - Would take too long here
- Section 508 issues do interact with the computing environments
Handout

- The handout is a work in progress
  - It will be finalized within a few weeks
  - If there are any comments on it contact Mark Pierzchala
    ♦ mpierzchala@mathematica-mpr.com
  - We’re looking for feedback
  - In return I will send you the finished appendix as a PDF file
Write on the handout:

- DRAFT
- My email address
  - mpierzchala@mathematica-mpr.com
Handout

- The handout has nothing new
- References include:
  - Baker, Crawford, and Swinehart
  - Couper
  - Dillman
  - Groves, Berry, and Mathiowetz
  - Kurata
  - MPR authors’ knowledge and experience
- The organization of the appendix is useful
<table>
<thead>
<tr>
<th>Aspect of environment</th>
<th>Notes</th>
<th>Respondent</th>
<th>Affects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tradeoffs: Middle ground</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower extreme</td>
<td></td>
<td></td>
<td>Upper extreme</td>
</tr>
</tbody>
</table>
### Connect speed

<table>
<thead>
<tr>
<th>Notes</th>
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</table>

**Tradeoffs: 2-second maximum screen refresh**

<table>
<thead>
<tr>
<th>Assume dial-up</th>
<th>Assume broadband</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Highlights

- Three major kinds of things out of our control:
  - Enabling vs. disabling
  - Version issues
  - Other kinds of configuration
- These things may be out of the control of the respondent too! Much depends on:
  - When a desktop was purchased and from which vendor
  - IT department constraints
• Enabling vs. disabling
  – JavaScript
    ♦ About 2 – 3 % of browsers disable
  – Cookies
    ♦ May be disabled
    ♦ R may be prompted to allow a cookie
  – Pop-ups
    ♦ Difficult situation is getting worse
    ♦ Assume you cannot use this
      This is really too bad
Highlights

- Kinds of versions
  - Can be updates of the same software
  - Can be variants between vendors
- Versioning that affects web surveys
  - JavaScript
  - HTML
  - Browsers
  - Operating systems
Highlights

- Other kinds of configuration
  - Connect speed
  - Screen resolution
  - Color palette
  - Fonts available
  - Subsidiary software on the desktop
    - Plug-ins, multimedia players, etc.
HTML and JavaScript

- HTML is dumb
  - HTML-only in the browser leads to server-side architectures where validation, edits, and other capabilities are executed
  - There may be performance issues as a result
    - Cross issue with connect speed

- JavaScript is smart
  - Client-side architectures for validation, etc.
    - Much faster and satisfying
  - Enable a lot of capability
JavaScript

● Small percent have disabled it (2 – 3%)
● Versioning issues can be taken care of by:
  – The web-survey software
  – The programmers
  – But leads to less flexibility
● There are issues with the use of JavaScript and Section 508 standards
Connect Speed

- About 50% of U.S. have access to broadband
  - Lots of statistics out there, hard to assess
- Broadband is an order of magnitude faster than dial-up
  - Some surveys cannot be done by dial-up
    - Many images or streaming video
- Slow connect speed may encourage:
  - More questions on a screen
  - Fewer edits beyond basic validation
  - Lesser capability in the browser
Conclusions

- Survey organization has limited control over respondent’s computer environment
  - It is a far worse situation than I thought!
- For general populations
  - Lowest Common Denominator interface
    - Consistent display across environments (more or less)
    - Segmentation of the questionnaire
    - More screens, less overview
  - Fewer edits, less capability overall
Conclusions

- Use Web-Survey software
- Develop standards and use them
- Test across environments
  - Baker, Crawford, Swinehart (2004) have excellent suggestions
Conclusions

- How do you adapt to a changing landscape?
  - New versions present new possibilities
  - There is a legacy you have to take care of
  - When don’t you care anymore about supporting a legacy?
- Population matters
- Kind of survey matters
- Probability survey versus ‘convenience sample’ matters
Conclusions

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