

# Generative AI in Survey Research: Principles and Use Cases

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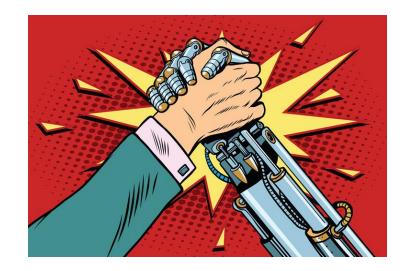
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The Future of Al and Survey Research, AAPOR | May 15, 2025

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## How should survey researchers use (and think about) Gen AI?

- Many functional analogies for Gen Al:
  - Assistant? (implies qualitative human interaction and adaptivity)
  - Tool? (implies clear inputs/outputs and narrow scope)
  - Methodology? (implies well-understood statistical properties)
- Our argument:
  - All of these are correct!
  - Let's match researchers to the function and associated requirements – based on their <u>need</u> (fit for purpose).



This talk is a preview of what we (NORC) have learned in our own research and teaching about 'Al fit for survey purpose'.

## Three roles\* for Gen AI in Survey Research:

Al as "Assistant"

Al as "Methodology"

Al as "Tool"

\*Not always mutually exclusive, but researchers need to <u>clarify</u> their intended goal(s).



## Three roles\* for Gen AI in Survey Research:

Analogy	Goal
Al as "Assistant"	<b>Discovery:</b> Co-ideation and problem solving across the survey lifecycle.
Al as "Methodology"	Optimization: Minimizing aspects of total survey error.
Al as "Tool"	<b>Efficiency:</b> Reducing costs of procedures.

<sup>\*</sup>Not always mutually exclusive, but researchers need to <u>clarify</u> their intended goal(s).



#### Specific use cases include:

- Brainstorming survey topics.
- Improving questionnaires.
- Summarizing best practices for design and analysis.
- Generating respondent personas for testing.
- Generating code and/or text for survey outputs.

## **Wey considerations:**

- Verification is still be required.
- Security and privacy also still matter → implications for your organization.

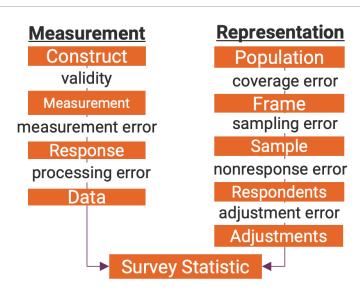
Analogy	Goal	Replicable?	Tailoring?	Scale?	Validation?	Quant?	Qual?
Assistant	Discovery	<b>2</b>	Low.	Low.	Verification	<b>✓</b>	$\checkmark$

#### **Example from our FedCASIC talk (question appraisal):**

**Please conduct an appraisal** of each of the following survey questions. Ask me any additional questions you need to refine your appraisal. ...

#### **Example from our AAPOR course (question labels):**

Generate for me a slide-friendly label for the survey question, "What motivates you to maintain a healthy lifestyle?"



Analogy	Goal	Replicable?	Tailoring?	Scale?	Validation?	Quant?	Qual?
Methodology	Minimizing error	<b>//</b>	High.	High.	Benchmarks	<b>✓</b>	X

#### **Example NORC evaluations:**

- Evaluating AI for Classifying Open-Ends.
- Comparing Human to Al Synthetic Responses.
- Evaluation of Al-Assisted Conversational Interviewing (Friday at 4!)

#### **ਊKey considerations** − there are three possible scenarios:

#### Al can reduce survey error:

- Clarify question wording via automated follow-up probes.
- Classify responses more accurately than an RA.

#### Al can increase survey error:

- Latency introduced by probes increases attrition.
- Synthetic respondents do not resemble target population.

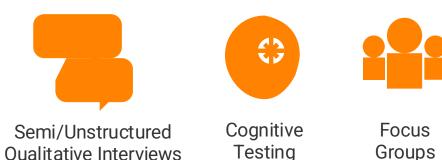
#### Al may be error neutral:

- Holding resources fixed, human coders produce same classification accuracy.
- Swapping one error (nonresponse) for another (measurement).

Need constant context-specific benchmarks (and still no guarantees!).



#### Many applicable qual methods:



Analogy	Goal	Replicable?	Tailoring?	Scale?	Validation?	Quant?	Qual?
Tool	Efficiency	<b>✓</b>	Medium.	Medium.	Testing	<b>✓</b>	<b>✓</b>

#### Gen AI can help by reducing costs and/or time.

- Interviewer training (respondent simulation)
- Entity extraction (e.g., names, locations)
- Response summarization (thematic analysis)

### **When States Services We service the service the services We service the services <b>We service the se**

The sweet spot for Gen AI in survey research → Many 'plug and play' tools available for many different tasks ... but be careful that you're not outsourcing the work of trusted experts or models!

#### **Example in our work** (Al-assisted moderation):

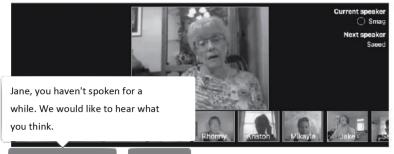


Perspectives on Politics

Scaling Dialogue for Democracy: Can Automated Deliberation Create More Deliberative Voters?

Published online by Cambridge University Press: 03 January 2025





Request to Speak

Interrupt

(automated speaker nudges)

## Our framework for Generative AI in survey research centers on researcher goals with helpful guiding analogies.

Analogy	Goal	Replicable ?	Tailored?	Scale?	Validation?
Assistant	Discovery	<b>293</b>	Low	Low	Verify
Methodology	Optimization	<b>/ /</b>	High	High	Benchmark
Tool	Efficiency	✓	Med	Med	Test

#### Challenge(s) for the future of AI and surveys:

- Must account for respondent experience regardless of goals.
- Must prioritize transparency regardless of replicability "bar".
- Must consider pedagogy for the next generation.

#### For more:



tinyurl.com/norc-uchicago-ai

## Thank you!

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