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

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Institute for Quantitative Social Science
Harvard University

MIT 9/17/2026

[1] Slides, paper, data: GaryKing.org/instability
[2] Joint work with Libby Jenke

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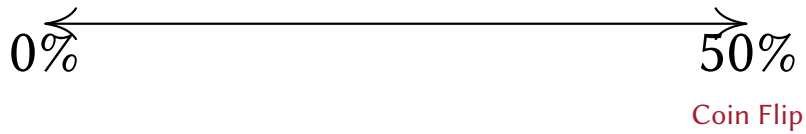

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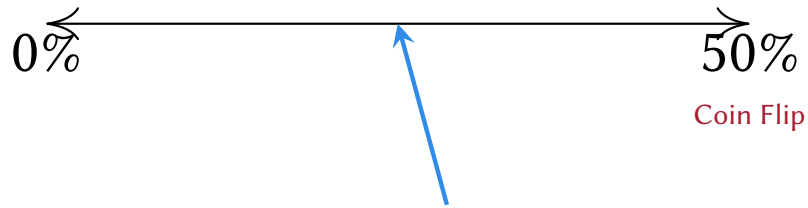

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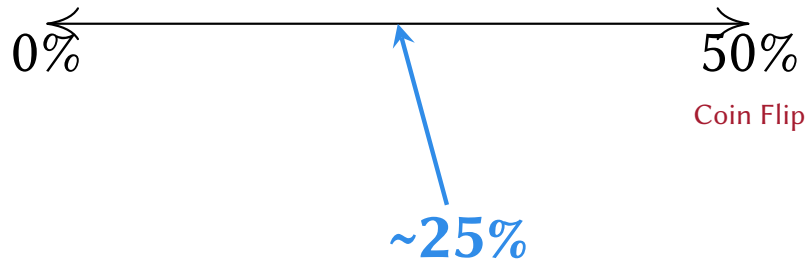

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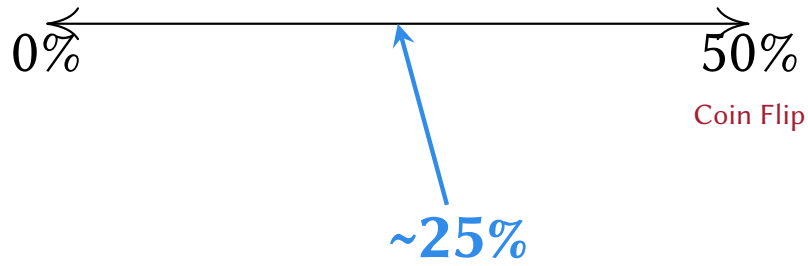

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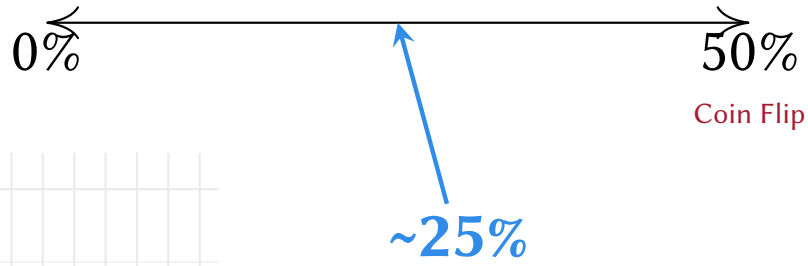

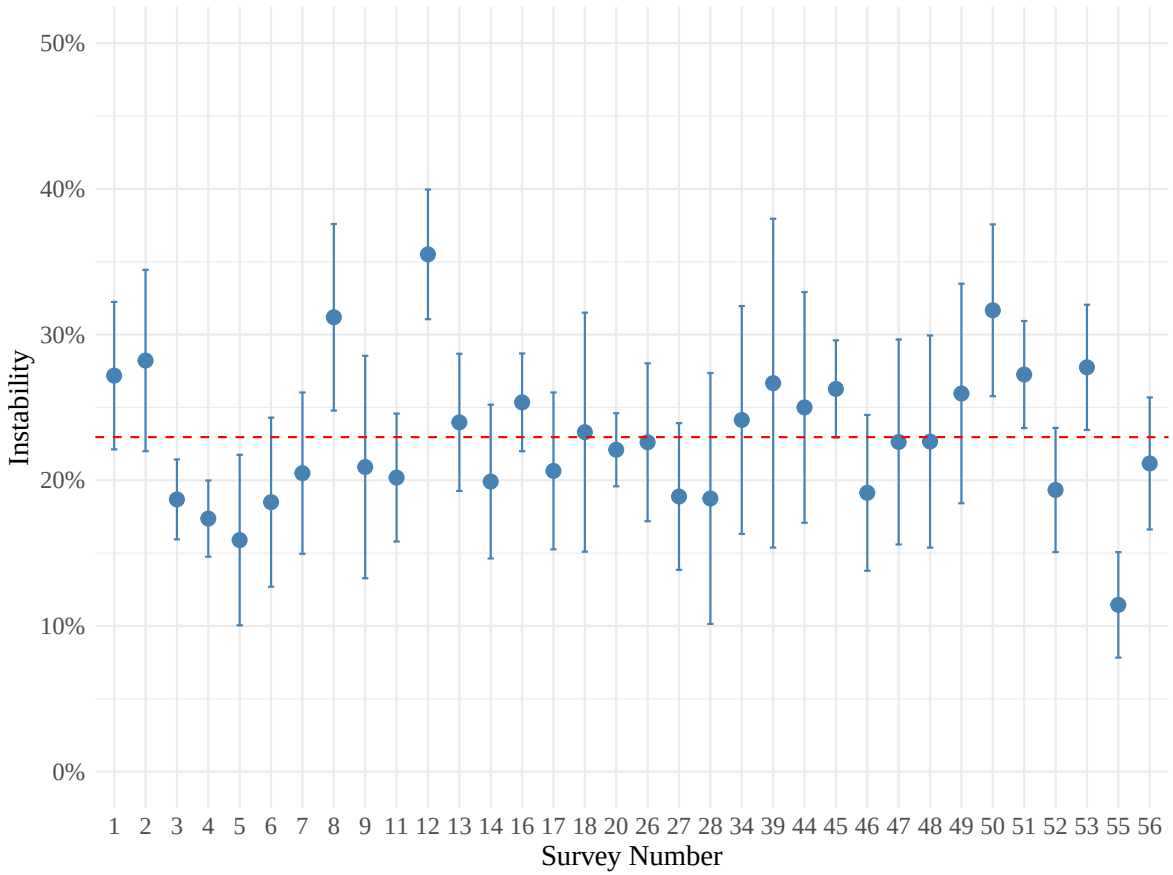

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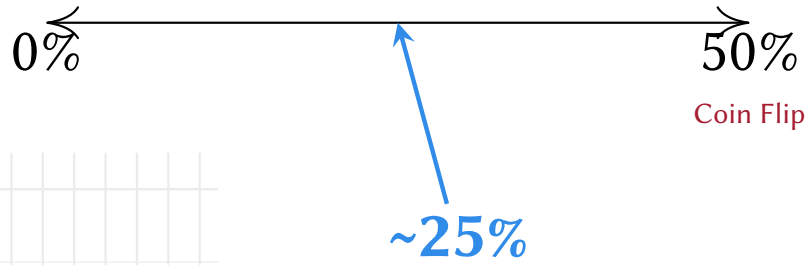

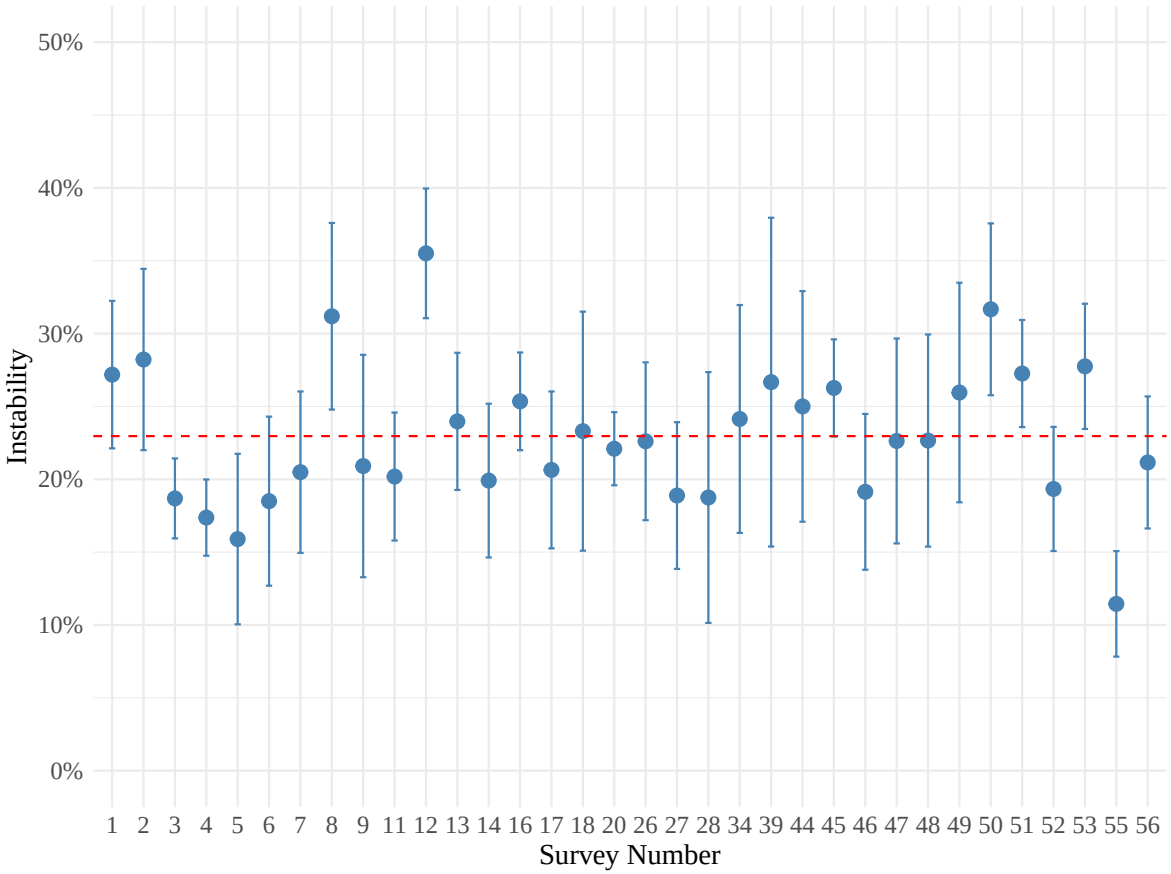

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- Why trust any survey analysis?

Research Strategy

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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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Survey Instability Explanations

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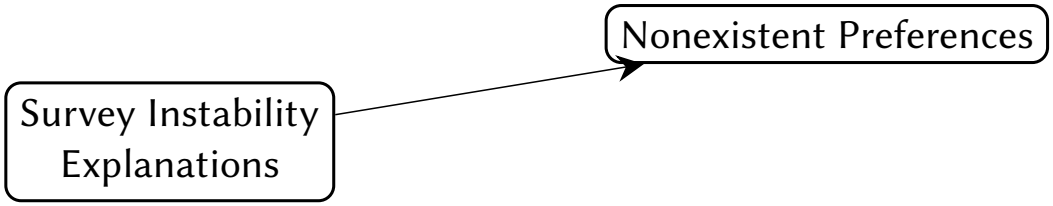
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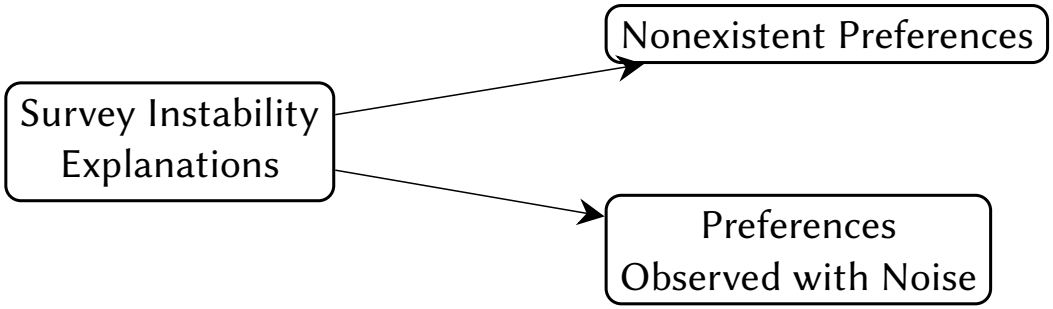
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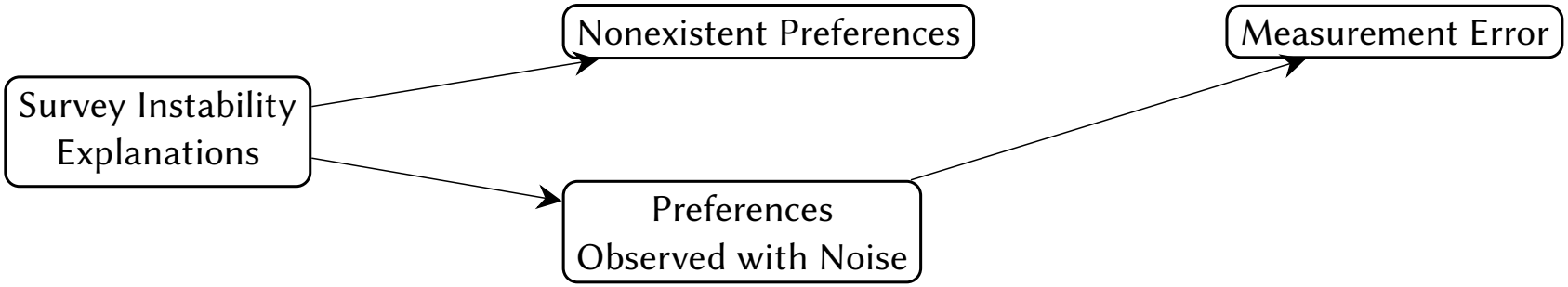
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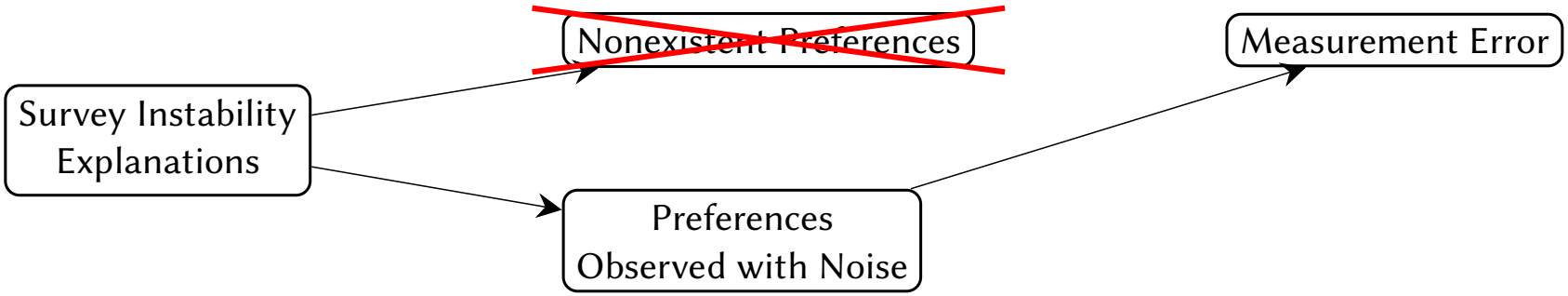
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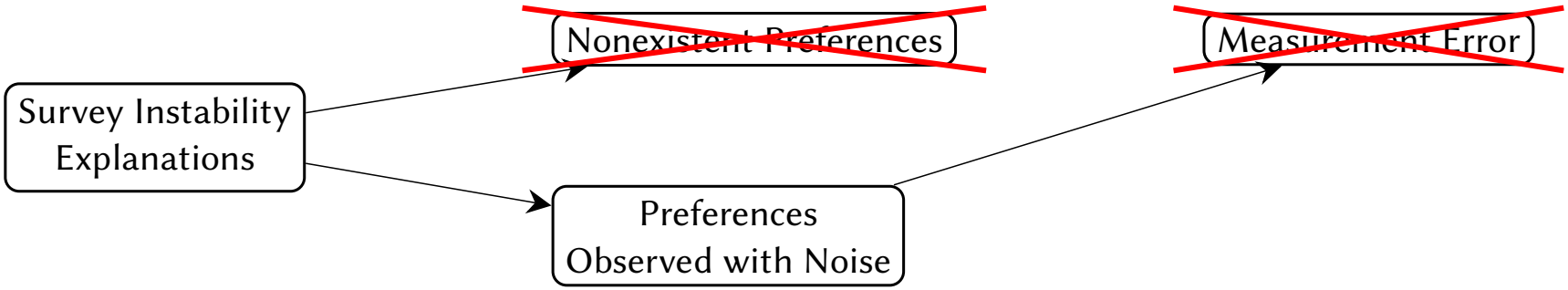
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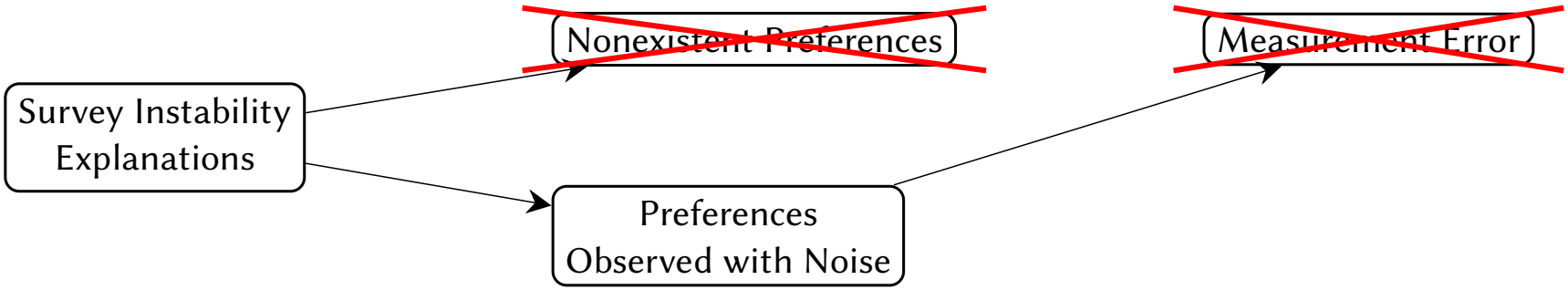

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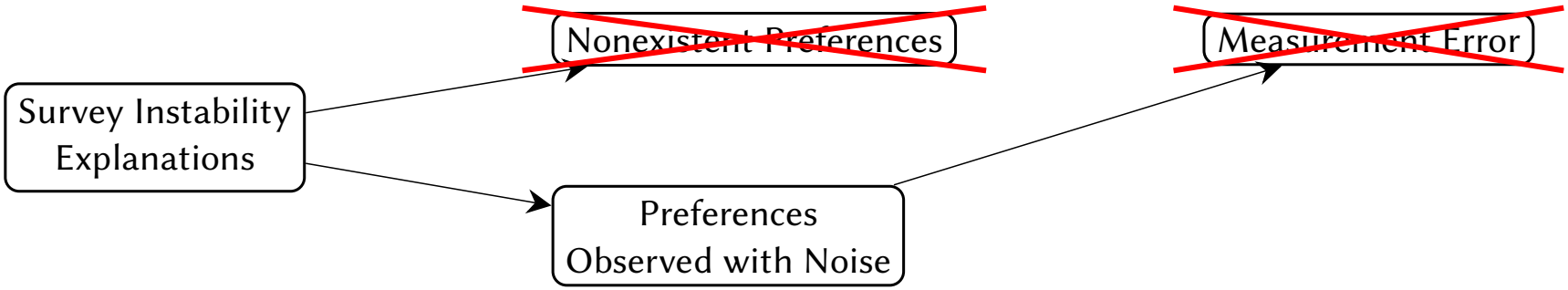

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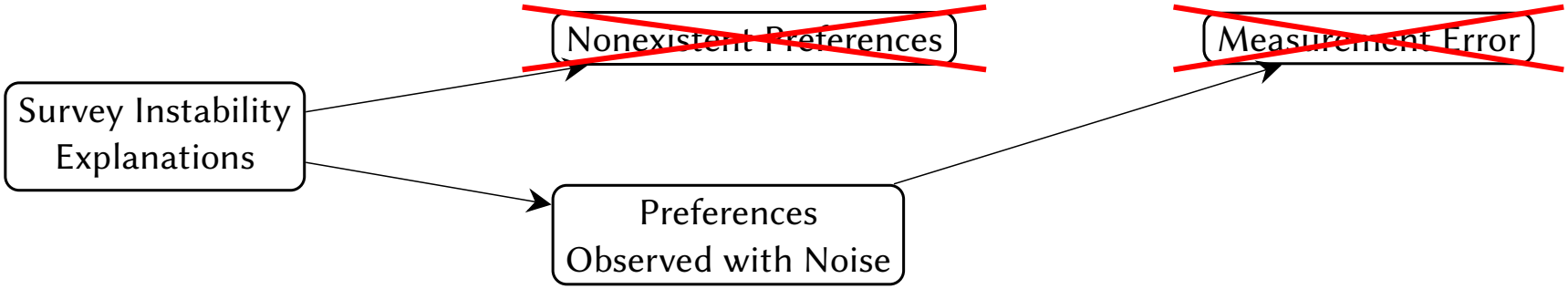

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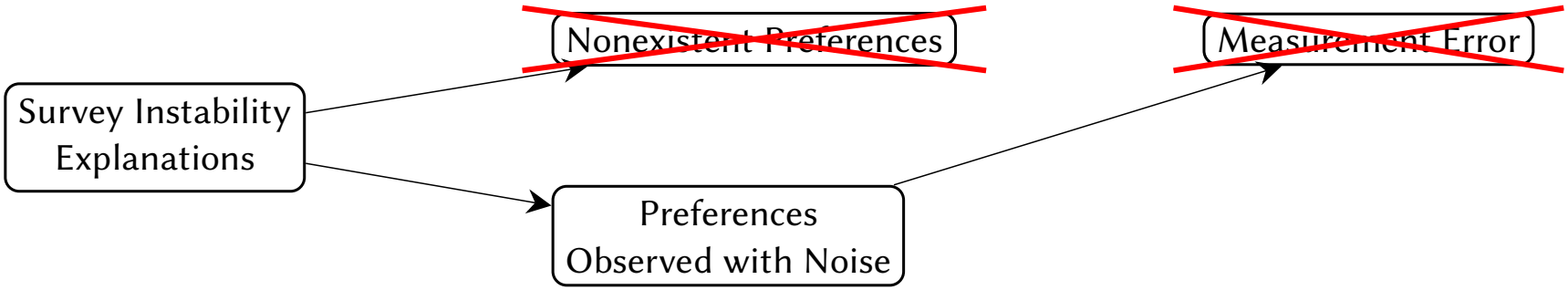

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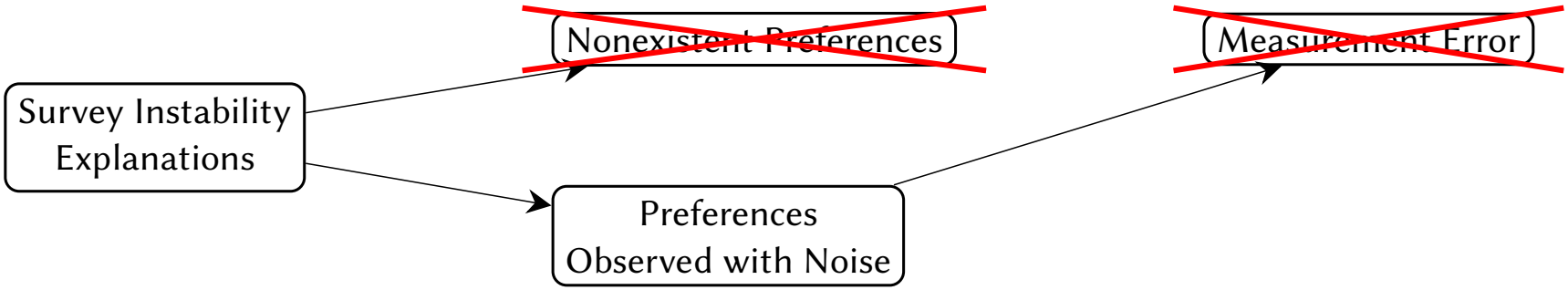

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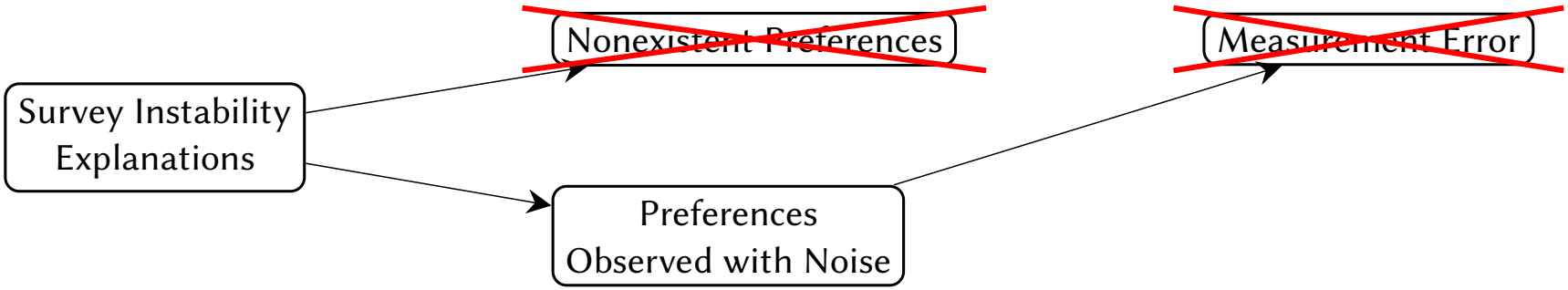

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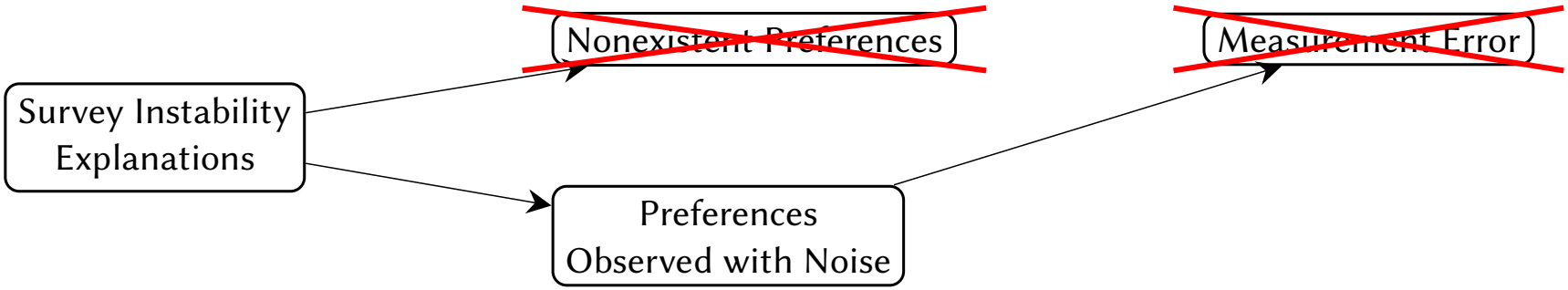

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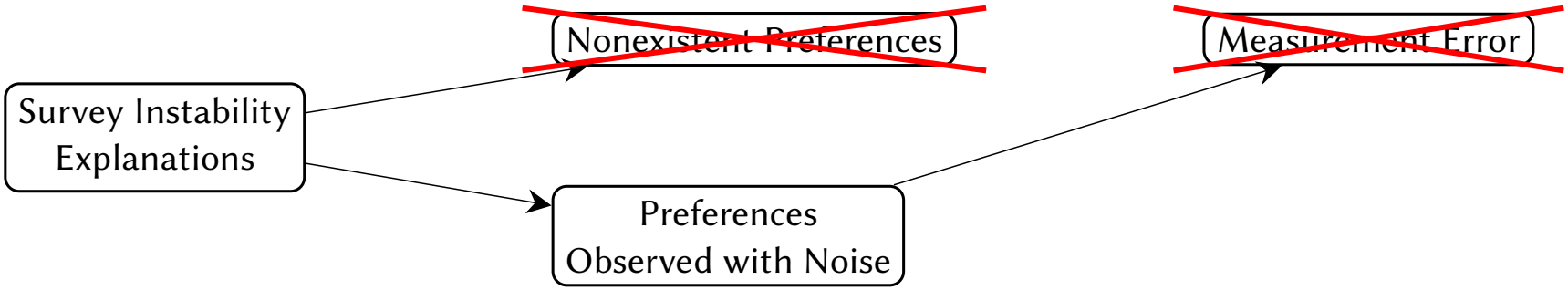

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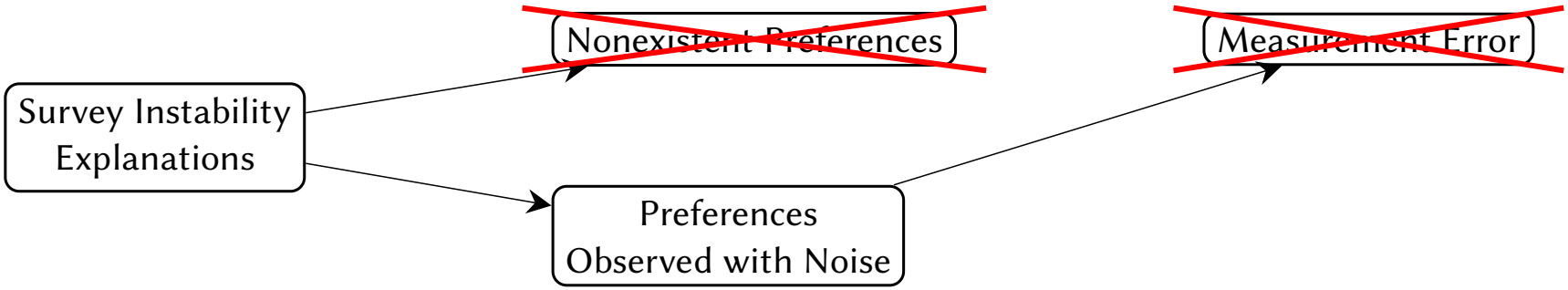

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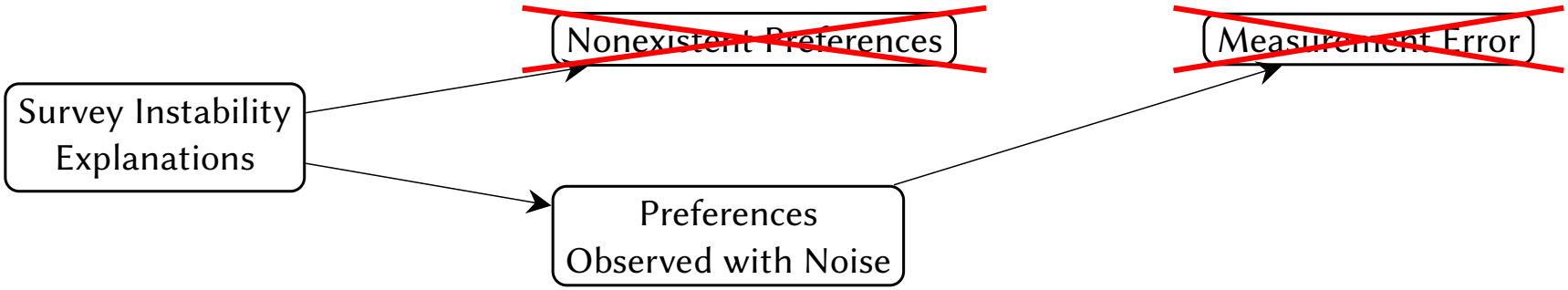

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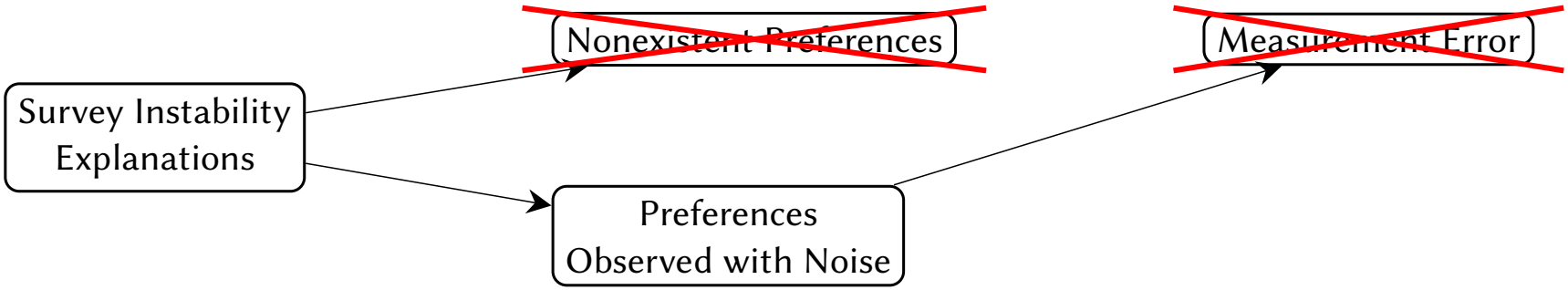

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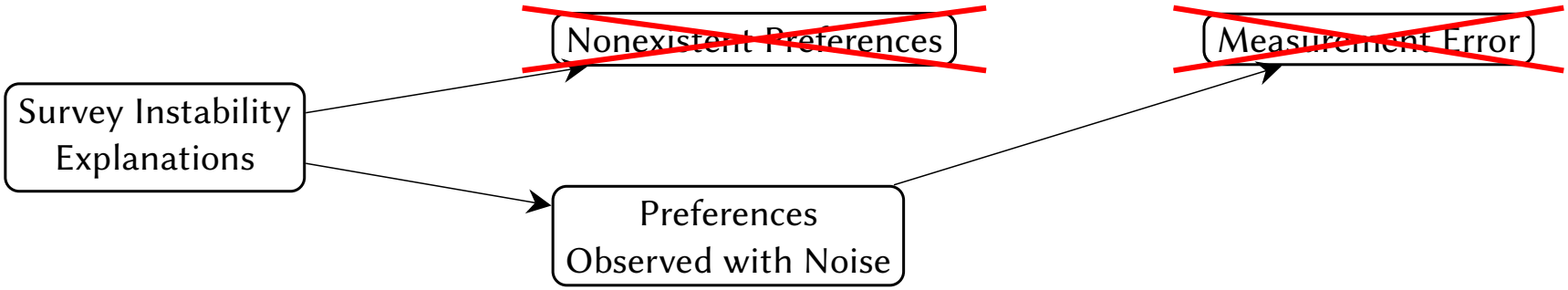

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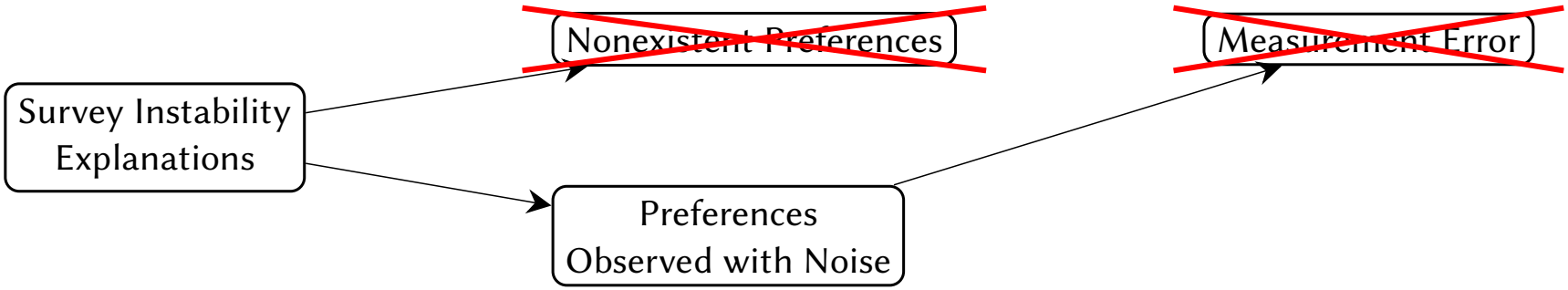

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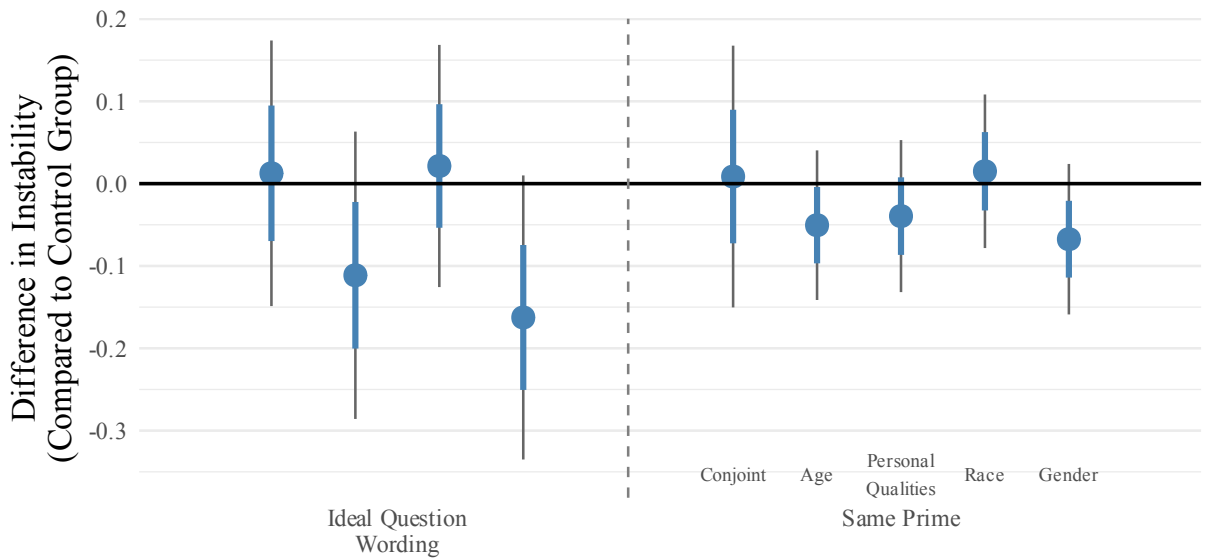
Survey Instability Expla

Reducing Bias Doesn't Reduce Instability



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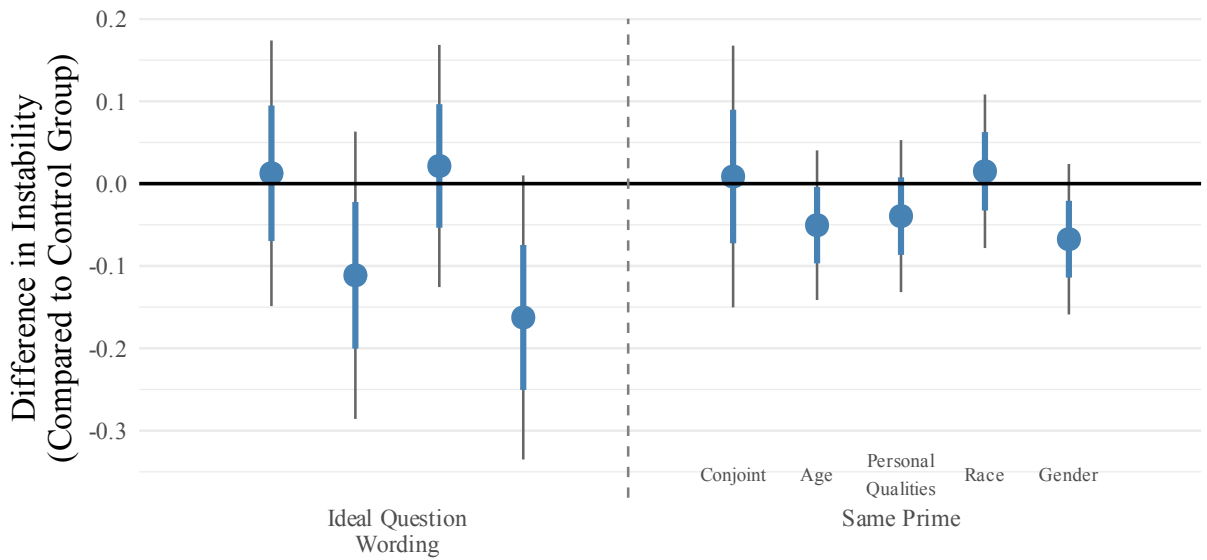

- Left: 2008 ANES question wording changes

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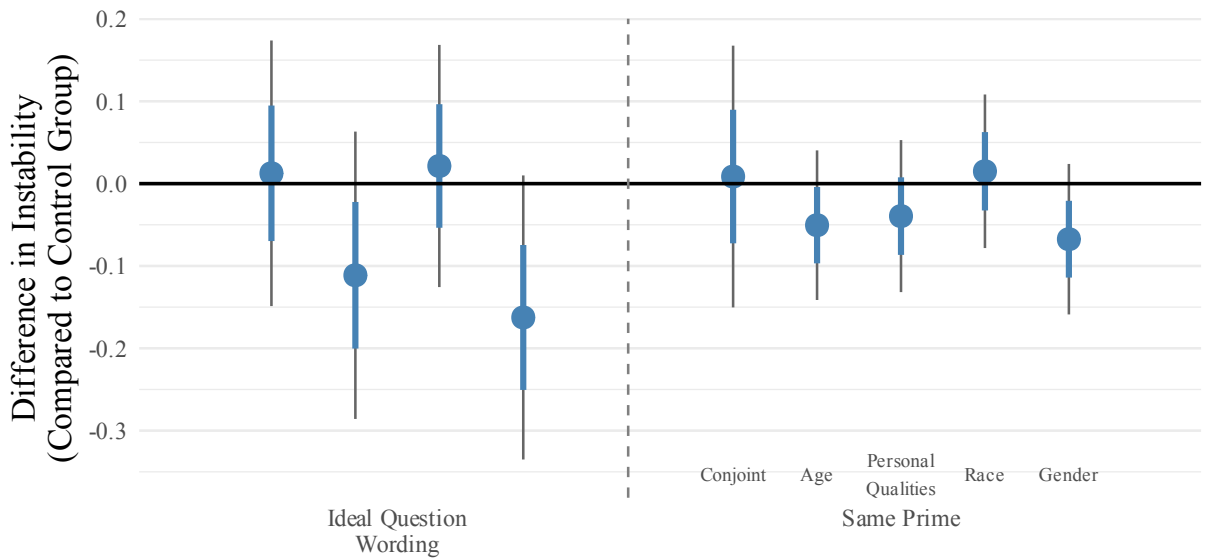

- Left: 2008 ANES question wording changes
- Right: different (priming) "considerations"

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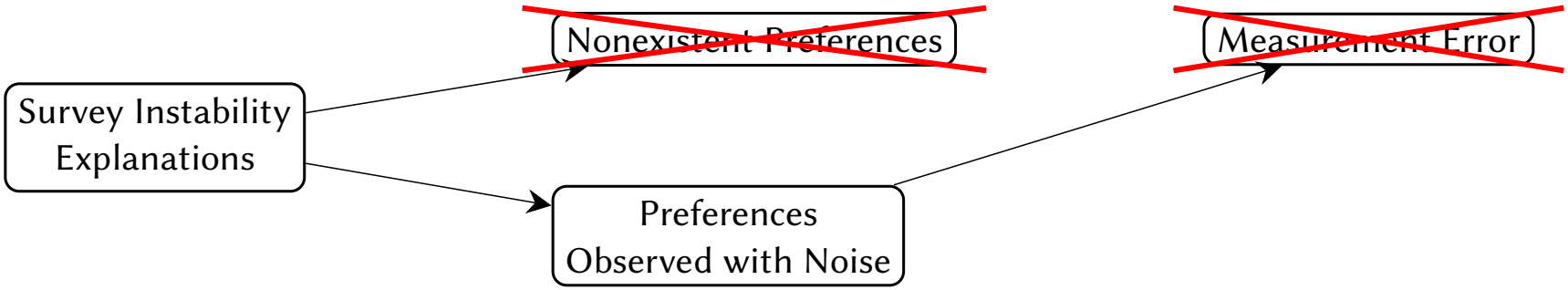
What We Know



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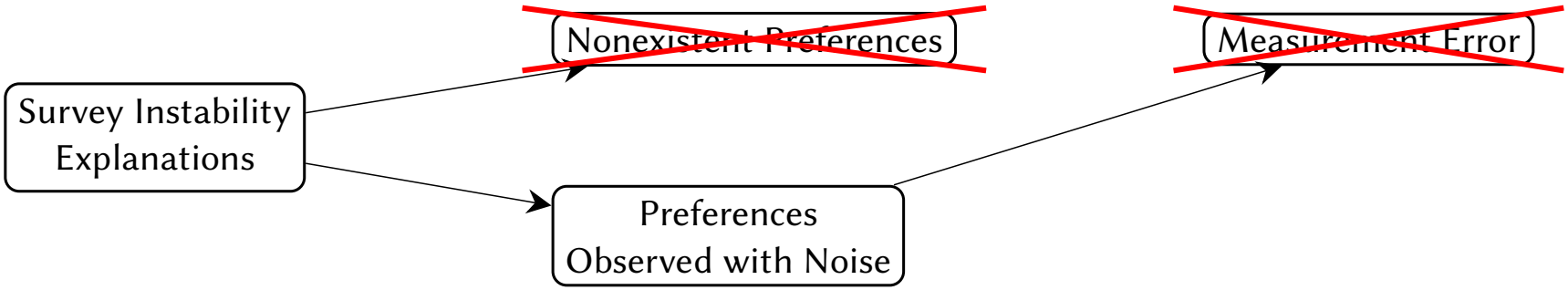

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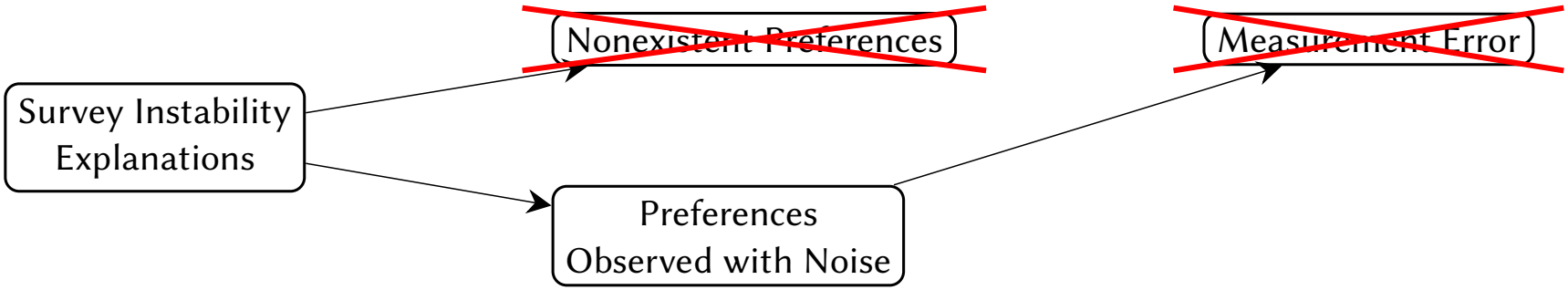

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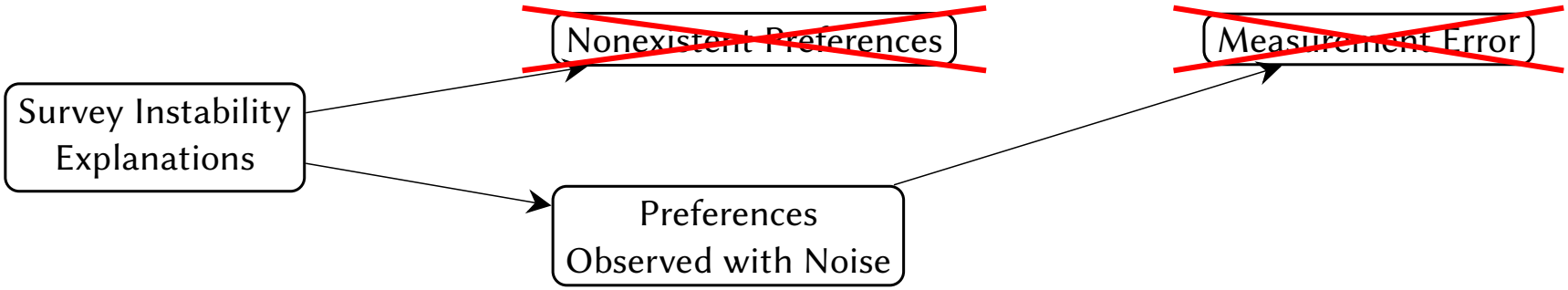
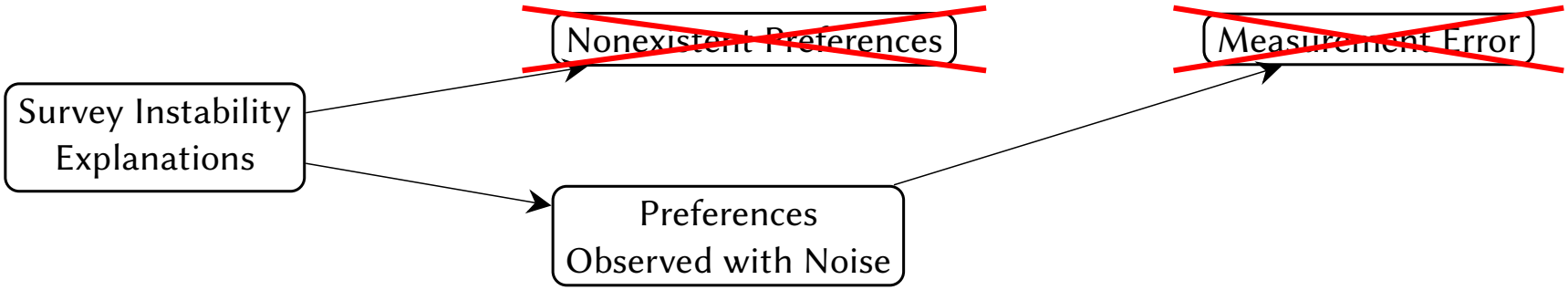

Survey Instability Explanations
Nonexistent Preferences
Measurement Error
Preferences Observed with Noise

What We Show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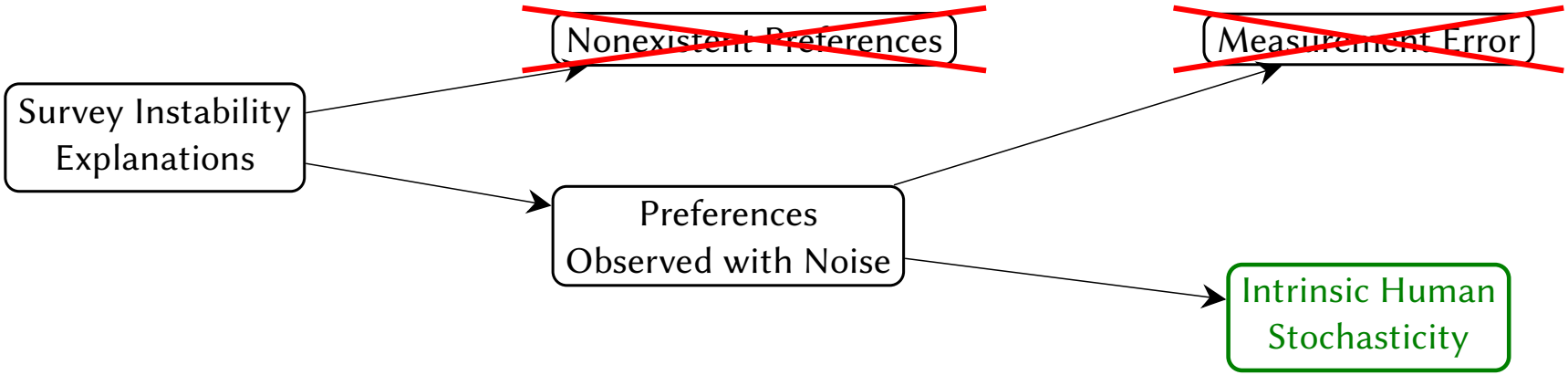
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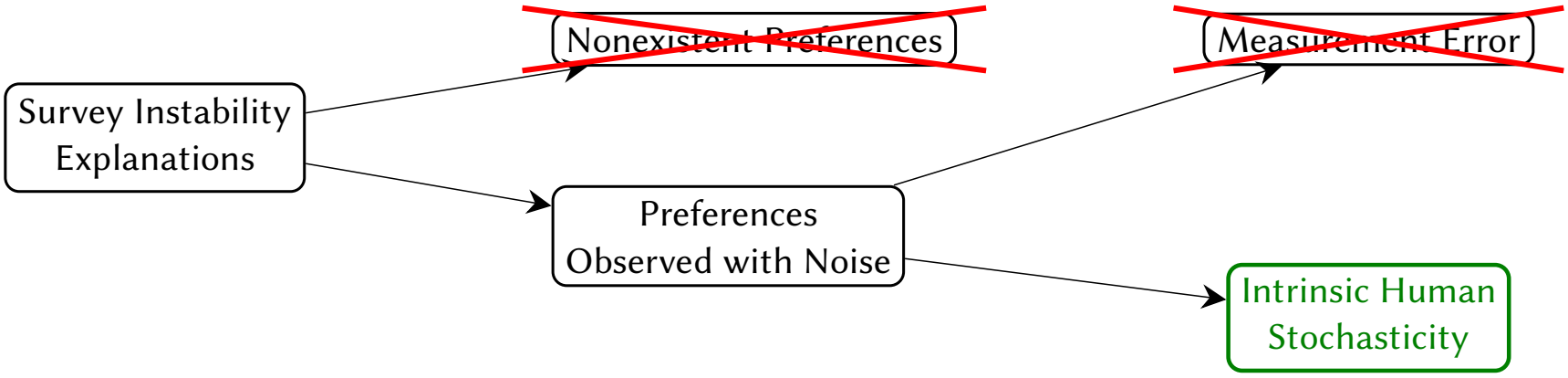
Intrinsic Human Stochasticity

What We Show



- Generally, in other fields: instrument v. subject variability

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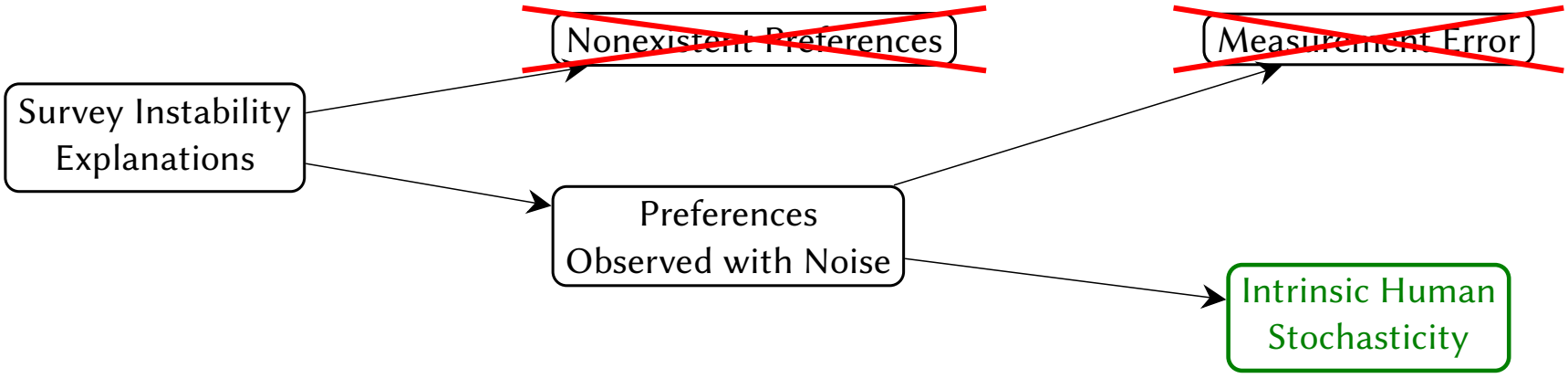

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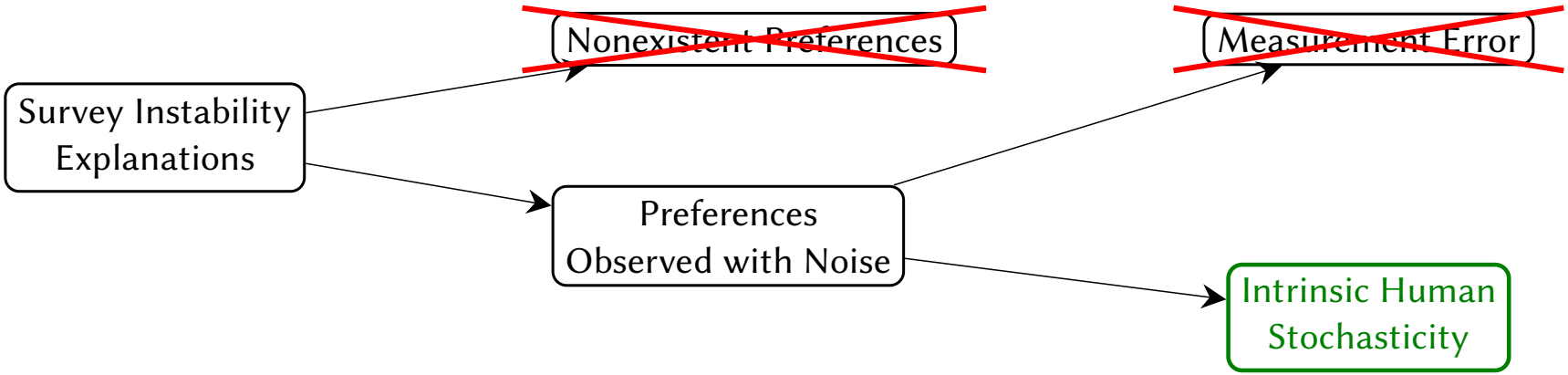

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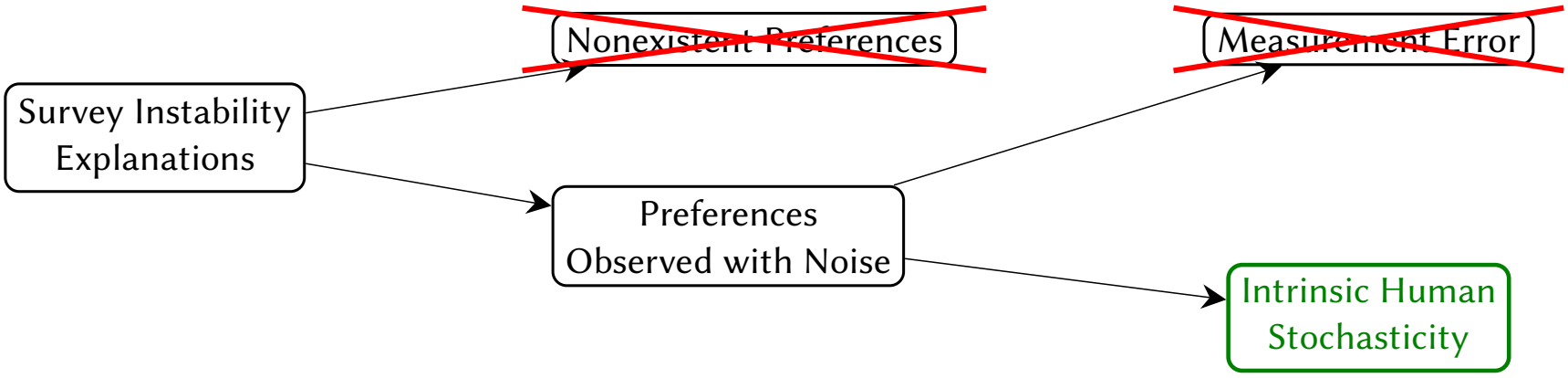

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  - biology, medicine: technical v. biological variability

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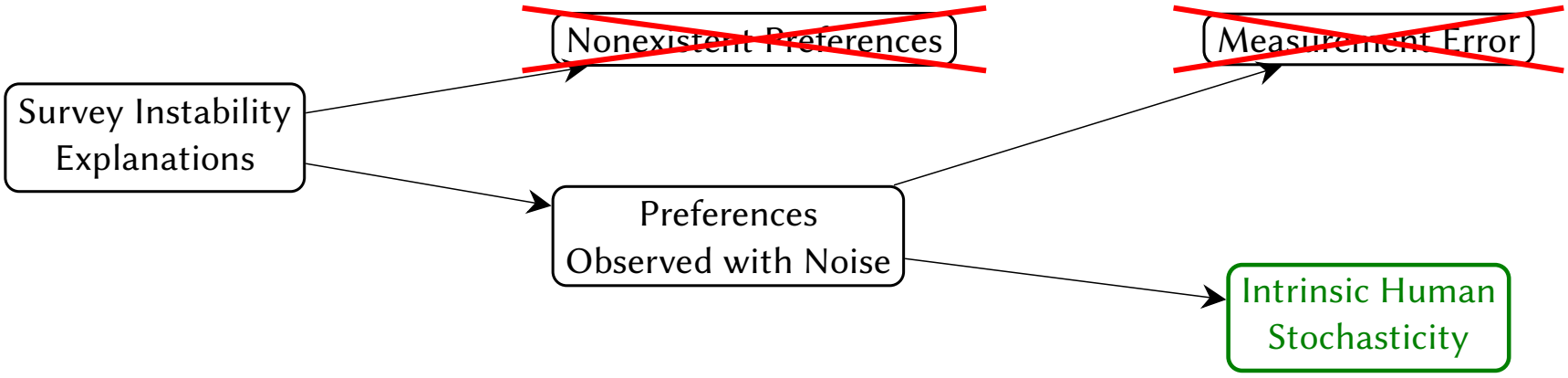

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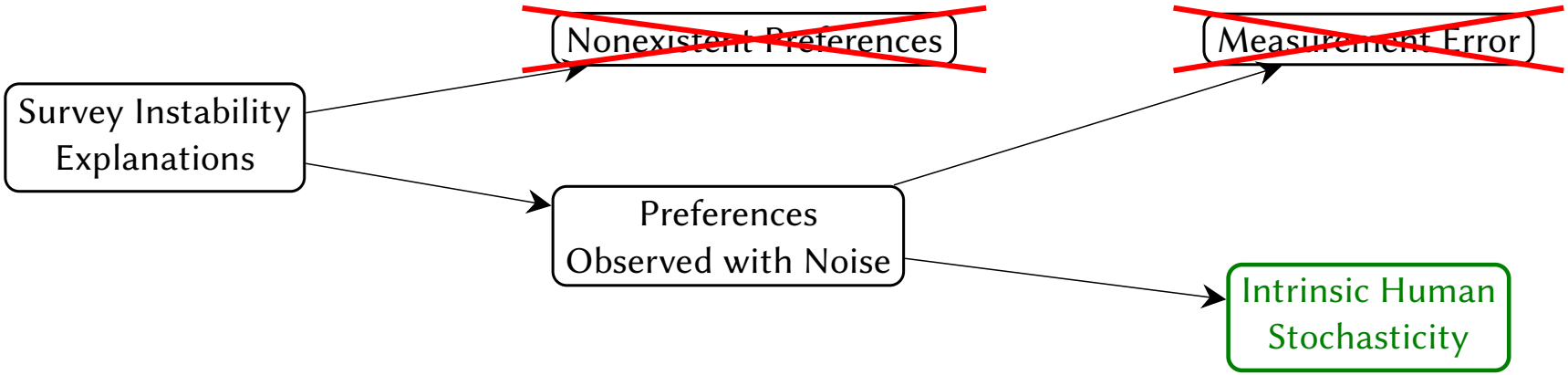

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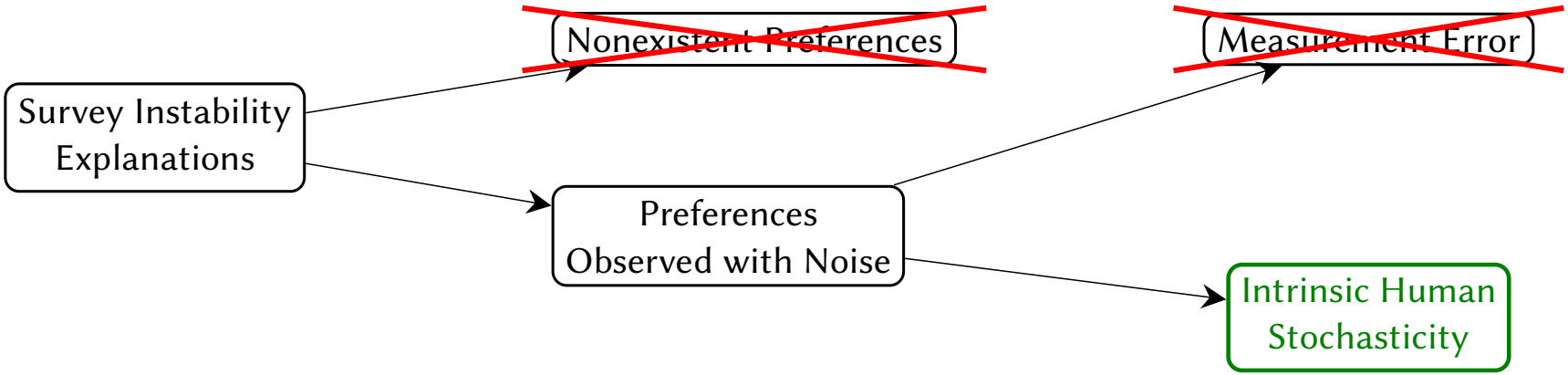

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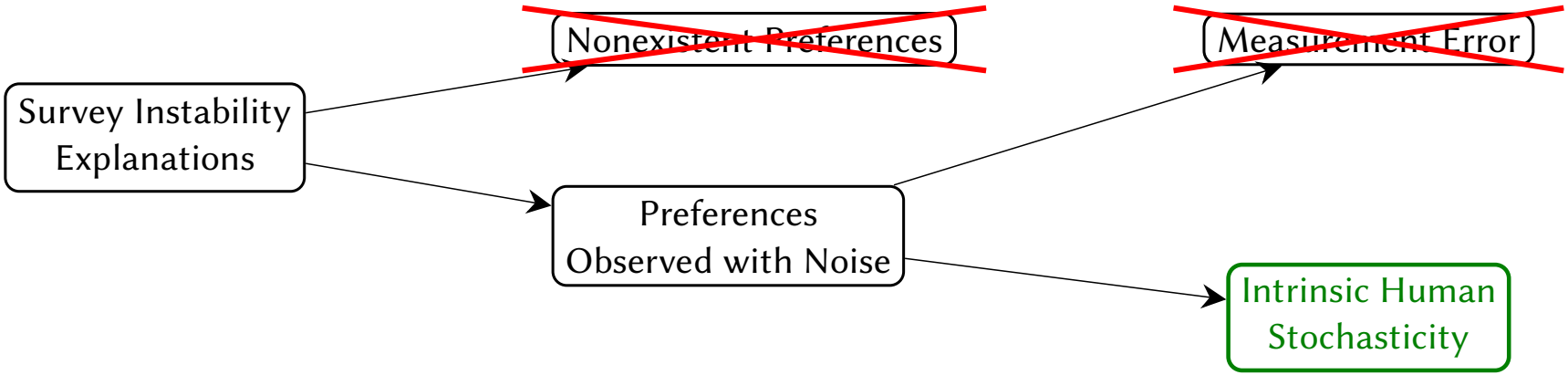

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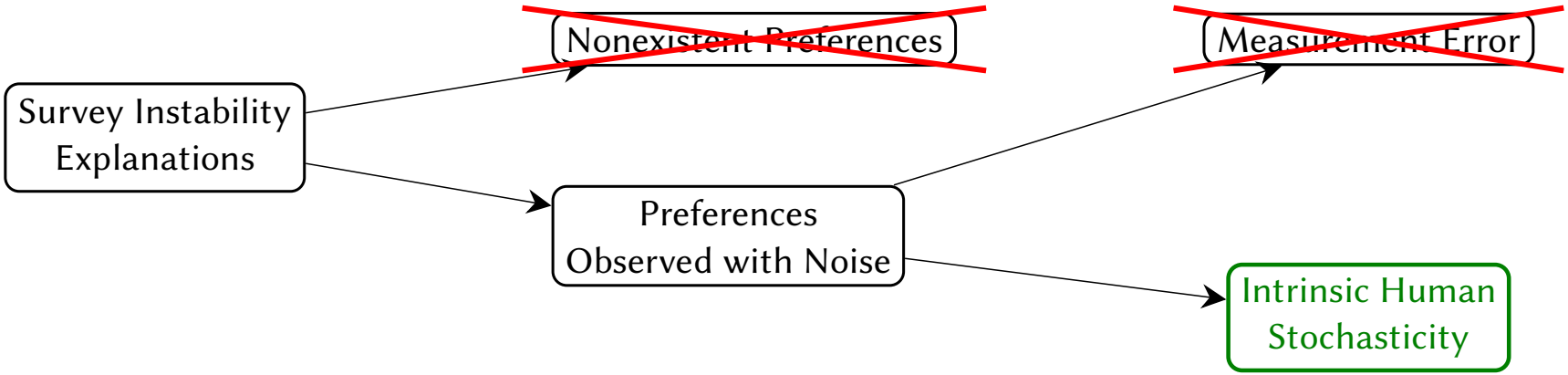

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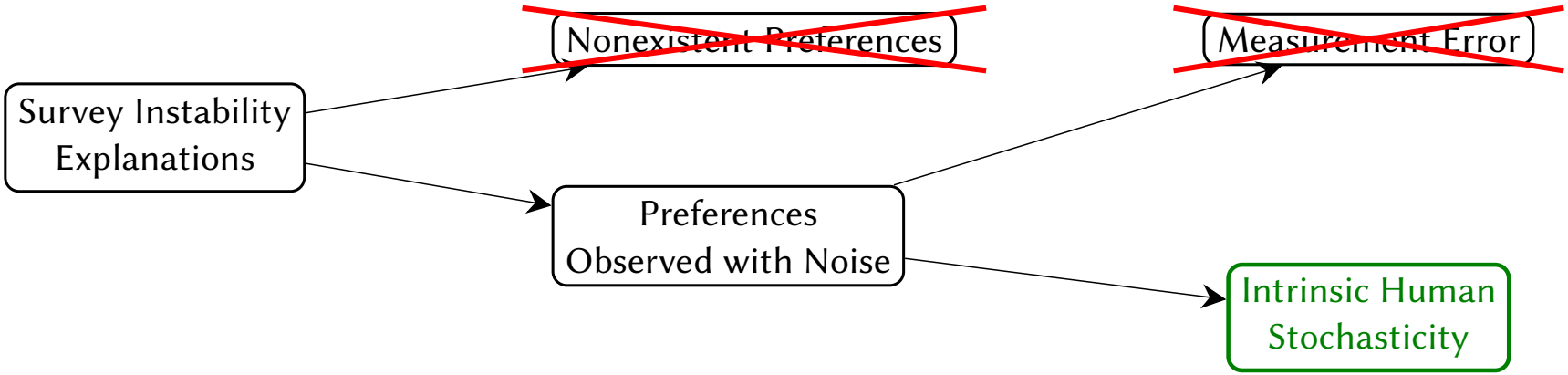

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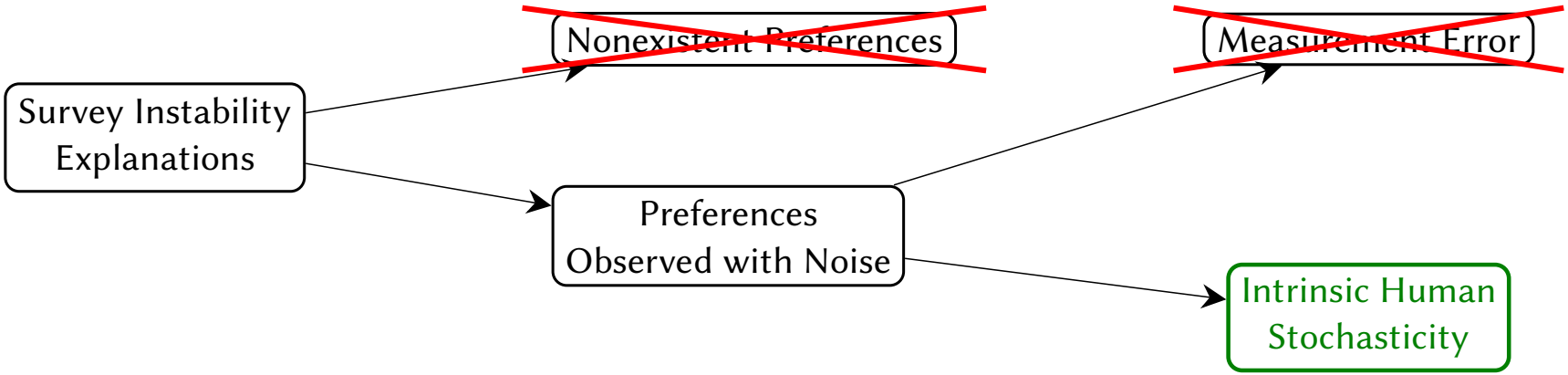

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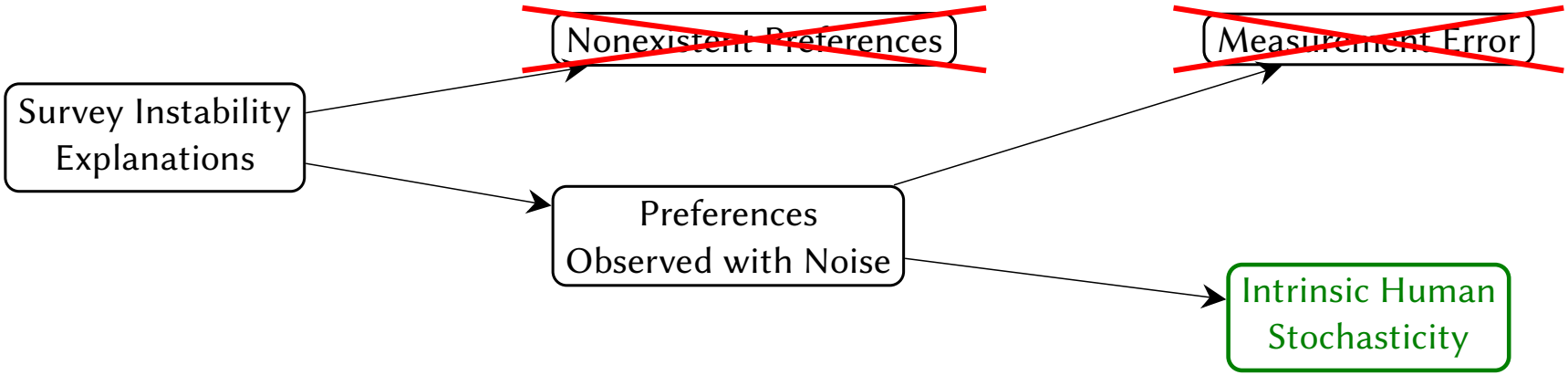

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$\Rightarrow$ The creatures we study: variables, not constants

Implications of Stochasticity in Instability Precursors

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Goal: Revealing where humans produce stochasticity

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Survey
Instability

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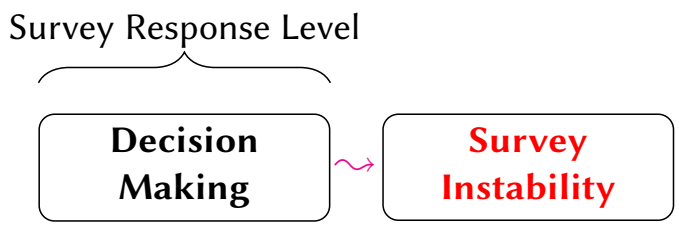

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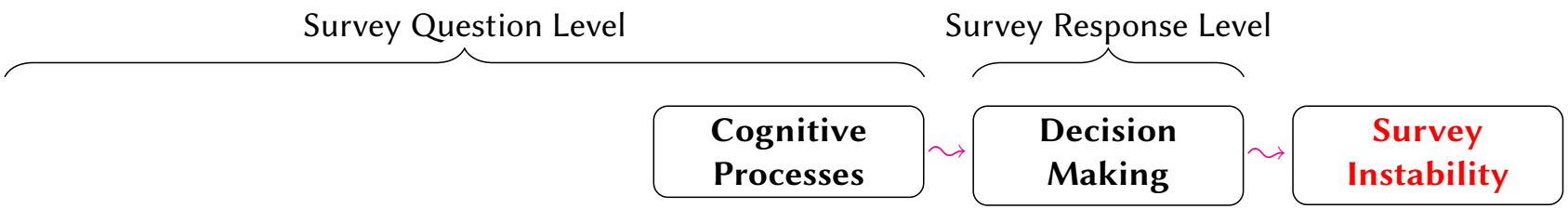

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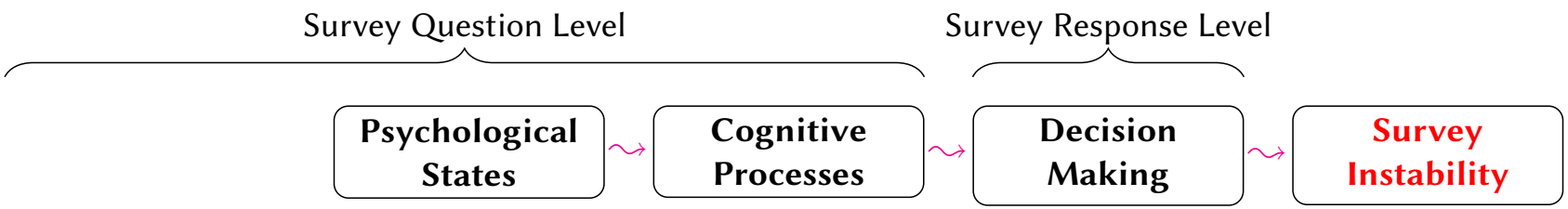

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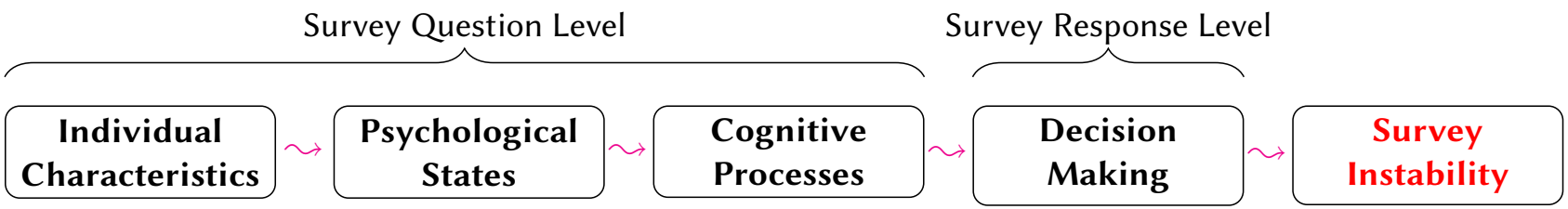

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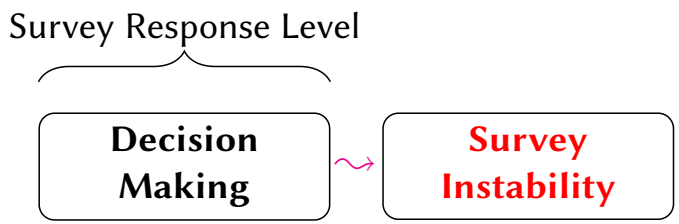

Stochasticity Sources: Decision Making

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Election Day

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- 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.
- How many Party A candidates will you choose?

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C_t

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$$C_t \begin{cases} \end{cases}$$

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$$C_t \begin{cases} = \mathbf{1}(\pi > 0.5) \\ \\ \end{cases}$$

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$$C_t \begin{cases} = \mathbf{1}(\pi > 0.5) & \text{Expected Utility (deterministic)} \quad E(D) = 0 \\ = \mathbf{1}(\pi + \eta_t > 0.5) & \end{cases}$$

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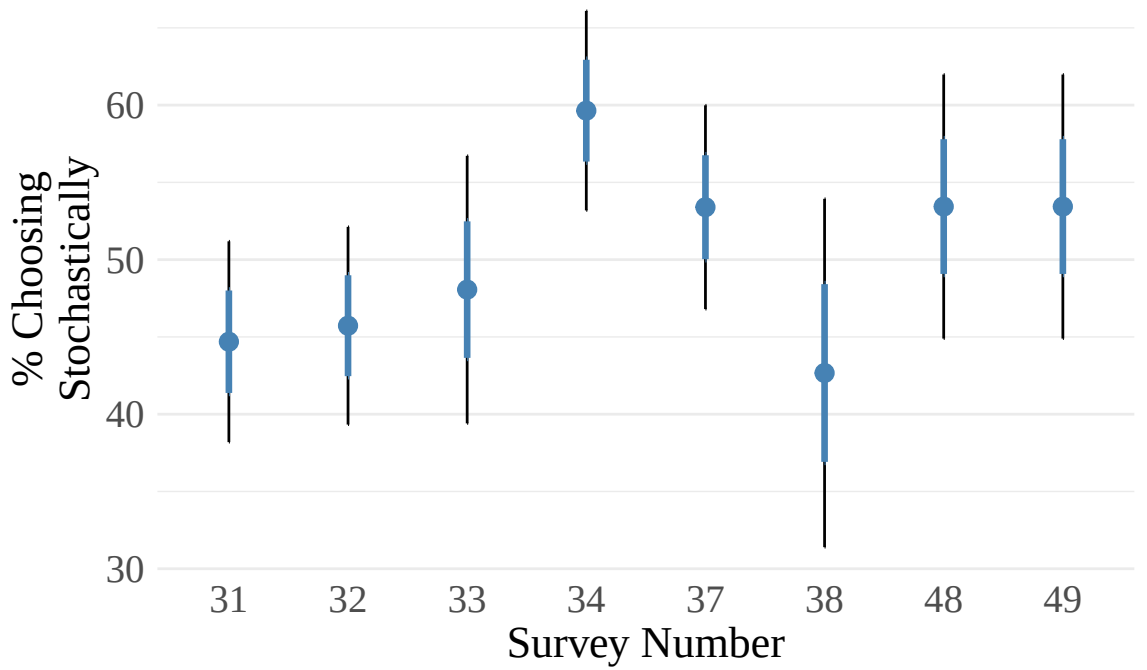
- C
- H
- L
- E

C_t { = 0 > 0 > 0

)] eons...)



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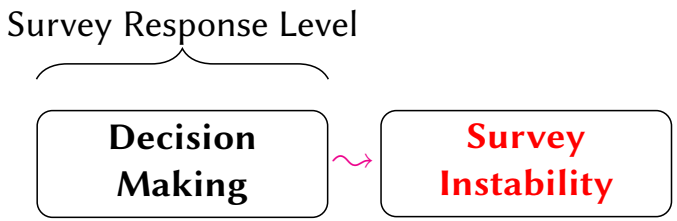
$\Rightarrow$ Human Decision Making: Adds Stochasticity

Stochasticity Sources: Cognitive Processing

Stochasticity Sources: Cognitive Processing

Survey Instability

Stochasticity Sources: Cognitive Processing



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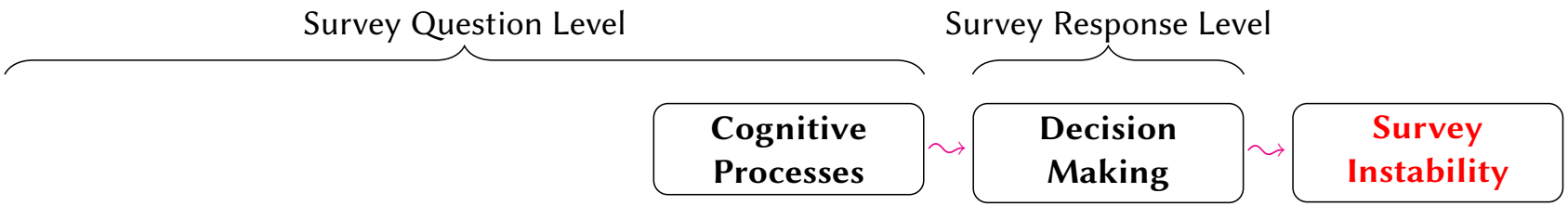

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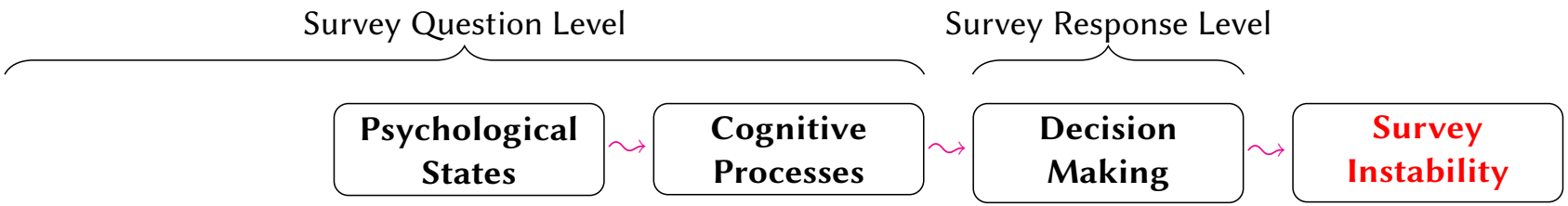

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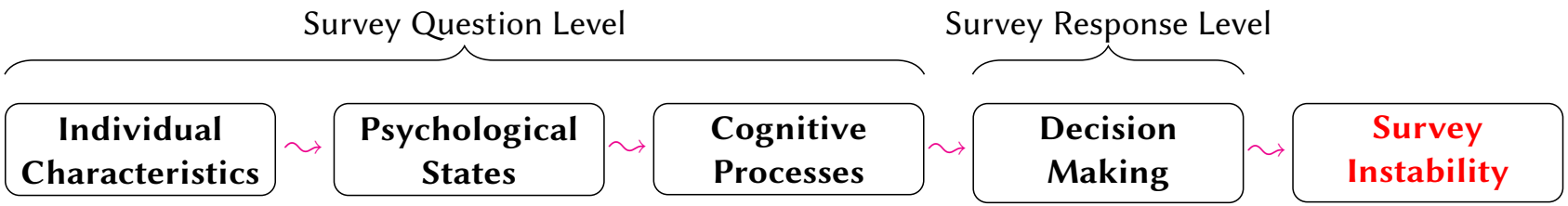

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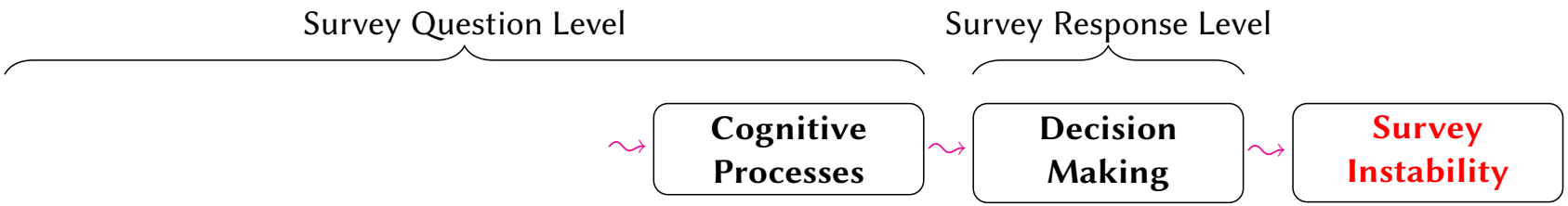

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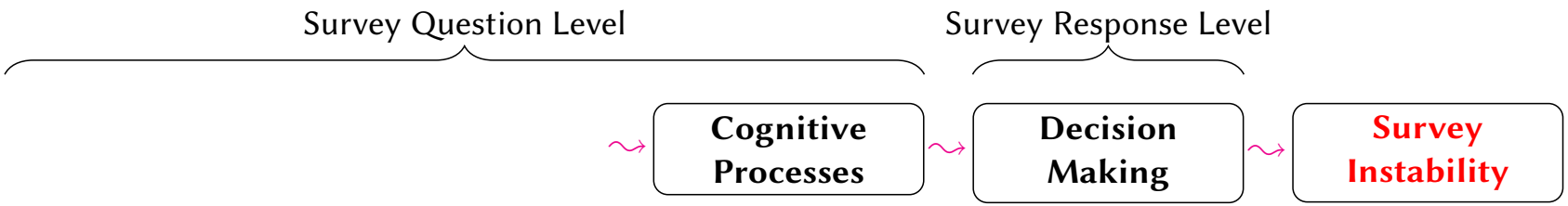
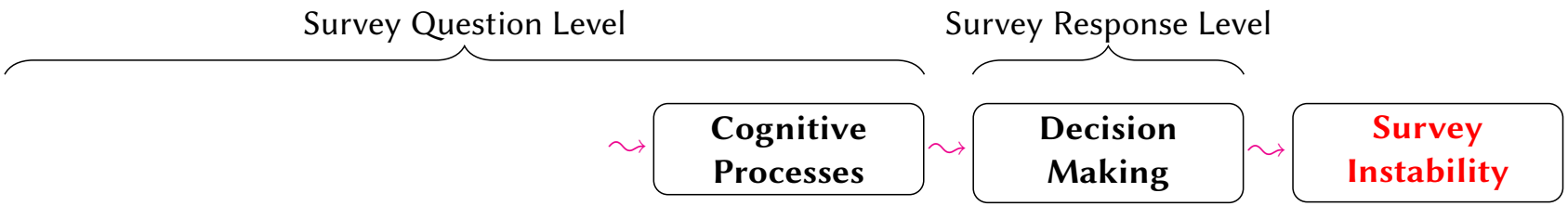


What increases stochasticity (and thus instability)?

Stochasticity Sources: Cognitive Processing



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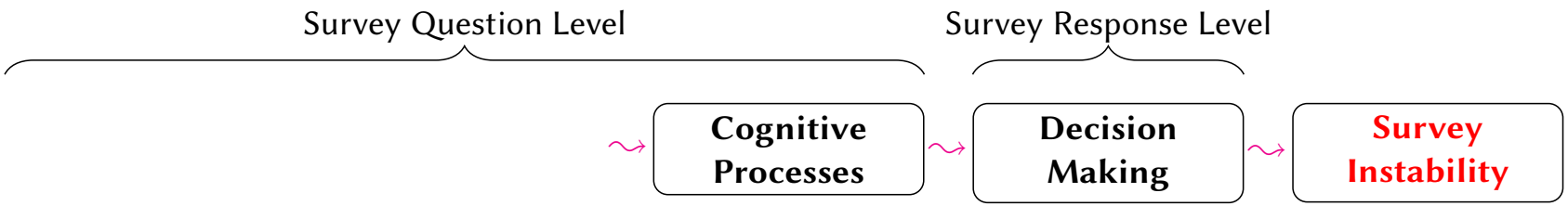

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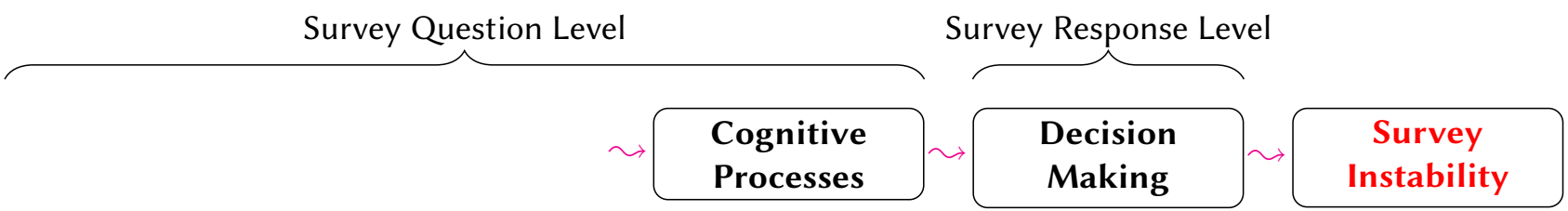

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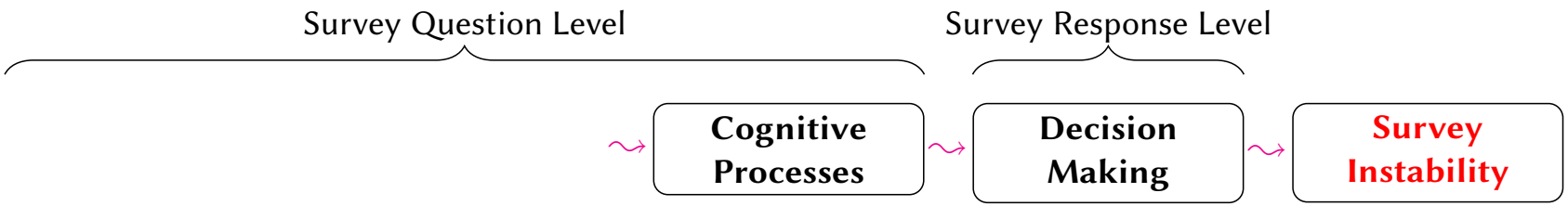

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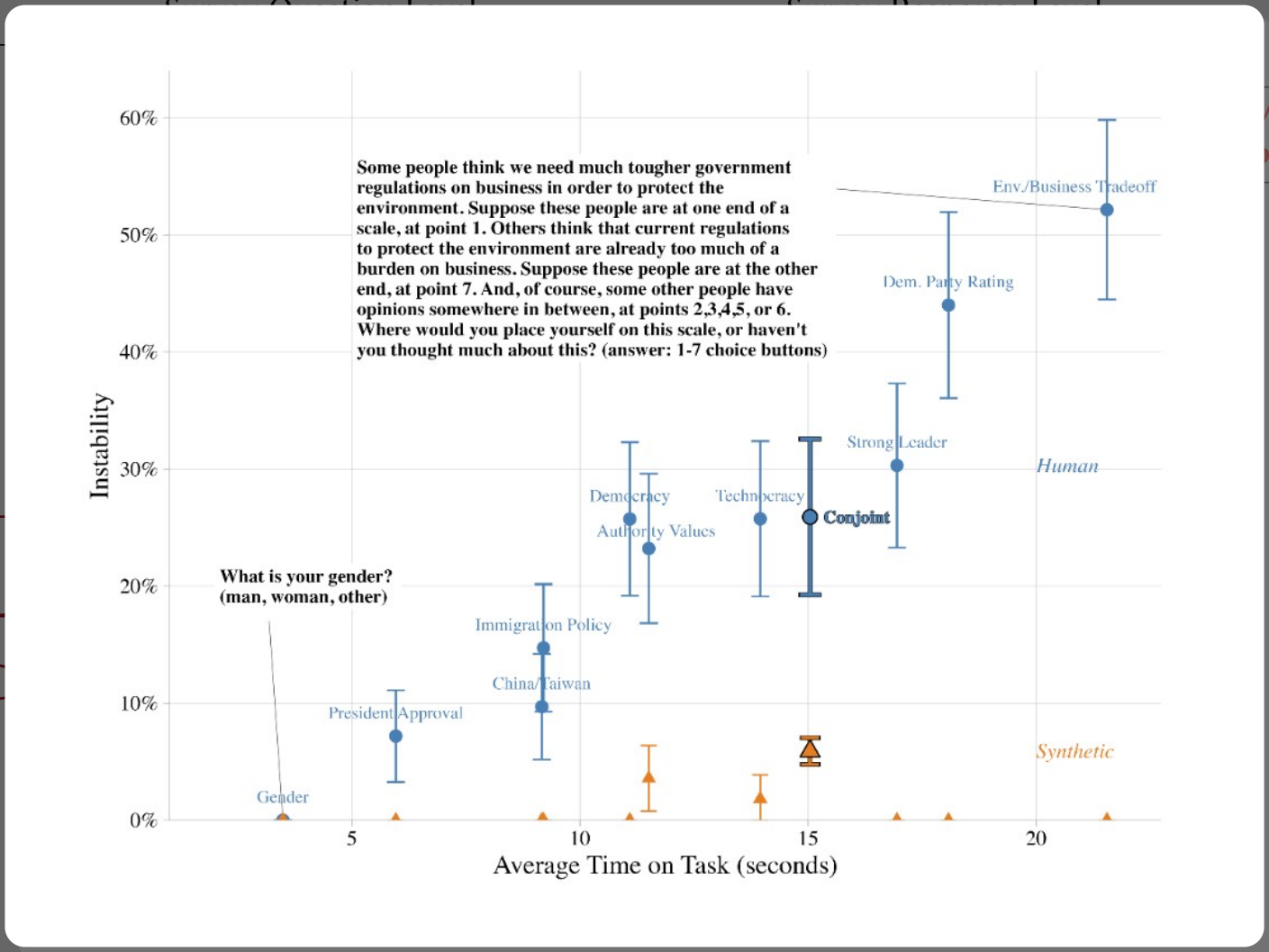

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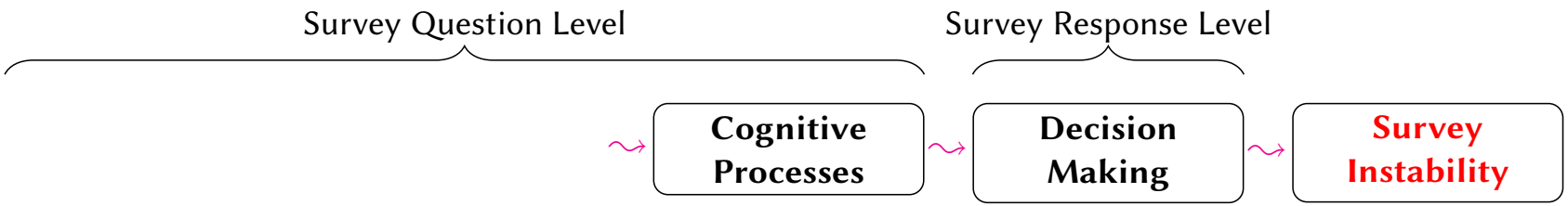

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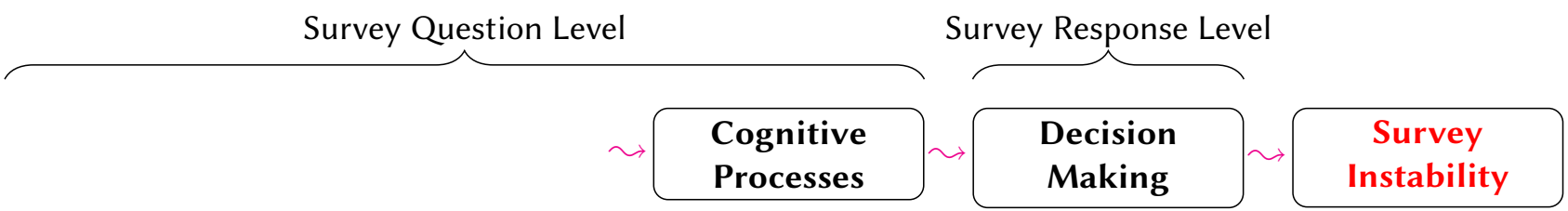

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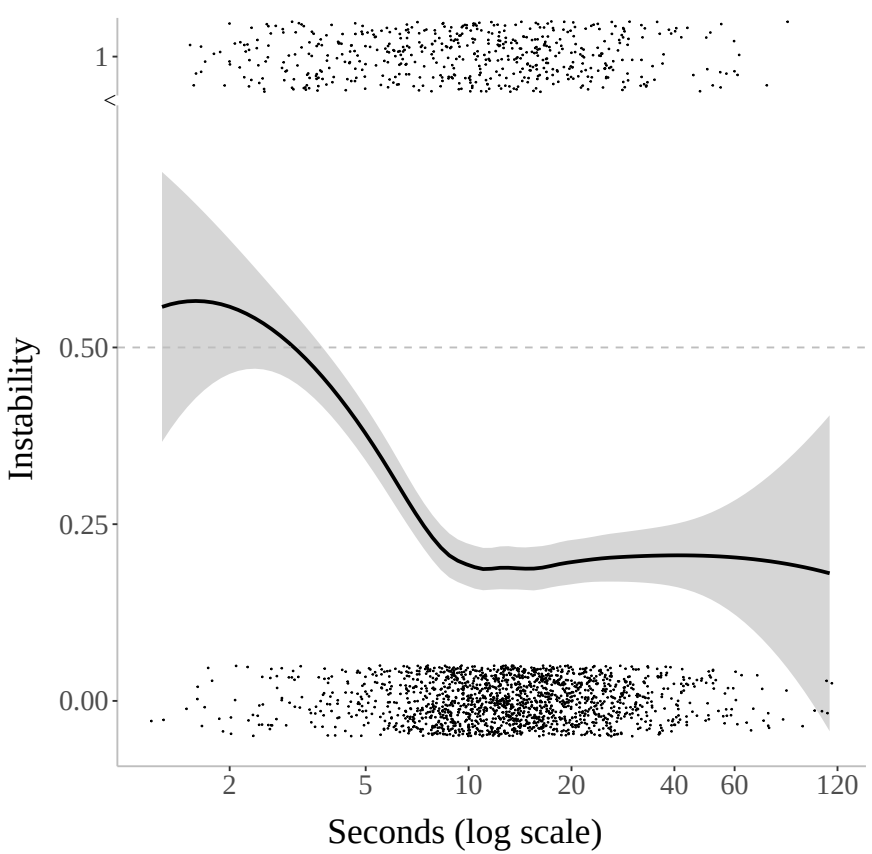
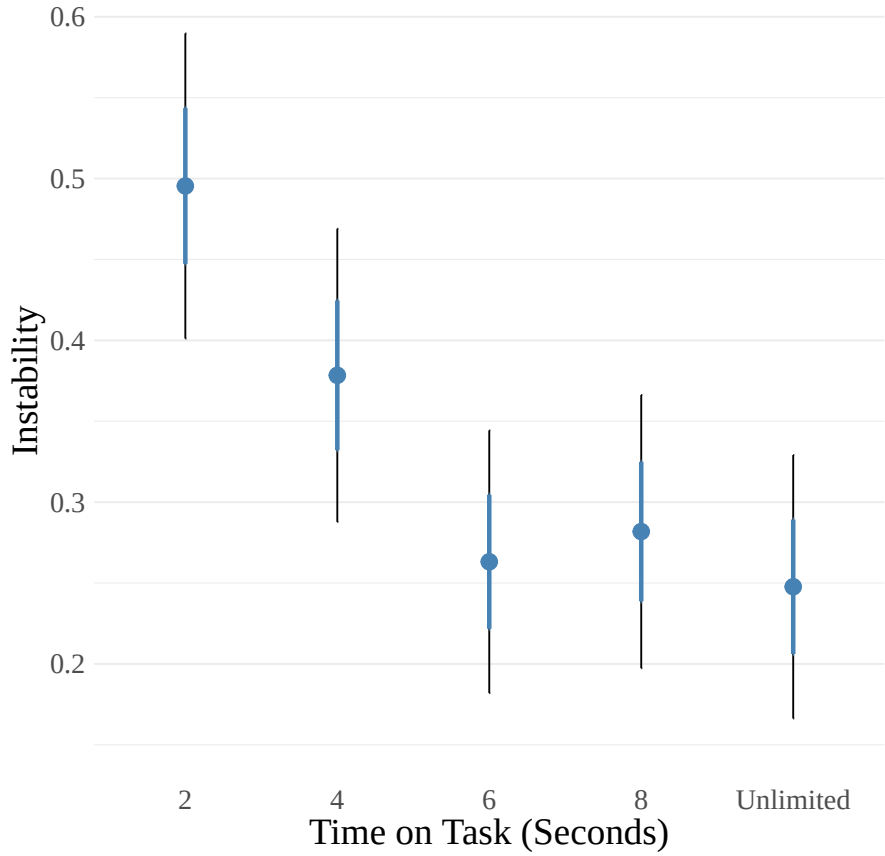
Stochasticity Sources: Cognitive Processing

Limited time-on-task causes survey instability

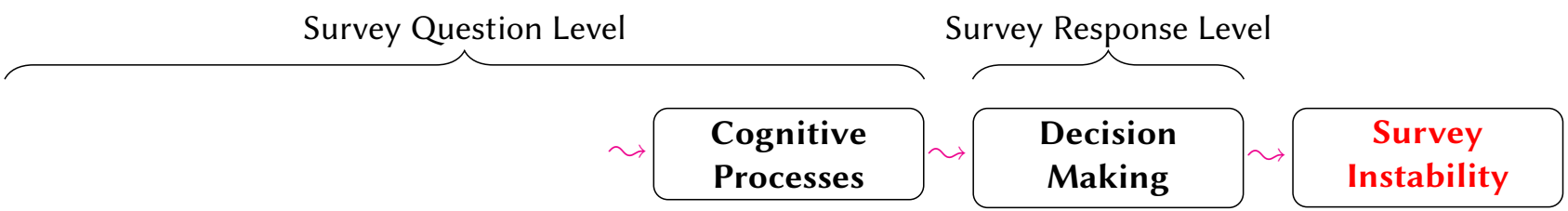


Observational



Experimental

Stochasticity Sources: Cognitive Processing



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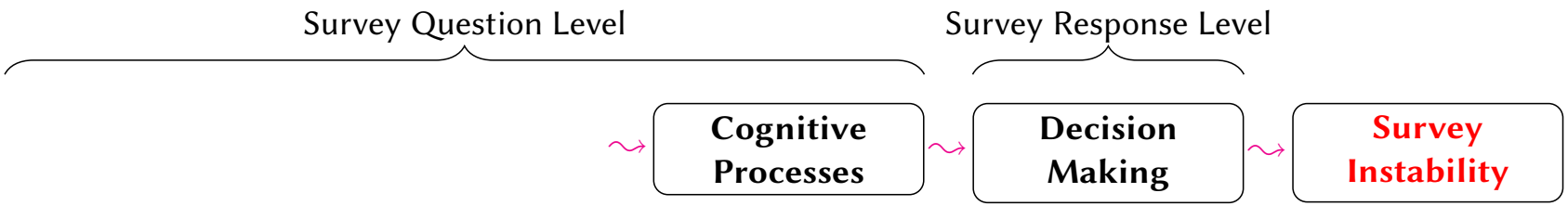

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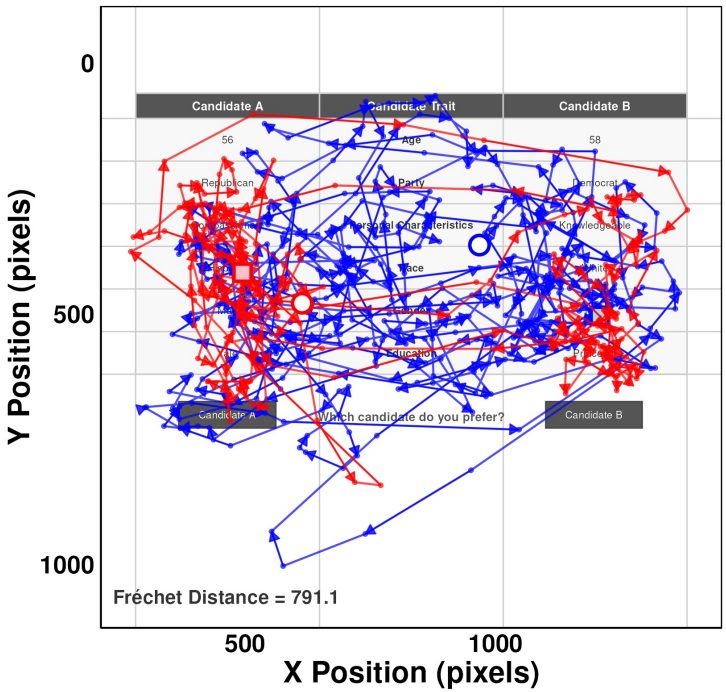
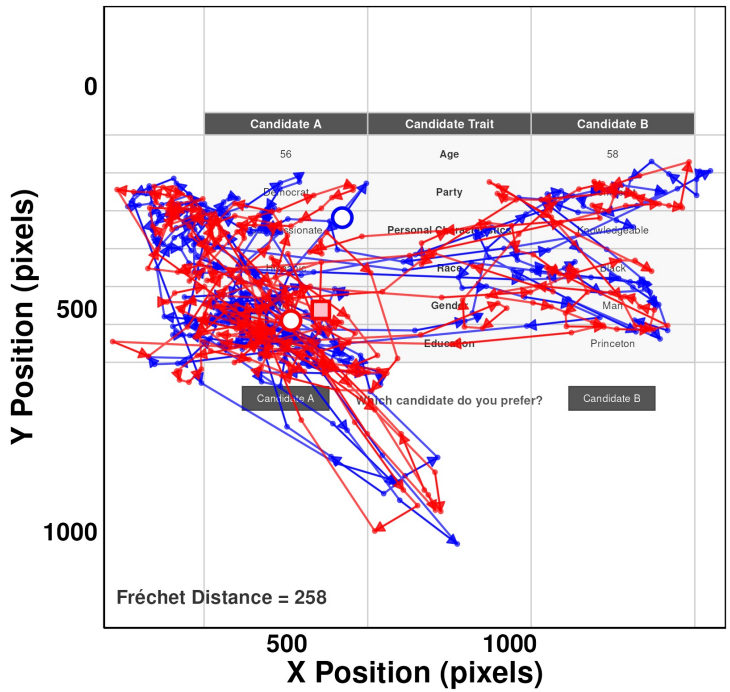
Stochasticity Sources: Cognitive Processing

Stochasticity in Gaze Behavior

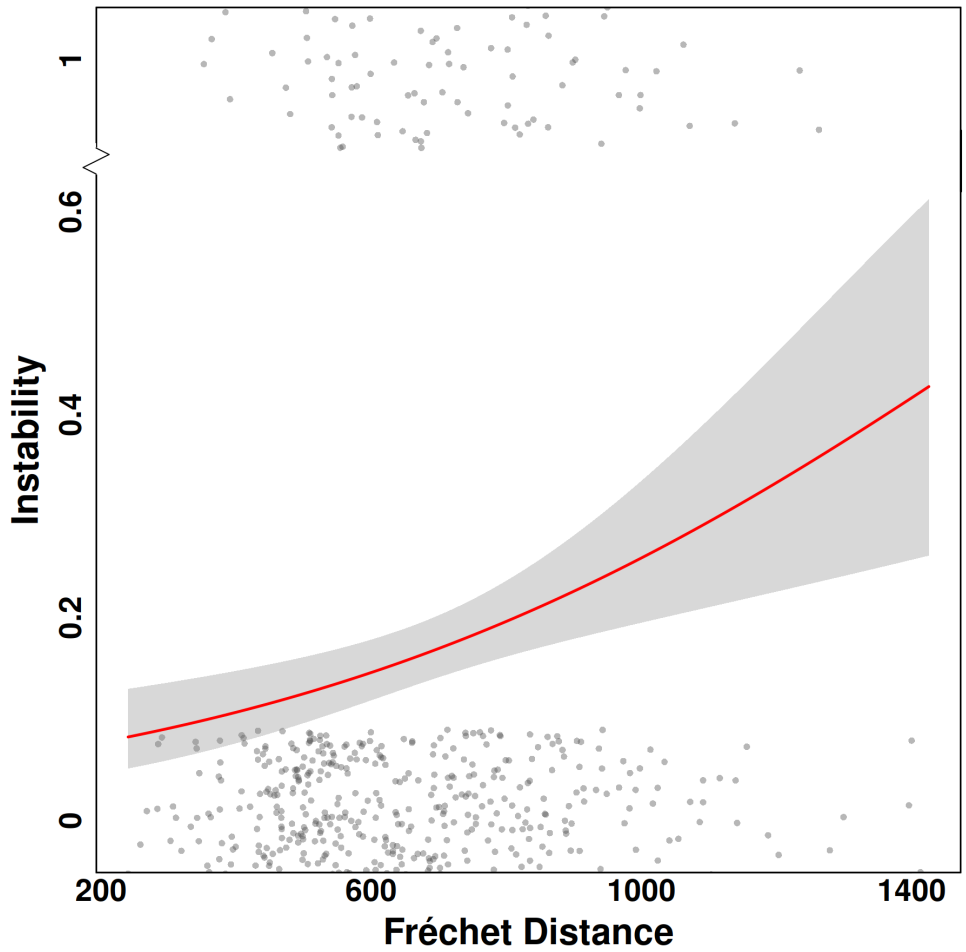


Large difference

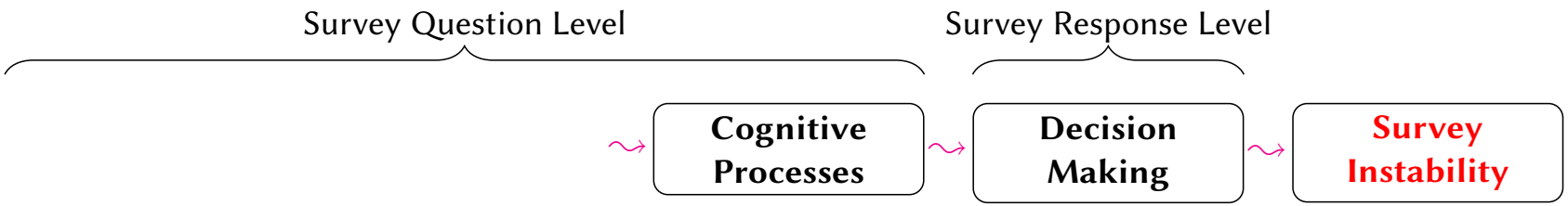


Small difference

Stochastic Distance $\rightsquigarrow$ Survey Instability



Stochasticity Sources: Cognitive Processing



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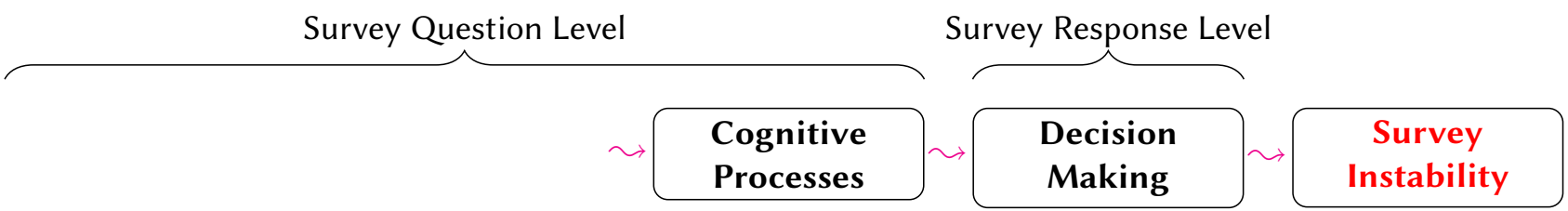

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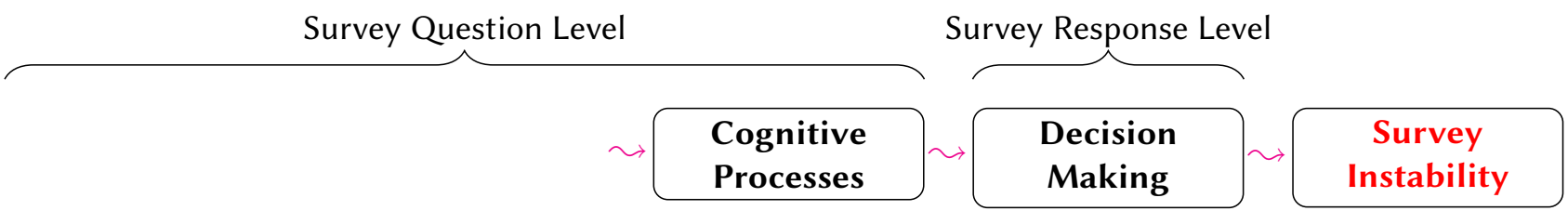

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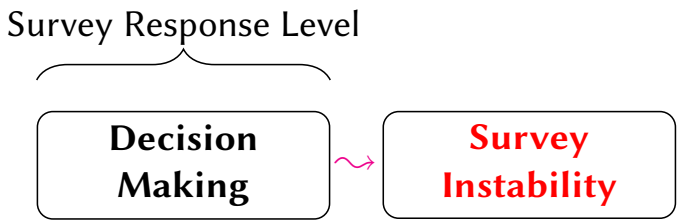
$\Rightarrow$ Human Cognitive Processing: Adds Stochasticity

Stochasticity Sources: Psychological States

Survey Instability

Stochasticity Sources: Psychological States



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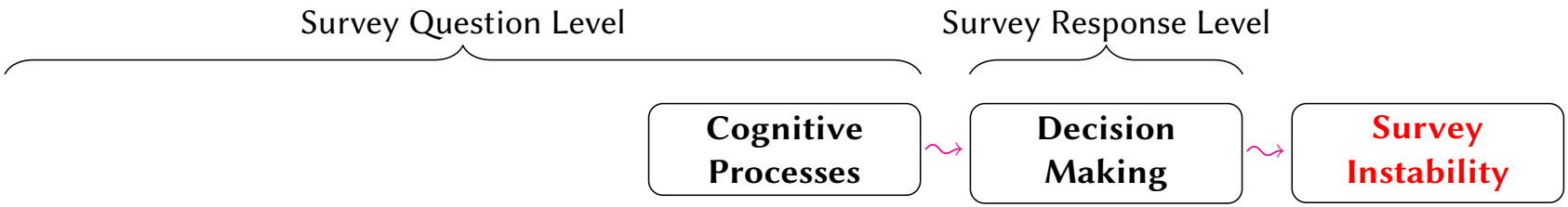

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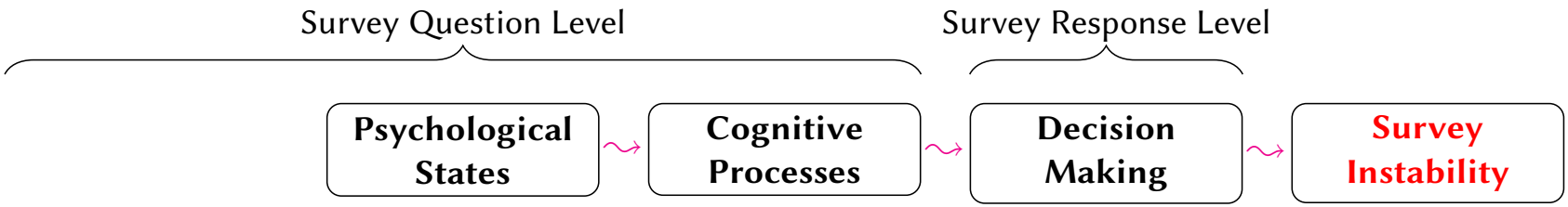

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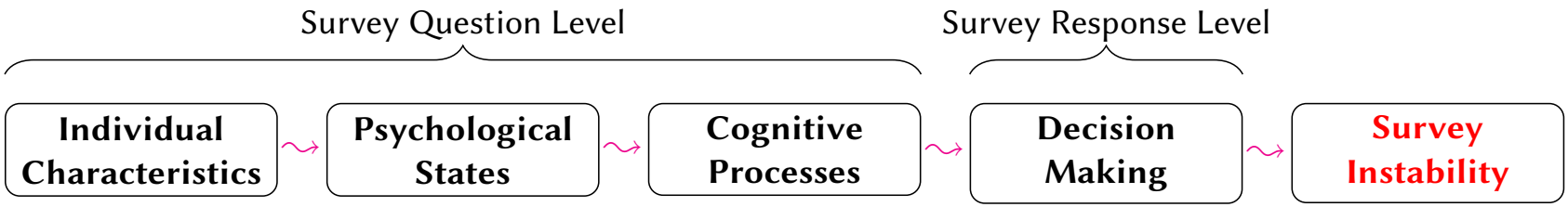

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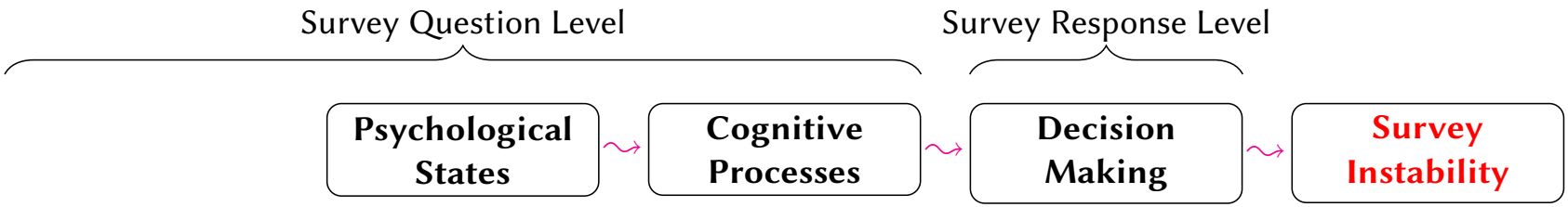

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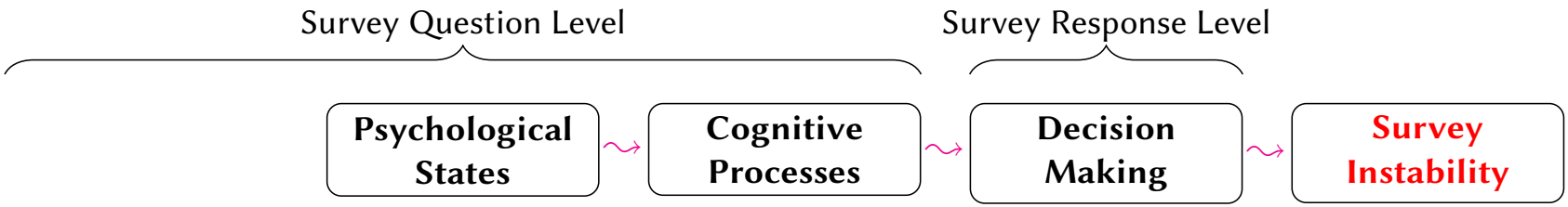
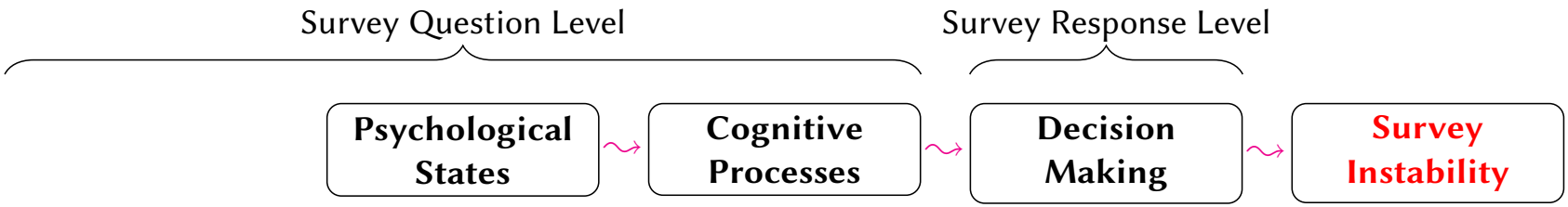


Q1: We would like to get a sense of your consumption of political news. To demonstrate that you've read this much, just go ahead and select both every day and never among the options below, no matter how often you watch political news.

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

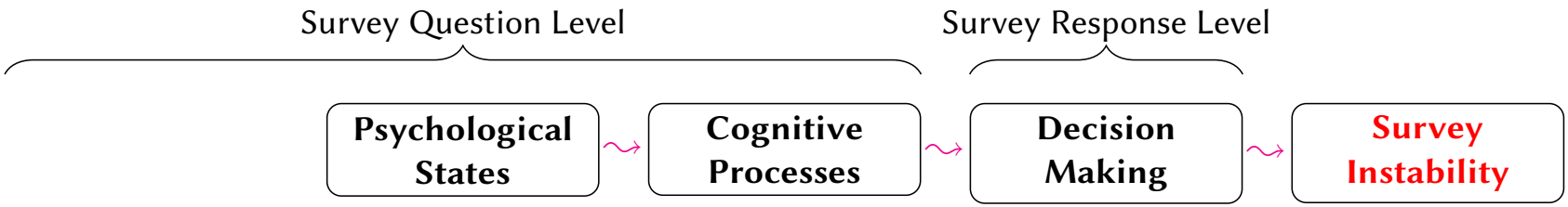
Stochasticity Sources: Psychological States



Q2: Which of these is a vegetable?

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

Stochasticity Sources: Psychological States



Attention Checks: Not Usable as a Filter

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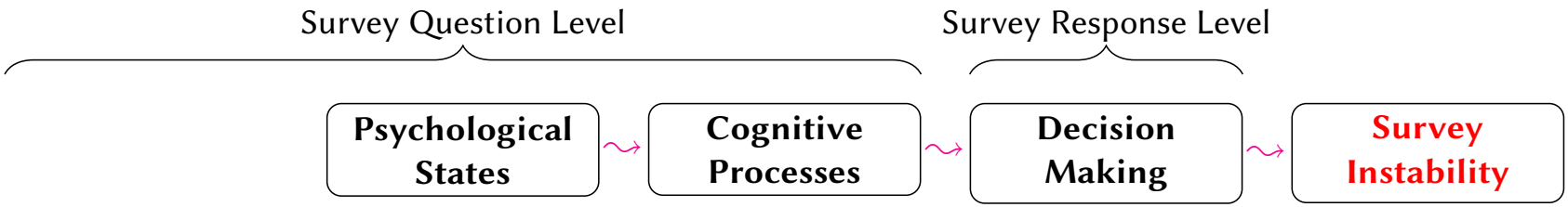

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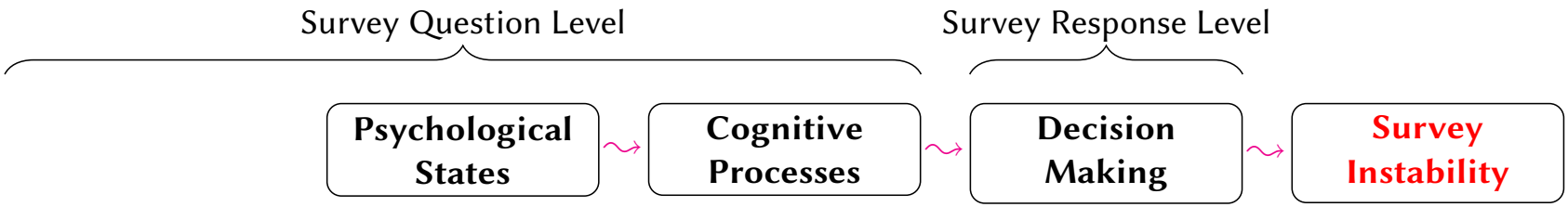

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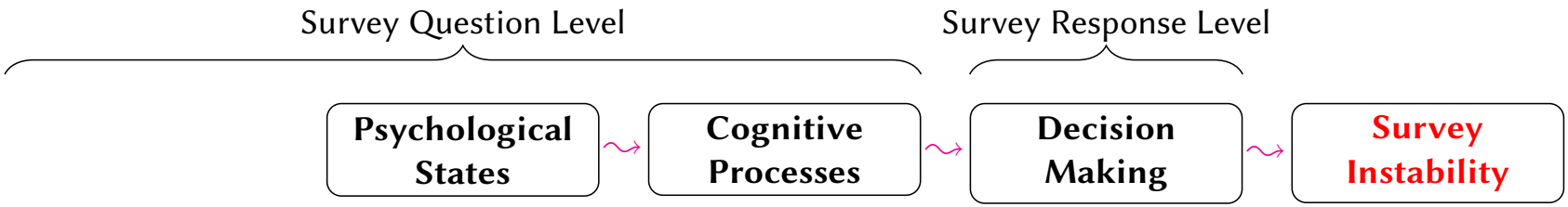

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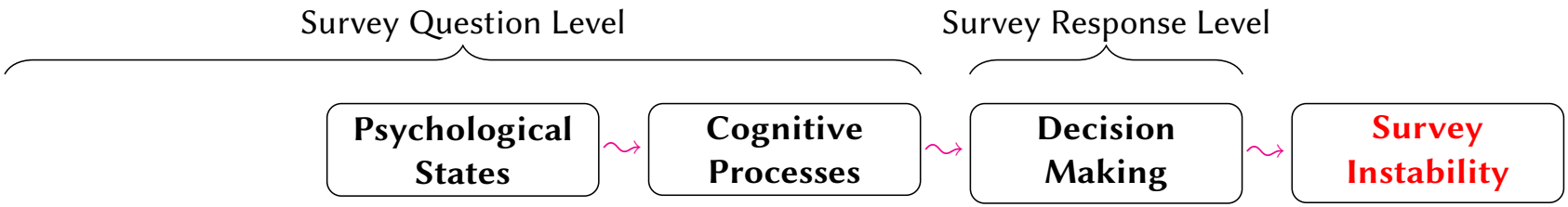

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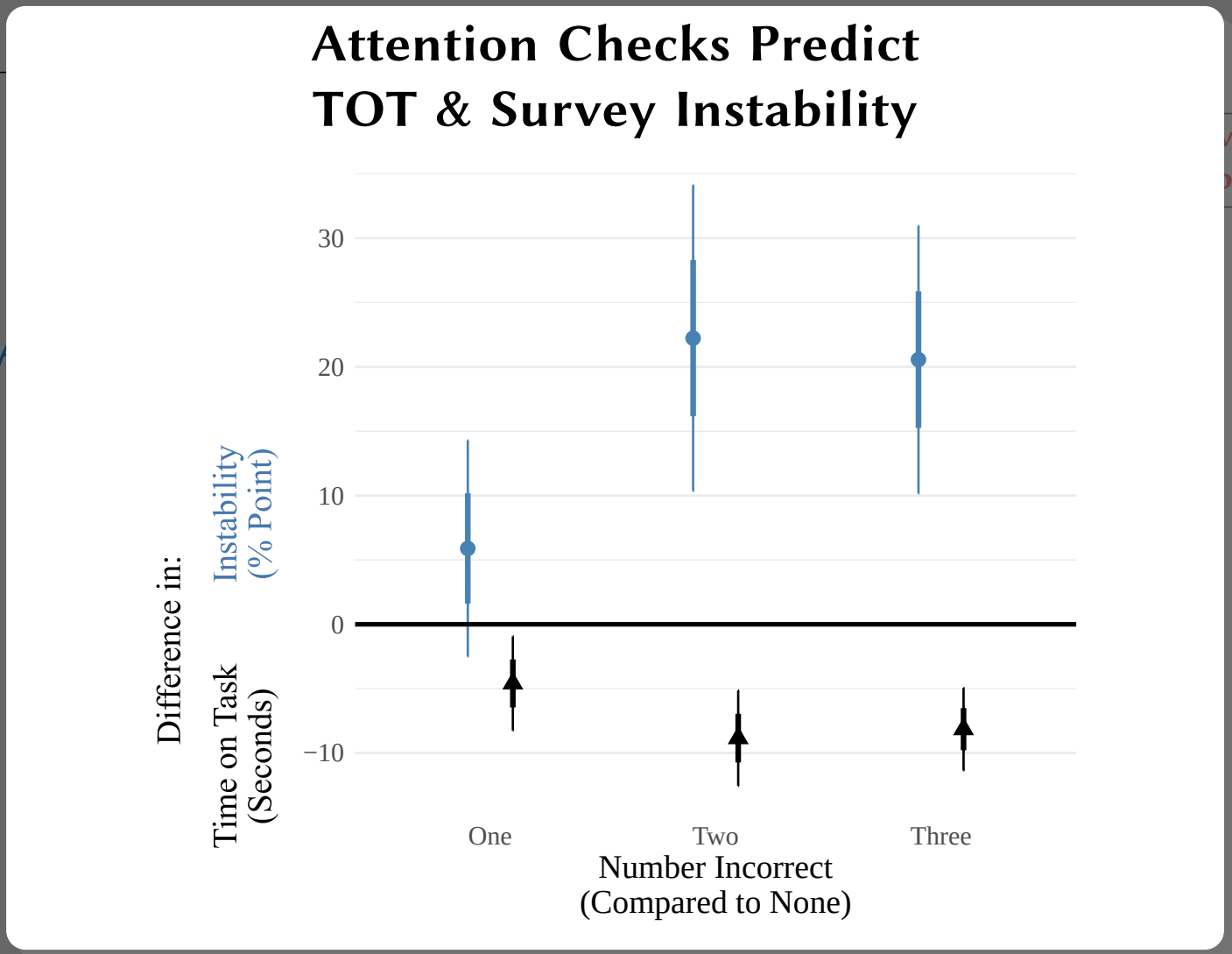

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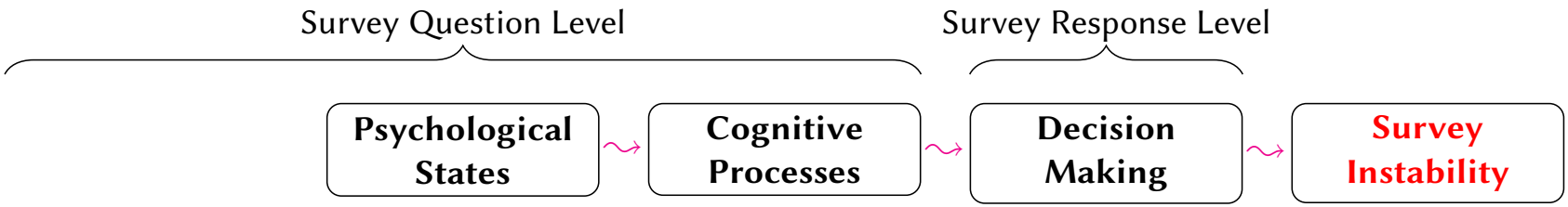

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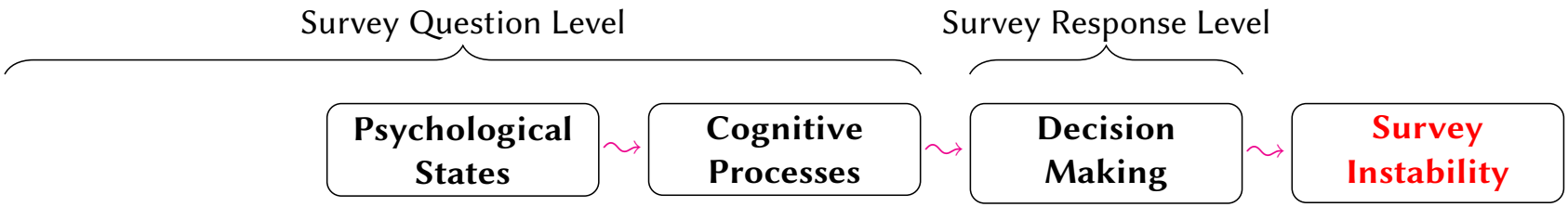

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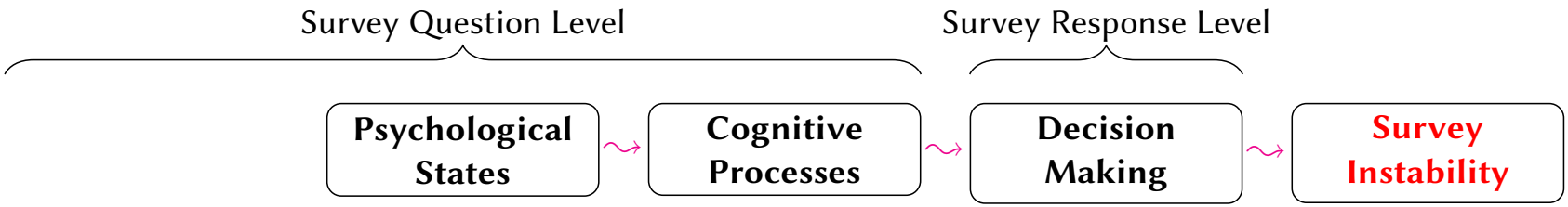

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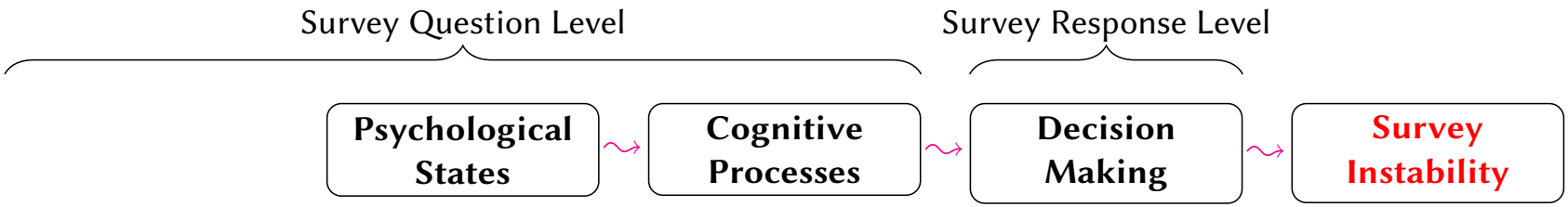

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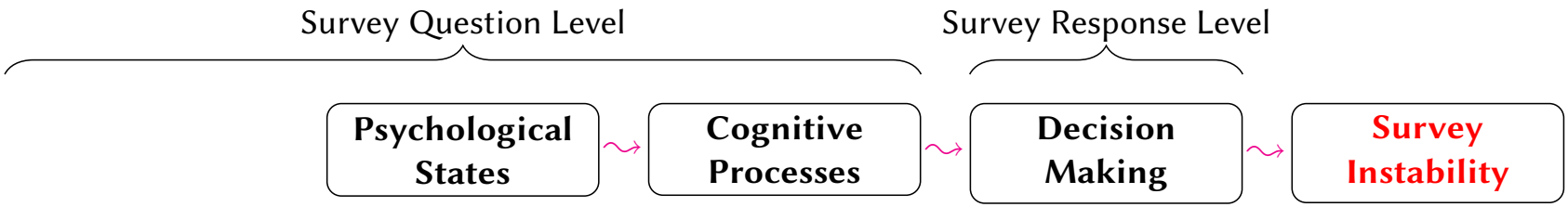

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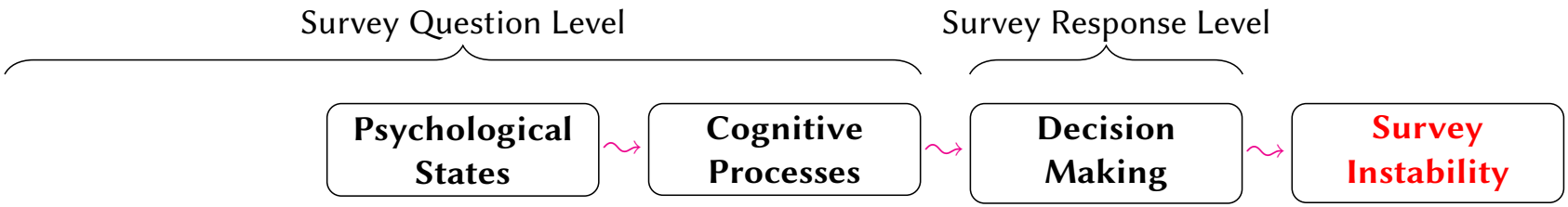

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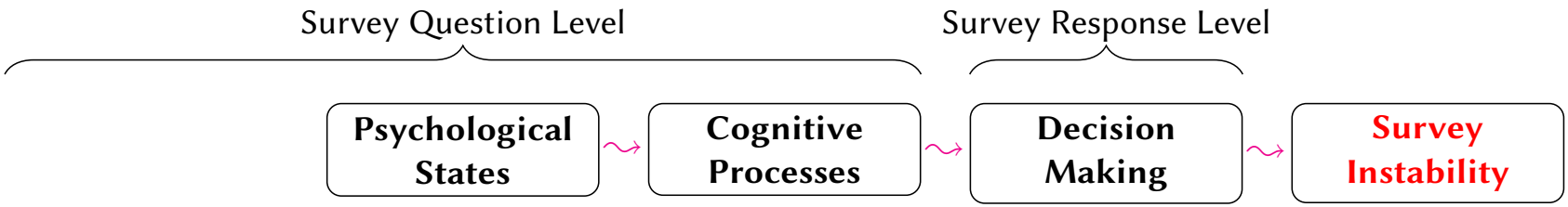

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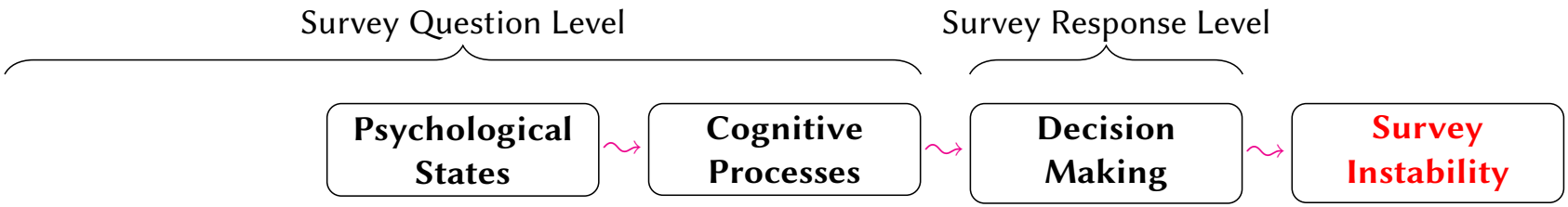

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  - Massive differences across AC questions

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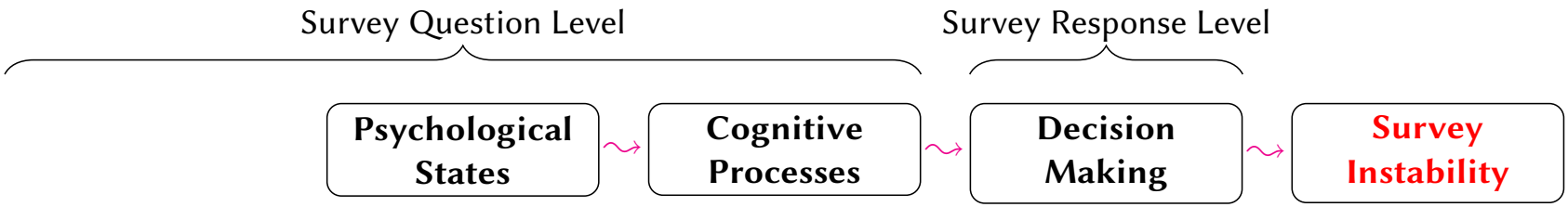

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Survey Question Level

Survey Response Level

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Cognitive

Decision

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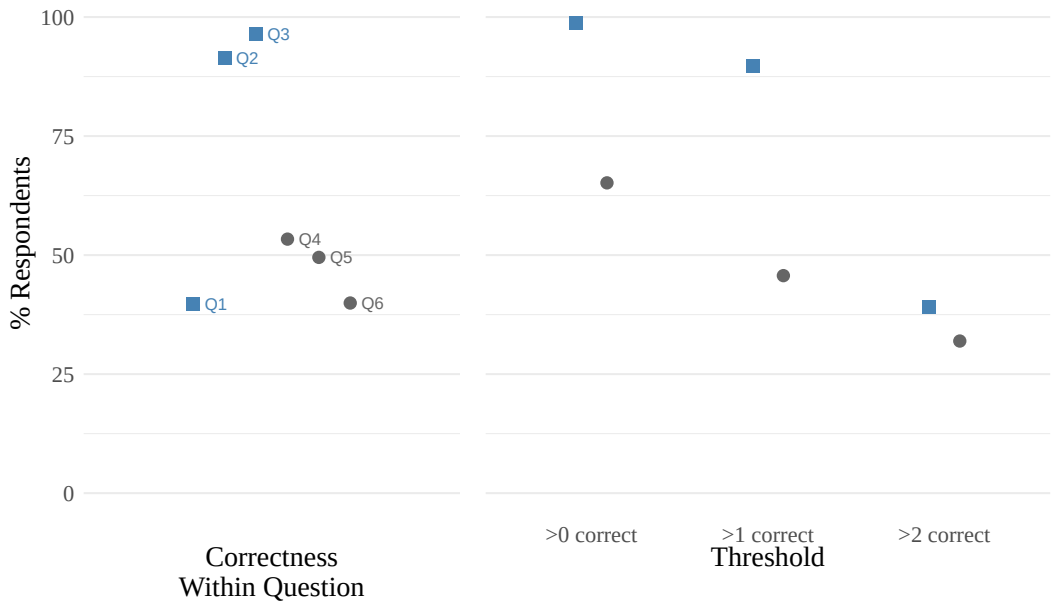
Huge Variation in Attention Check Thresholds



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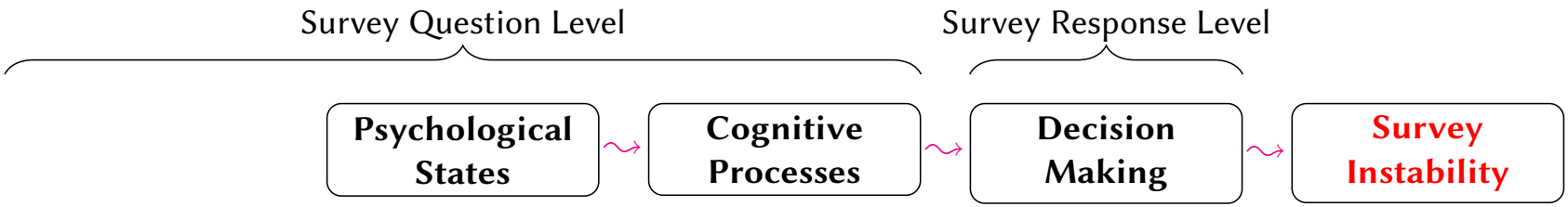

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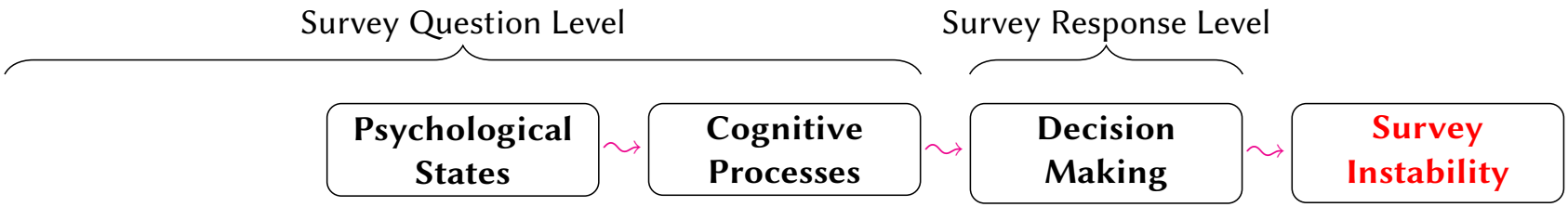

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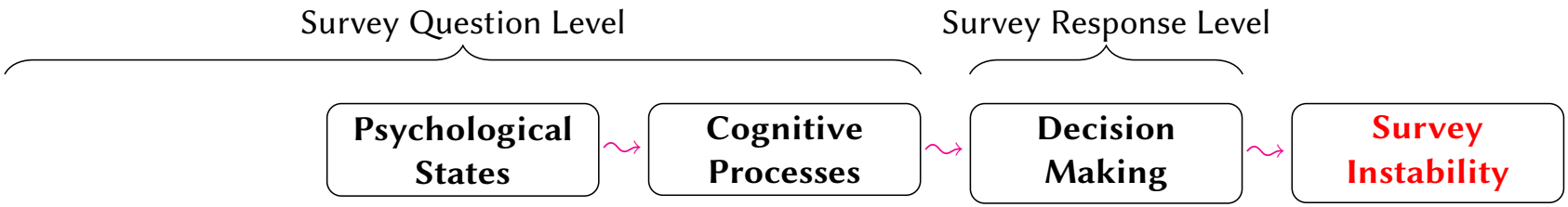

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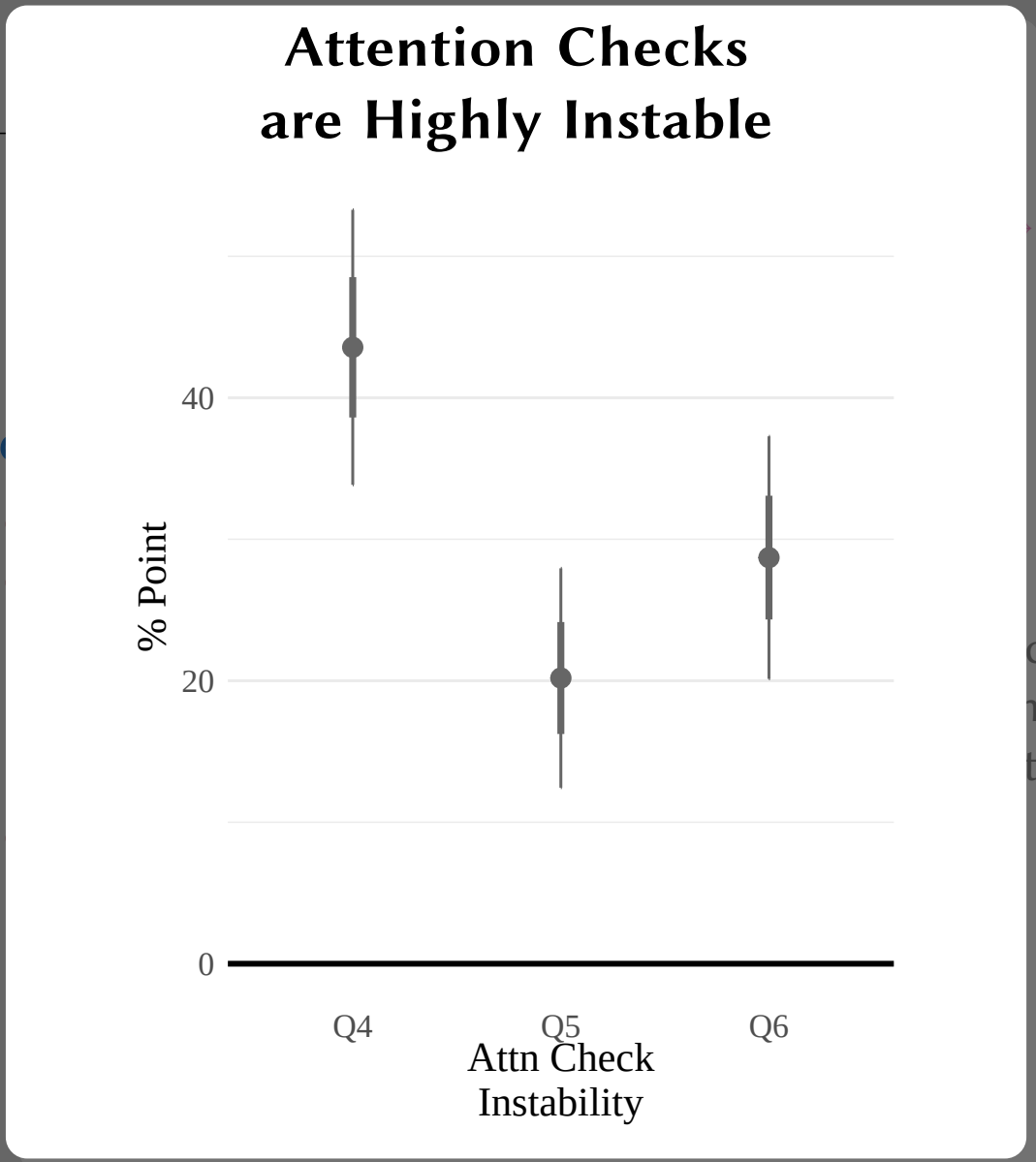

Survey Instability

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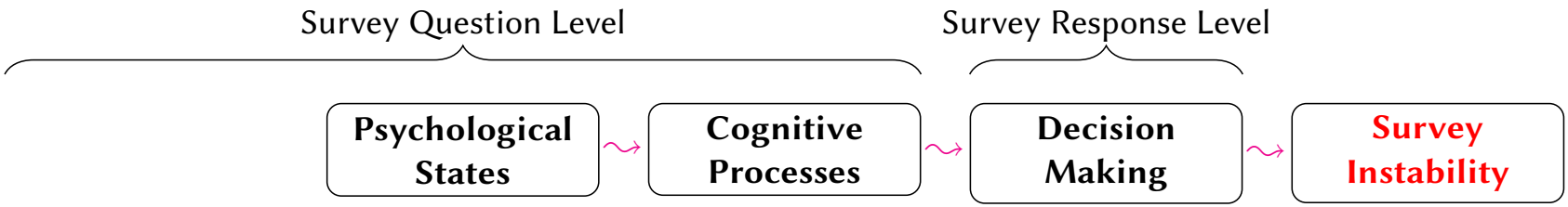

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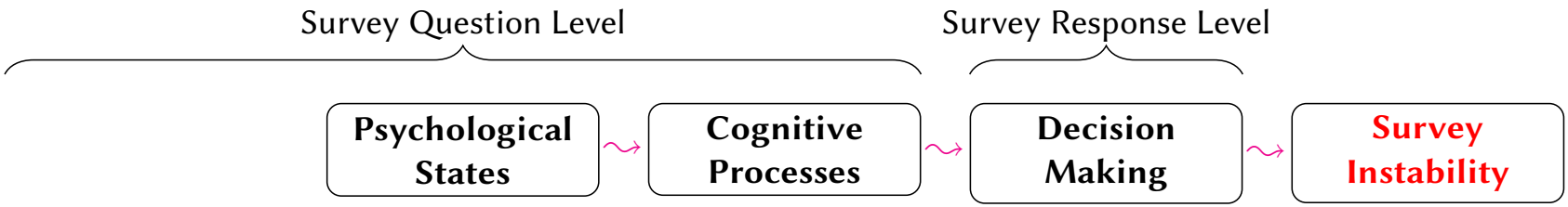

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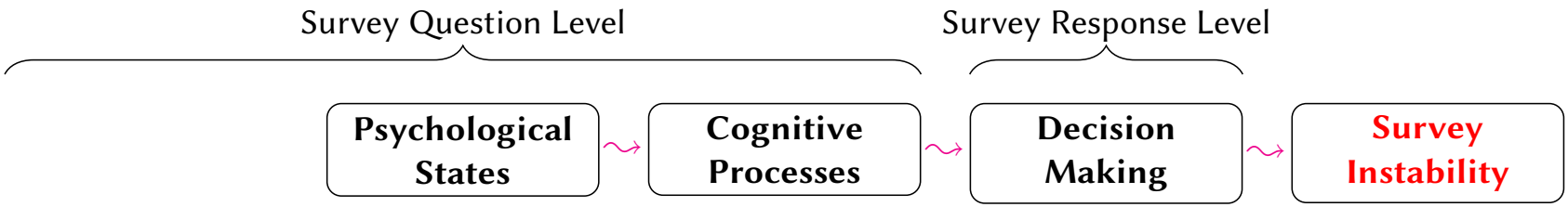

Everyone comes to a new task (like this survey) with things on their minds. How preoccupied were you, just before you started this survey, with thoughts or worries about your partner, job, health, children, friends, money, or other concerns?

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

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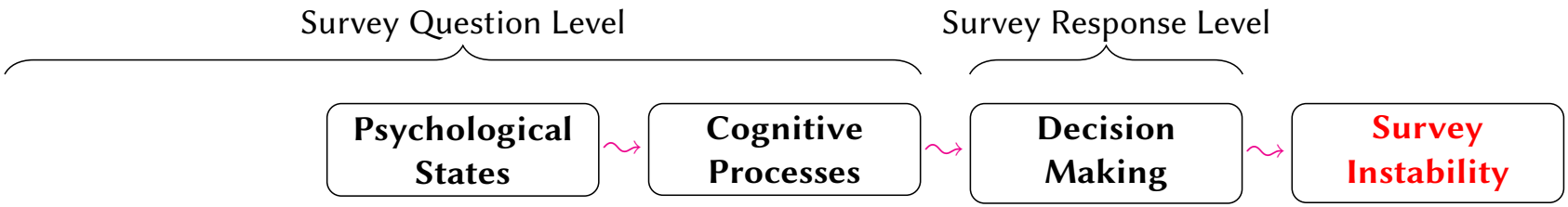

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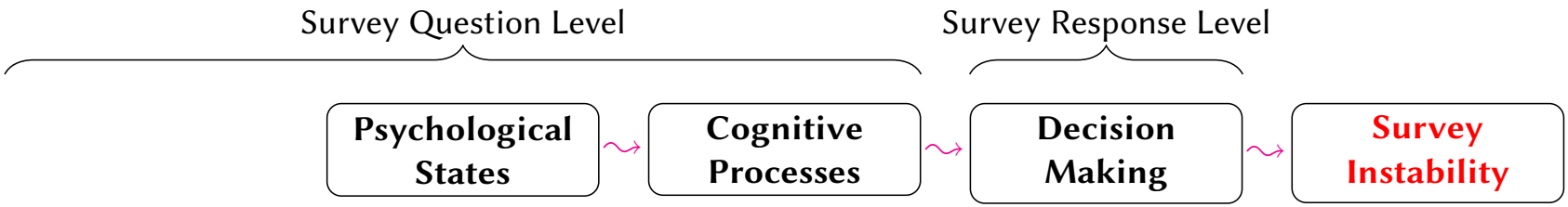

Preoccupation: Great for Filtering (and Understanding)

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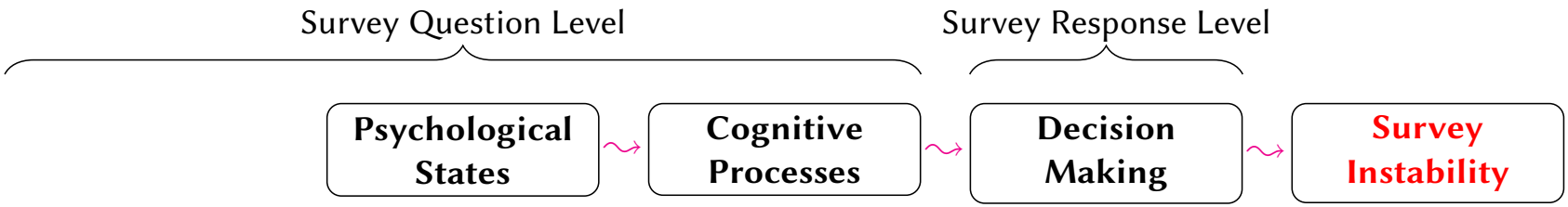

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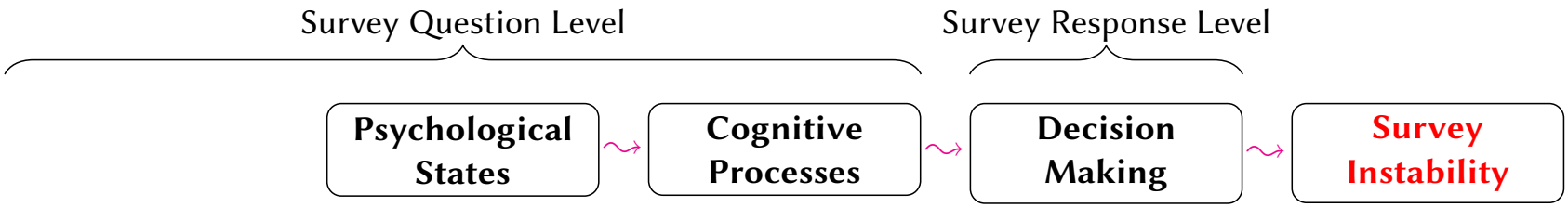

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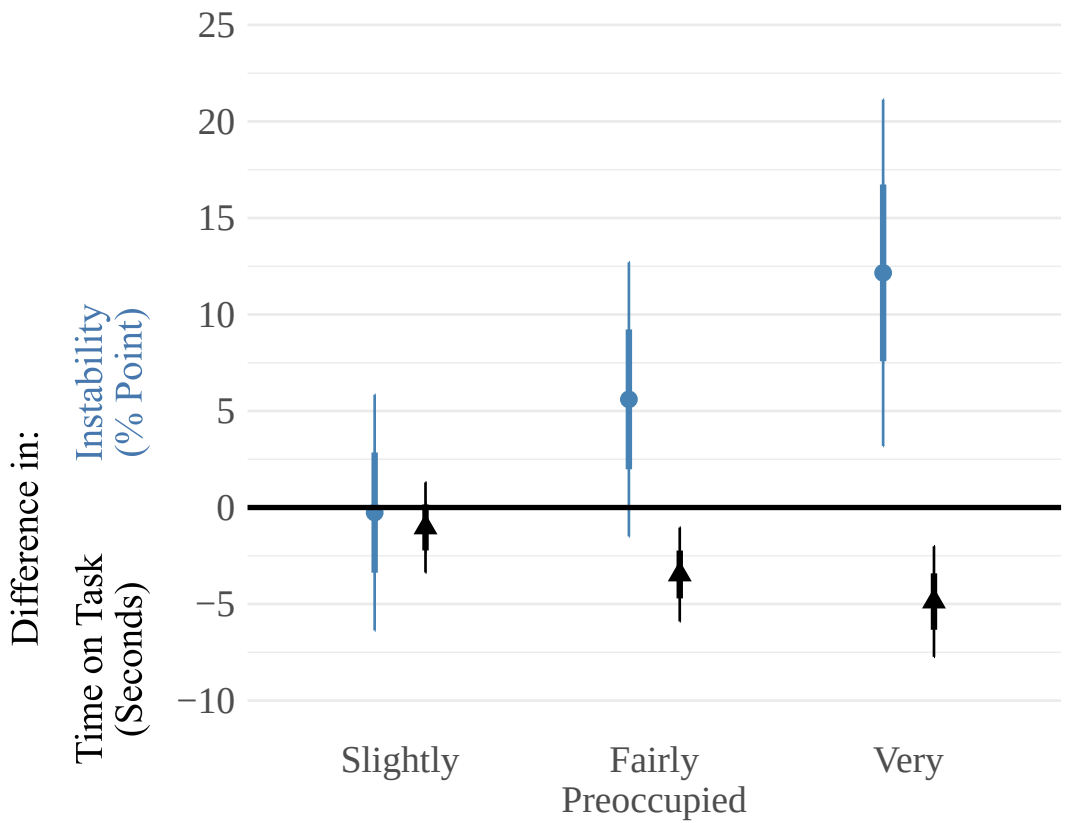

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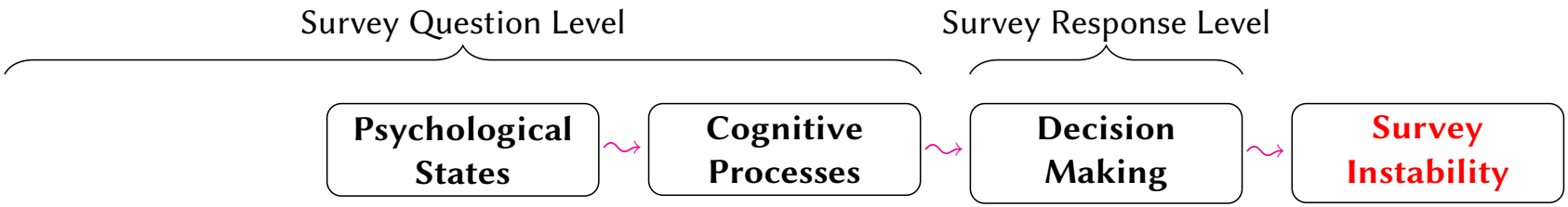

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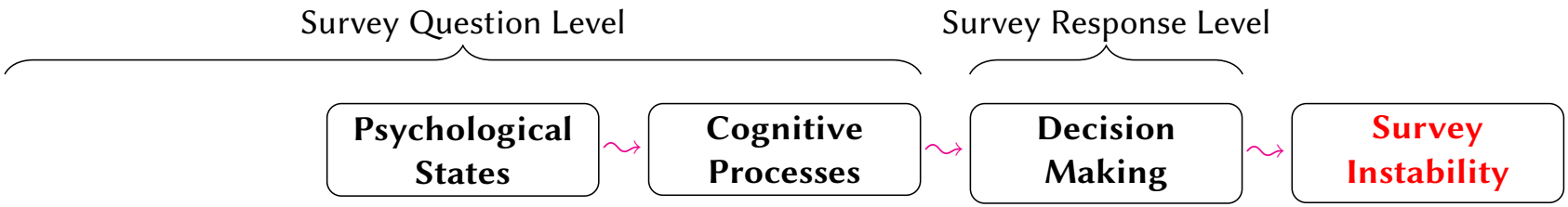

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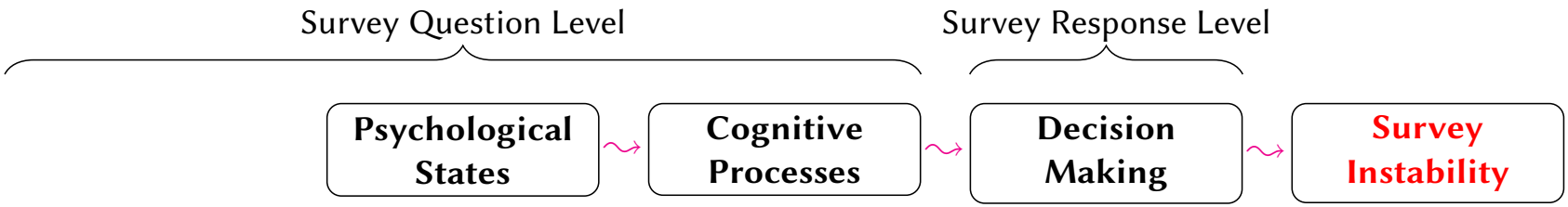

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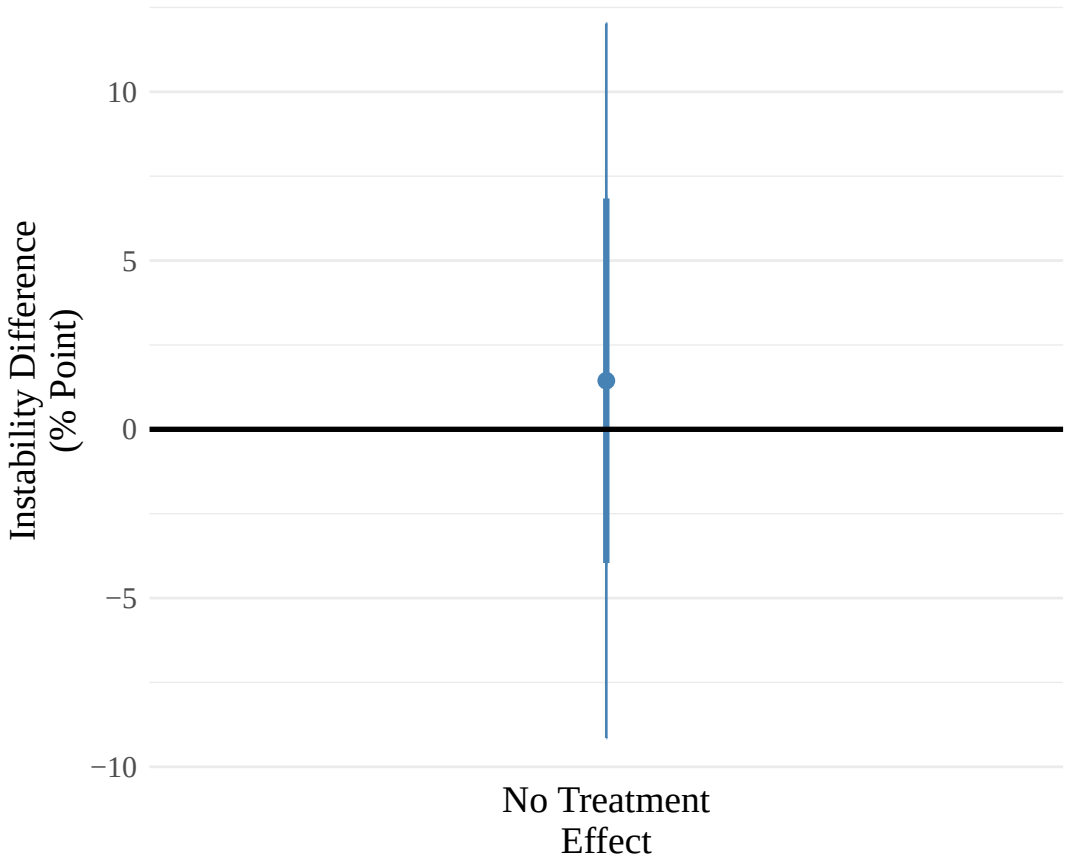

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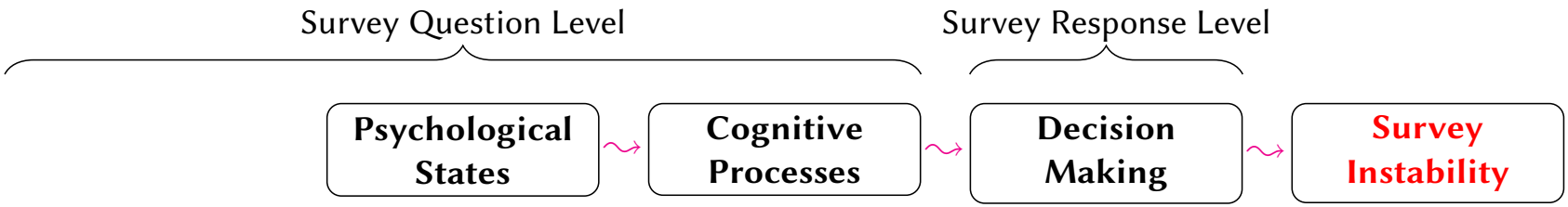

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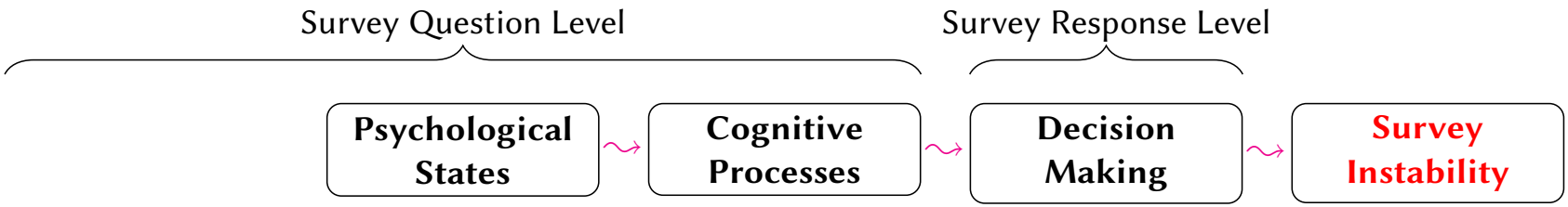

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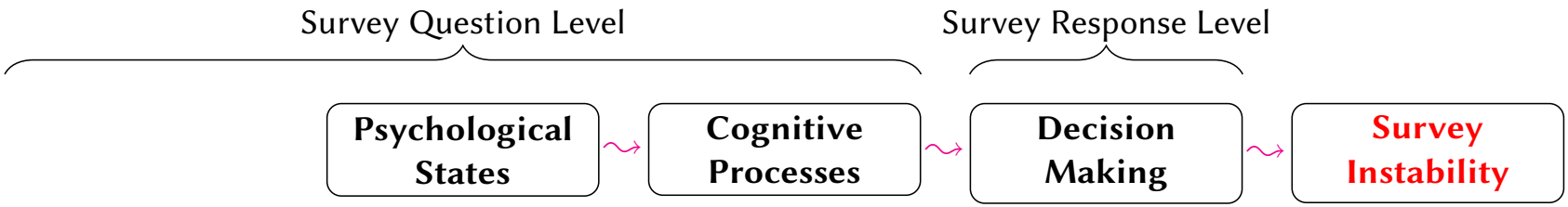

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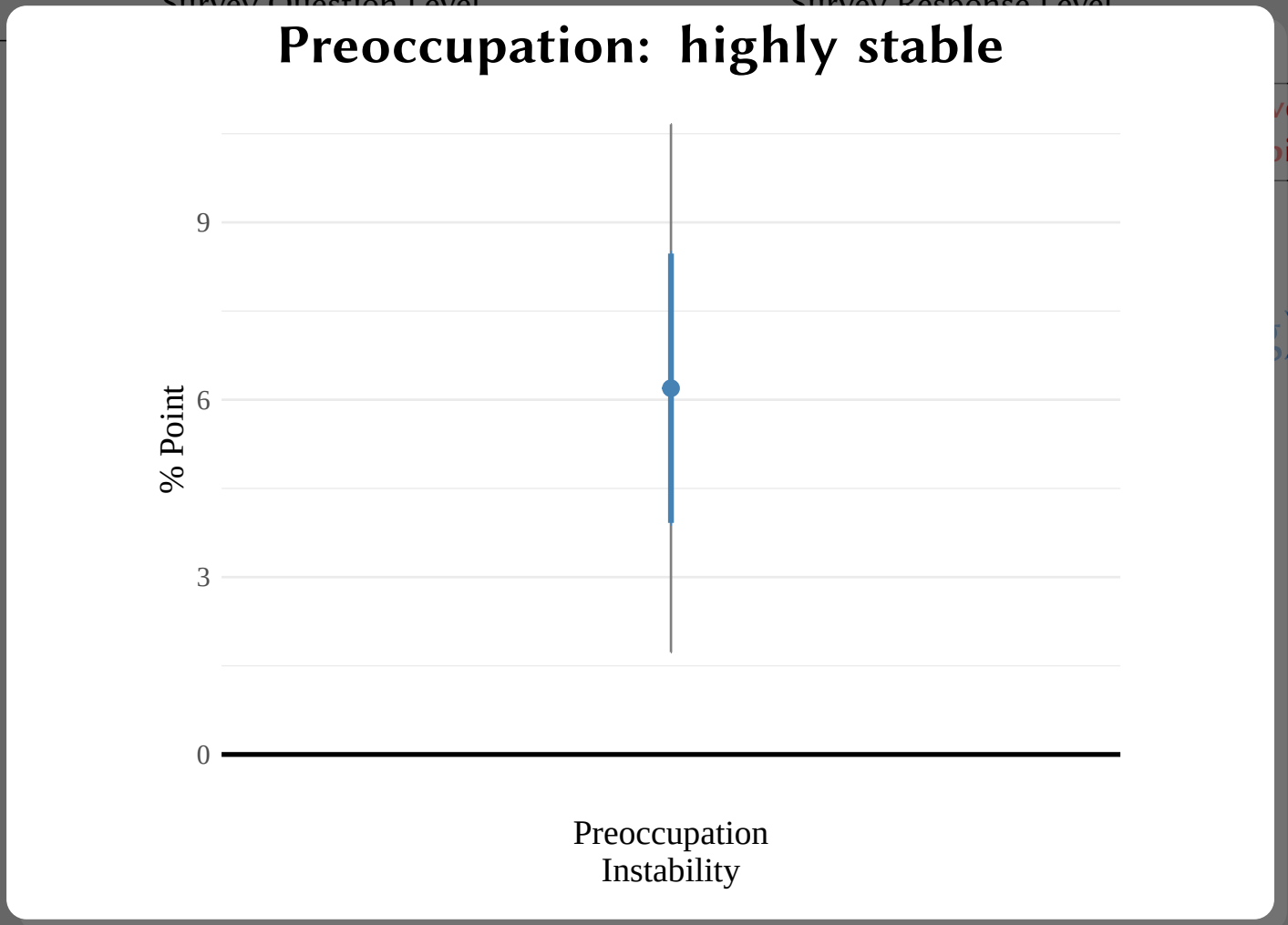

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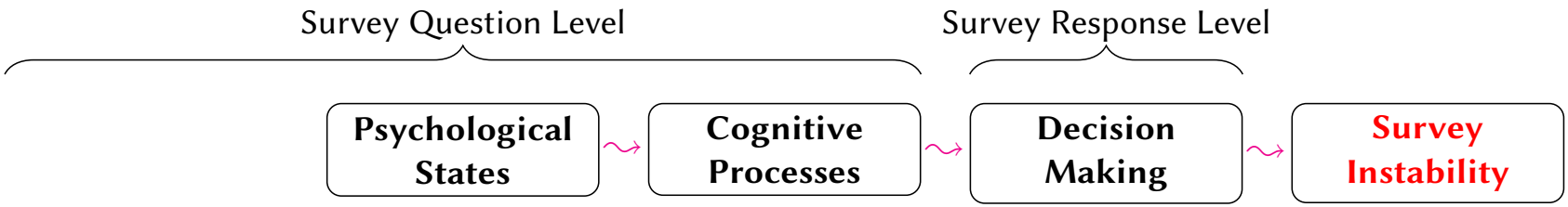

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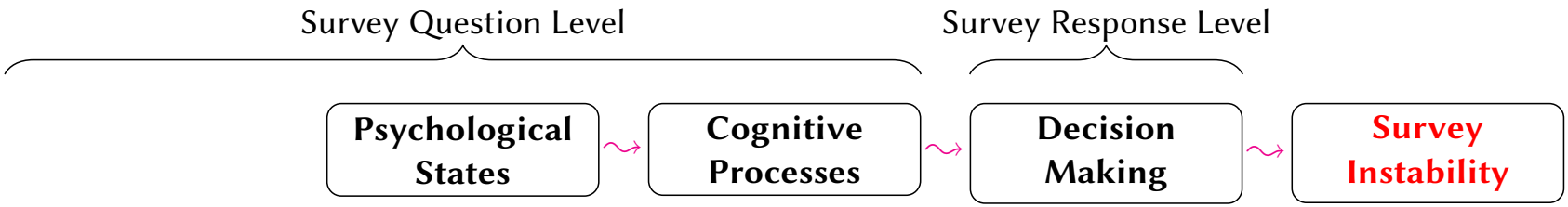

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$\Rightarrow$ Human Psychology: Adds Stochasticity

So Who's to Blame for Survey Instability?

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Explanations

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Survey Instability
~25%

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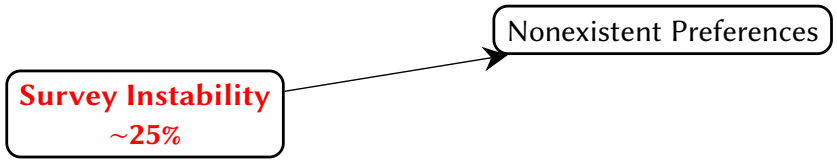

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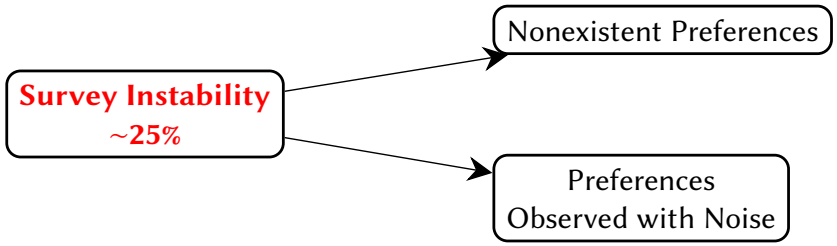

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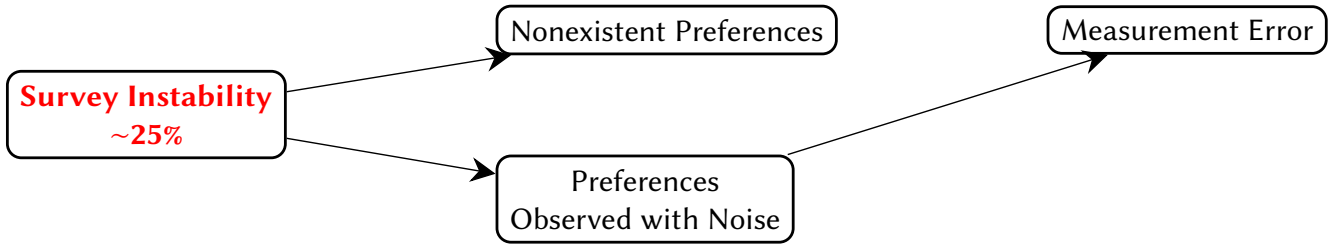

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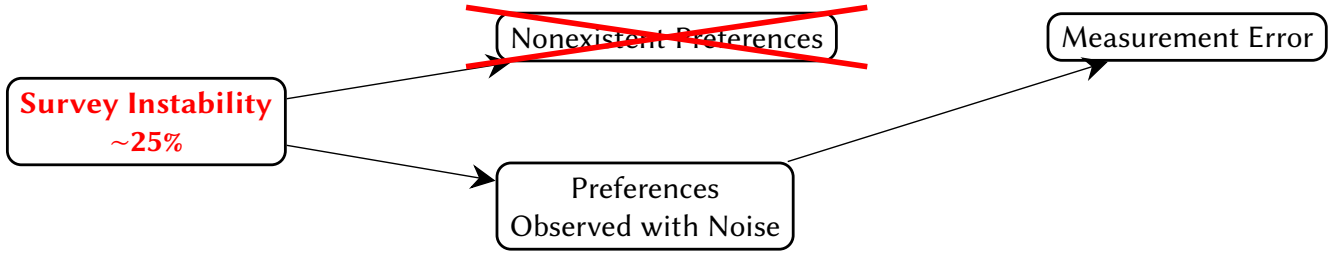

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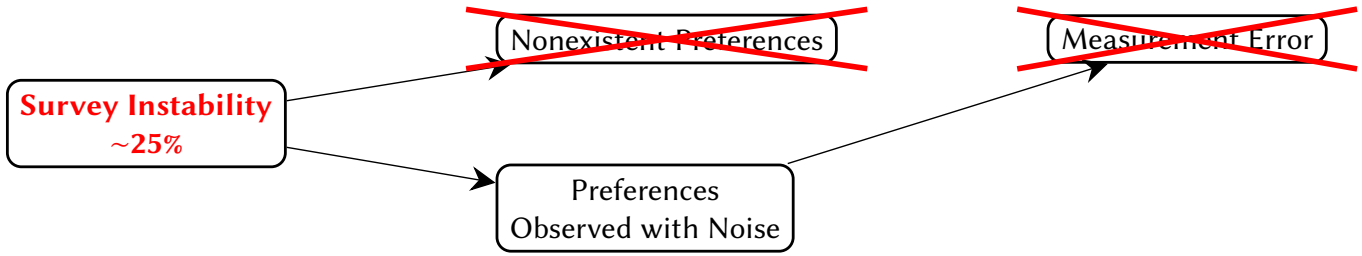

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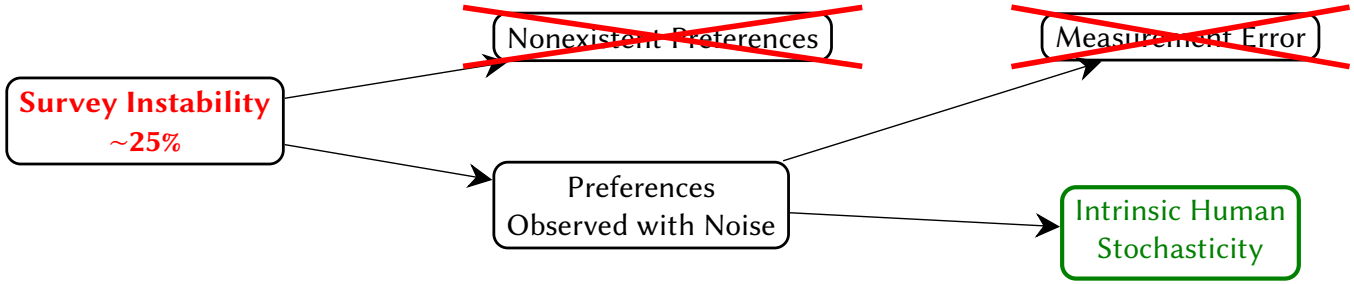

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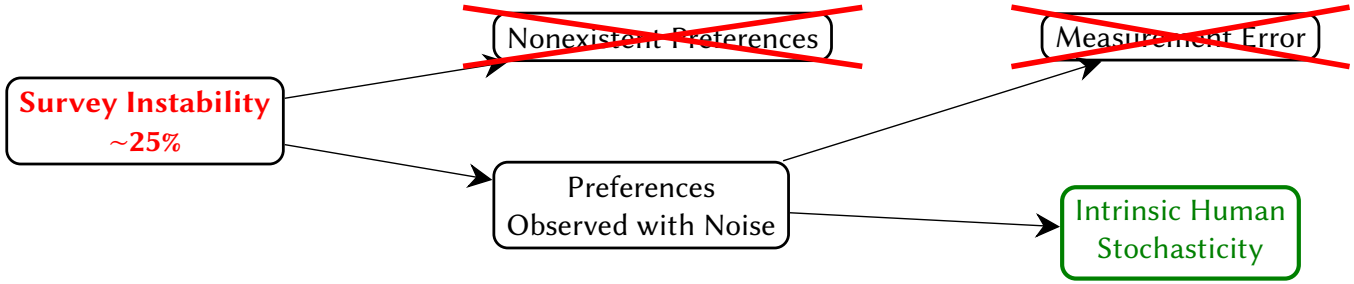

Observable Implications

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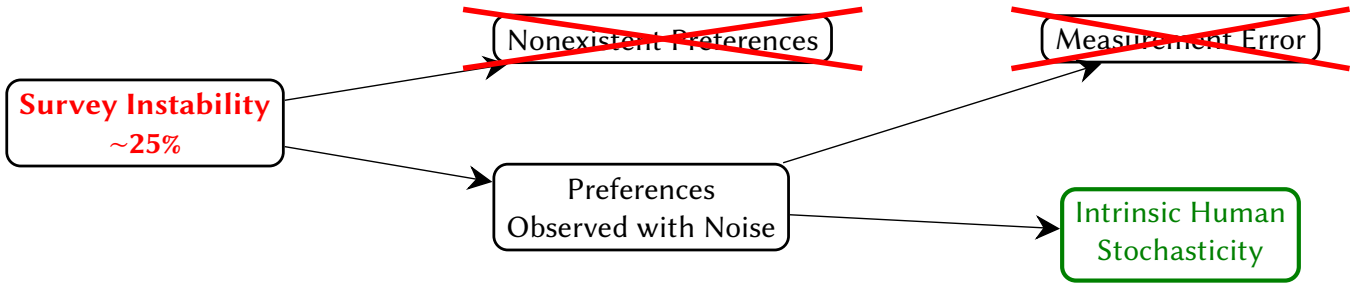

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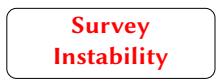

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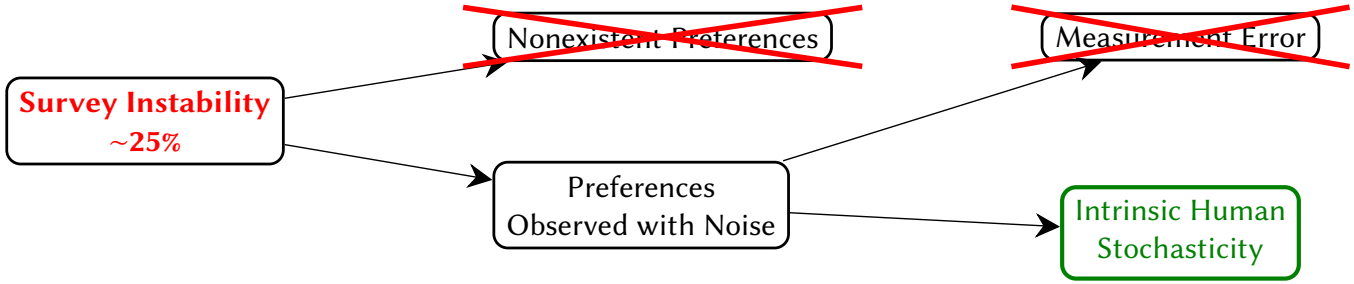

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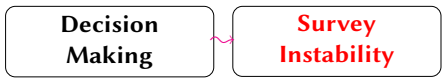

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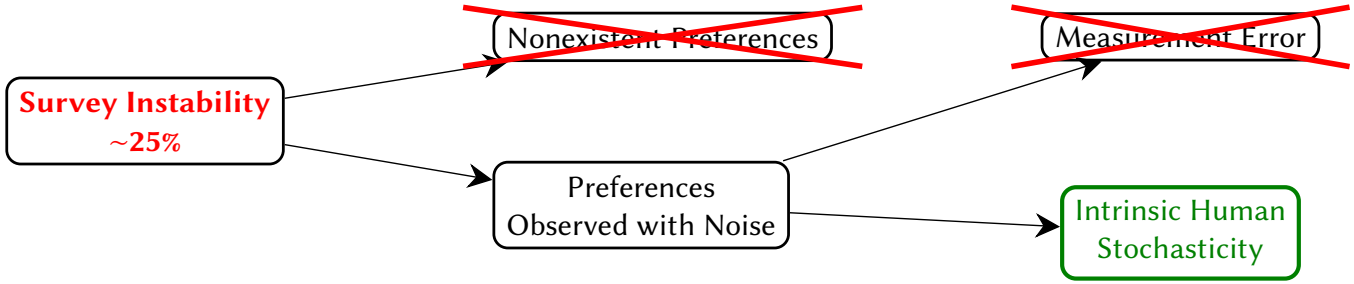

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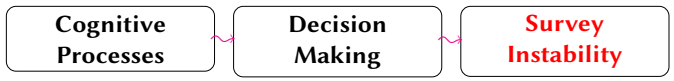

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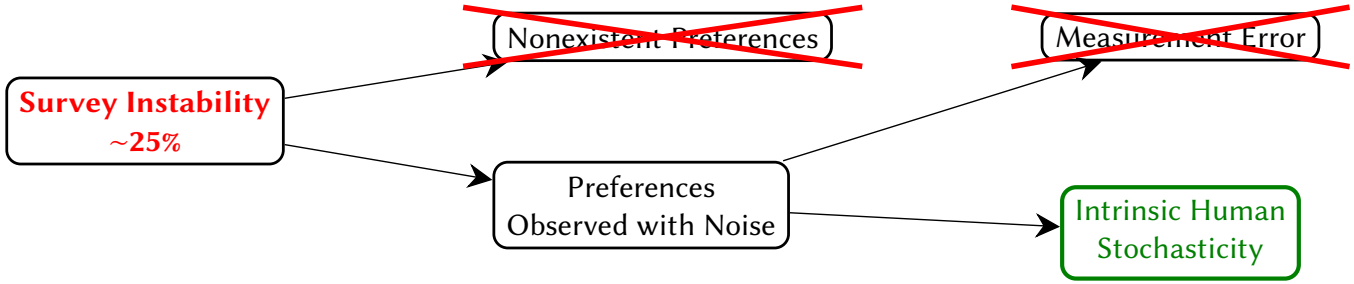

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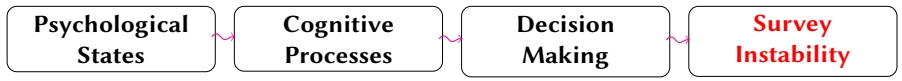

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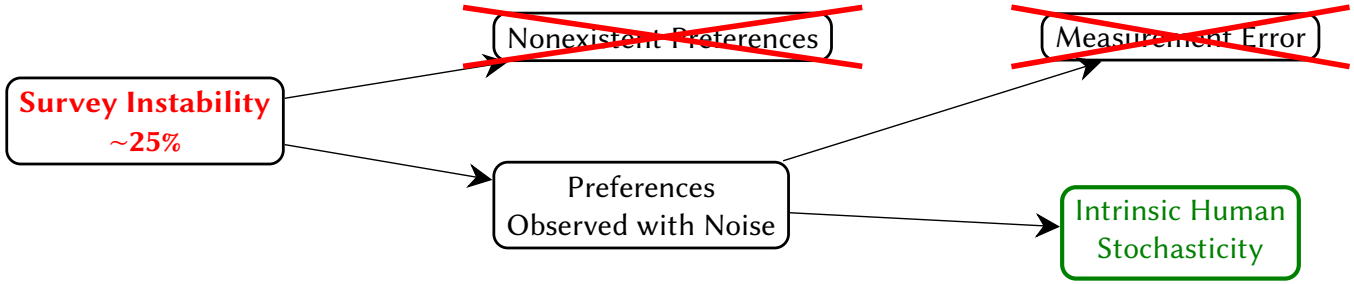

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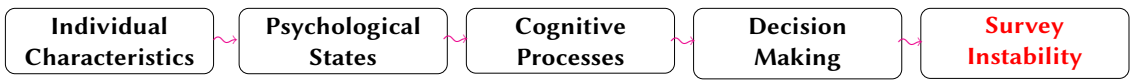

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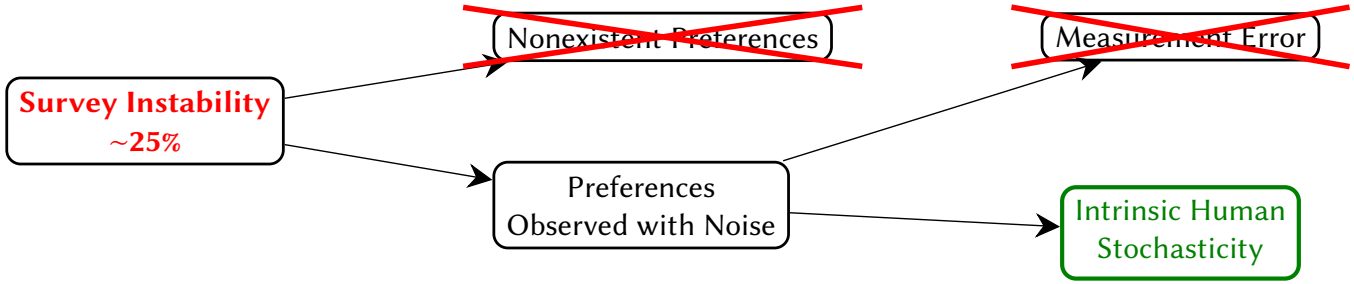

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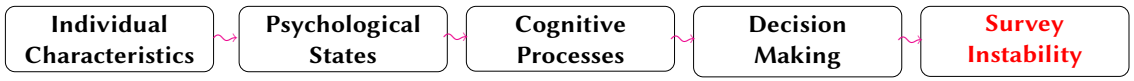

Practical Implications

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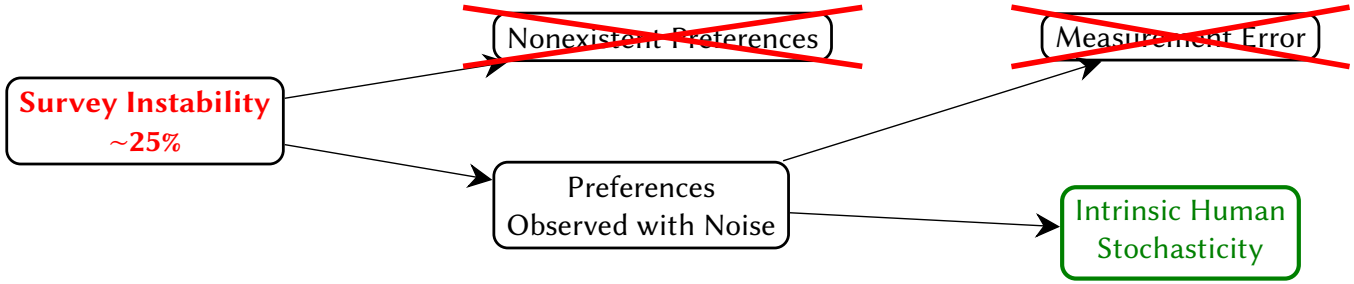

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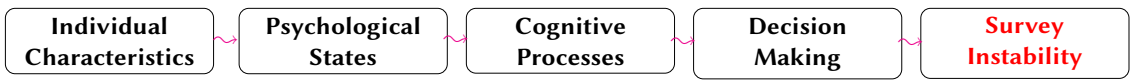

Practical Implications

- Improve survey instruments:

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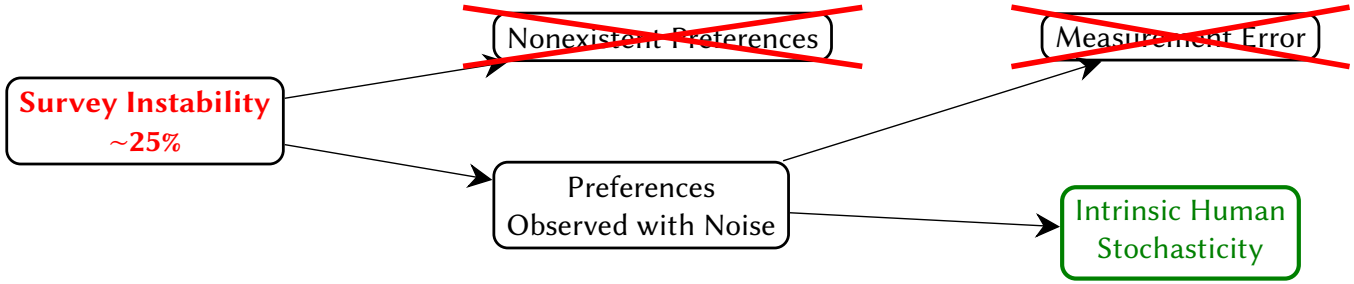

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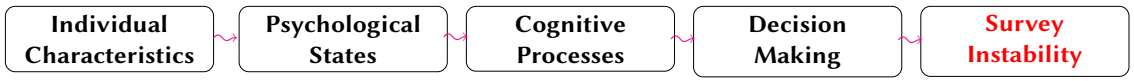

Practical Implications

- Improve survey instruments:
  - measure instability (one extra Q)

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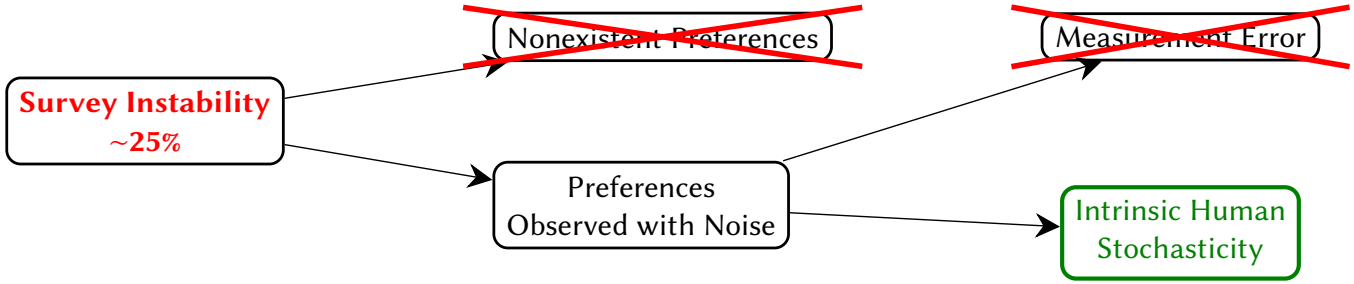

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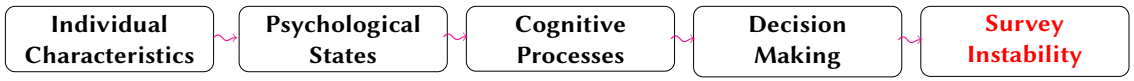

Practical Implications

- Improve survey instruments:
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  - reduce cognitive complexity (simpler Qs, fewer As)

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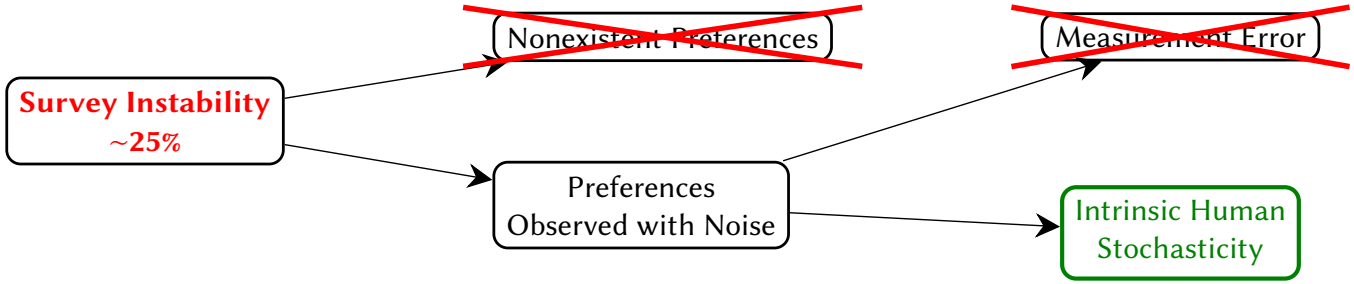

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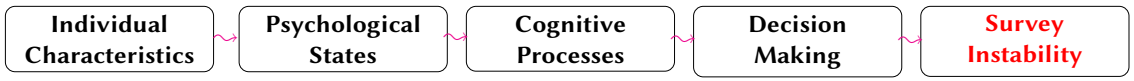

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- Improve survey instruments:
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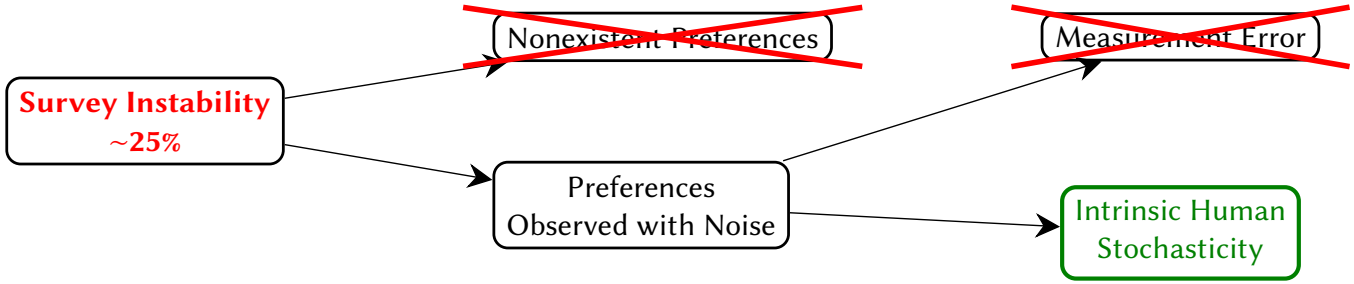

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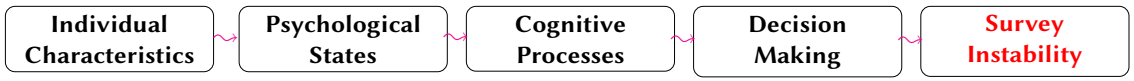

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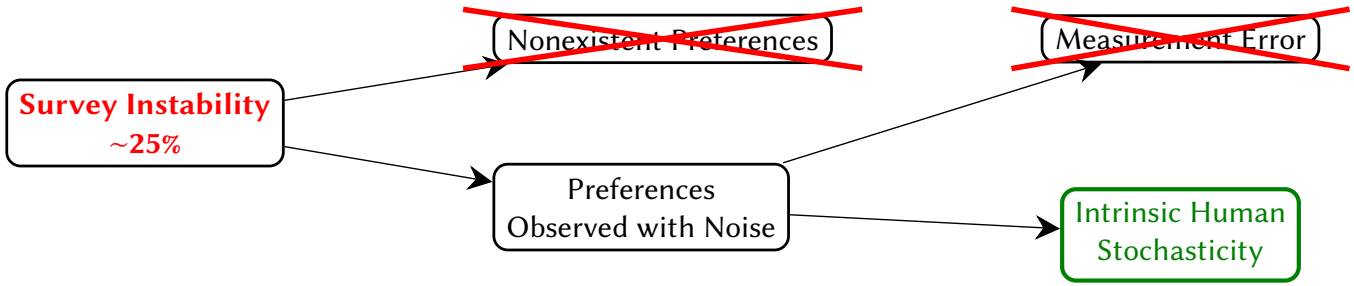

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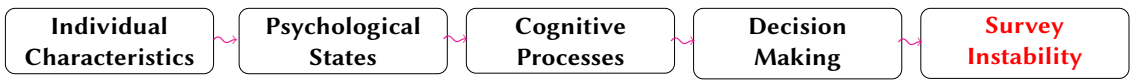

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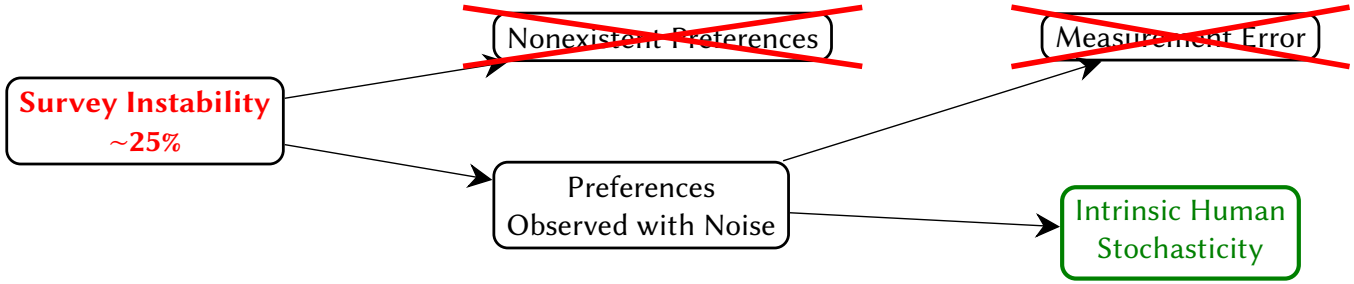

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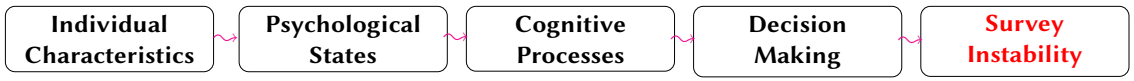

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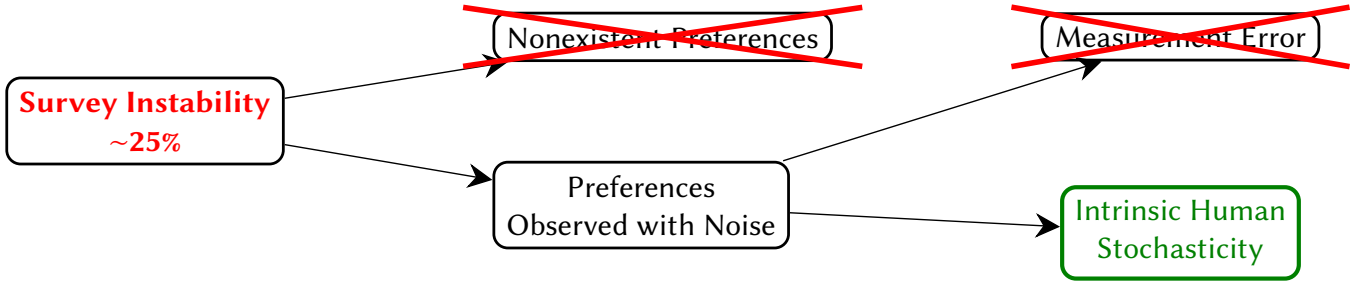

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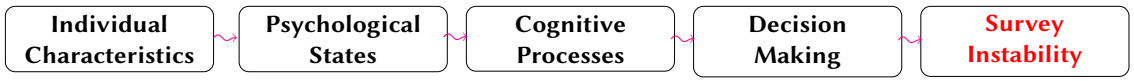

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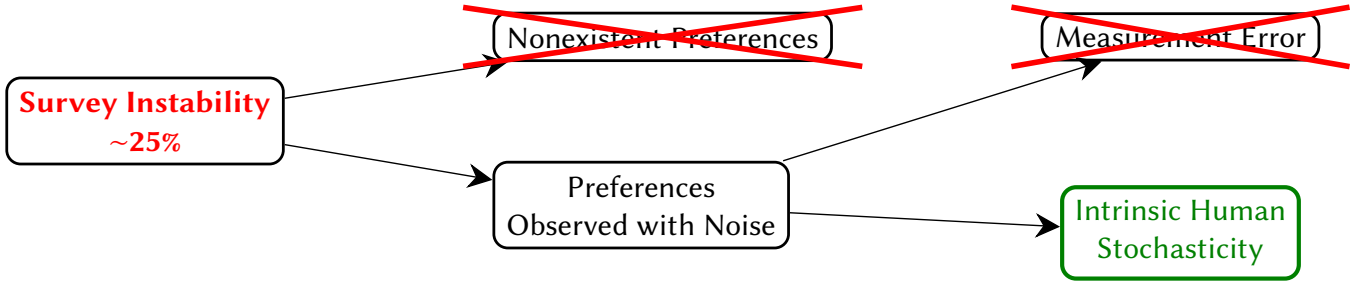

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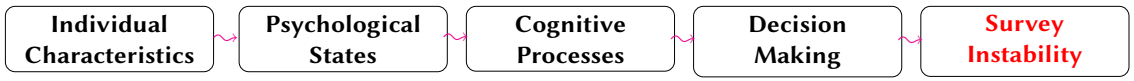

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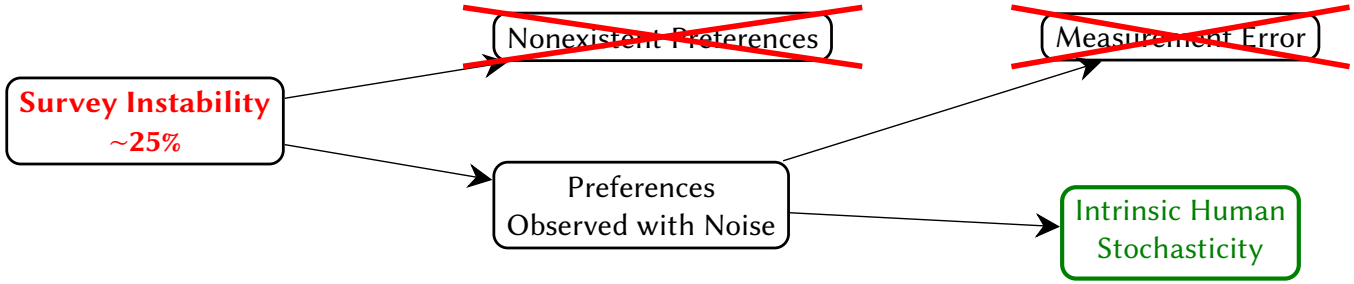

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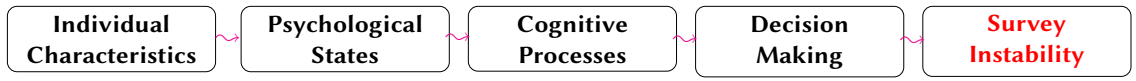

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Slides, data, paper: GaryKing.org