Implementing Computer-Audio Recorded Interviewing (CARI) Using Blaise 4.8.2

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Outline

• Introduction
• CARI Requirements
• Blaise 4.8.2 CARI Settings
• CARI Testing Considerations
• CARI Systems Testing Results
• Conclusion
Integrate with Legacy Systems
Sponsors Expect Heavy Lifting
CARI Without Constraints
CARI Requirements

- Simplify where possible
- Make some compromises
- A few requirements help
- Recognize limitations
- Teamwork is a must
- Ask if you don’t understand
- Steal from the best
- Save the good work
CARI Requirements

A. General Criteria

- Create Sound and Image Files
- Quality recordings
- CARI Transparent to the interviewer
- Bounding questions (questions around the target question)
- Sampling
- Irregular navigation
- Multi-person households
- Work for CATI and CAPI
CARI Requirements

B. Specific Requirements

– Record up to 238 unique questions
– Only record the first 5 people in roster
– Use a CARI Sample flag to control CARI recordings
– Build in a system “emergency exit” that stops CARI
– Stop recordings after 60 seconds
– Consent should only be recorded if the respondent agreed to be recorded.
– If the respondent changes, then “automatically” re-ask the consent question
CARI Challenges

- How do we implement CARI consent?
- What should the max recording length be?
- How do CARI files impact transmissions?
- How big will these files be?
- What settings do we need to use?
- What information do the back-end systems need?
- Concurrent with instrument development
CARI Settings – Using the BCI

Audio | Record | File parameters

File Name:
$KEYVALUE+CARIFileString+$FIELDNAME+'-'+$FILEDATE+$FILETIME

Windows Media Audio
.wma format for sound

6kb limit Blaise removes
most empty recordings
CARI Settings

Audio | Record | Parameters

- **Sequence**: Set the sequence number on the file for irregular navigation
- **Record consent**: Capture the consent question and answer
CARI Settings

Screenshots | File parameters

Select image file type from .jpg .bmp .gif
CARI Settings

Screenshots | Parameters

Compression Quality seems to adjust the color pallet and screen granularity. At 10 we can still read the question text and see the field pane answer.
CARI Settings

Specific field parameters | Consent fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Consent</th>
<th>Time limit</th>
<th>Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front.CARICON1</td>
<td>CARICON_FLAG = 1</td>
<td>60</td>
<td>True</td>
</tr>
<tr>
<td>Recorder.CARICON2</td>
<td>CARICON_FLAG = 1</td>
<td>60</td>
<td>True</td>
</tr>
<tr>
<td>WebCATIFront.CARICON1</td>
<td>CARICON_FLAG = 1</td>
<td>60</td>
<td>True</td>
</tr>
</tbody>
</table>
CARI Settings

Specific field parameters | Fields

CARI fields are easy to manage using the Specification tool.

Cool Tools – BICariSpec.exe
CARI Settings

Specific field parameters | Fields | Add

Select fields to add from the existing .bmi
CARI Settings

Specific field parameters | Fields | Edit

Fields may be edited easily for testing, research & development or debugging.
CARI Testing Considerations

• Verify that the instrument is:
  – Creating sound and image files when you expect
  – Creating pairs of sound/image files
  – Creating sound/image files for all potential CARI fields
  – Not creating any unexpected sound/image files

• Verify that your BCI file settings are working
• ** Verify that Consent is working as expected
• Conduct Testing in pairs – talking out loud
• Review sound/image file naming
• Review quality of Sound/Image files
Consent Considerations

- Consent asked in multiple places

- What if respondent changes his/her mind?
  - Added a parallel tab
  - CARICON_Flag=1

- What if interview changes respondents?
  - “Force” Re-ask of Consent
Testing Results

We Broke WebCATI

They weren’t happy with us
## Testing Results – Sound Files

<table>
<thead>
<tr>
<th>WMA Files</th>
<th>CAPI</th>
<th>CATI</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Size of Files</td>
<td>10kb</td>
<td>14kb</td>
<td>CATI about 40% Larger</td>
</tr>
<tr>
<td>Size of 60 Second Recordings</td>
<td>40kb</td>
<td>68kb</td>
<td>CATI about 60% larger</td>
</tr>
<tr>
<td>WMA files per megabyte</td>
<td>92</td>
<td>68</td>
<td>Fairly large number of recordings per Meg</td>
</tr>
</tbody>
</table>

* WMA files were about 12 times smaller than MP3 files
* WMA file compression varies. Ours ranged around 30-45%, better than MP3 file compression
## Testing Results – Image Files

<table>
<thead>
<tr>
<th>JPG Files (10% Compression)</th>
<th>CAPI</th>
<th>CATI</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Size of Files</td>
<td>38kb</td>
<td>30kb</td>
<td>CAPI about 30% larger</td>
</tr>
<tr>
<td>Size of Smallest JPG</td>
<td>32kb</td>
<td>27kb</td>
<td>Image file sizes don’t vary as much as sound</td>
</tr>
<tr>
<td>Size of Largest JPG</td>
<td>52kb</td>
<td>40kb</td>
<td></td>
</tr>
<tr>
<td>JPG files per megabyte</td>
<td>26</td>
<td>35</td>
<td><strong>Image files average 2 to 3 times the size of sound files</strong></td>
</tr>
</tbody>
</table>

* Regular JPG files were very large – Many over 100kb

* GIF files caused significant instrument lag (2-6 seconds)
Blaise JPG Compression Quality

![Graph showing JPG file size vs. compression quality setting](image)

**Graph Details:**
- **X-axis:** Compression Quality Setting (testing with Blaise 1520)
- **Y-axis:** JPG File Size (bytes)

**Graph Description:**
- The graph illustrates the relationship between compression quality setting and JPG file size.
- As the compression quality setting increases, the JPG file size also increases.

**Key Points:**
- The graph helps understand how different compression settings affect file size.
- This information is crucial for optimizing file sizes for various applications.

**Source:**
- US Census Bureau
- Helping You Make Informed Decisions
Conclusion

• Implementing CARI with Blaise 4.8.2 is relatively simple once you’ve identified ideal sound and image settings
• CARI can produce LOTS of sound & image files.
• BlICariSpec.exe is an excellent tool
• Consent is important and can be a little challenging
• Instrument testing should be modified accordingly
• *We wish to thank Statistics Netherlands for adding CARI into Blaise!!
QUESTIONS?

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