The Coverage-Nonresponse Trade-off

ITSEW 2012

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Coverage of Target Population

Undercoverage

Target Population

Overcoverage
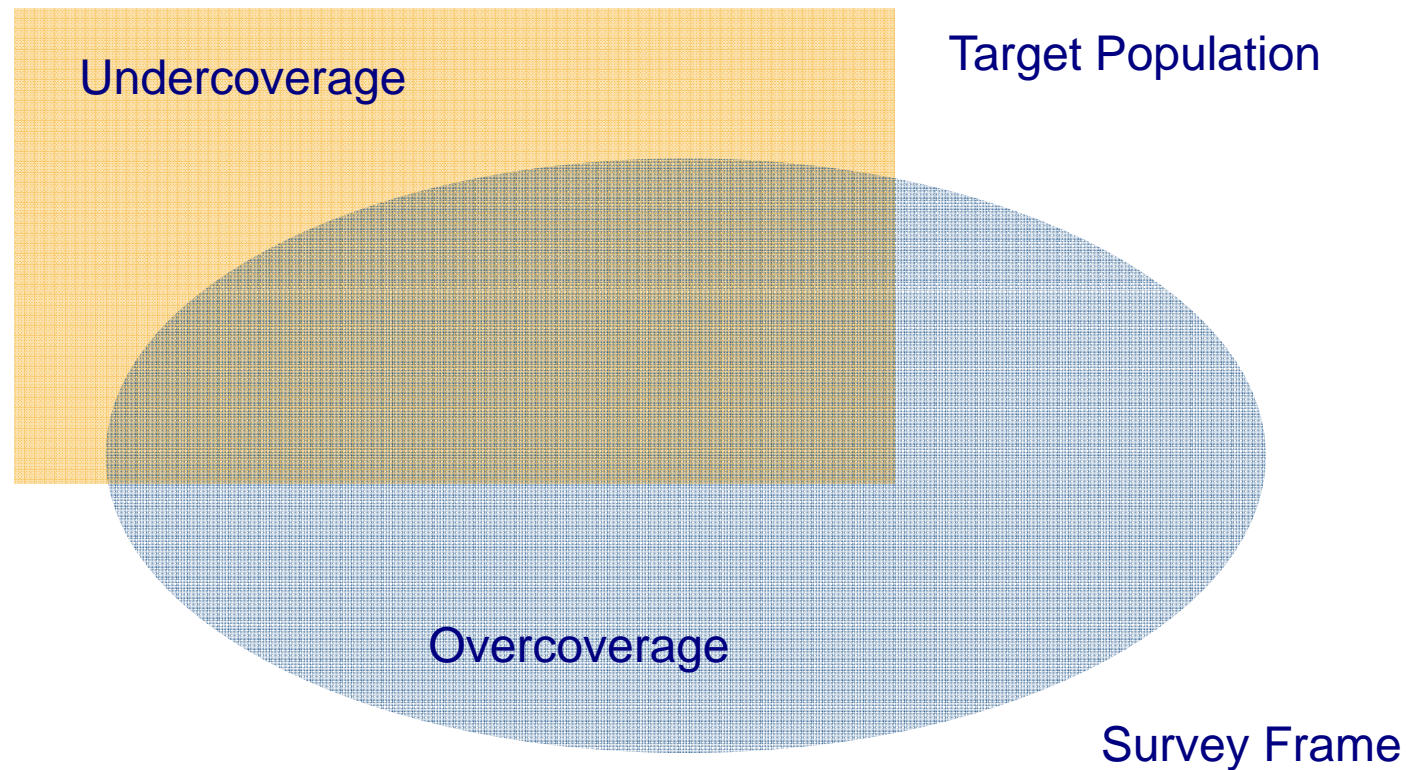
Survey Frame

Motivation

- Improving coverage means
  - Calling mobile-phone-only people
  - Including homeless, institutionalized in general surveys
  - Providing internet access & computers
  - Dual frame surveys

- Efforts are costly

- Are the people included with these efforts disproportionate nonresponders?

Screening Study (Tourangeau, Kreuter & Eckman 2012)

- **2 versions of screener questions**
  - **Direct** "Is anyone 35-55?"
  - **Full HH roster** Age of all adults in HH

Condition	Screener Comp. Rate	Eligibility Rate	Interview Comp. Rate	Response Rate
Direct	59.3	31.8	86.3	32.3
Roster	**53.5**	**45.1**	**71.5**	**23.9**

- **Increasing coverage leads to lower RR**

Housing Unit Listing

- *If I see a house, with a fence and a sign that says "Dangerous Dog," should I even list it?*
  - Interviewer at lister training, 2009

- Units in small multi-unit buildings have lower listing propensity (Eckman & Kreuter, under review)
- HHs in these units tend to be smaller, younger
  - Have lower response propensities

CPS Household Roster (Hainer 1987)

- Roster of HH members in wave 1
  - HH members will be recontacted in future waves

- Known undercoverage of young minority men

- Interviewers leave off tenuously connected members who may be hard to find in future waves

Other examples

- **RDD + mobile phone surveys**
  - Lower response rates among mobile only HHs
    (AAPOR Cell Phone Task Force Report)

- **LISS online panel**
  - Lower recruitment rates among cases without internet
    (Leenheer & Scherpenzeel)

Other examples?

- **Random walk**
  - Interviewers may skip HHs that look like nonrespondents
    (Alt et al 1991)

- **Half open interval procedure**
  - Interviewers may fail to cover units that look like NRs
    (Eckman & O'Muircheartaigh 2011)

Tradeoff at Interviewer Level
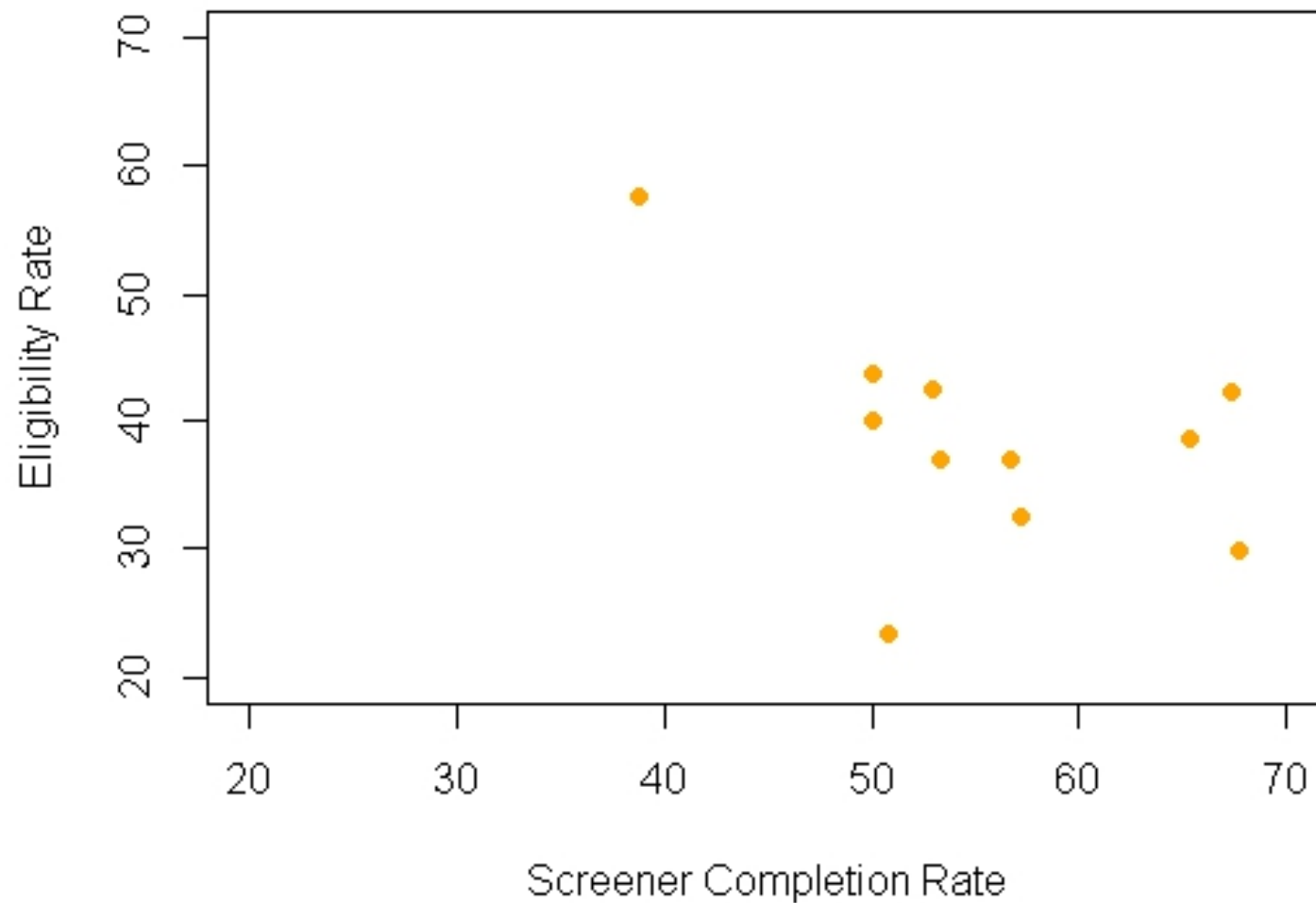
Mechanisms Behind Trade-Off

- **Respondent side**
    - Hidden refusals: Rs screen out rather than refuse
    - Burden
        - Learning to use internet/computer difficult
        - Survey on cell phone annoying

- **Interviewer side**
    - Undercover cases rather than taking hit in RR
    - Different skill sets

Choice Faced by Survey Designers

	Response Rate	Coverage Rate
Design A	High	Low
Design B	Low	High

- Which should we choose?

- High RR in design A hides low coverage rate
    - Is nonresponse more *honest* than undercoverage?

Cost Considerations

	Response Rate	Coverage Rate	Costs
Design A	High	Low	$
Design B	Low	High	$$$

- **Decisions should be guided by *bias***
  - How are nonresponse & undercoverage bias related?
  - How are response & coverage propensities related?
  - Not enough research to date

Research Agenda

- Secondary analyses of trade-off
- Simulation studies

- How can we design a study to understand:
    - Mechanisms
    - Costs
    - Bias

- How much should we spend to increase coverage, if it only increases nonresponse?

Comments & Ideas Welcome

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