

Who's to Blame for Survey Instability: Respondents with Nonexistent Preferences or Researchers with Flawed Measures?¹

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University of Chicago, 4/14/2026

¹Slides, paper, data: GaryKing.org

²Joint work with [Libby Jenke](#), University of Houston

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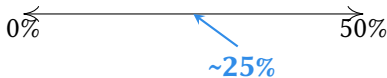
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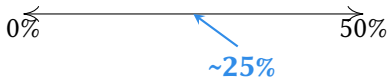
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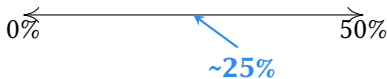
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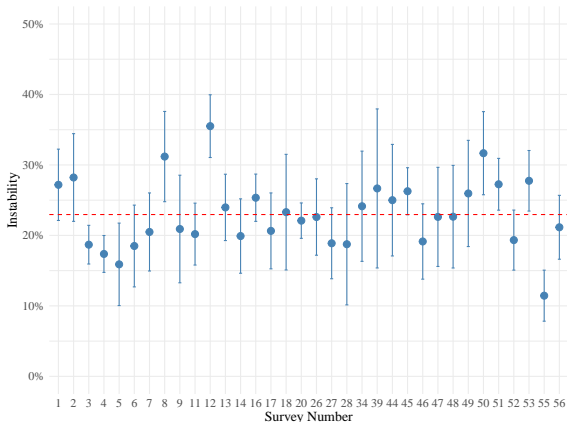
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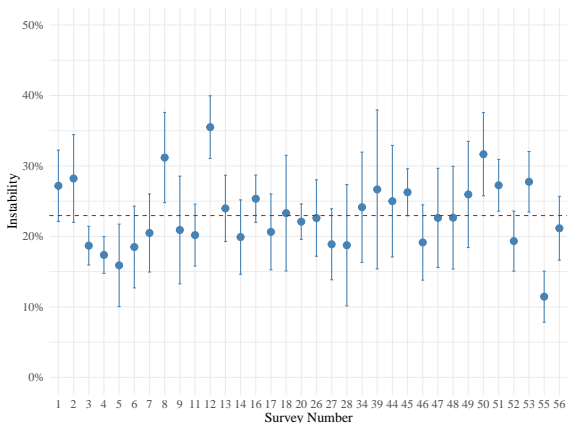
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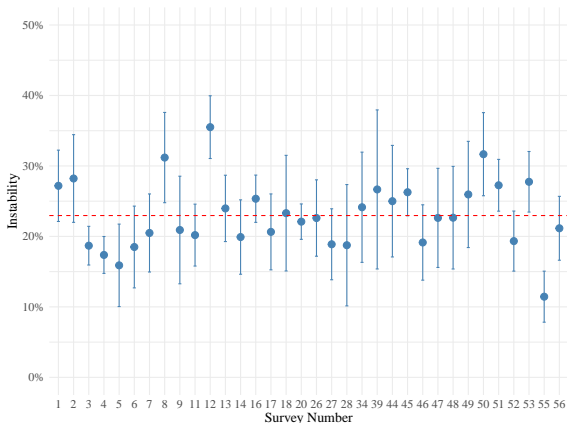
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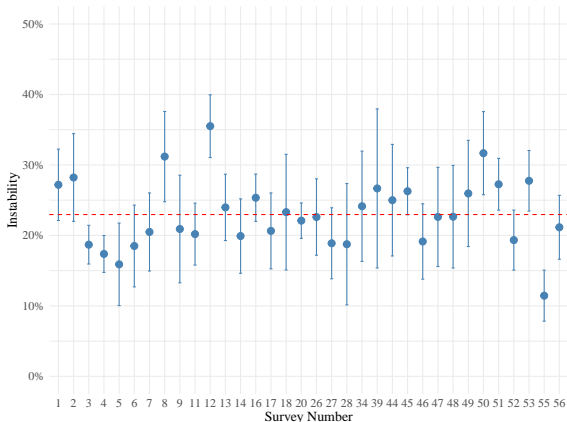
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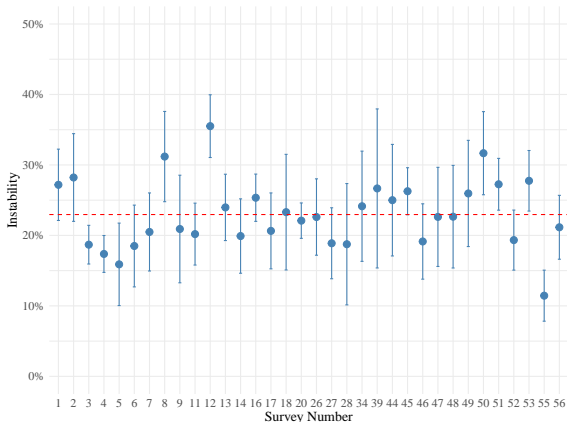
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A Binary Choice Conjoint Question


(Ono and Burden, 2018)

Please carefully review the two potential candidates running for election to the U.S. House of Representatives, detailed below.

	Candidate 0	Candidate 1
Race/Ethnicity	Hispanic	Asian American
Age	52	60
Favorability rating among the public	70%	34%
Position on immigrants	Favors giving citizenship or guest worker status to undocumented immigrants	Opposes giving citizenship or guest worker status to undocumented immigrants
Party affiliation	Republican Party	Democratic Party
Position on abortion	Abortion is not a private matter (pro-life)	Abortion is a private matter (pro-choice)
Position on government deficit	Wants to reduce the deficit through tax increase	Wants to reduce the deficit through tax increase
Salient personal characteristics	Really cares about people like you	Really cares about people like you
Position on national security	Wants to cut military budget and keep the U.S. out of war	Wants to maintain strong defense and increase U.S. influence
Gender	Female	Female
Policy area of expertise	Education	Foreign policy
Family	Single (divorced)	Married (no child)
Experience in public office	12 years	4 years

If you had to choose between them, which of these candidates would you vote to be a member of the U.S. House of Representatives?


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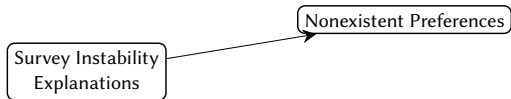
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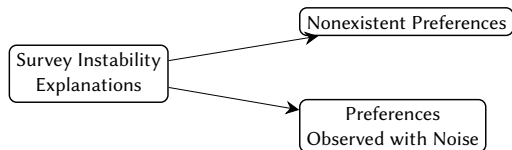
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Survey Instability
Explanations

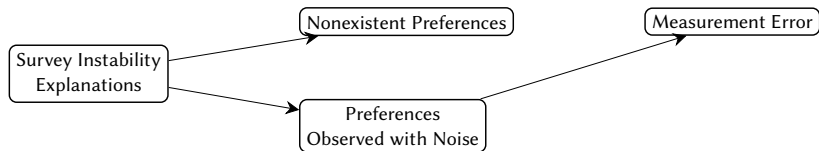
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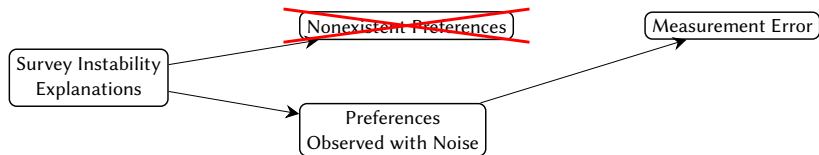
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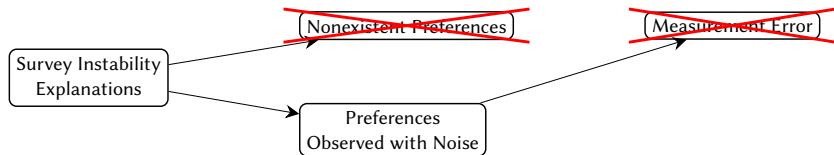
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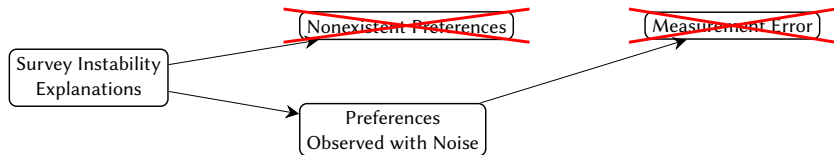
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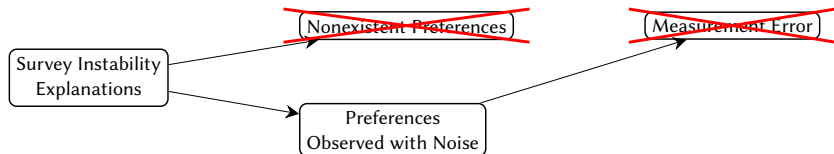


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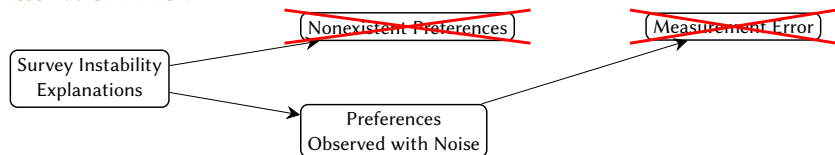
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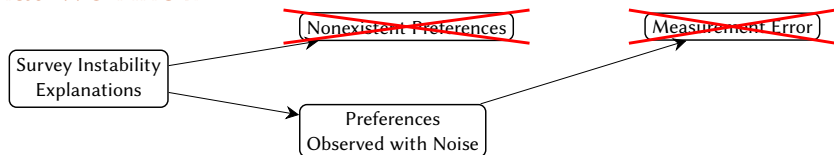
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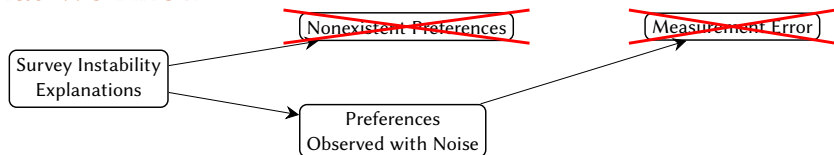
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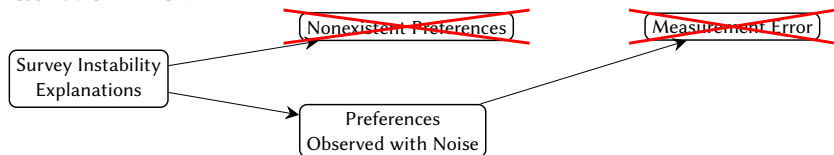
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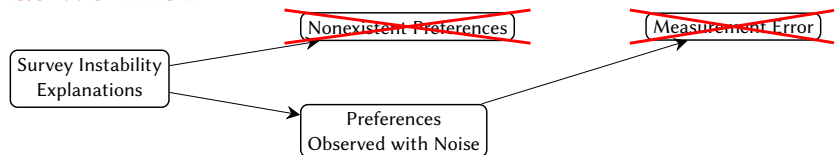
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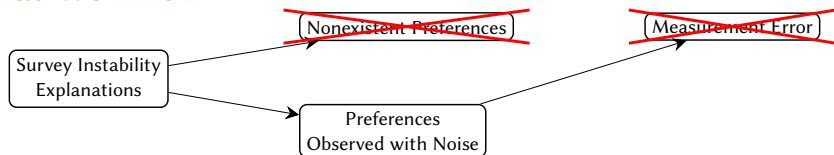
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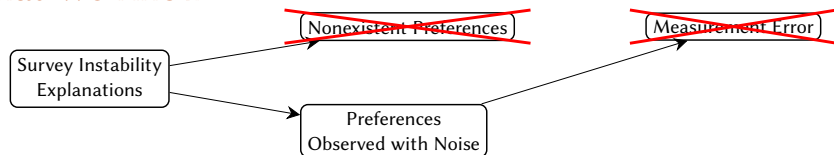
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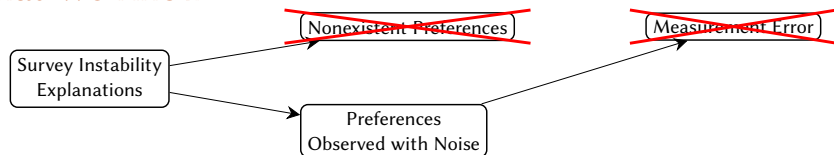
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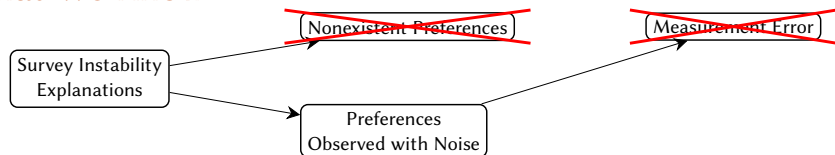
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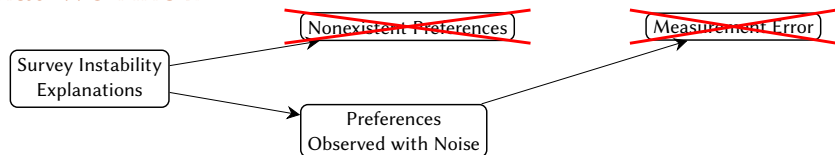
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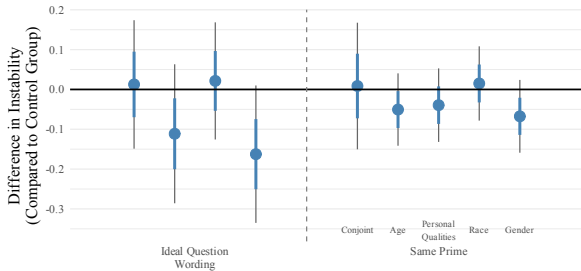
What We Know

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Survey Instability
Explains

Reducing Bias Doesn't Reduce Instability



- reduce bias, not instability

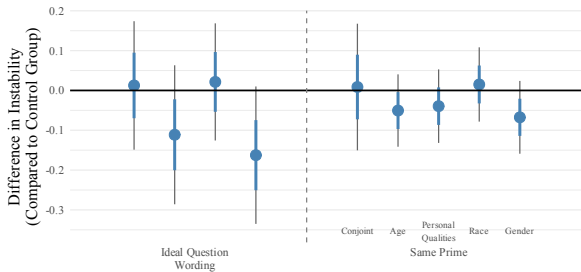
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- Left: 2008 ANES question wording changes

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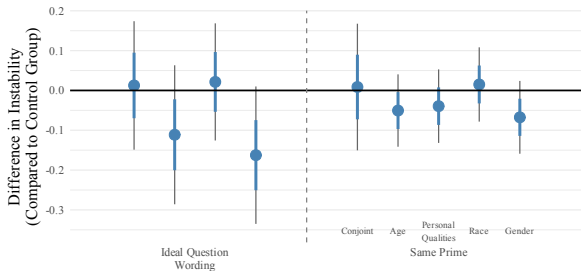
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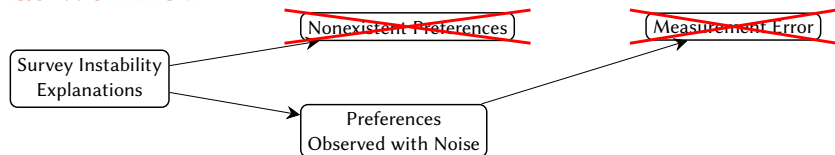
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- Left: 2008 ANES question wording changes
- Right: different (priming) “considerations”
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What We Know



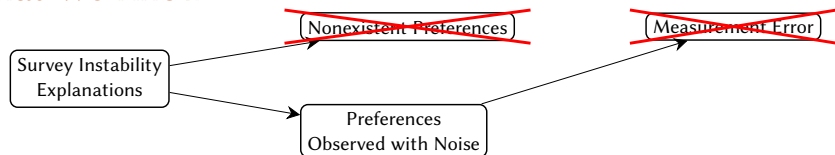
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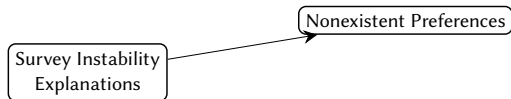
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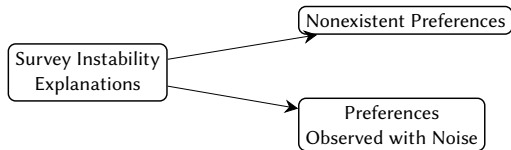
What We Show

Survey Instability
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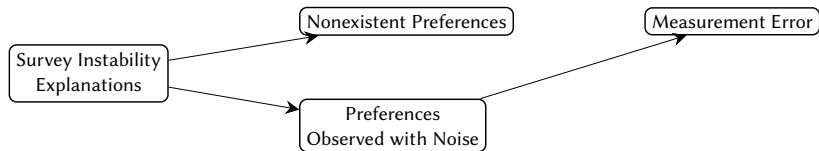
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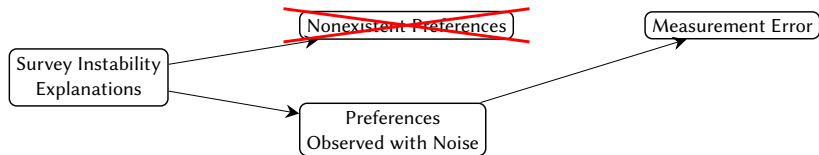
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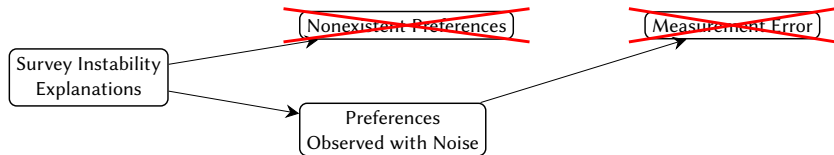
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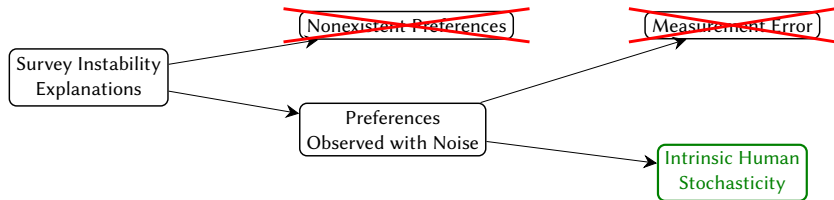
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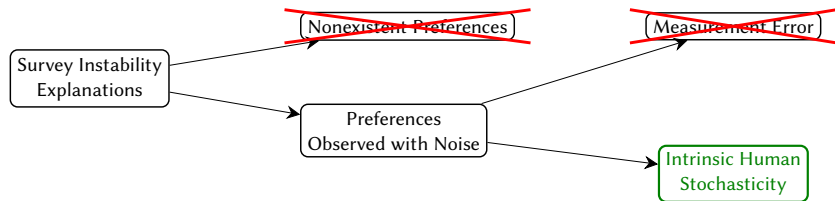
What We Show



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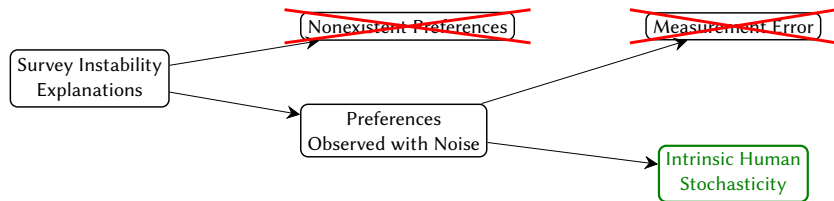


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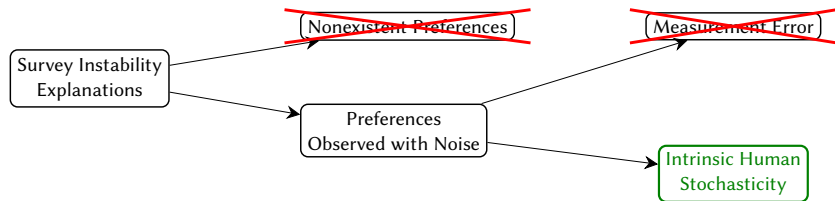
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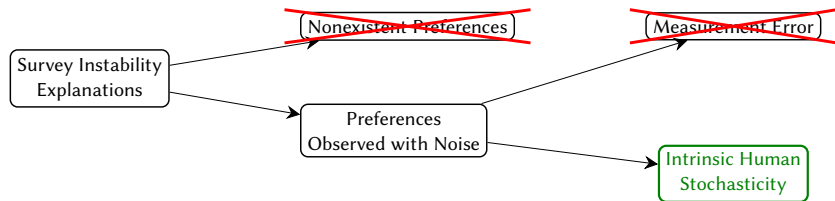
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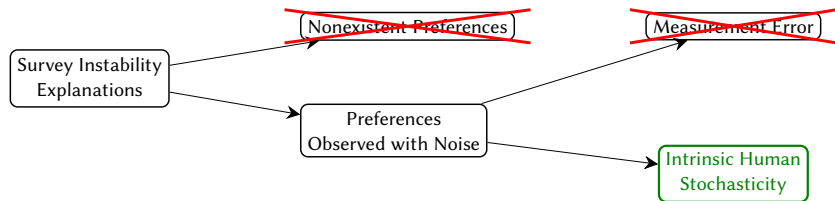
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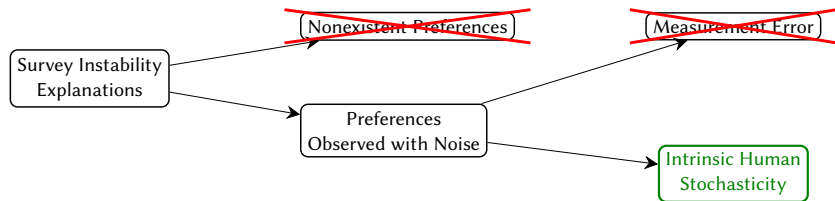
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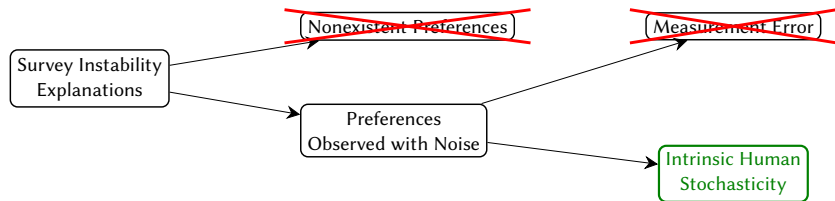
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 - Zero stochasticity: not an attentive respondent, or live human

Intrinsic Human Stochasticity

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Imagine: Two (error-free) CTs, taken moments apart

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Introduction

Intrinsic Human Stochasticity

Sources of Stochasticity Leading to Survey Instability

Substantive Conclusions, Practical Implications

Sources of Stochasticity Leading to Survey Instability

Survey Instability

$C_1 \neq C_2$ (No memory,
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Sources of Stochasticity Leading to Survey Instability

Survey Response Level

Decision Making

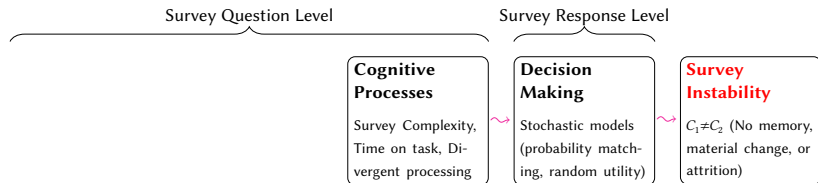
Stochastic models
(probability matching,
random utility)

Survey Instability

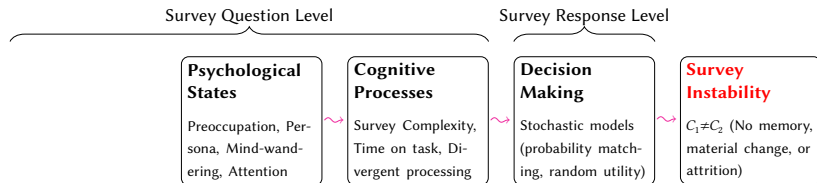
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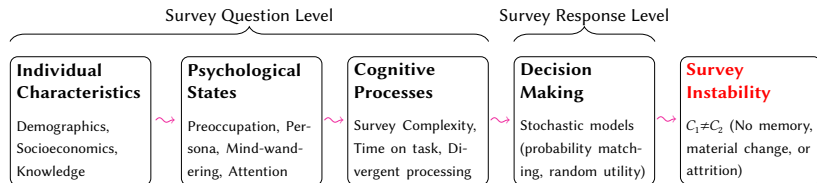
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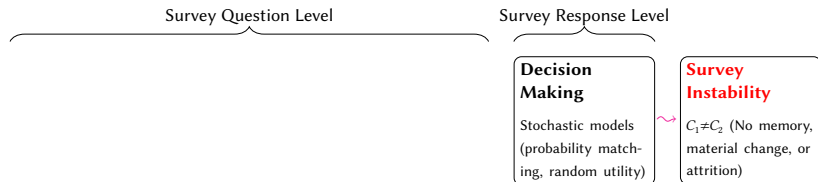
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- How Beliefs become Choices 

Election Day


Stochasticity Sources: Decision Making

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Election Day

- 10 offices, each with Party A & B candidates


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Election Day

- 10 offices, each with Party A & B candidates
- In 6/10, Party A is better for you than Party B.


Stochasticity Sources: Decision Making

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- Belief: $\pi = \Pr(\rho = 1)$ (known)
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- How Beliefs become Choices 

Election Day

- 10 offices, each with Party A & B candidates
- In 6/10, Party A is better for you than Party B.
- How many Party A candidates will you choose?

Stochasticity Sources: Decision Making

- Preference: $\rho \in \{0, 1\}$ (unknown)
- Belief: $\pi = \Pr(\rho = 1)$ (known)
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$$C_t \left\{ \begin{array}{l} = \mathbf{1}(\pi > 0.5) \quad \text{Expected Utility (deterministic)} \quad E(D) = 0 \end{array} \right.$$

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Stochasticity Sources: Decision Making

- Preference: $\rho \in \{0, 1\}$ (unknown)

- Bias: $\beta \in \mathbb{R}^n$ (unknown)

- Choice: C_t (unknown)

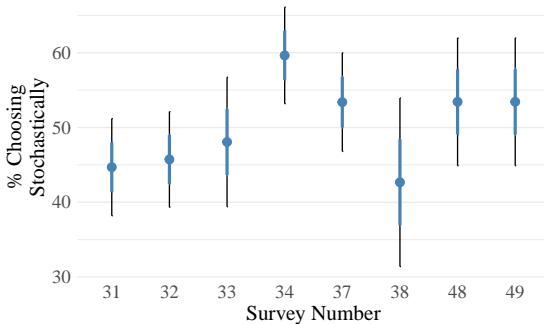
- History

C_t {

- Learning

- Environment


Decision Making: Highly Stochastic!



Stochasticity Sources: Decision Making

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Stochasticity Sources: Cognitive Processing

Stochasticity Sources: Cognitive Processing

Survey Instability

$C_1 \neq C_2$ (No memory,
material change, or
attrition)

Stochasticity Sources: Cognitive Processing

Survey Response Level

Decision Making

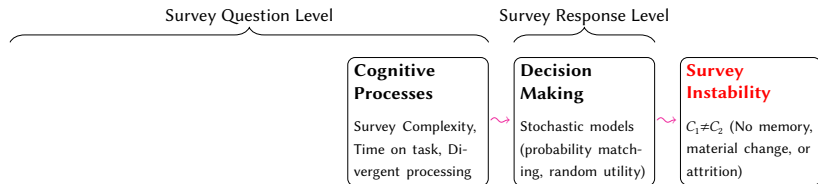
Stochastic models
(probability matching,
random utility)

Survey Instability

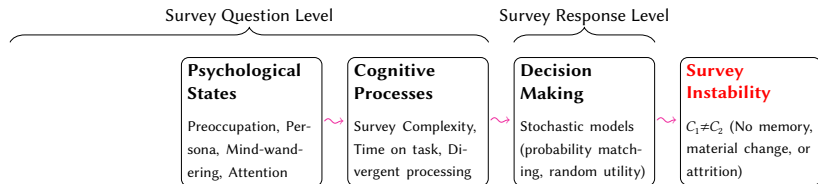
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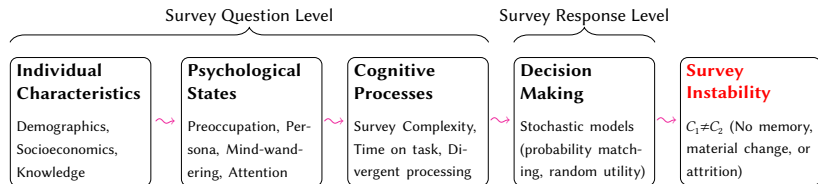
Stochasticity Sources: Cognitive Processing



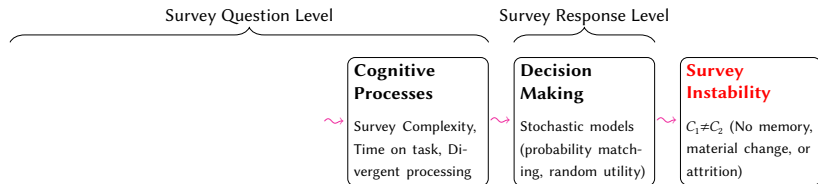
Stochasticity Sources: Cognitive Processing



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Stochasticity Sources: Cognitive Processing

What increases stochasticity (and thus instability)?

Stochasticity Sources: Cognitive Processing

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- High cognitive complexity: hard Qs; many As

Stochasticity Sources: Cognitive Processing

What increases stochasticity (and thus instability)?

- **High cognitive complexity:** hard Qs; many As
- **Low time-on-task:** for any given question


Stochasticity Sources: Cognitive Processing

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- High cognitive complexity: hard Qs; many As
- Low time-on-task: for any given question
- Differential cognitive processing: Q_1 vs Q_2

Stochasticity Sources: Cognitive Processing

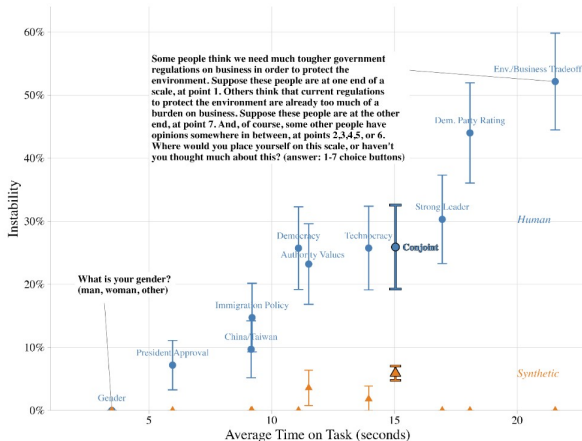
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Stochasticity Sources: Cognitive Processing


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Stochasticity Sources: Cognitive Processing

What increases stochasticity (and thus instability)?

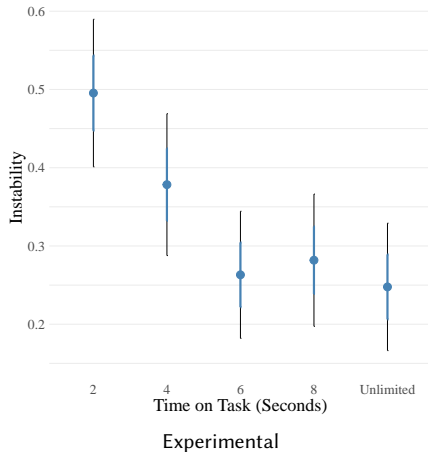
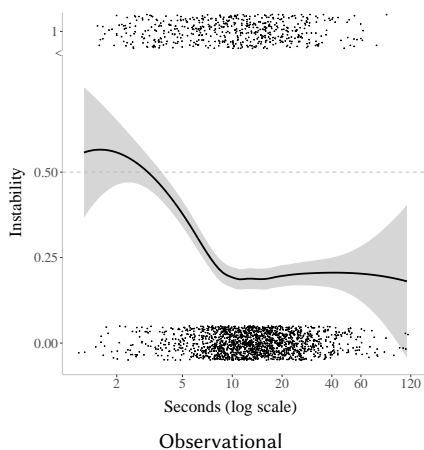
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Stochasticity Sources: Cognitive Processing

What increases stochasticity (and thus instability)?

- High cognitive complexity: hard Qs; many As
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- Differential cognitive processing: Q_1 vs Q_2

Limited time-on-task causes survey instability




Stochasticity Sources: Cognitive Processing

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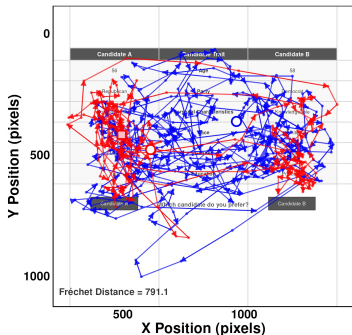
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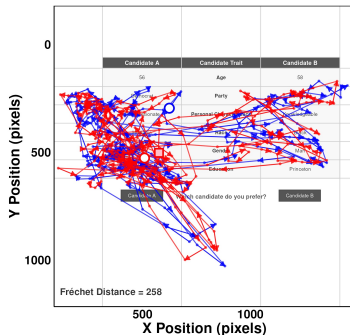
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Stochasticity Sources: Cognitive Processing

Stochasticity in Gaze Behavior

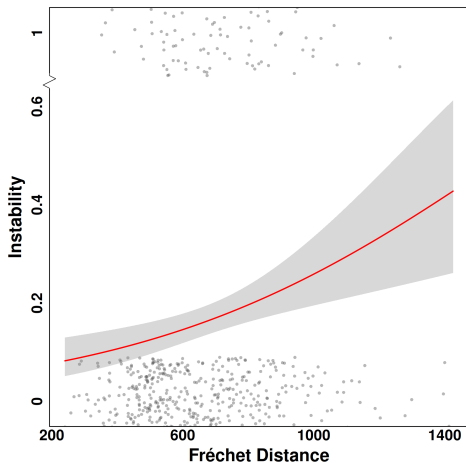


Large difference



Small difference

Stochastic Distance \rightsquigarrow Survey Instability




What

- H
- L
- D

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Stochasticity Sources: Psychological States

Survey Instability

$C_1 \neq C_2$ (No memory,
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Stochasticity Sources: Psychological States

Survey Response Level

Decision Making

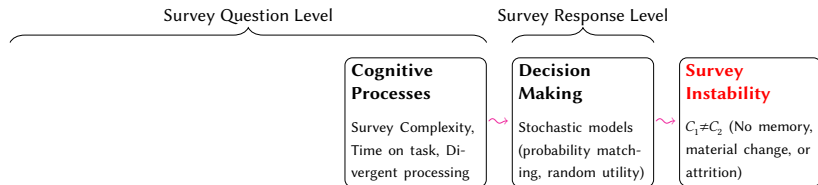
Stochastic models
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Survey Instability

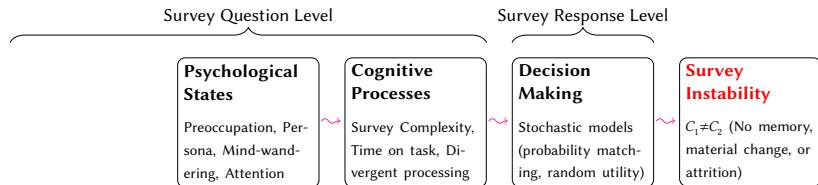
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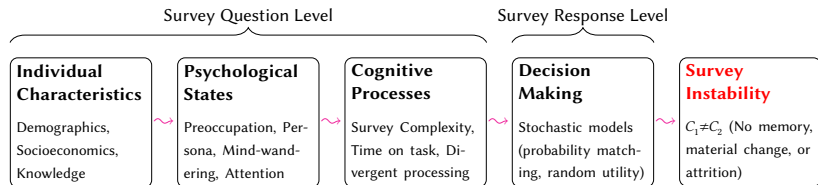
Stochasticity Sources: Psychological States



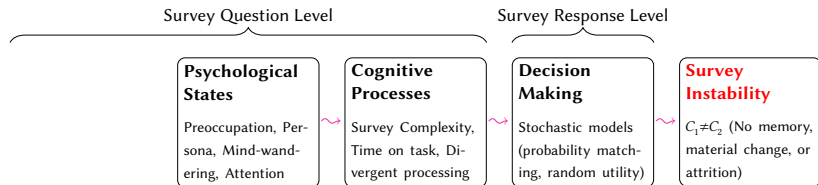
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Stochasticity Sources: Psychological States

Strongly Influenced by:

		Other Survey Questions	
		No	Yes
Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
	Yes	Persona	Attention

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Q1: We would like to get a sense of your consumption of political news. To demonstrate that you've read this much, just go ahead and select both every day and never among the options below, no matter how often you watch political news.

Based on the text you read above, how often do you watch political news on TV? (1) Every day, (2) Once a week, (3) Once a month, (4) A few times a year, (5) Never

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Q2: Which of these is a vegetable?

(1) Ham, (2) Ice cream, (3) Carrot, (4) Bread, (5) Apple

Stochasticity Sources: Psychological States

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Attention Checks: Not Usable as a Filter

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- **The Good:** Predicts TOT & survey instability

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Attention Checks: Not Usable as a Filter

- **The Good:** Predicts TOT & survey instability
- **The Bad:** Ruin relationship with respondent

- **The Ugly:** Unacceptable statistical properties

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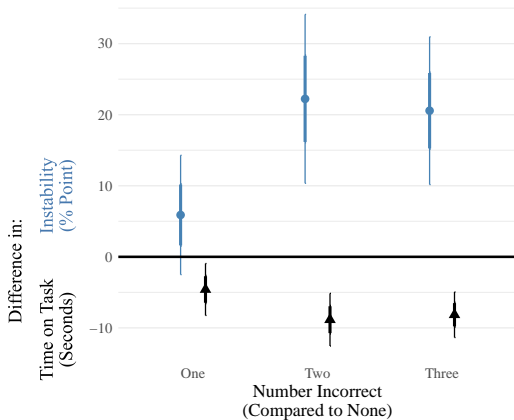
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Stochasticity Sources: Psychological States

Strong

Attention Checks Predict TOT & Survey Instability



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Attention Checks: Not Usable as a Filter

- **The Good:** Predicts TOT & survey instability
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 - **Standard Qs:** follows Gricean maxims of mutual cooperation

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 - **Standard Qs:** follows Gricean maxims of mutual cooperation
 - **Attention checks reduce attention:** Trick questions
- **The Ugly:** Unacceptable statistical properties

Stochasticity Sources: Psychological States

Strongly Influenced by:

		Other Survey Questions	
		No	Yes
Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
	Yes	Persona	Attention

Attention Checks: Not Usable as a Filter

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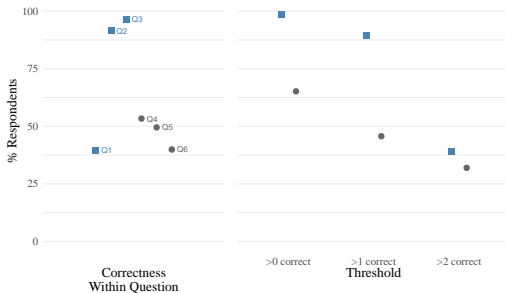
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Stochasticity Sources: Psychological States

Strongly Influenced by:

Huge Variation in Attention Check Thresholds



- Massive differences across AC questions




Stochasticity Sources: Psychological States

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Stochasticity Sources: Psychological States

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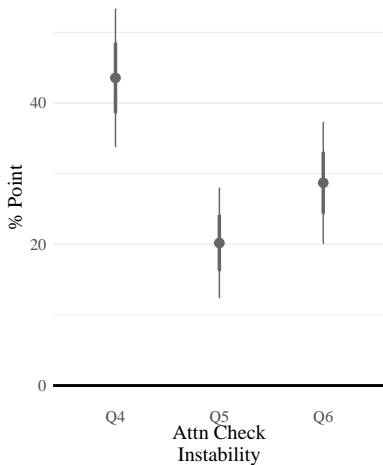
Re
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- The

Attention Checks are Highly Instable




cooperation
is ~ surveys
other questions

Stochasticity Sources: Psychological States

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Everyone comes to a new task (like this survey) with things on their minds. How preoccupied were you, just before you started this survey, with thoughts or worries about your partner, job, health, children, friends, money, or other concerns?

(1) Very preoccupied, (2) Fairly preoccupied, (3) Slightly preoccupied, or (4) Not at all preoccupied.

Stochasticity Sources: Psychological States

Strongly Influenced by:

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		No	Yes
Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
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Stochasticity Sources: Psychological States

Strongly Influenced by:

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Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
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Preoccupation: Great for Filtering (and Understanding)

Stochasticity Sources: Psychological States

Strongly Influenced by:

		Other Survey Questions	
		No	Yes
Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
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Preoccupation: Great for Filtering (and Understanding)

- Reduces time-on-task; Increases survey instability

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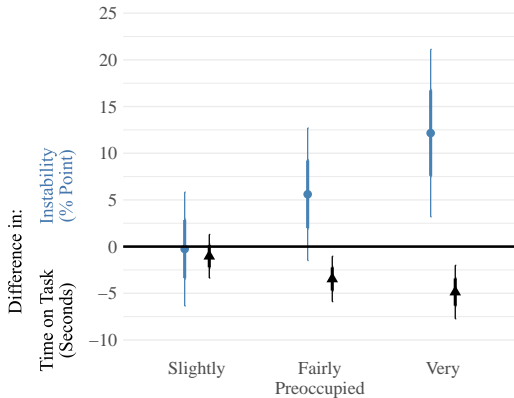
- Reduces time-on-task; Increases survey instability



Stochasticity Sources: Psychological States

Strong

Preoccupation: reduces TOT & Survey Instability



Stochasticity Sources: Psychological States

Strongly Influenced by:

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Stochasticity Sources: Psychological States

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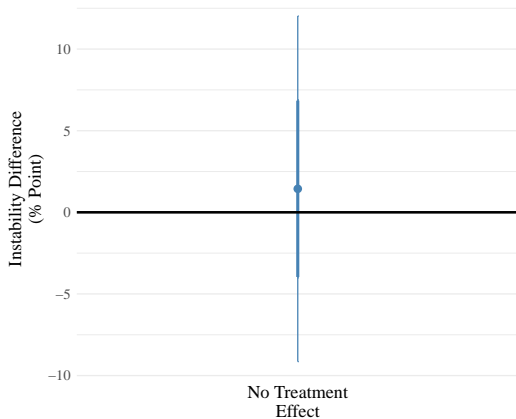
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Stochasticity Sources: Psychological States

Strong

Preoccupation: no effect on other questions




Stochasticity Sources: Psychological States

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Preoccupation: Great for Filtering (and Understanding)


- Reduces time-on-task; Increases survey instability
- Has no effect on other questions
- Highly stable (6% << 25%)

Stochasticity Sources: Psychological States

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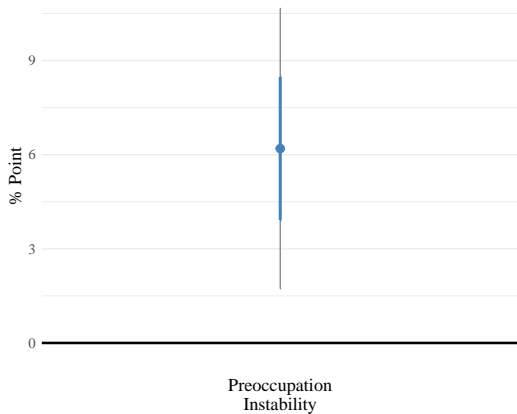
Preoccupation: Great for Filtering (and Understanding)

- Reduces time-on-task; Increases survey instability
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- Highly stable (6% << 25%) 

Stochasticity Sources: Psychological States

Strong

Preoccupation: highly stable




Stochasticity Sources: Psychological States

Strongly Influenced by:

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		No	Yes
Respondent's Conscious Choice	No	Preoccupation	Mind-wandering
	Yes	Persona	Attention

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Stochasticity Sources: Individual Characteristics

Survey Instability

$C_1 \neq C_2$ (No memory,
material change, or
attrition)

Stochasticity Sources: Individual Characteristics

Survey Response Level

Decision Making

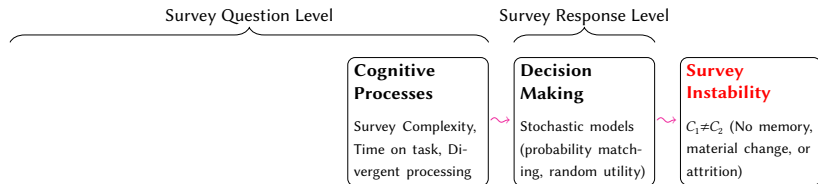
Stochastic models
(probability matching,
random utility)

Survey Instability

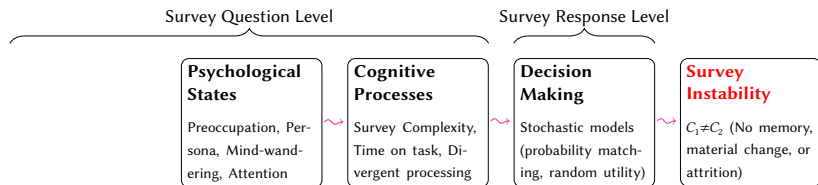
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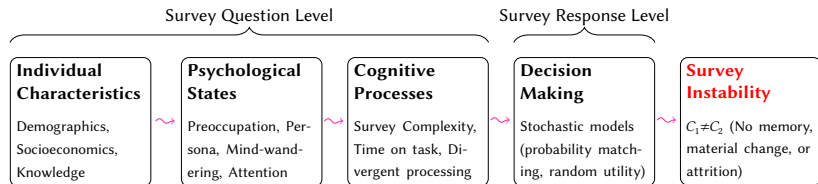
Stochasticity Sources: Individual Characteristics



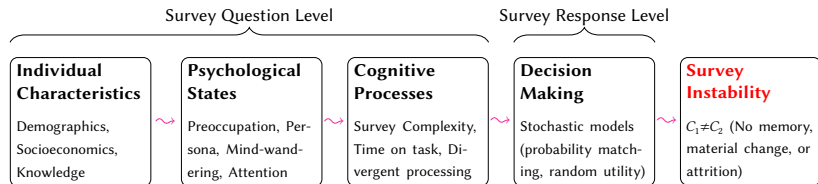
Stochasticity Sources: Individual Characteristics



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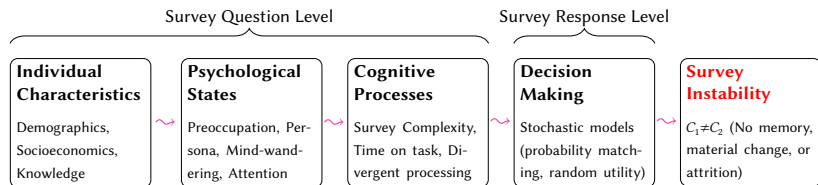


Stochasticity Sources: Individual Characteristics



e.g., Older folks:

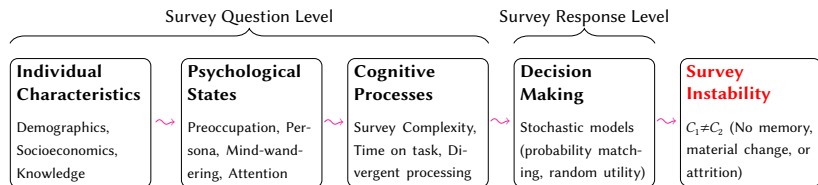
Stochasticity Sources: Individual Characteristics



e.g., Older folks:

- spend **more** time on task

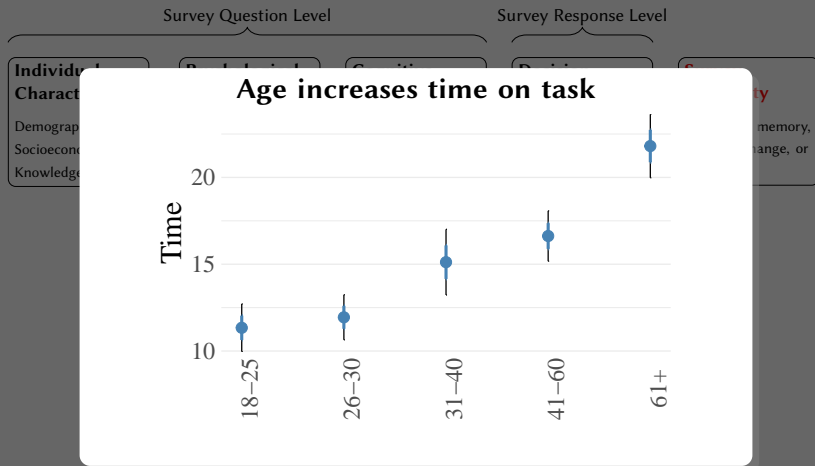
Stochasticity Sources: Individual Characteristics



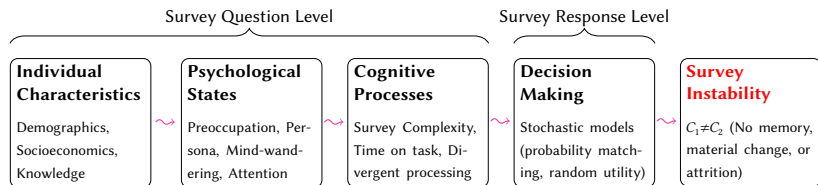
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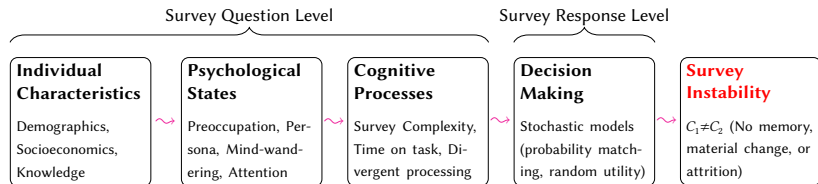
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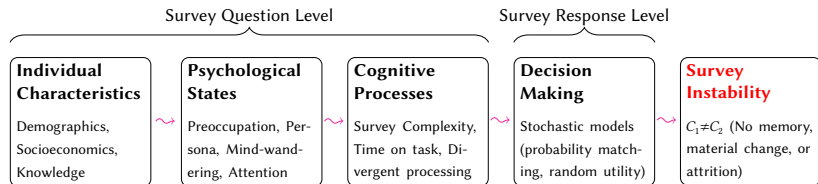
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Stochasticity Sources: Individual Characteristics



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Stochasticity Sources: Individual Characteristics

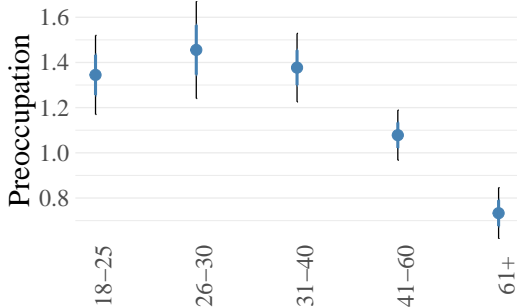
Survey Question Level

Survey Response Level

Individual
Character

Demograp
Socioecon
Knowledge

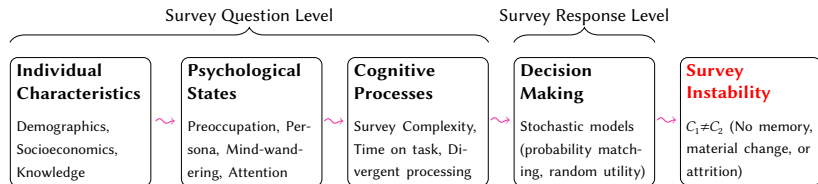
Age decreases preoccupation




ity

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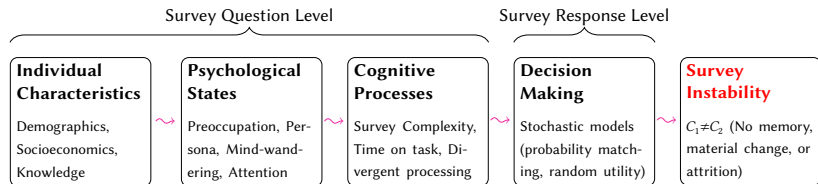
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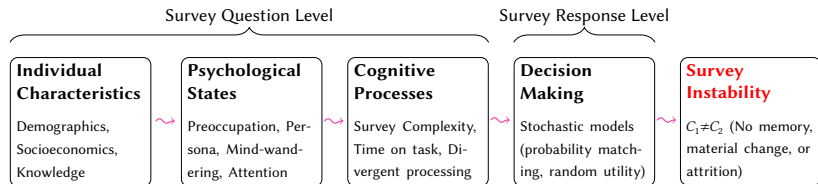
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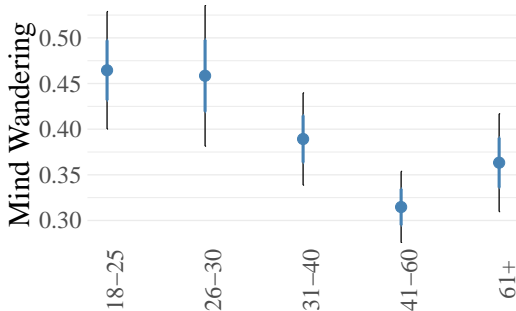
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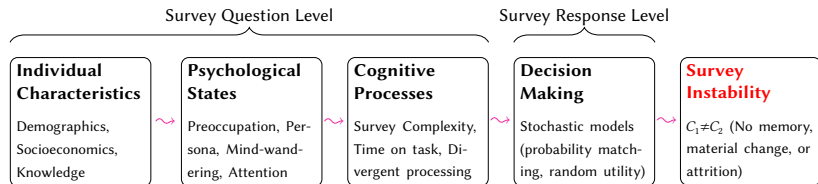
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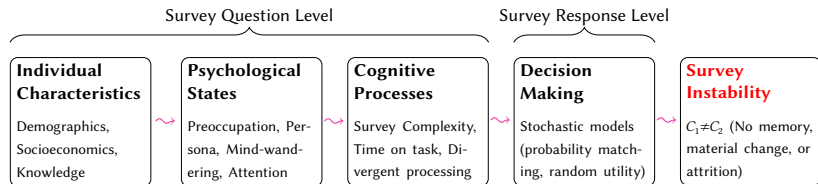
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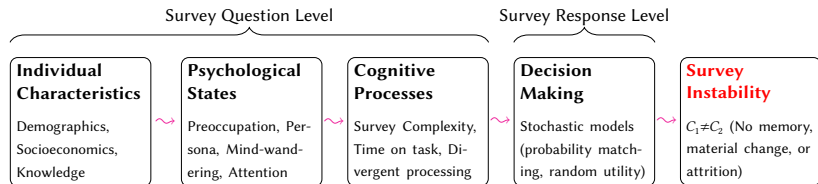
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Stochasticity Sources: Individual Characteristics



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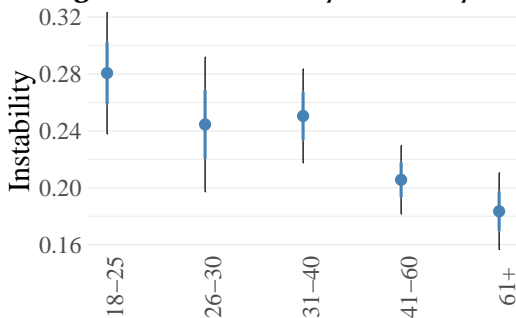
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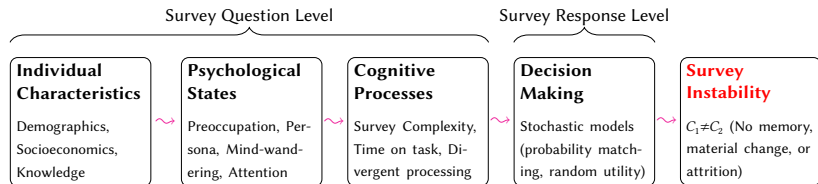
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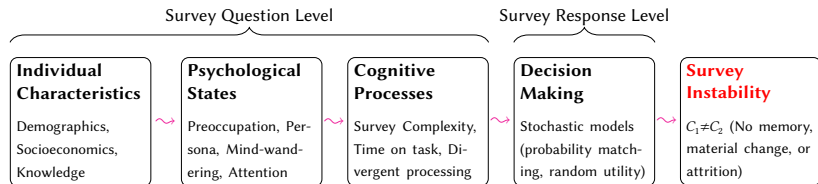


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Future research:

What else predicts survey instability?

Introduction

Intrinsic Human Stochasticity

Sources of Stochasticity Leading to Survey Instability

Substantive Conclusions, Practical Implications

Implications for Survey Practice

Implications for Survey Practice

- Improve Survey Instruments

Implications for Survey Practice

- Improve Survey Instruments
- Filter (Likely Instable) Respondents

Implications for Survey Practice

- Improve Survey Instruments
- Filter (Likely Instable) Respondents
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Implications for Survey Practice

- Improve Survey Instruments
 - Reduce cognitive complexity:
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Implications for Survey Practice

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 - Reduce cognitive complexity: Simpler Qs,
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Implications for Survey Practice

- Improve Survey Instruments
 - Reduce cognitive complexity: Simpler Qs, Fewer As
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Implications for Survey Practice

- **Improve Survey Instruments**
 - **Reduce cognitive complexity:** Simpler Qs, Fewer As
 - **Measure remaining survey instability:** Just one extra Q
- **Filter (Likely Instable) Respondents**

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Implications for Survey Practice

- **Improve Survey Instruments**
 - **Reduce cognitive complexity:** Simpler Qs, Fewer As
 - **Measure remaining survey instability:** Just one extra Q
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 - **Selection:**

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 - **Selection:** Change QOI;

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 - **Selection:** Change QOI; Oversample filtered groups; or

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- **Improve Statistical Methods**
 - **Selection:** Change QOI; Oversample filtered groups; or Impute
 - **Remaining instability:** correct statistically

So Who's to Blame for Survey Instability?

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Explanations:

So Who's to Blame for Survey Instability?

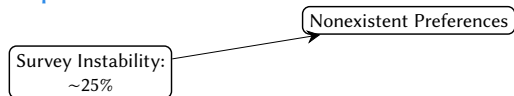
Explanations:

Survey Instability:

~25%

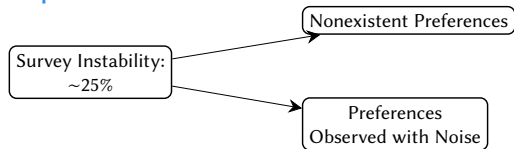
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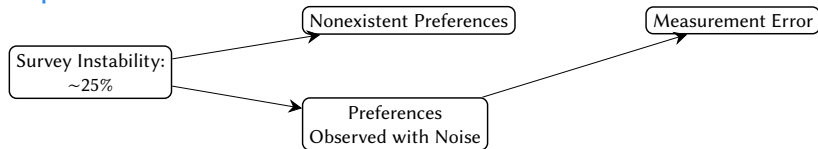
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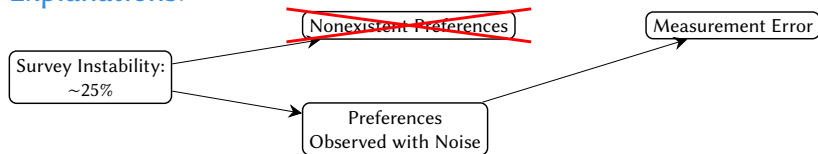
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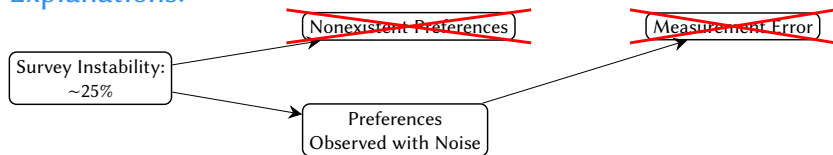
So Who's to Blame for Survey Instability?

Explanations:



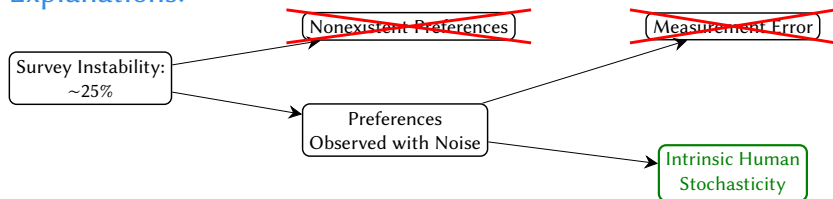
So Who's to Blame for Survey Instability?

Explanations:



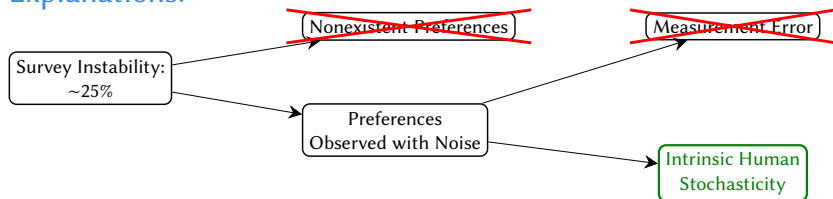
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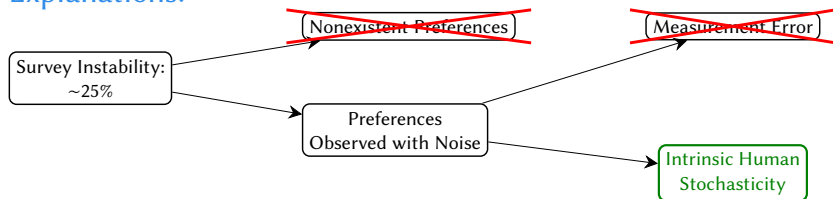
Explanations:



Sources:

So Who's to Blame for Survey Instability?

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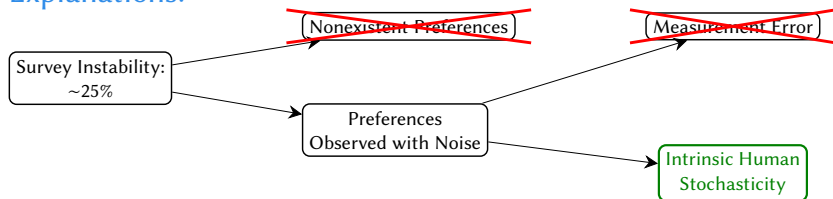
Sources:

Survey Instability

$C_1 \neq C_2$ (No memory, material change, or attrition)

So Who's to Blame for Survey Instability?

Explanations:



Sources:

Survey Response Level

Decision Making

Stochastic models
(probability matching,
random utility)

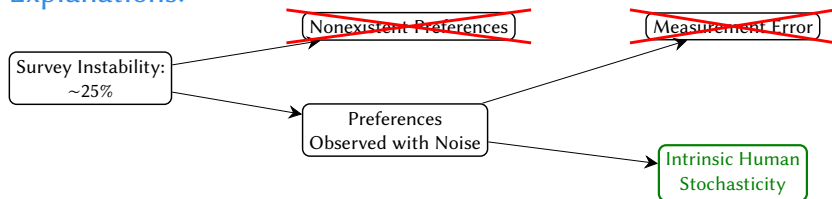
Survey Instability

$C_1 \neq C_2$ (No memory,
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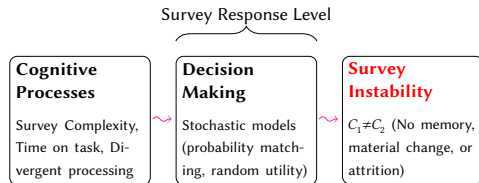


So Who's to Blame for Survey Instability?

Explanations:

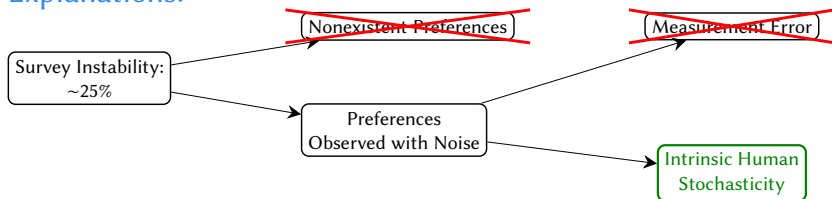


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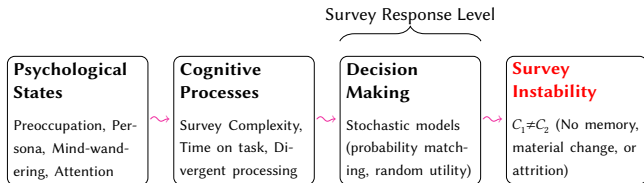


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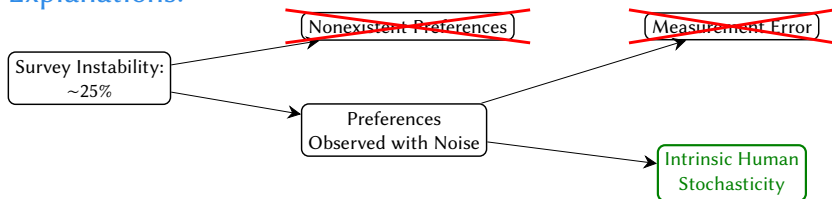


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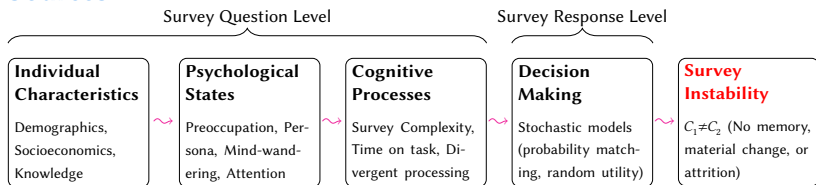


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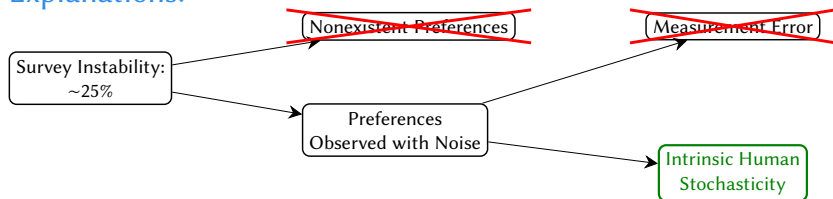


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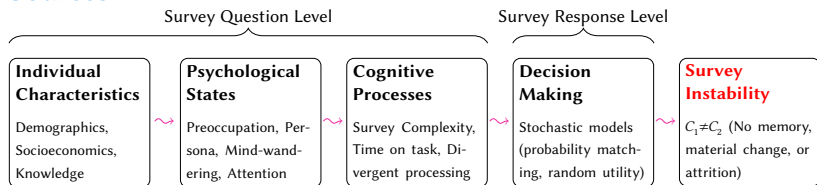


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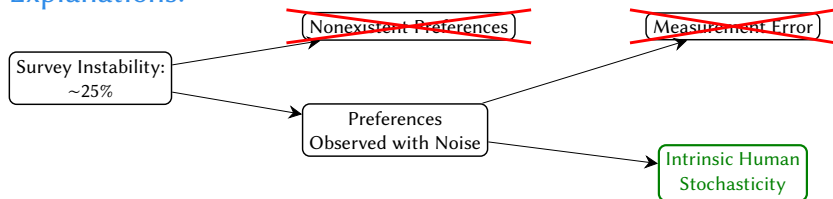
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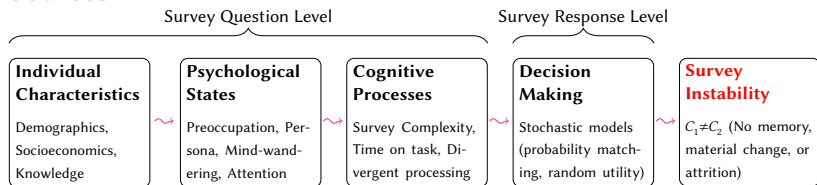
Implications

So Who's to Blame for Survey Instability?

Explanations:



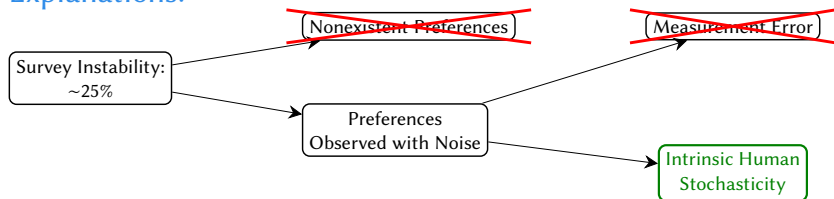
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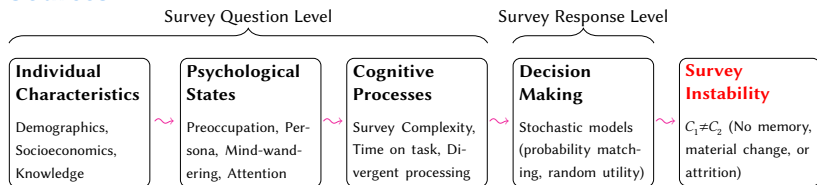
Implications Survey Qs:

So Who's to Blame for Survey Instability?

Explanations:



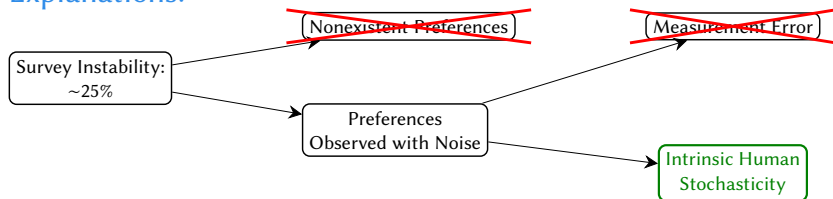
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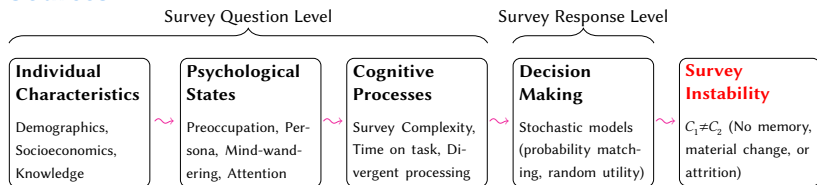
Implications Survey Qs: reduce cognitive complexity,

So Who's to Blame for Survey Instability?

Explanations:



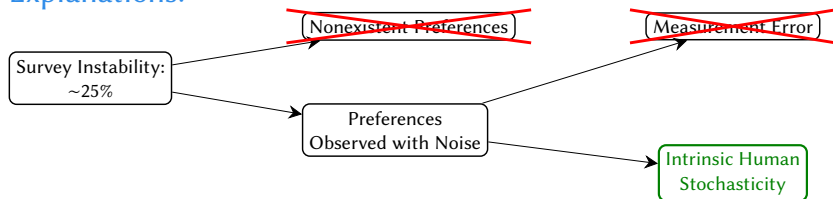
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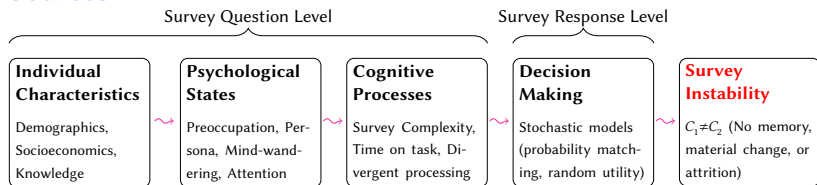
Implications Survey Qs: reduce cognitive complexity, measure instability

So Who's to Blame for Survey Instability?

Explanations:



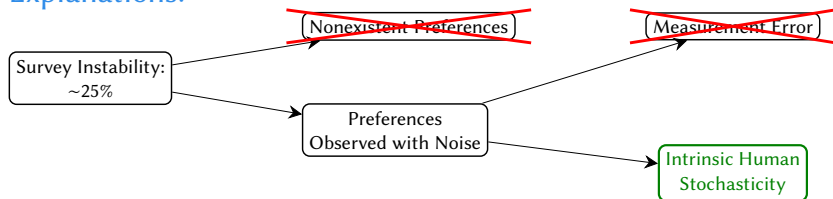
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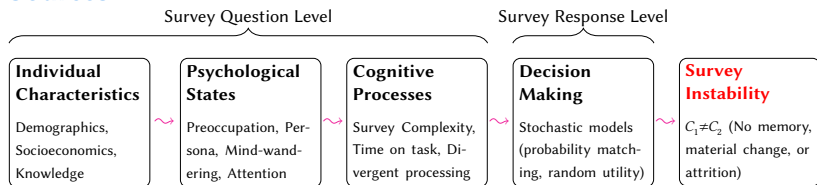
Implications Survey Qs: reduce cognitive complexity, measure instability
Filter:

So Who's to Blame for Survey Instability?

Explanations:



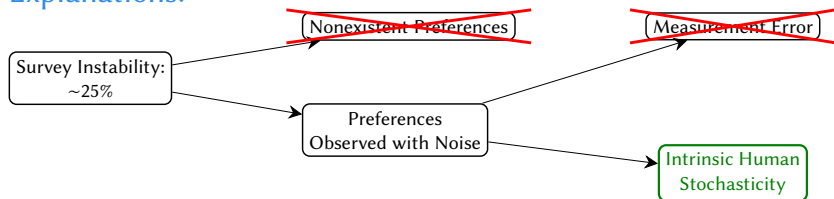
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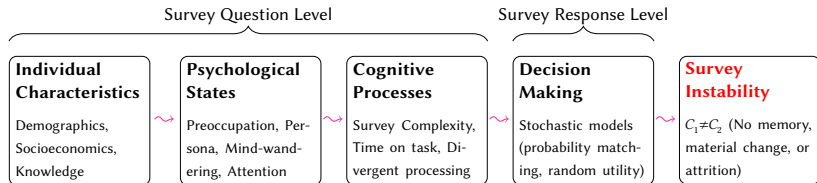
Implications **Survey Qs:** reduce cognitive complexity, measure instability
Filter: preoccupied,

So Who's to Blame for Survey Instability?

Explanations:



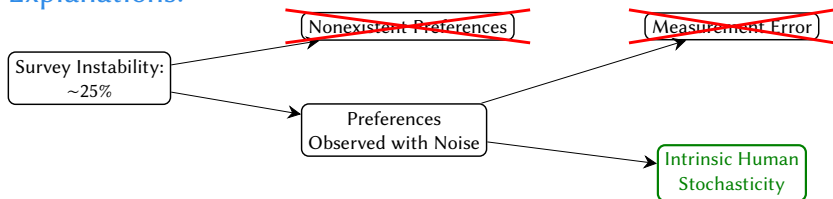
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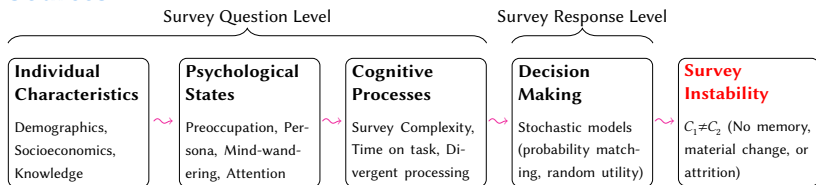
Implications **Survey Qs:** reduce cognitive complexity, measure instability
Filter: preoccupied, low time-on-task

So Who's to Blame for Survey Instability?

Explanations:



Sources:



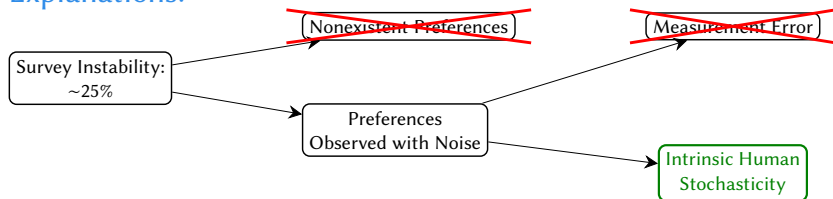
Implications **Survey Qs:** reduce cognitive complexity, measure instability

Filter: preoccupied, low time-on-task

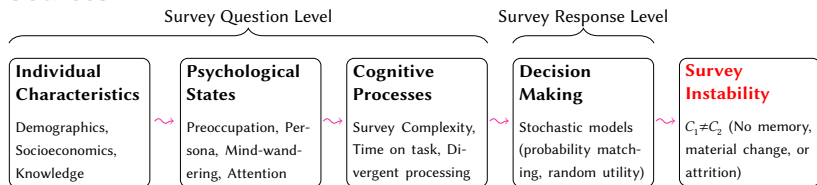
Correct for:

So Who's to Blame for Survey Instability?

Explanations:



Sources:



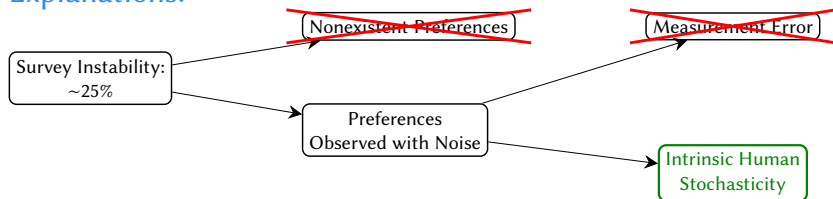
Implications **Survey Qs:** reduce cognitive complexity, measure instability

Filter: preoccupied, low time-on-task

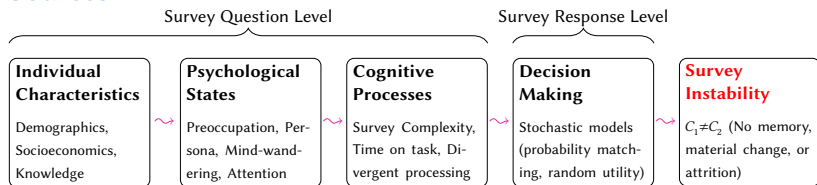
Correct for: selection bias,

So Who's to Blame for Survey Instability?

Explanations:



Sources:



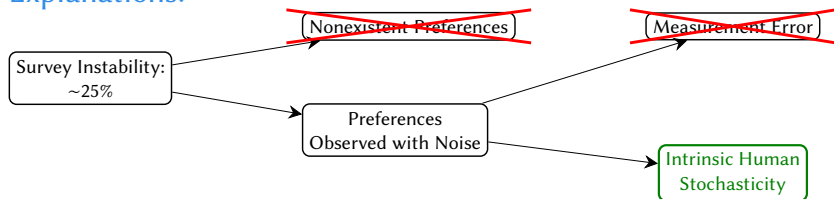
Implications **Survey Qs:** reduce cognitive complexity, measure instability

Filter: preoccupied, low time-on-task

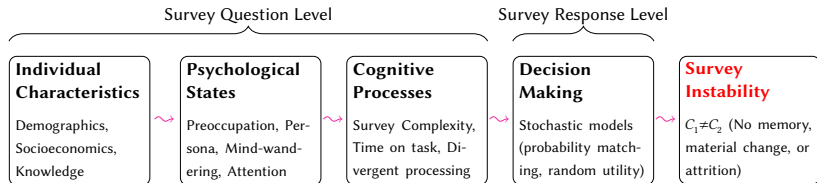
Correct for: selection bias, remaining instability

So Who's to Blame for Survey Instability?

Explanations:



Sources:



Implications **Survey Qs:** reduce cognitive complexity, measure instability

Filter: preoccupied, low time-on-task

Correct for: selection bias, remaining instability