Nexus between Survey Breakoff and Nonresponse

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Background

- Breakoff is different from nonresponse in self-administered surveys (Peytchev, 2007)
- Breakoff in interviewer-administered survey occurs at logical breaks (Groves and Kahn, 1979)
  - Possible to share common causes with unit nonresponse
- Noncontact is different from refusal (Lynn and Clarke, 2002)
Mechanisms Linking Breakoff and Nonresponse

- Key influences on decision to participate can be shared by survey variables
- Examples
  - Decision to break-off when a new survey topic (module) is introduced
  - Hard-to-find sample persons are likely to have time constrains and may not finish the survey interview once started
Research Questions

• Are there common causes for refusals, noncontacts, breakoffs and partials?
• What are the associations between the predicted propensities across these four groups?
• Do the four types of nonresponse contribute differently to nonresponse bias?
Correlates of Nonresponse

- Number of calls
- Contact strategies used (stake-out, use of various letters, contacts with neighbor, property manager, etc.)
- Reassignment
- Data collection period
- Census region
Data

- 2008 National Health Interview Survey
- Face-to-face
- Household, family-level, adult, and child interview
- 28,790 sample households, 74,236 persons in 29,421 families
- 85% household response rate
# Distribution of Interview Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed case</td>
<td>21,621</td>
</tr>
<tr>
<td>Partial (Sufficient partial case)</td>
<td>7,712</td>
</tr>
<tr>
<td>Breakoff (Insufficient partial case)</td>
<td>517</td>
</tr>
<tr>
<td>Refusal</td>
<td>2,625</td>
</tr>
<tr>
<td>Noncontact</td>
<td>1,440</td>
</tr>
<tr>
<td>Total</td>
<td>33,915</td>
</tr>
</tbody>
</table>
Methods

• Model likelihood of being a refusal, noncontact, breakoff or partial as a function of:
  – number of calls by mode of interview
  – types of contact materials used
  – census region
  – period during case life
  – contact with persons other than the sample member

• Examine correlations across propensities

• Estimate bias by type of nonresponse:

\[
\text{RelBias}(\bar{y}_r) \approx \frac{\sigma_{yp}}{\bar{p}}
\]
Nonresponse Model

- Coefficients for partials much smaller than those for noncontacts and breakoffs
- Coefficients for noncontacts and refusals in different direction
- Coefficients for partials and breakoff almost always in the same direction
### Correlations

<table>
<thead>
<tr>
<th></th>
<th>Breakoff</th>
<th>Partial</th>
<th>Noncontact</th>
<th>Refusal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakoff</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partial</td>
<td>0.47</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noncontact</td>
<td>0.40</td>
<td>0.19</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Refusal</td>
<td>0.55</td>
<td>0.18</td>
<td>0.48</td>
<td>1</td>
</tr>
</tbody>
</table>
Conclusions

- Common covariates, but direction and magnitude of coefficients vary
- High correlations suggest some relationship
- Different resulting biases
- Partials different from noncontacts and refusals

- Can allocate funds to the source of nonresponse that mostly affects estimates
- Separate post-survey adjustments for each type of nonresponse