What is Up With Lower Response Rates?

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Presentation Acknowledgements

- Tim Beebe, Mayo Clinic helped me put this together
- I also draw heavily on two outstanding papers recently published in *Public Opinion Quarterly* by Bob Groves (2006) and Richard Curtin et al. (2005)
- I have the full references to these and several other excellent papers in a research brief I wrote on the issue

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Issues with Response Rates

- Why do we care about response rates?
- What are the current trends in survey response rates?
  - Telephone surveys
  - Other surveys
- Are response rates a valid measure or proxy for response bias?
- Implications for health research and health research examples?
- What can health researchers do to study response bias?

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Why do we care about response rates

- With less than 100% participation we have the potential for nonresponse bias
- Nonresponse bias is a function of two things:
  - Magnitude of the difference between respondents and nonrespondents with respect to variables of interest
  - The size of the nonresponding population (or the response rate)
- Differences between respondents and nonrespondents are not usually known
- The size of the nonresponding population (or response rate) is easy to estimate
  - Often used a proxy for response bias (or potential response bias)

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Background on response rates

- Total response bias is a function of response rates
- Response rates are easy to measure
- Therefore, they have become the key summary of survey quality reported in the literature
- What are the current trends in survey response rates?

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Declining Response Rates

- Response rates for telephone surveys have declined dramatically
  - In the 1980s they were around 70 percent and now you are lucky to hit 50 percent
- Telephone surveys are still the dominant mode given their cost, sample coverage, and timeliness
  - The decrease in response rates is a major concern
- In government surveys that are either all face to face, or mixed mode response rates have also fallen:
  - The National Health Interview Survey (all face to face) the response rate has gone from 90% in 1998 to a 86.5% response rate for the 2005 survey
  - The mixed mode (in person and telephone) Current Population Survey ASEC supplement's response rate has gone from 85.6% to 82.6% from 1998-2005
  - This decline is not as dramatic as telephone only surveys
- What is driving the big telephone decline?

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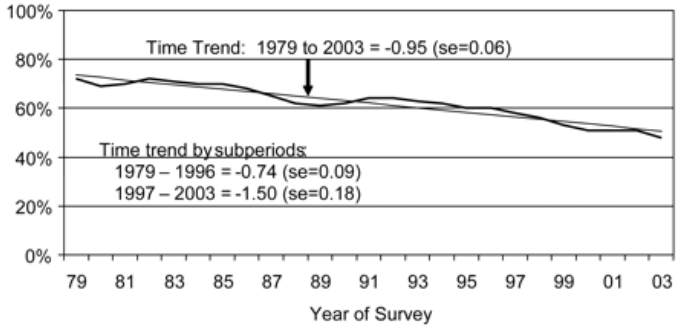
Survey of Consumer Attitudes Response Rates from 1979-2003

- Curtin, Richard et al. 2005 *Public Opinion Quarterly*



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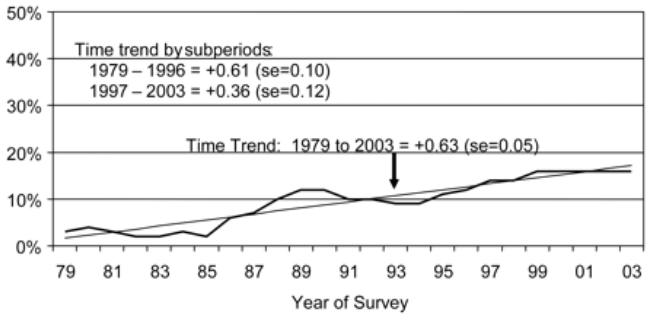
Growth in the Non-contact Rate

- Curtin, Richard et al. 2005 *Public Opinion Quarterly*



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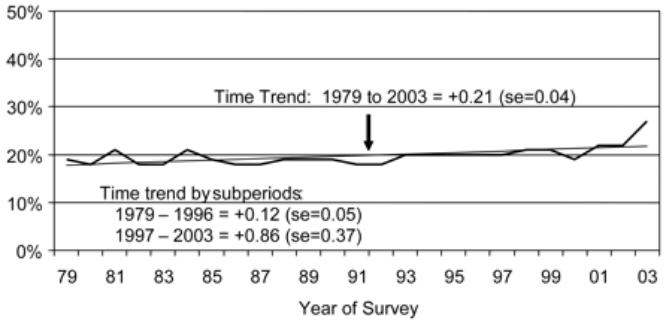
Final refusals stay about the same

- Curtin, Richard et al. 2005 *Public Opinion Quarterly*



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What is behind the phone response rate drop?

- The telephone response rate drop was more dramatic post 1996 than before 1996
- Noncontacts are playing the largest role over the whole period
  - Largely due to introduction of telephone screening devices
- Refusals also increased over the time period but not as dramatically
  - However, the most recent data shows a sharp increase in refusals

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What is the relationship between survey response rate and response bias

- Has the quality of survey data been declining with declining response rates?
- Another way to ask this question is: Do surveys with lower response rates actually produce more absolute response bias?
- A recent analysis by Bob Groves sheds light on this:

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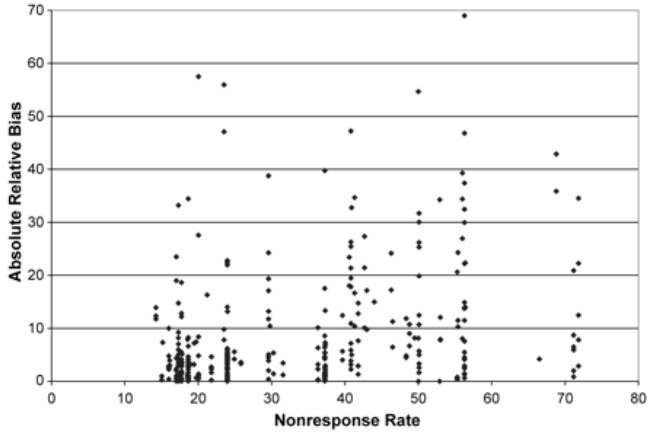
Absolute response bias by Nonresponse rate

- Groves, Robert. 2006 *Public Opinion Quarterly*



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Additional research on response rates

- Experimental studies by Keeter et al. in 2000 and 2006 showed that a survey with a very low response rate obtained very similar estimates on key variables as a survey with a much higher response rate (20-30 versus 50-60)
  - Most of the items examined had to do with public opinion issues
- This work has been replicated elsewhere by health researchers as well
  - In a study we recently completed at the U of MN we showed
    - Those we work hardest to obtain responses from (initial refusals and those who answer the survey after its being called several times) are different from others with respect to some socio-demographic characteristics
    - However, after controlling for socio-demographic factors used in weighting there are few significant differences on key health outcome measures
    - There were some notable exceptions in one of the three surveys we examined

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Is a response rate a good proxy for response bias?

- Response bias remains a serious problem in high and low response rate surveys alike
- There is not much of a relationship between response rates and absolute response bias
- Bottom line: Response rates are not a good indicator of survey quality or response bias
- Why is there this counter-intuitive finding?
  - After all absolute response bias is a function of the response rate

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What is going on?

- Currently non-response adjustments are made to survey data
  - Survey data are often weighted to Census Bureau control totals (or administrative data control totals) by age, race/ethnicity, geography and gender
- It is possible that this partially corrects for response bias in some surveys and some substantive estimates much better than others
- Closer examination of response bias and nonresponse adjustments to survey data is needed
  - To do this we need to understand what motivates some people to be very unlikely to respond to a survey (after controlling for basic demographics).
  - As health survey researchers we should be especially concerned with these issues
    - As its possible that nonresponse mechanisms may not bias political polls but would bias a health survey
      - If nonresponse is caused by the same mechanism (say mental health or disability status) that leads one to not vote: political polls are not biased but mental health or disability prevalence from surveys would be
- development of theory and research in this area is vital

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Implications for practice

- Blind pursuit of high response rates is not a good idea
  - Calling people 50 times and trying to convert refusals many times increases respondent burden
  - It reduces the ultimate number of respondents that a survey can obtain
    - Reduces the statistical power of a study
  - Some evidence has shown that those people we work the hardest to get data from also provide the least accurate information
- We should be more concerned with response bias and not fixated on response rates

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What can we do about it as health researchers?

- Response bias is a problem in many surveys
  - Regardless of response rate
- As health researchers we often draw samples from frames that are rich with auxiliary information on respondents and nonrespondents
  - Such as health plan studies, CMS enrollee studies or VA studies
  - When using these rich sample frames we should try to examine the impact of nonresponse bias on our surveys
  - This will contribute greatly to our understanding of survey response bias

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Conclusions

- Response bias is an understudied problem
- Response rates are not good predictors of response bias and survey quality
- Blind pursuit of high response rates is not a good idea
- We need to conduct studies (potentially using our rich sample frames) to examine who is likely to be a nonrespondent
  - This research would greatly inform work being done on general population surveys of health (and non health issues)

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