

# Advanced Survey Design

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# This course

- 1-hour parts
  - Day 1:
    - Total survey error
    - Mixed-mode surveys
    - Exercise : study design and modes
    - Push-to-web
    - Sampling frames
    - Recruitment strategy (sampling and coverage)
  - Day 2
  - Day 3
  - Day 4
  - Day 5

# This course

- 1-hour parts
  - Day 1
  - Day 2:
    - Questionnaire design
    - Questionnaires for mixed mode
    - Exercise: Redesigning for self-completion
    - Adaptive survey designs
    - Ecological momentary assessment
    - Exercise: Redesign once more (fieldwork, new methods)
  - Day 3
  - Day 4
  - Day 5

# This course

- 1-hour parts
  - Day 1
  - Day 2
  - Day 3:
    - Big data and TSE
    - Designed Big data
    - Exercise: selection bias in (designed) big data
    - Data donation
    - Exercise: data donation
    - Exercise: digital trace data
  - Day 4
  - Day 5

# This course

- 1-hour parts
  - Day 1
  - Day 2
  - Day 3
  - Day 4:
    - Surveys using apps
    - (Passive) data collection using mobiles (sensors)
    - Ethics, consent, willingness
    - Geo- and accelerometer-based applications
    - Exercise: Working with sensor (geo) data or accelerometer data
    - Text and images
    - Exercise: text and images
  - Day 5

# This course

- 1-hour parts
  - Day 1
  - Day 2
  - Day 3
  - Day 4
  - Day 5:
    - Data integration
    - Individual consultations

# This is us

- And who are you?

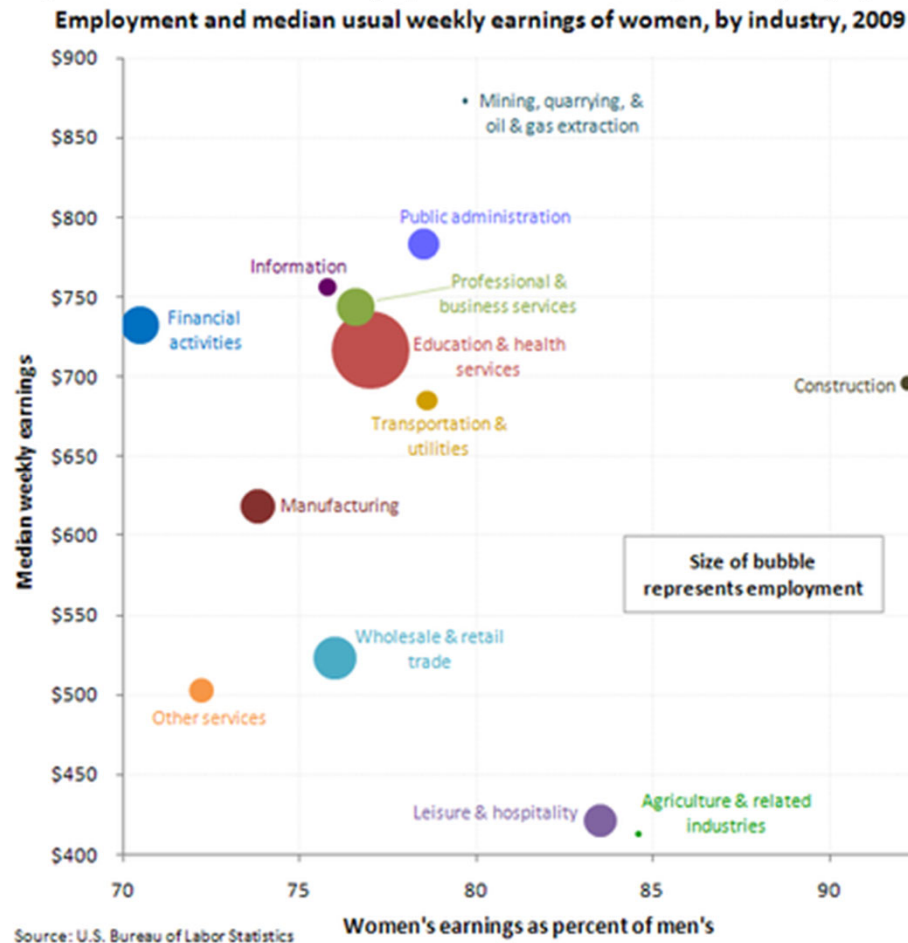


# Introduction

Total Survey Error



# Example: The gender pay gap

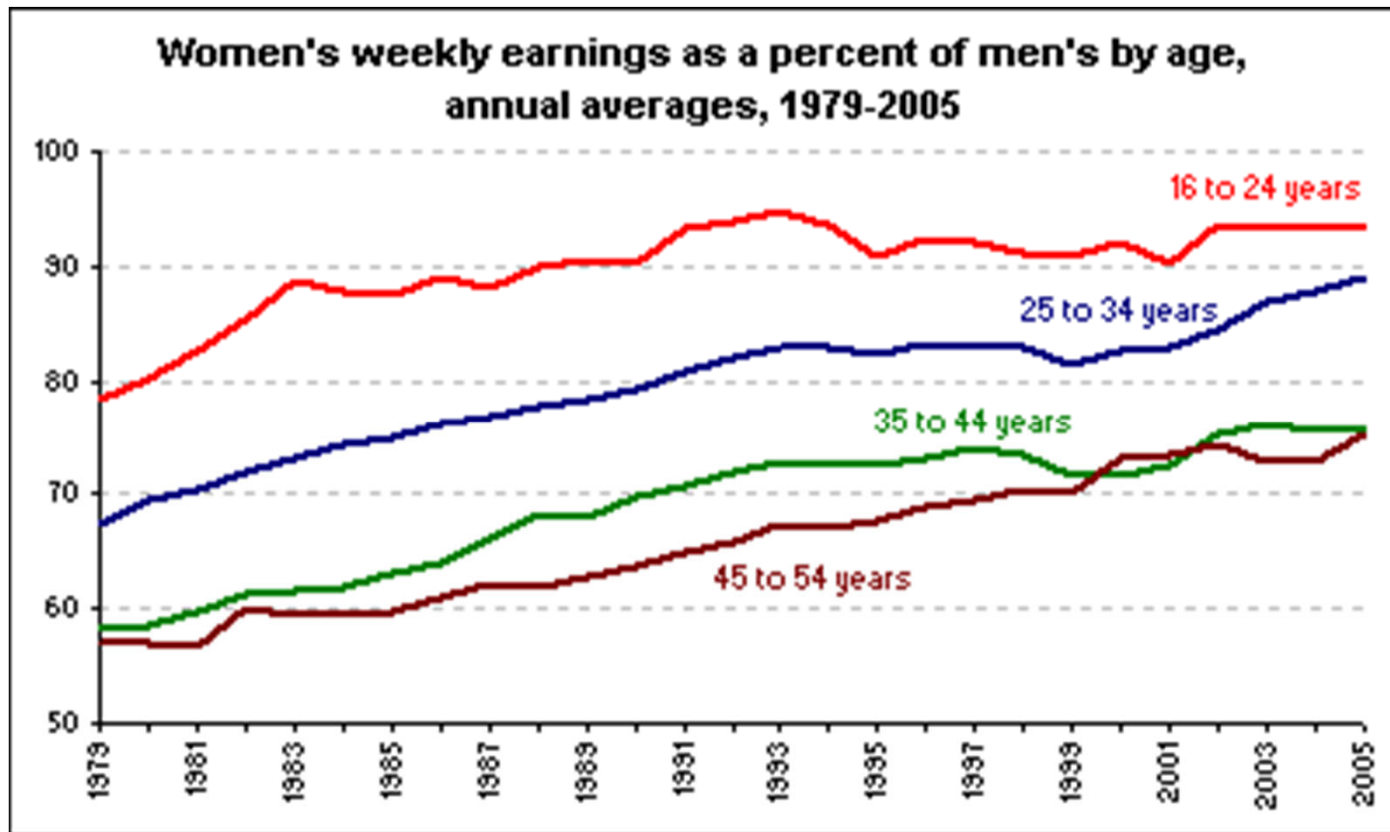


[http://en.wikipedia.org/wiki/Gender\\_pay\\_gap](http://en.wikipedia.org/wiki/Gender_pay_gap)

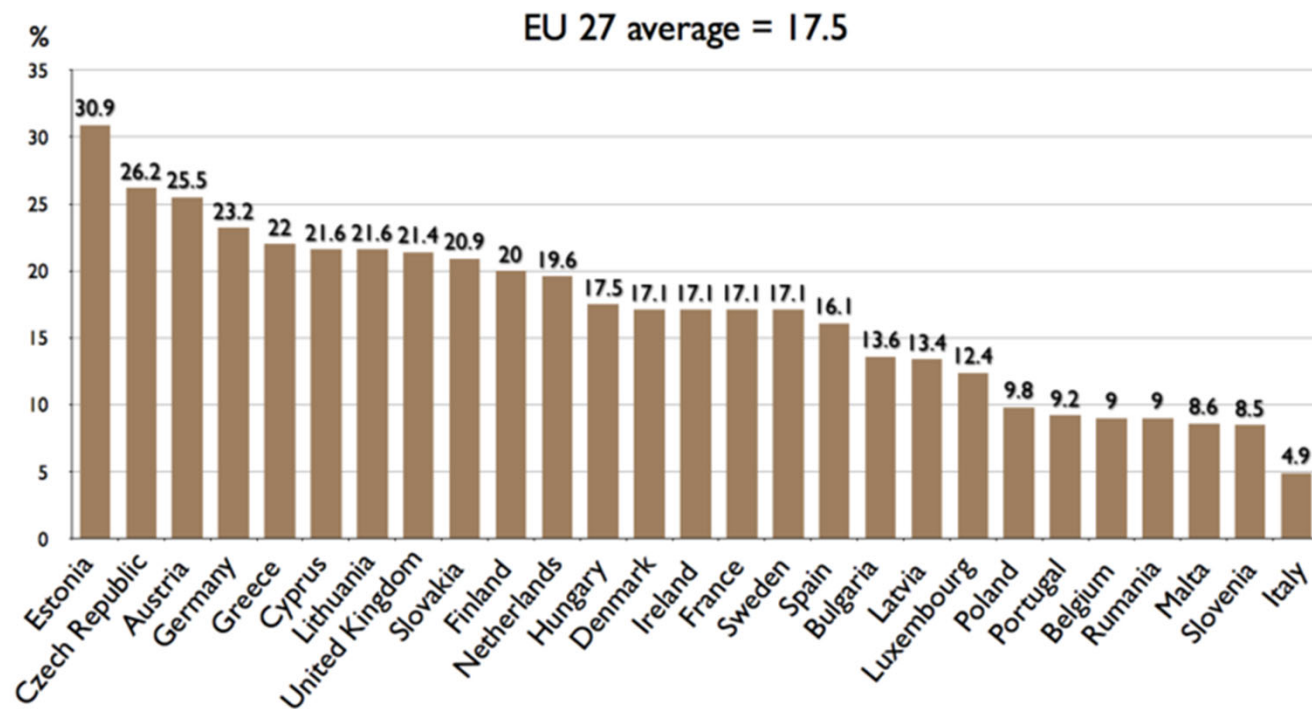
# Example: The gender pay gap

- Women get paid less than men for same job
- Even after correcting for:
  - Men work more hours a week
  - Men self-select higher paid jobs
  - Difference in Work experience
  - Difference in educational levels (in some countries)
- In USA, observable differences explain about 60% of wage gap
- In Europe: glass ceiling
  - Positive discrimination necessary? Quota?

## Example: The gender pay gap



# Example: The gender pay gap



# Example: the gender pay gap

- How to investigate the pay gap?
  - Interviews
  - Experiments
  - Official statistics
  - Surveys

# 1. Interviews

- Interview
  - Employees: how is their salary determined?
  - Employers: how do they determine salaries?



Good for understanding how/why salaries are lower  
Good for understanding attitudes



Not good for studying size of wage gap  
Not good for studying many different situations, job types etc.

## 2. Experiments

- Experiment
  - Use male and females applicants with exact same CV, negotiation tactics etc.
  - Study outcome: what is wage gap in agreed salary?



Good for estimating size of wage gap that is attributable to gender  
Good to study behaviour



External validity low  
Interaction effects of gender with lots of job-related choices: type of job, hours worked, duties at job etc.  
Not great for studying attitudes

### 3. Official statistics

- Use national statistical data
  - Tax data
  - Government departments for work



Able to investigate real wage gap  
Across lots of sectors, hours worked, age etc.



Can only focus on observable data (facts)  
Not on attitudes, behaviour etc.  
Not good for understanding



## 4. Survey

- Survey
  - Get a random sample of entire population
  - Ask about salaries, attitudes, background characteristics



Good for estimating size of wage gap  
Possibility to study lots of causes of wage gap  
Attitudes, facts



Nonresponse? Answers that are not accurate?  
Not good for studying behaviour (e.g. Salary negotiations)

## Aims of survey research

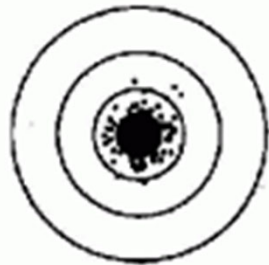
The ultimate aim of survey research is to collect data about sample units, from which we can **infer** to the population.

For this we need to ensure that the data are accurate, i.e. we need to minimize error.

Survey error consists of two components:

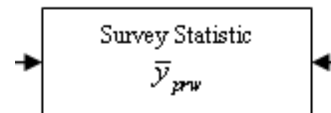
**Error = bias + variance**

# Bias and variance



**a. Unbiased and precise  
= accurate**

# Total Survey Error (TSE) Framework

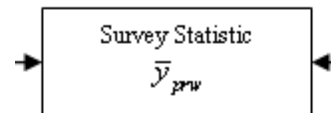


(Groves et al. 2009, p.48)

# Total Survey Error (TSE) Framework

Measurement

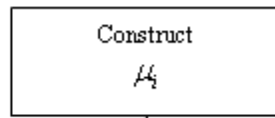
Representation



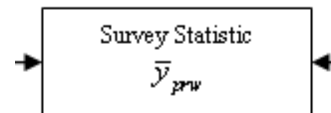
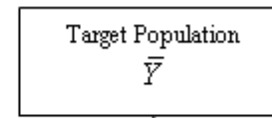
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# Total Survey Error (TSE) Framework

Measurement



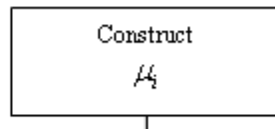
Representation



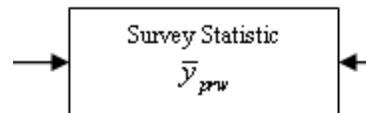
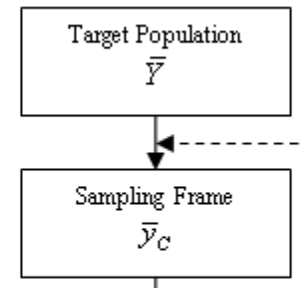
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# Total Survey Error (TSE) Framework

## Measurement



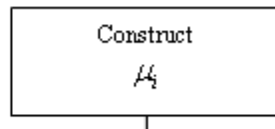
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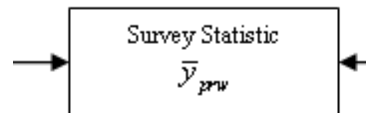
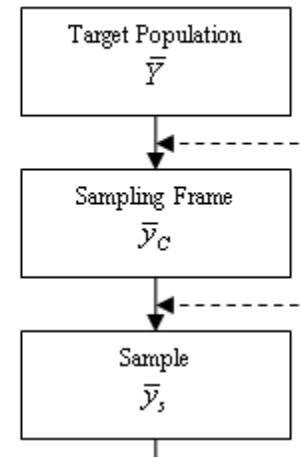
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# Total Survey Error (TSE) Framework

## Measurement



## Representation

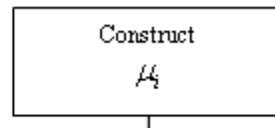


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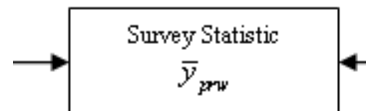
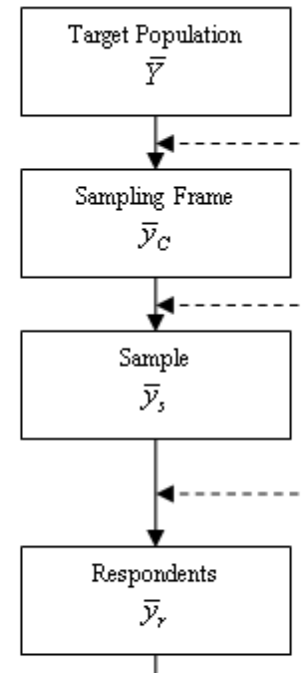


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## Measurement



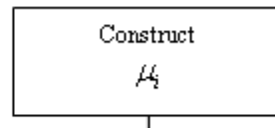
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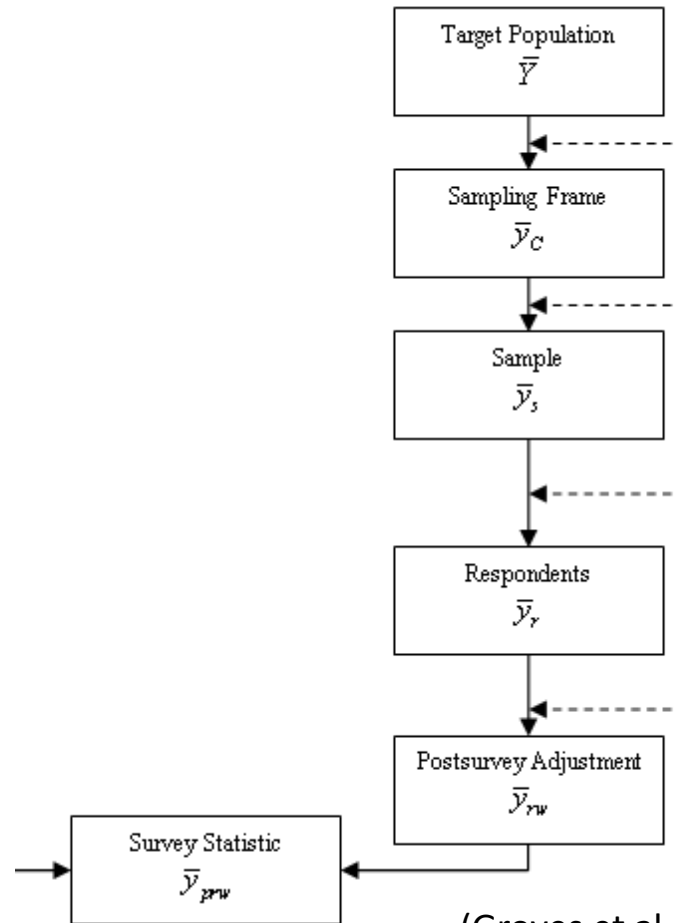
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## Measurement

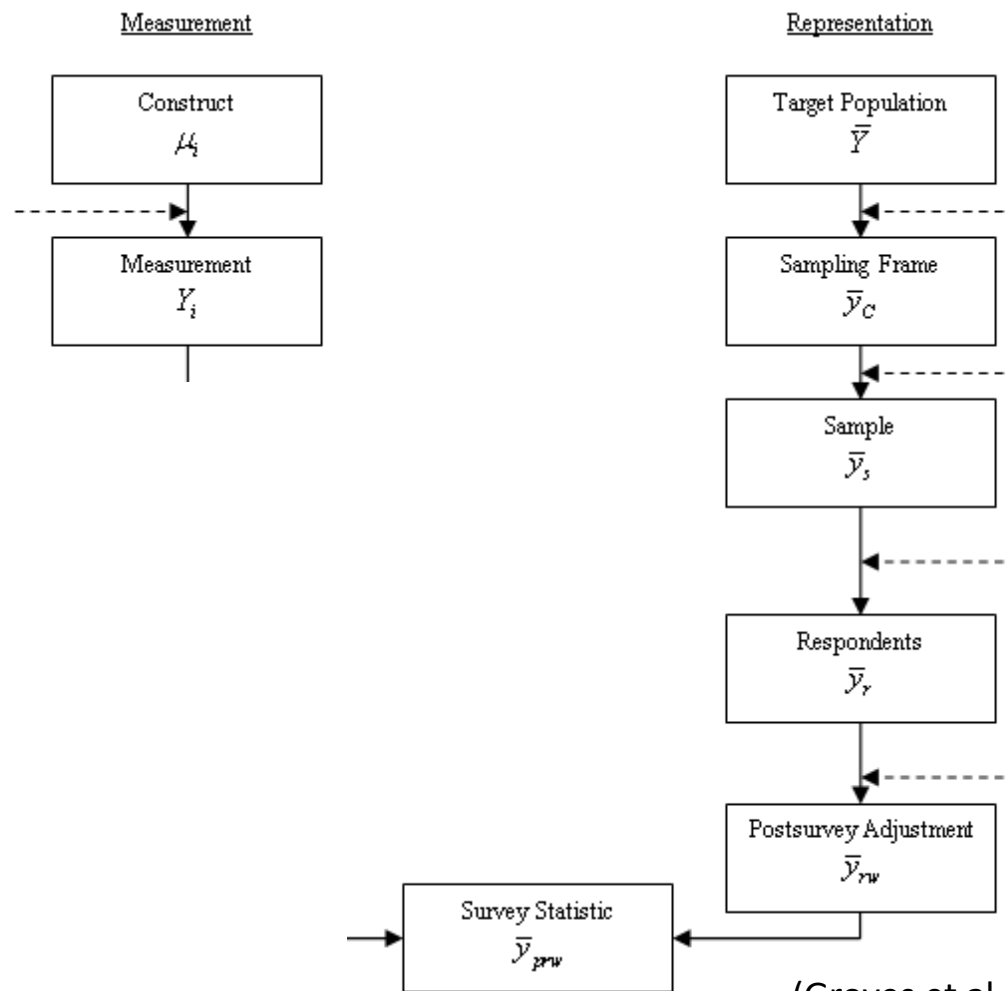


## Representation



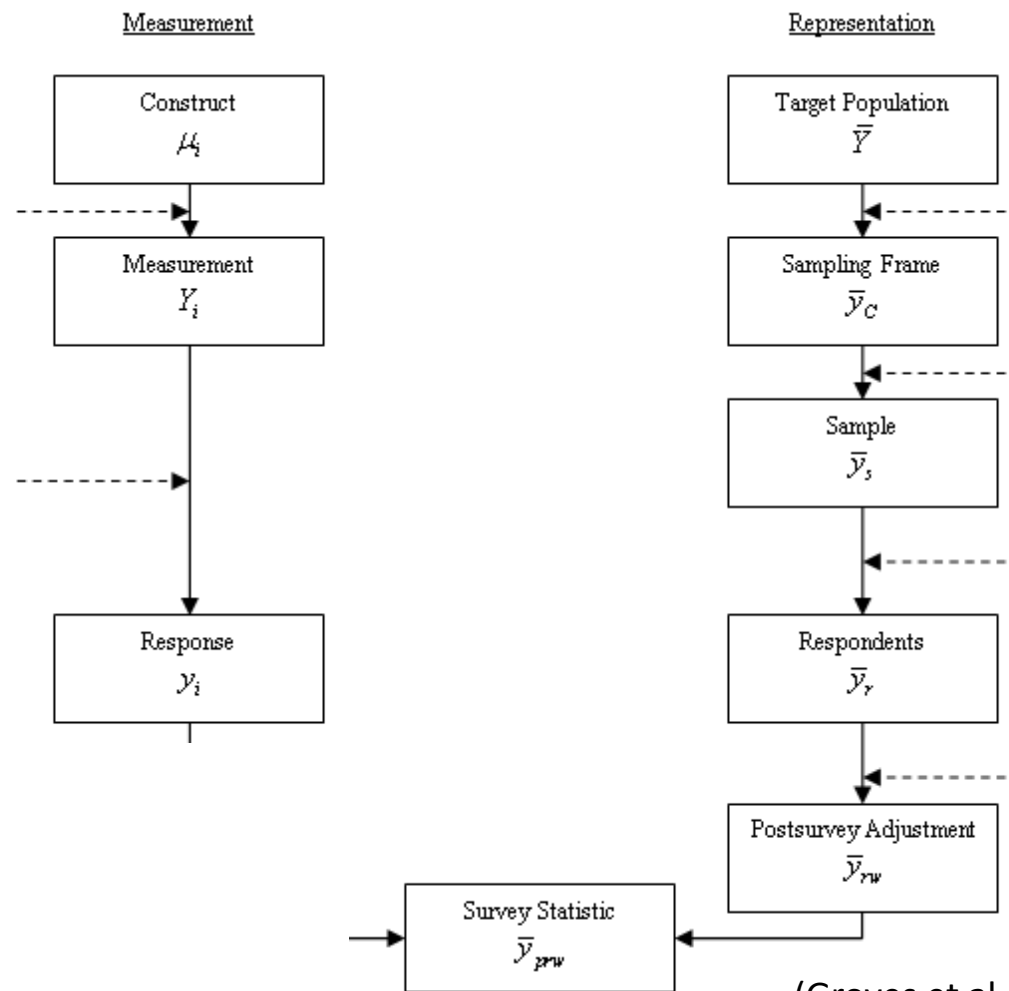
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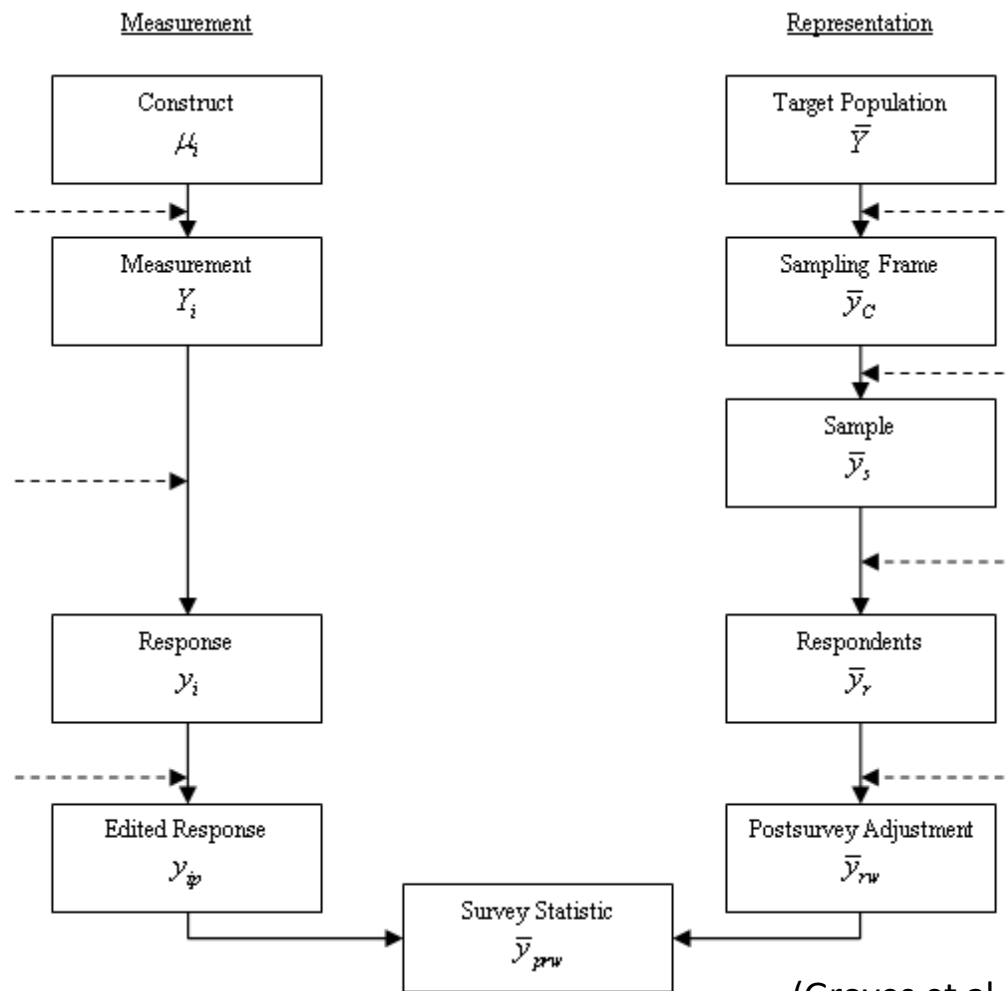
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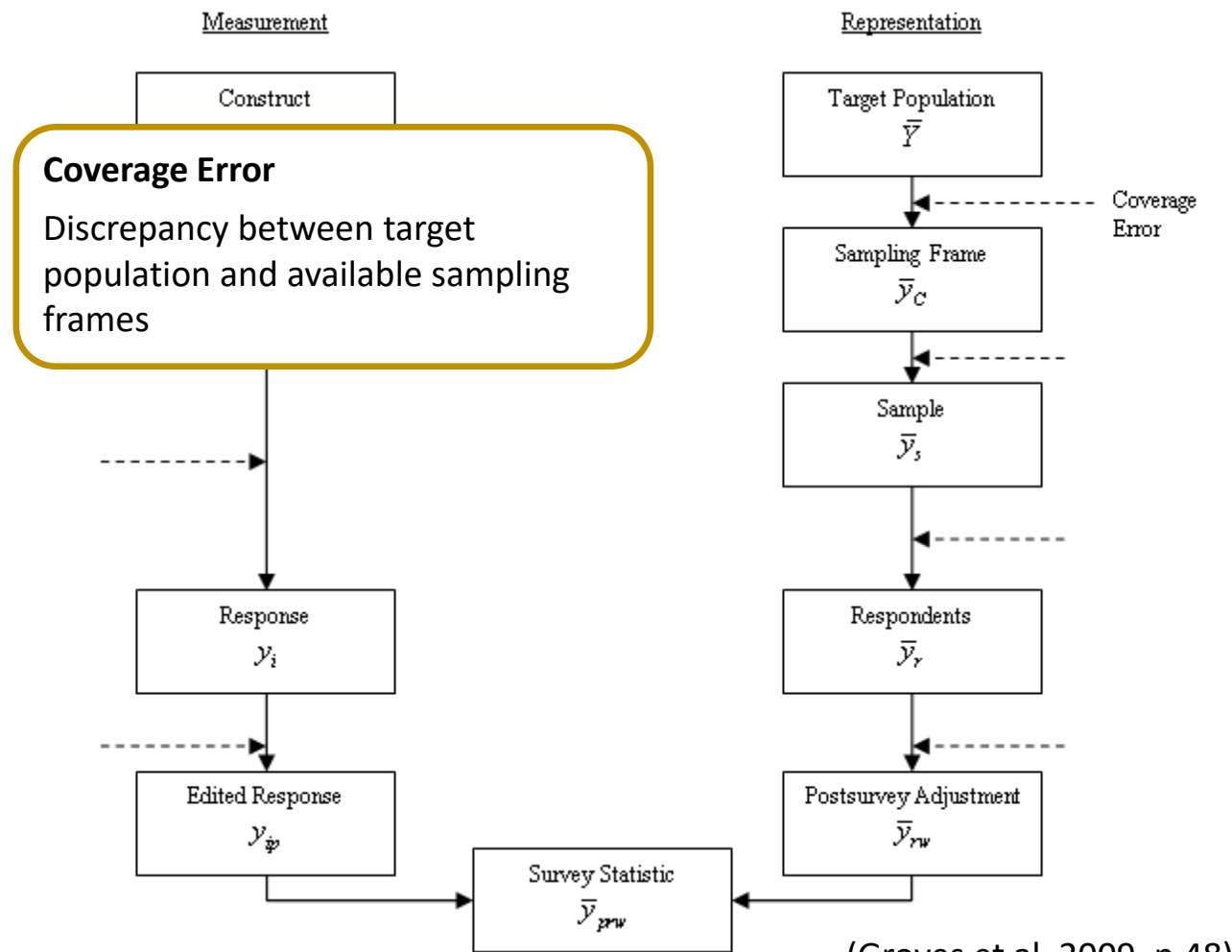
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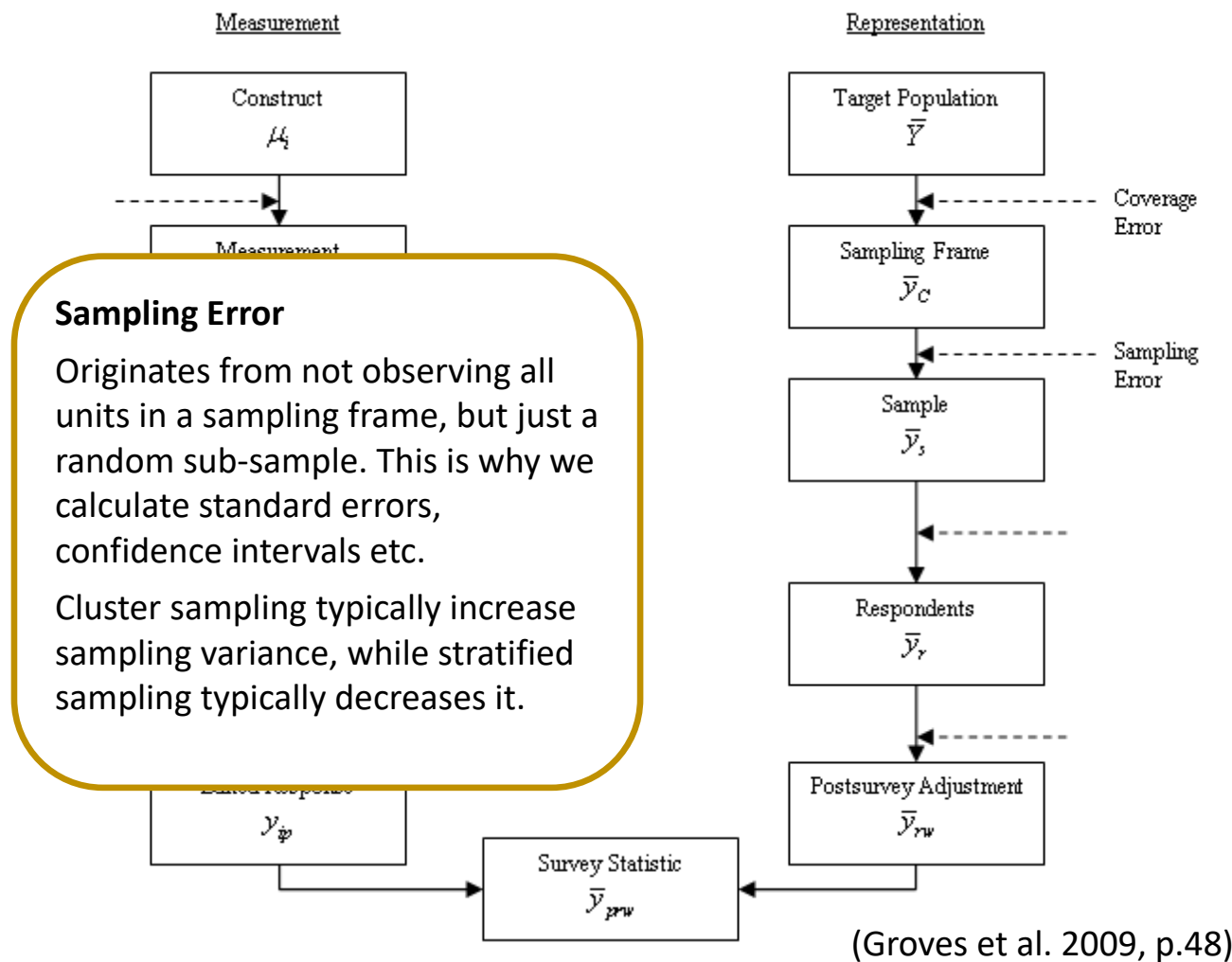


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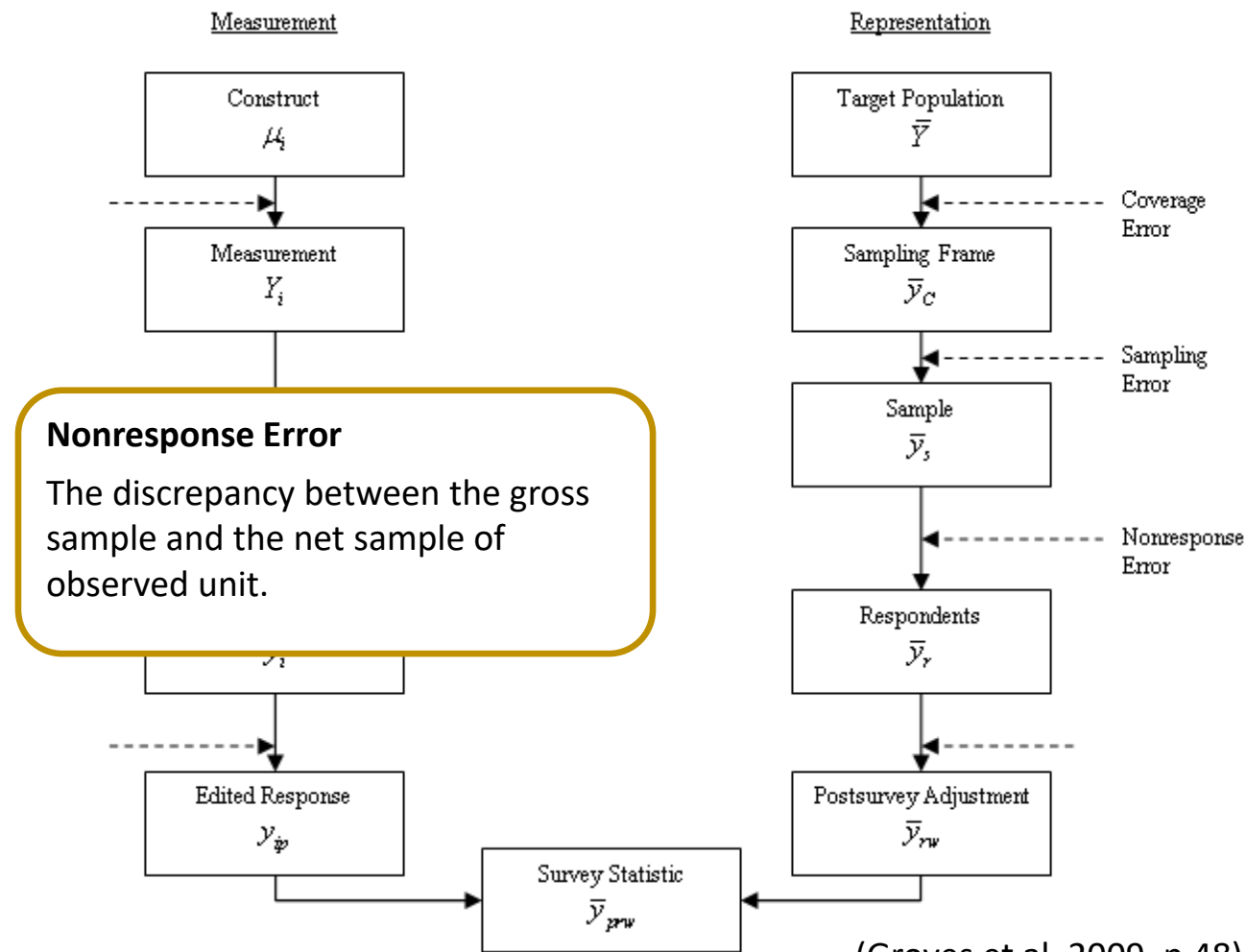
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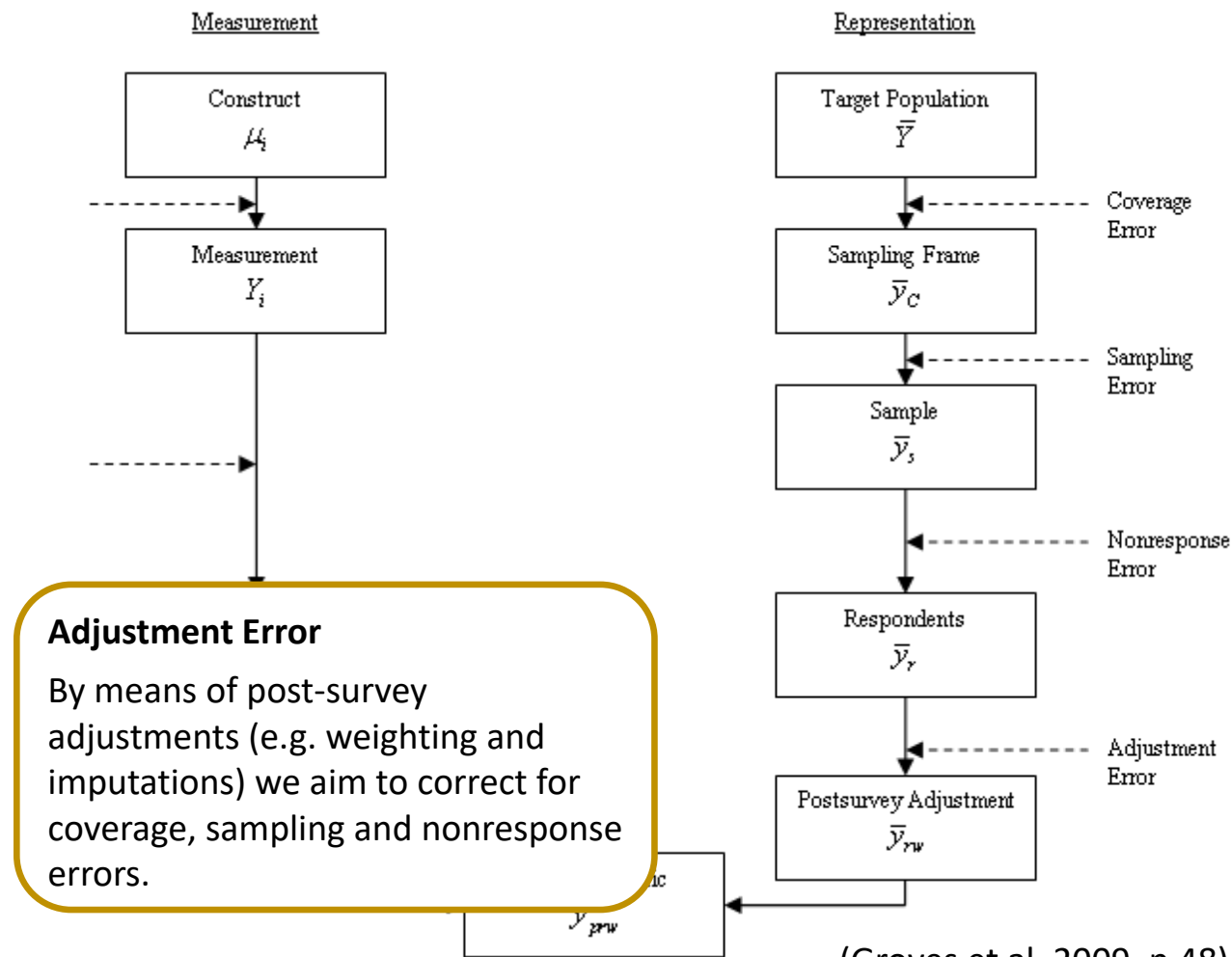


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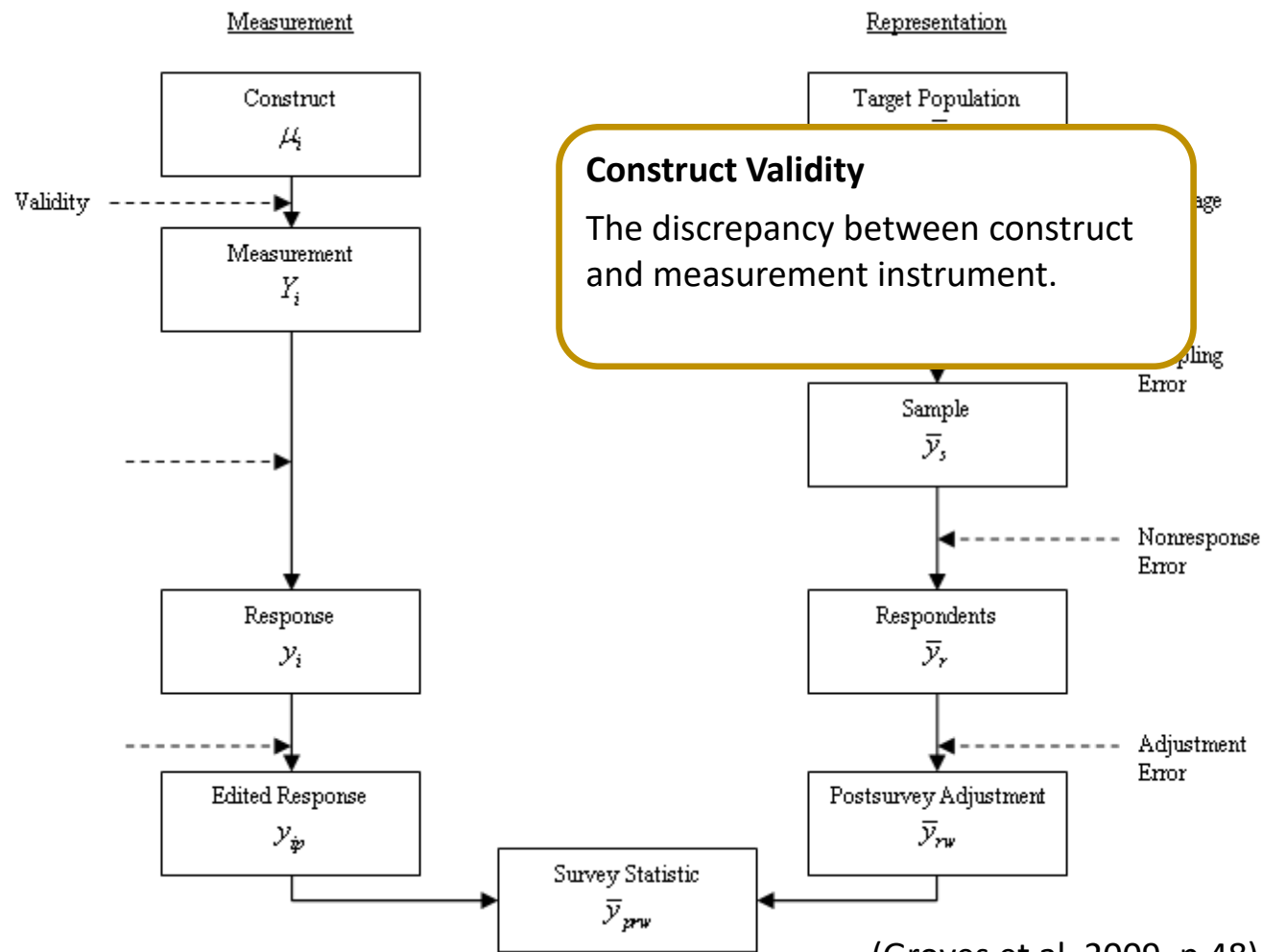




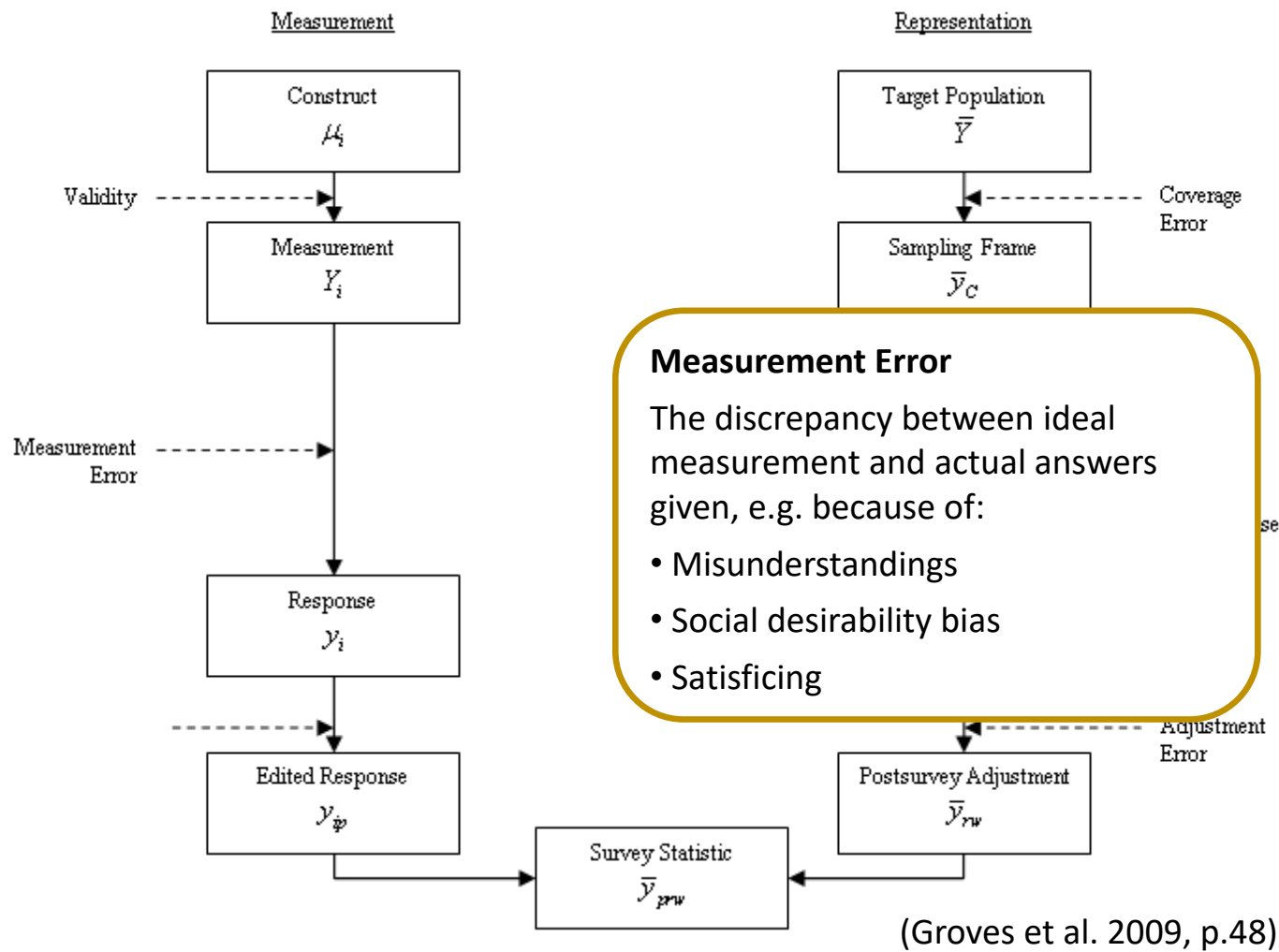
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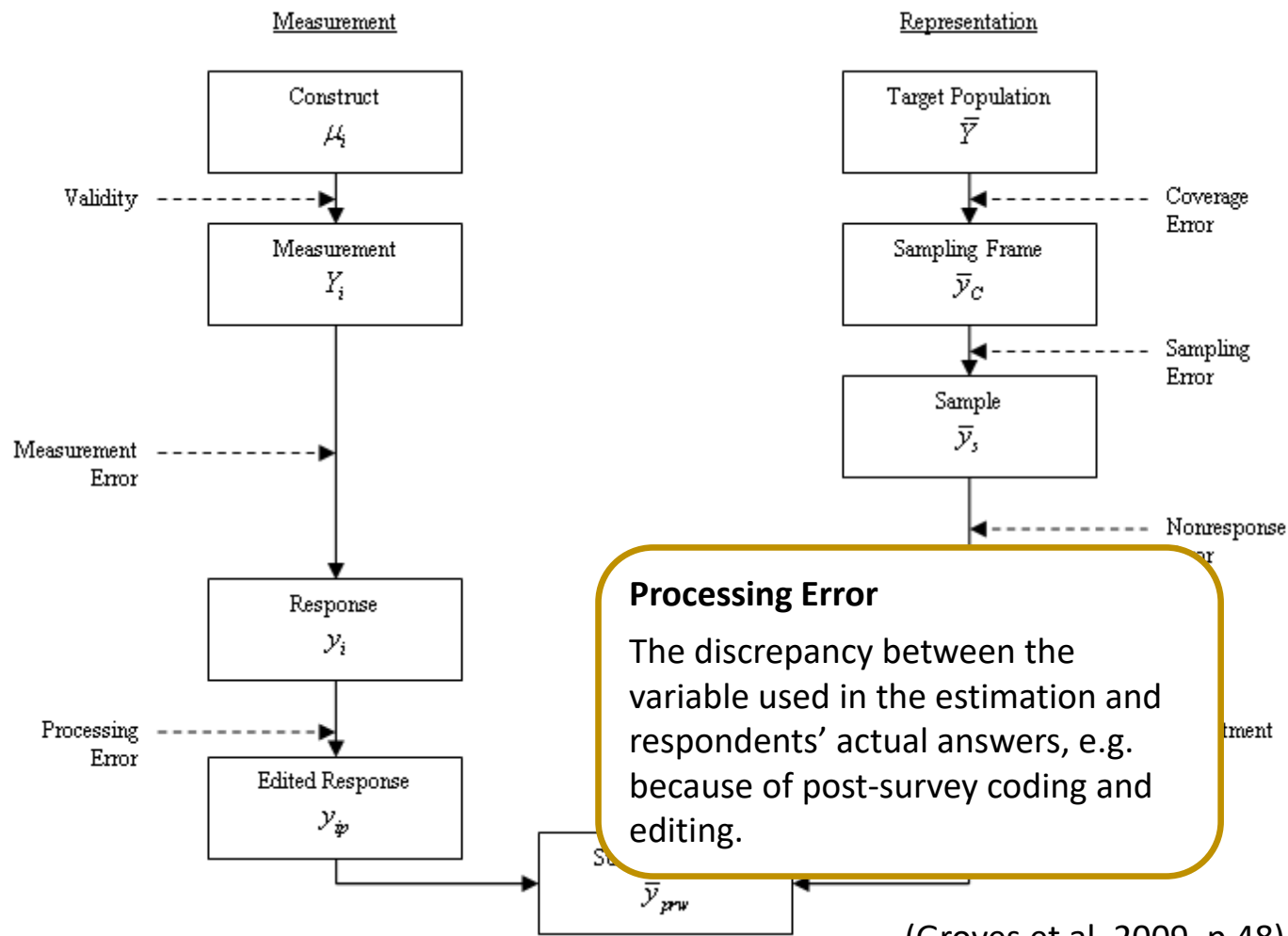
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