A Comparison of Cognitive Testing Methods and Sources: In-Person versus Online Nonprobability and Probability Methods

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QDET2

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Motivation

- We can get valuable cognitive testing feedback using unmoderated, online services (e.g., Edgar 2013; Fowler et al., 2015; Cook et al., 2015)

- Feedback can vary by nonprobability sample source (e.g., Murphy, Edgar, & Keating, 2014)

- Online opt-in nonprobability samples sometimes demographically skewed
  - May not be viable for some types of cognitive testing

Motivation (cont.)

- Present study is a comparison between:
  - Two online nonprobability methods
  - Traditional in-person cognitive interviews
  - Probability sample (cold contact)
- Research Questions
  - How do conclusions about comprehension from cognitive testing feedback differ by sample source?
  - How do the demographic characteristics of respondents differ by sample source?

Cognitive testing

- Assessed comprehension of 36 official Census Bureau messages*
    - "The Census Bureau will never use your responses for anything other than statistical research."
    - "We will never share your information with law enforcement or allow it to be used to determine your eligibility for government benefits."

*see Fobia and Childs, 2016 AAPOR

Instrument for online testing

- Respondents were randomly shown 9 messages on 9 screens, in random order:
  - Five messages on privacy and confidentiality
  - One message from each of four sub-sections on required language (burden, mandatory response, OMB number, other confidentiality protections)
- After each message, respondents were asked, *"In your own words, what is this message telling you?"* with an open-ended text box
- Demographic questions

Data sources (cont.)

	Nonprobab. Census opt-in	Nonprobab. MTurk	Prob.	In-person
Description	Email addresses signed up to be in research on census.gov	Crowd-sourcing site; previously used in online cognitive testing	Email addresses matched to master list of U.S. addresses	Think-aloud, concurrently probed interviews on a subset of the messages
# Responses	303 (8% RR)	200	330 (3% RR)	30
Incentive	-	$0.50	-	$40
Data collection	Two weeks	Two hours	Two weeks	Over a month

Analysis

- Comprehension?
  - Qualitative assessment of feedback
  - Coding of responses
- Diversity of respondents?
  - Demographics of respondents

Coding comprehension

- Understood

- Misunderstood
  - Misinterprets the meaning of the message by paraphrasing incorrectly
  - Explicitly states that they do not understand the message
  - Requests clarification

- Comprehension of the message =

$$\frac{\# \, und.codes}{\# \, und.codes + \# \, misund.codes}$$

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Findings: Comprehension

Online v. in-person generally

- Online
  - More negativity
  - More off-topic responses that we could not code for comprehension
- In-person
  - More requests for clarification

Comprehension

- For most messages, general consensus across sample sources in comprehension
  - Leads to similar conclusion about clarity of message
  - Sometimes unpredictable spikes in negativity and off-topic responses

"Very few authorized individuals actually see your name or other personal information that could identify you. Most of the time, personal information that could identify you is removed from the file that contains your census or survey answers."

Legend:
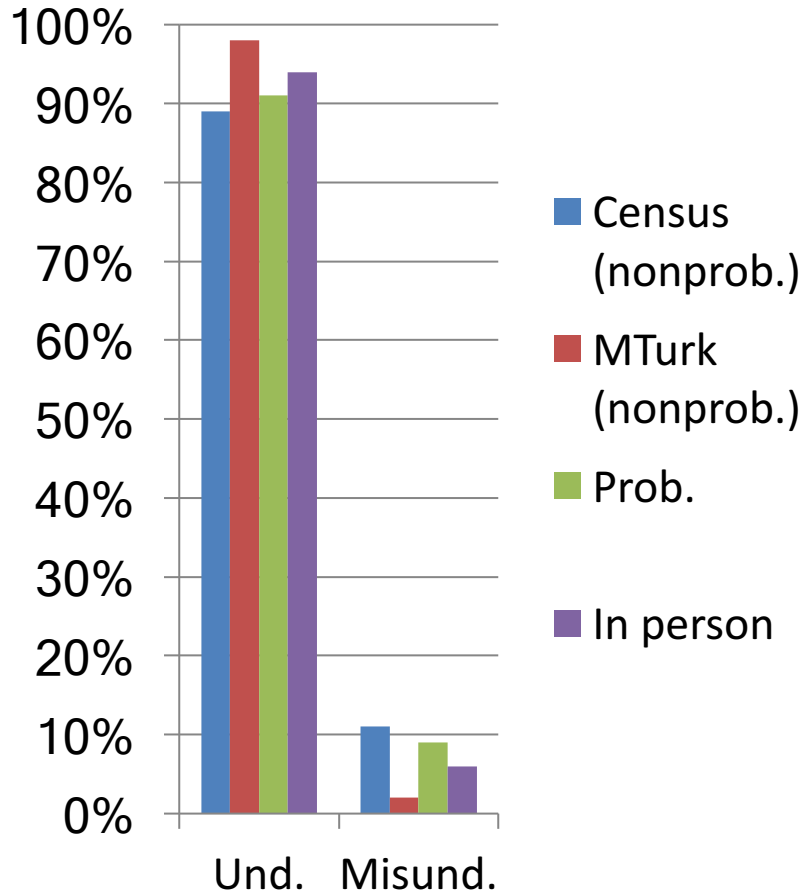- Census (nonprob.)
- MTurk (nonprob.)
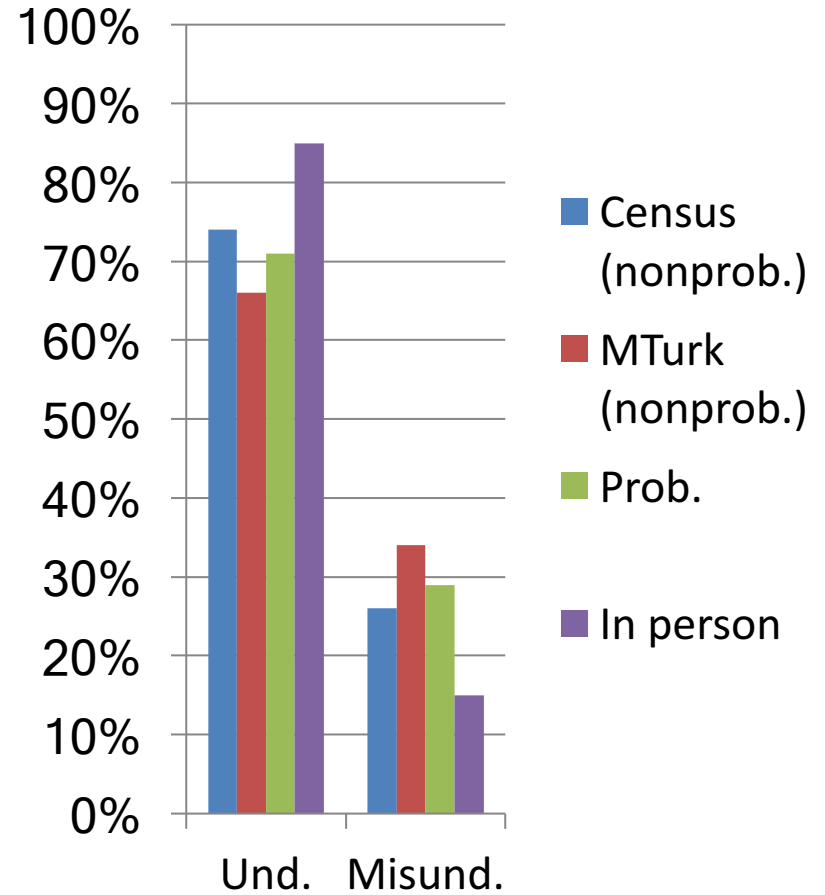- Prob.
- In person
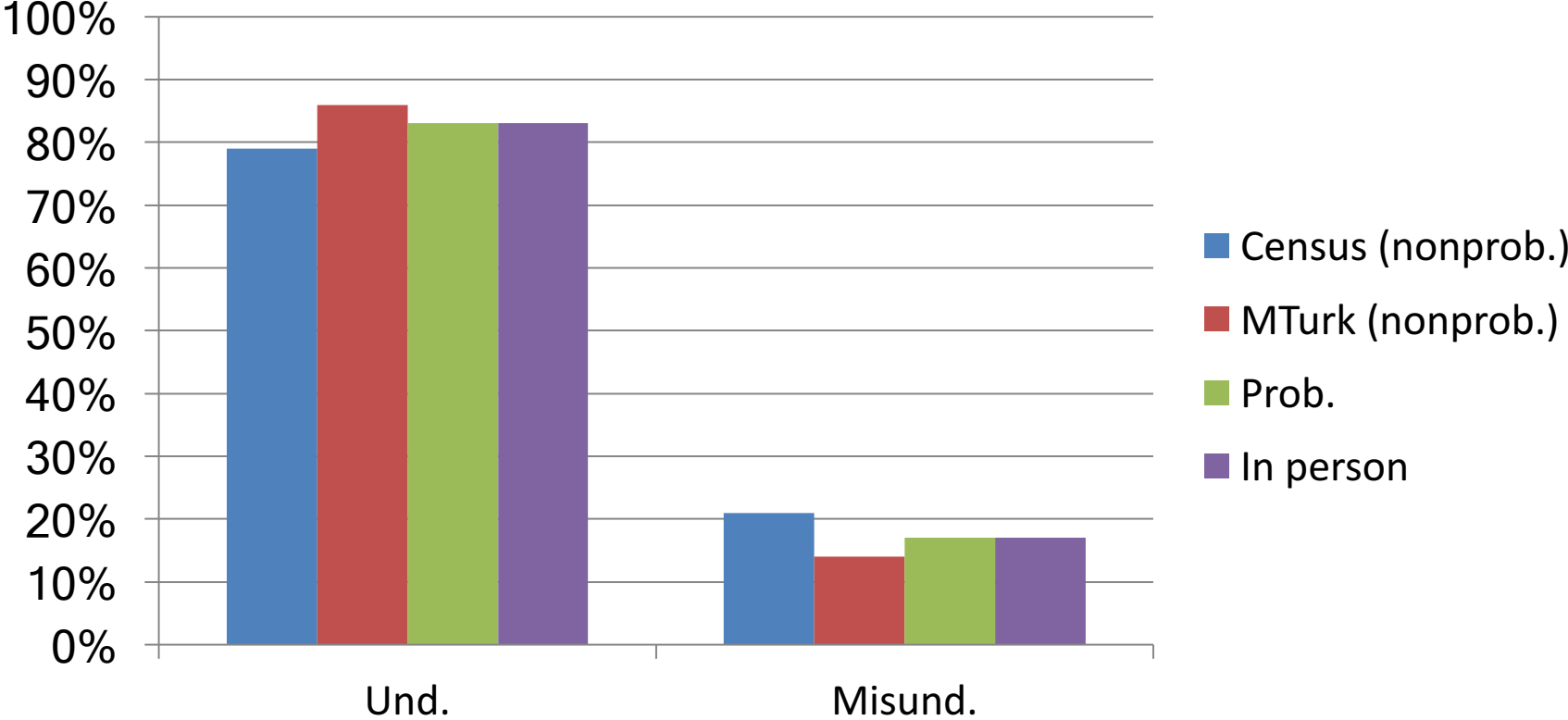
Mandatory response

- **Short:** You are required by law to respond to the census (Title 13 U.S. Code Sections 141 and 193).

- **Wordy:** Collection of the information is mandatory and is collected under Title 13 U.S. Code Sections 141 and 193.

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Mandatory response (cont.)
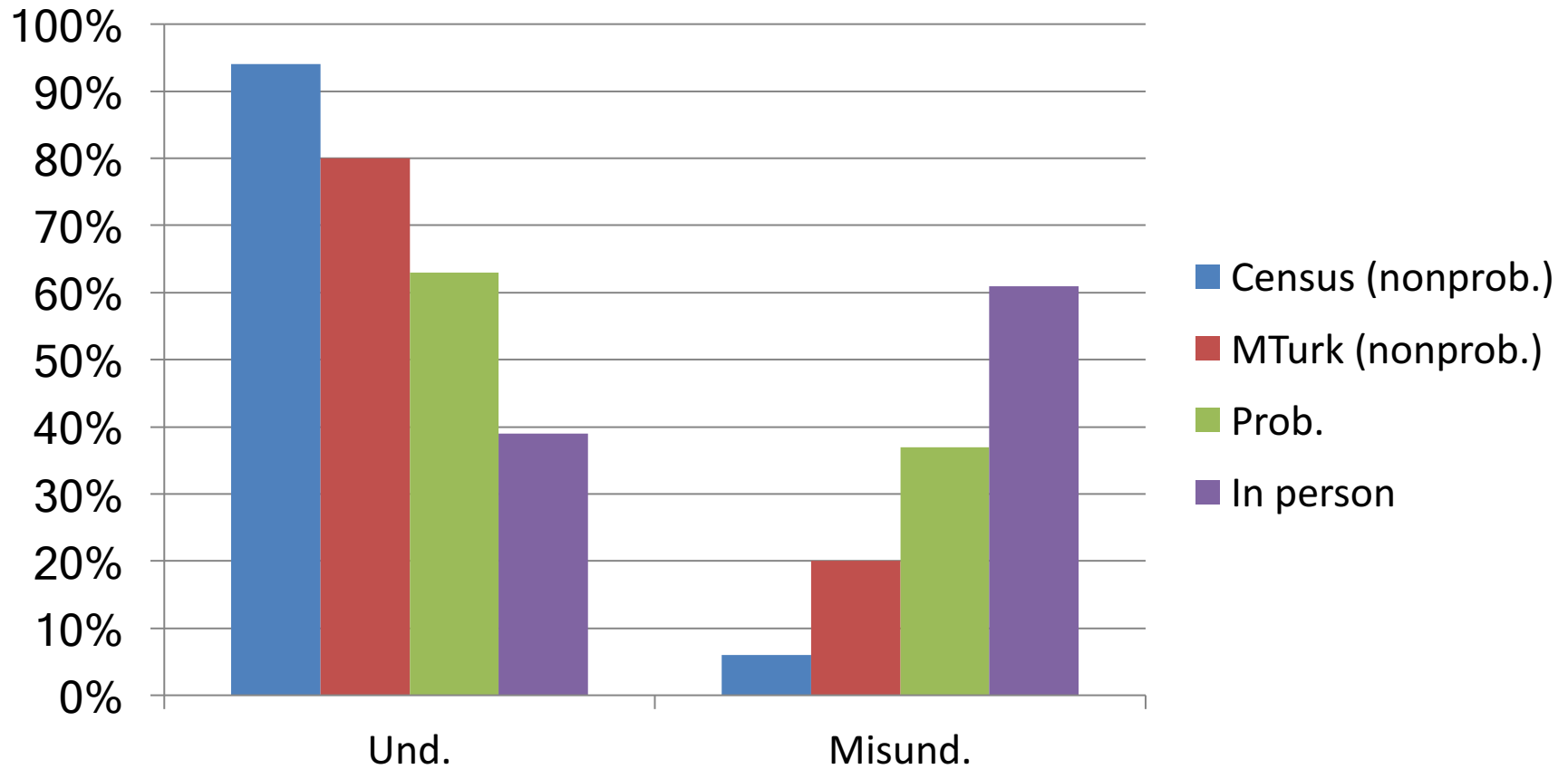
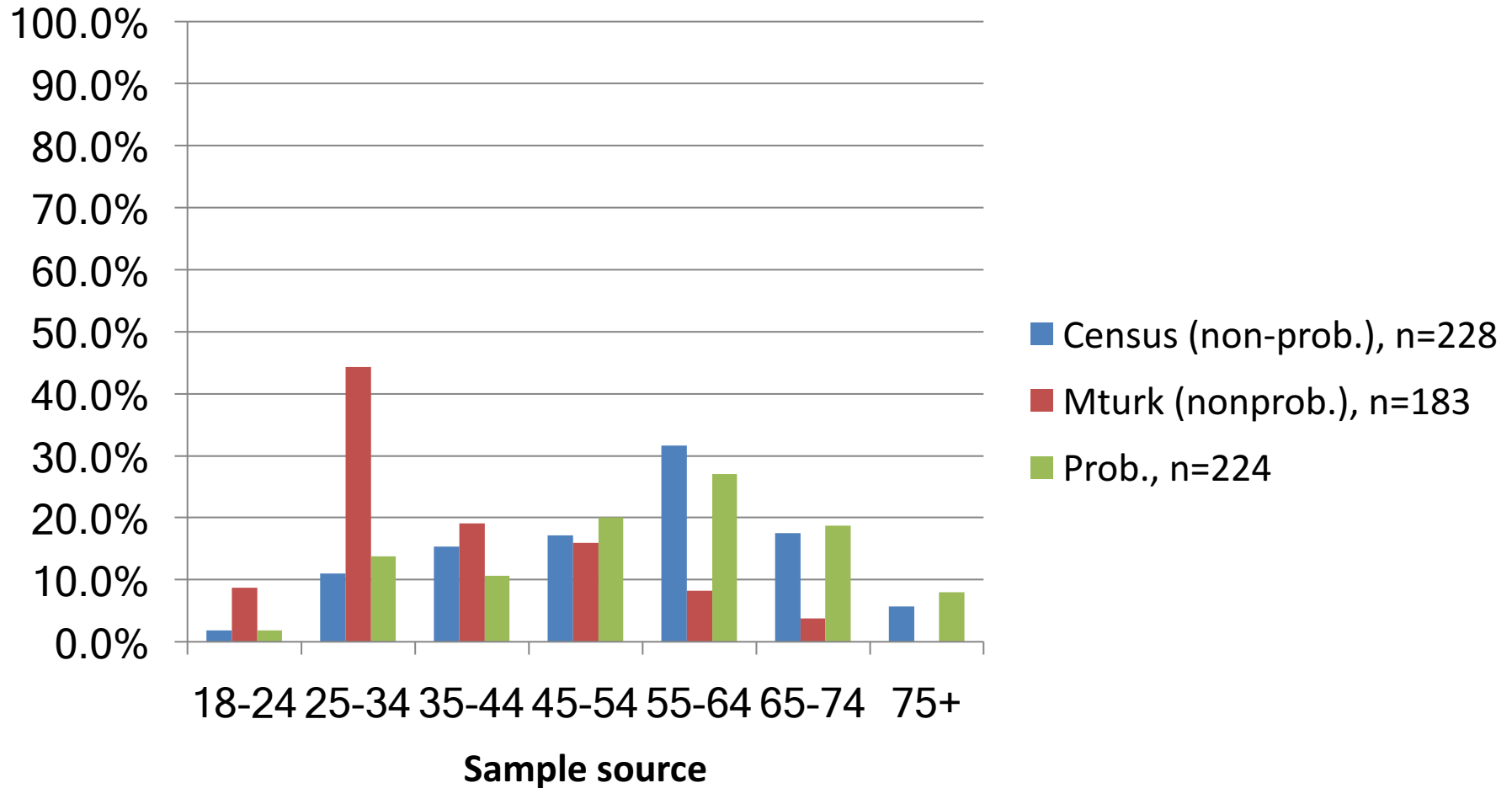# Comprehension results (cont.)

- There were a few instances where one or two sources differ from the other in comprehension
  - No clear pattern across sample sources
  - Especially of concern when in-person differs from online

"By law, we only allow access to data to conduct research that would help carry out the Census Bureau's mission and benefit the public good."
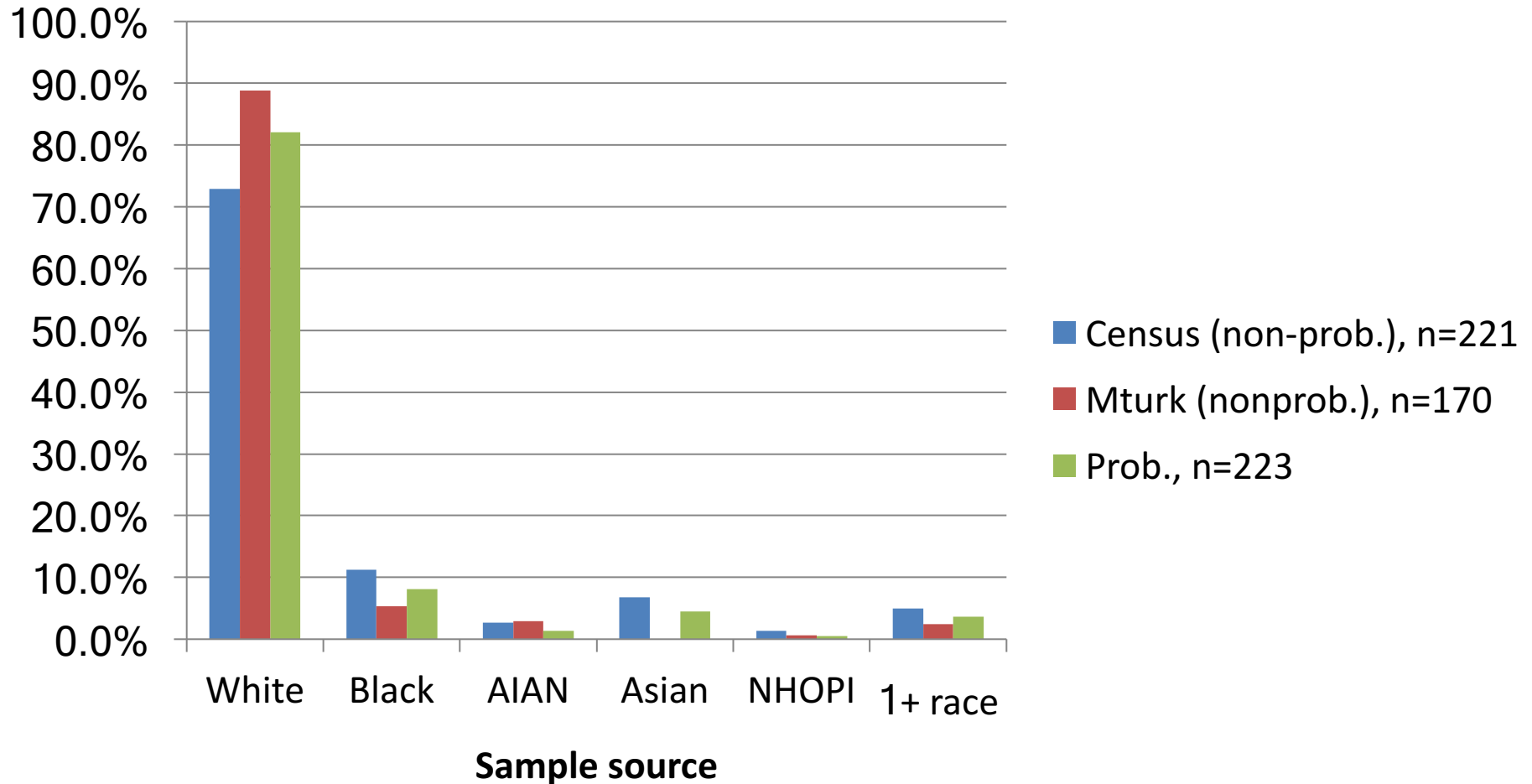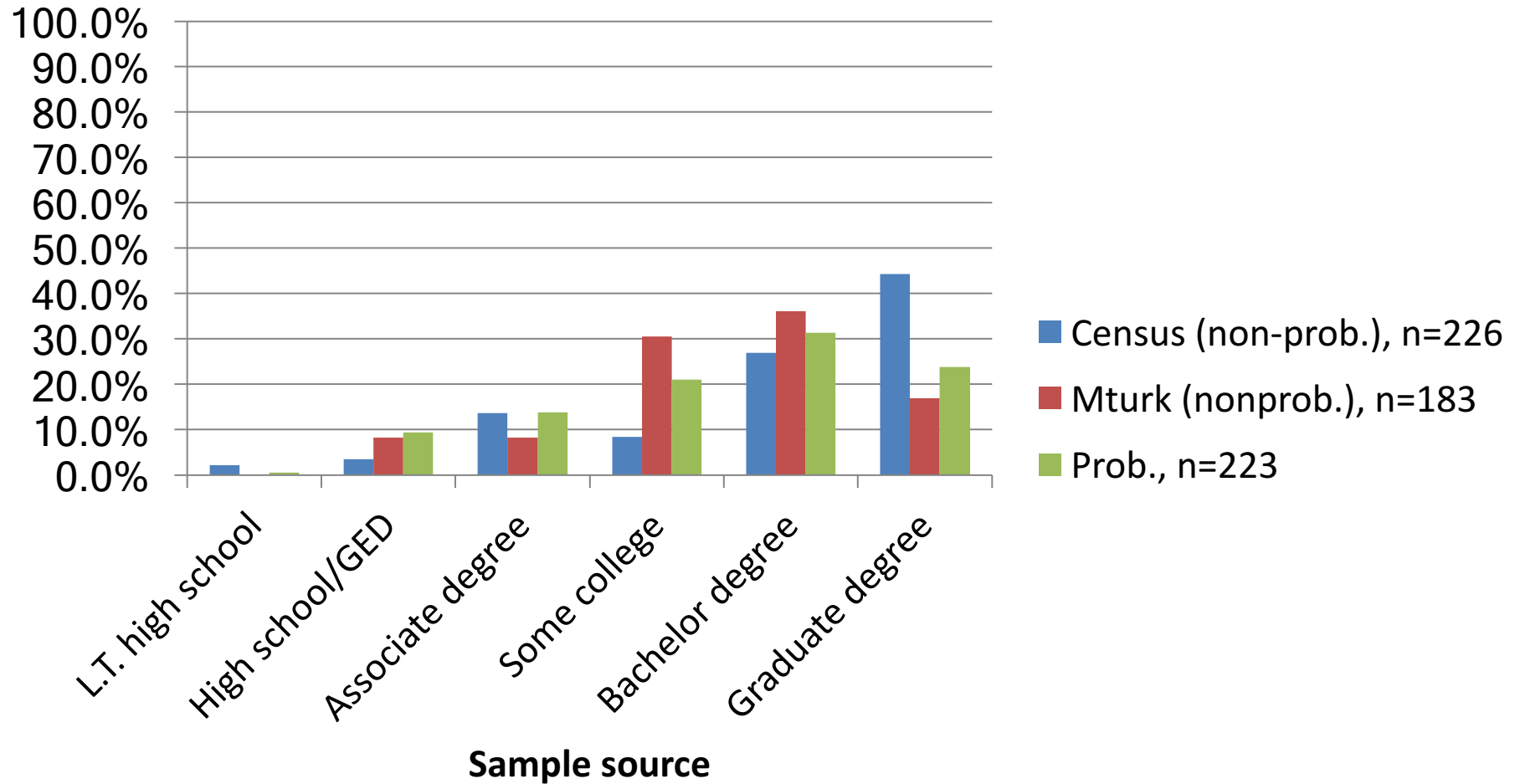
Findings: Demographics of respondents

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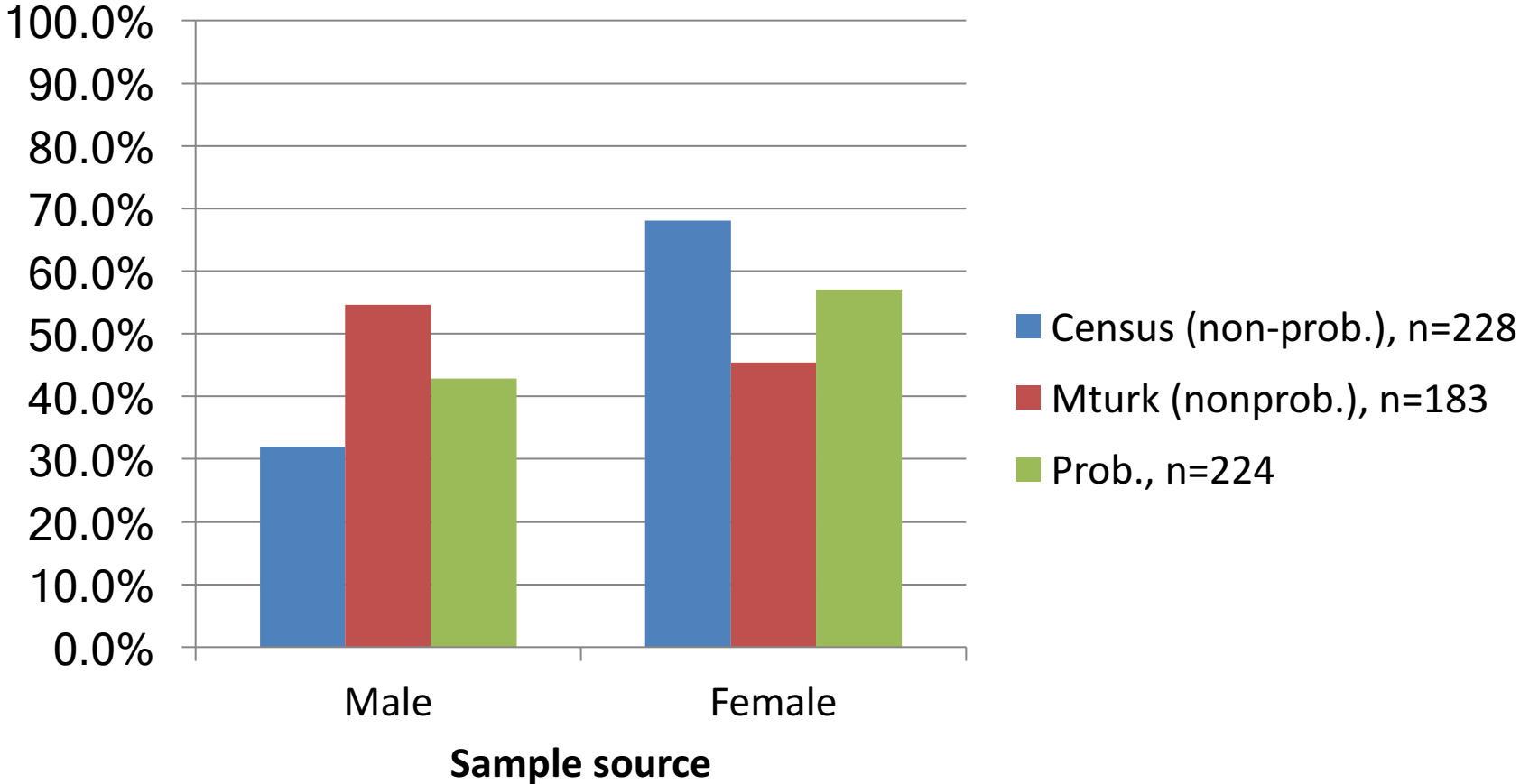U.S. CENSUS BUREAU
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Age

Race

Education

Sex

Demographics of respondents: in-person

- Obviously, ability to be more selective
- We needed to test with: non-white, less educated, men
  - 22/30 black
  - 24/30 some college or less
  - Still ended up with 20/30 women!

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Conclusion

- Feedback on comprehension
  - For most messages, no major differences in conclusion on comprehension by online sample source
- Generally more negativity and off-topic responses online, fewer requests for clarification

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Conclusion (cont.)

- Demographics of respondents
    - Use of probability sample not a clear improvement for most demographics
    - If you're only using one online sample, demo differences may be used to guide choice, depending on what you are testing

Future Research

- Length of responses and other quality measures

- Demographic differences in responses?

- Digging into discrepancies and using other types of probes

- In the mean time: use in-person, too!

Thank you!

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