

# Is Our Survey Data Good Enough for Public Policymakers?

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Field Quality Control Techniques in F2F and CATI Surveys at D3

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**DESIGNS**



**DATA**



**DECISIONS**

Introduction

# International Polling



Note\* Will continue to add D3 countries

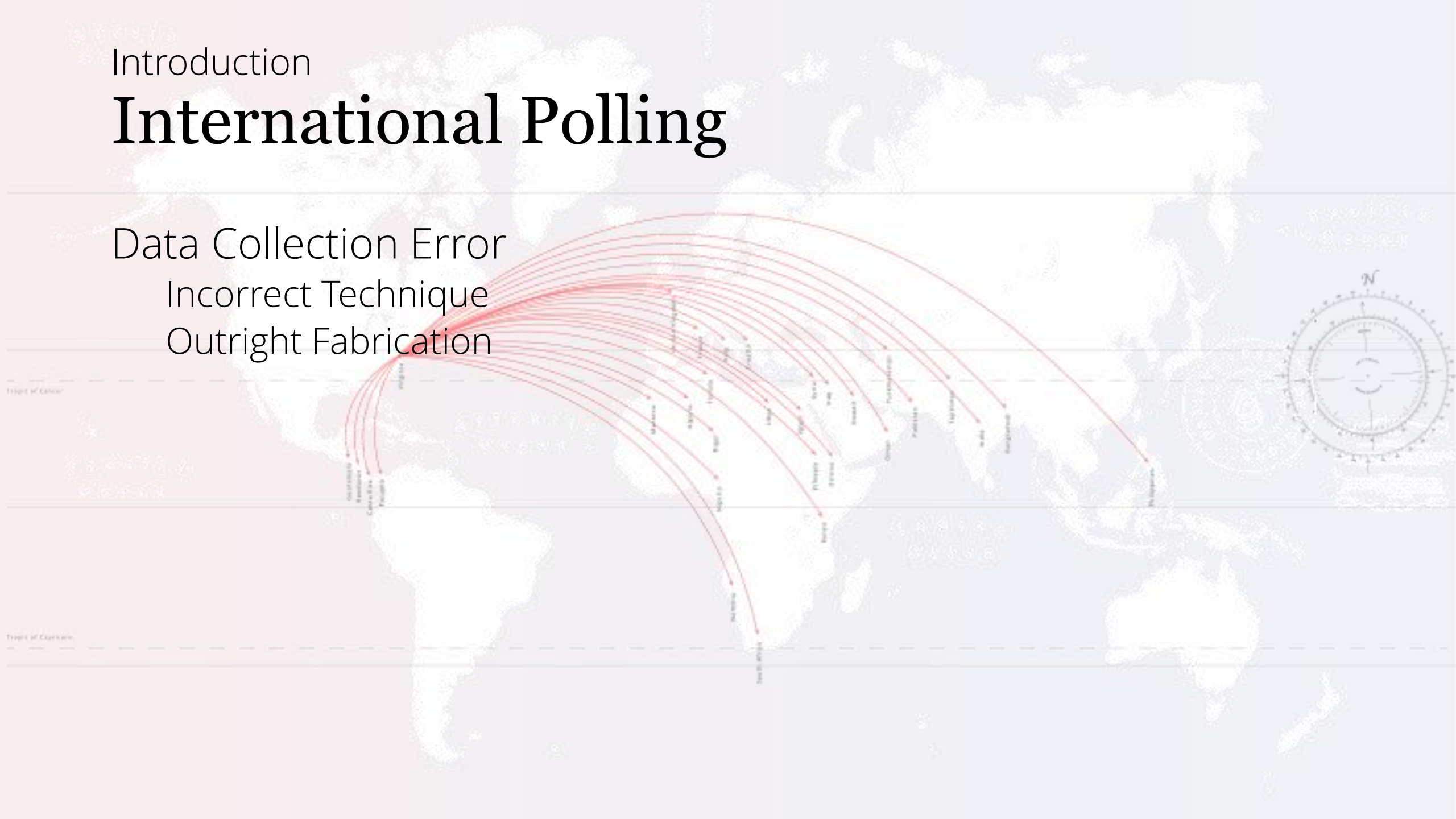
Introduction

# International Polling

Data Collection Error

Incorrect Technique

Outright Fabrication



Introduction

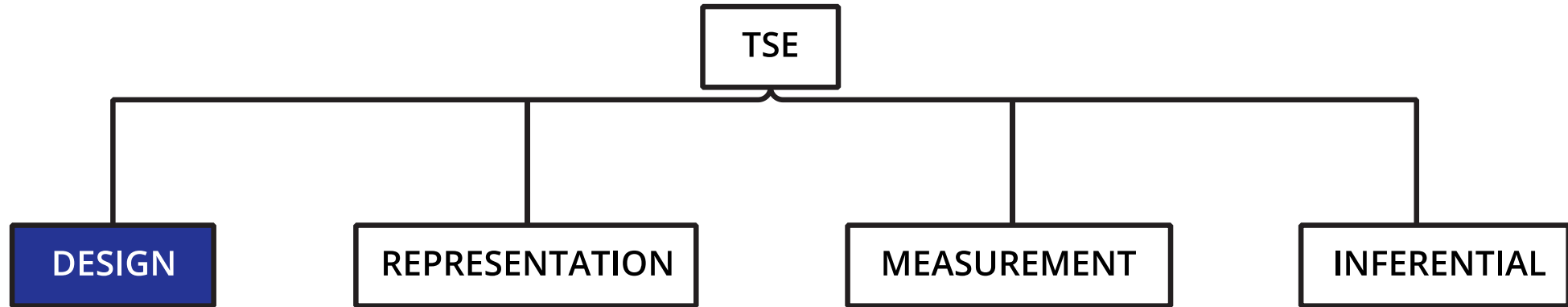
# Total Survey Error (TSE)

“Refers to the accumulation of all errors that may arise in the design, collection, processing, and analysis of survey data. A survey error is defined as the deviation of a survey response from its underlying true value.”

Error can occur in 1 of 4 categories and by many means

Introduction

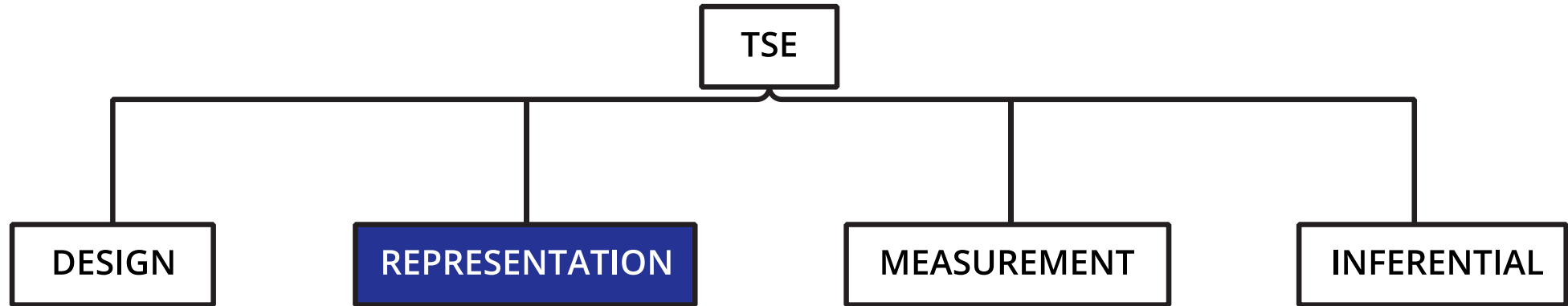
# Total Survey Error (TSE)



Inappropriate method  
Misrepresentative benchmarks  
Imbalance of research and resources

Introduction

# Total Survey Error (TSE)



Coverage

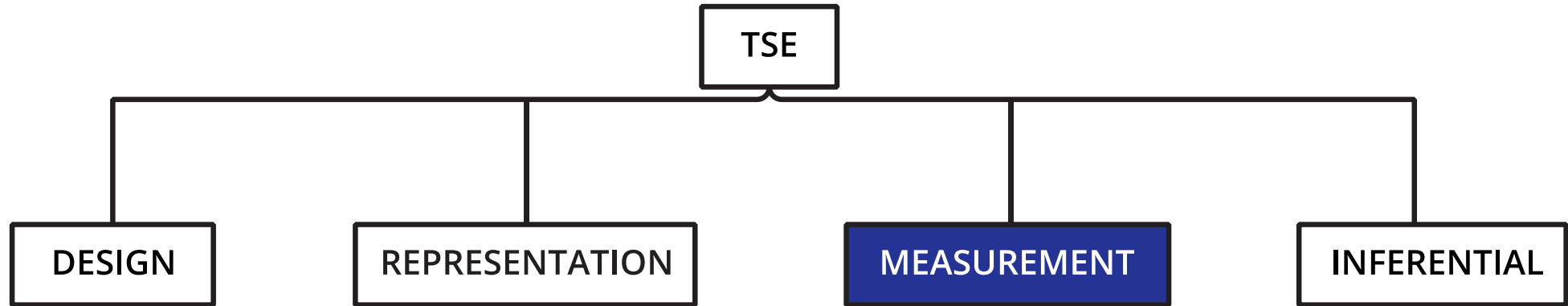
Sampling

Non-response

Adjustment errors

Introduction

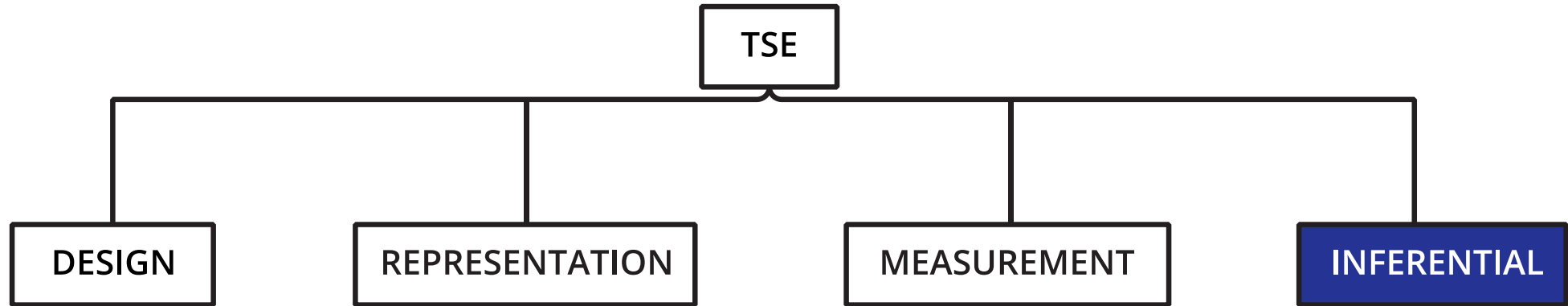
# Total Survey Error (TSE)



Construct validity  
Measurement in field  
Processing errors

Introduction

# Total Survey Error (TSE)



Interpretation

Application



# Eliminating Measurement Error

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- I. The role of the client
- II. Buying by the brand of local practitioners
- III. On-site observation of data collection
- IV. 3<sup>rd</sup> party evaluators for field work
- V. Statistical Analysis of the full body of work
- VI. Cross-border polling from call centers
- VII. F2F surveys with the RCS App

Eliminating Measurement Error

# I. The Role of the Client

Match requirements to budget

Establish clear expectations

Respect agreed-upon time frame for field work/back checking

Participate in field briefings and field observation

Support the role of independent 3<sup>rd</sup> party evaluators

Eliminating Measurement Error

## II. Buying Well-branded Local Vendors

Brand is earned through historically high quality practices

Encourages self-regulated quality control

EMNID, IFOP, NIPO, Gallup International

Brand is built through Outcome Validity Testing

Fair and free election predictions

Eliminating Measurement Error

## III. On-site Observation of Data Collection

Substitute for brand in conflict, post-conflict, and emerging markets

New firms require hands-on approach

MIB (1996)

ACSOR (2003)

Supplement with statistical analysis of each interviewer

Supplement with on-site 3<sup>rd</sup> party evaluators for F2F

Eliminating Measurement Error

# III. On-site Observation of Data Collection

## Benefits

- Cultural learning

- Global understanding

- Training control

- Process influence

## Shortcomings

- Not scalable

- Vendor experience bias

Eliminating Measurement Error

## IV. 3<sup>rd</sup> Party Evaluators for Field Work

Can be self-imposed or required by client

Aids in client acquisition of funding

Strong alternative to client visits

- Time constraints

- Dangerous environments

Eliminating Measurement Error

## IV. 3<sup>rd</sup> Party Evaluators for Field Work

Institutional conflict of interest

Competitors often offered positions as Field Work Evaluators

Proprietary information to competition

Establishment of unbiased evaluation of practice

Eliminating Measurement Error

# V. Statistical Analysis of Full Bodies of Work

Categorize response patterns

Grouped by interviewer, team, or supervisor

Eliminates scalability problem

Reduces probability of assessment error



Eliminating Measurement Error

# V. Statistical Analysis of Full Bodies of Work

Test Data for 5 indicators

- Duplicate interviews

- Pattern responses within respondents

- Pattern responses across respondents

- Non-response patterns

- Field productivity

  - Average length of interviews

  - Quantity of interviews

[Graph depicting commend, no action, yellow, red]

# V. Statistical Analysis of Full Bodies of Work



## RED

- ¼ of surveys >50% NR
- Flagged with Yellow tag



## YELLOW

- 1 metric flagged



## NO ACTION

- Not flagged
- Both productivity metrics are flagged



## COMMEND

- 1 of 2 productivity metrics are flagged

Eliminating Measurement Error

# V. Statistical Analysis of Full Bodies of Work

Additional Methods to further reduce Fraudulent data include

1. Explicit standards for sampling, administration, respondent interaction
2. Deploy supervisors to observe and back-check
3. Back-check by telephone  
Break complicity links between supervisors and interviewers
4. Conduct QC assessments without metric explanations
5. Allow sufficient time and travel to conduct interviews
6. Relegating moral hazard from payment per completed survey
7. Maintain consistent ID numbers for interviewers and supervisors

Eliminating Measurement Error

## VI. Cross-border Polling from Call Centers

Strong alternative to F2F in violent area

Loss of contextual understanding (i.e. socioeconomic status)

Freedom from local censorship

Improved Quality Control

Large samples (RDD)

Eliminating Measurement Error

## VII. F2F Surveys With the RCS App

Decreased mobile device costs, increase network access globally

Auto-capture location (permissions granted)

Auto-capture date, start/end time, item time

Audio recording (permissions granted)

Links relevant photos (often not desirable or permitted)

Filters questions, rotates responses, and randomizes order

Operates on/off line

Eliminating Measurement Error

## **VII. F2F Surveys With the RCS App**

RCS automatically captures data that proves when and where research was conducted

# The Future of Survey Quality Control

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- I. Continuous process improvement
- II. Valkyrie
- III. Dynamic reporting
- IV. Database development

The Future of Survey Quality Control

# I. Continuous Process Improvement

## Holistic Approach

- Interviewer training

- Supervisor training

- Data processing

- Incorporation of new technology

## Reduce waste

- Engineering/Manufacturing industry parallel



The Future of Survey Quality Control

## II. Valkyrie

Result of Continuous Process Improvement

4 main components

- Point-and-click interface, easy transfer of data sets and reports

- R computing environment interprets user inputs to conduct tests

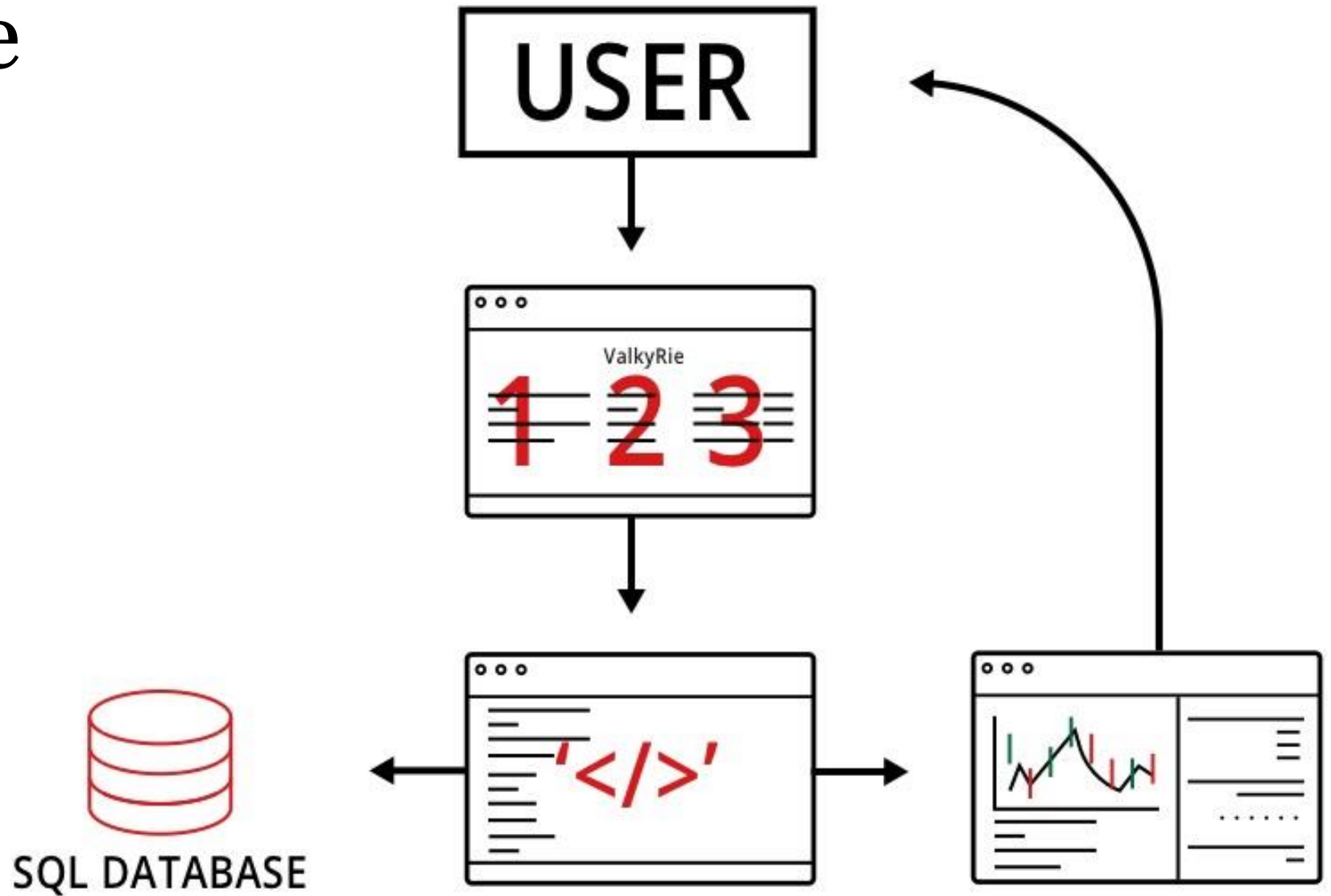
- Results are stored in SQL database

- Produces dynamic HTML reports, featuring interactive graphs and recommendations

Possible with R packages like Shiny, Rmarkdown, SQLite, ggplot2

The Future of Survey Quality Control

## II. Valkyrie



# The Future of Survey Quality Control

## II. Valkyrie



### Valkyrie Quality Control Tool

Process Document - Z:/Team E/Resources/Process Documents

#### Step 1: Survey Identification

Select the Vendor

Select Project

Enter Wave Number

Country

Select Mode

#### Step 2: Upload Dataset

Upload a SAV which you wish to conduct a QC Analysis on

Upload a SAV  
 No file selected

Download a .csv in order to specify substantive and battery variables

Upload downloaded variable list .csv with any changes  
 No file selected

#### Step 3: Update Variable Names

Respondent ID

Length of Interview

Supervisor

Province

Run Data Cleaning Tests

Run QC tests

The Future of Survey Quality Control

## II. Valkyrie

More efficient quality control reporting process

Automation improves report consistency across analysts/projects

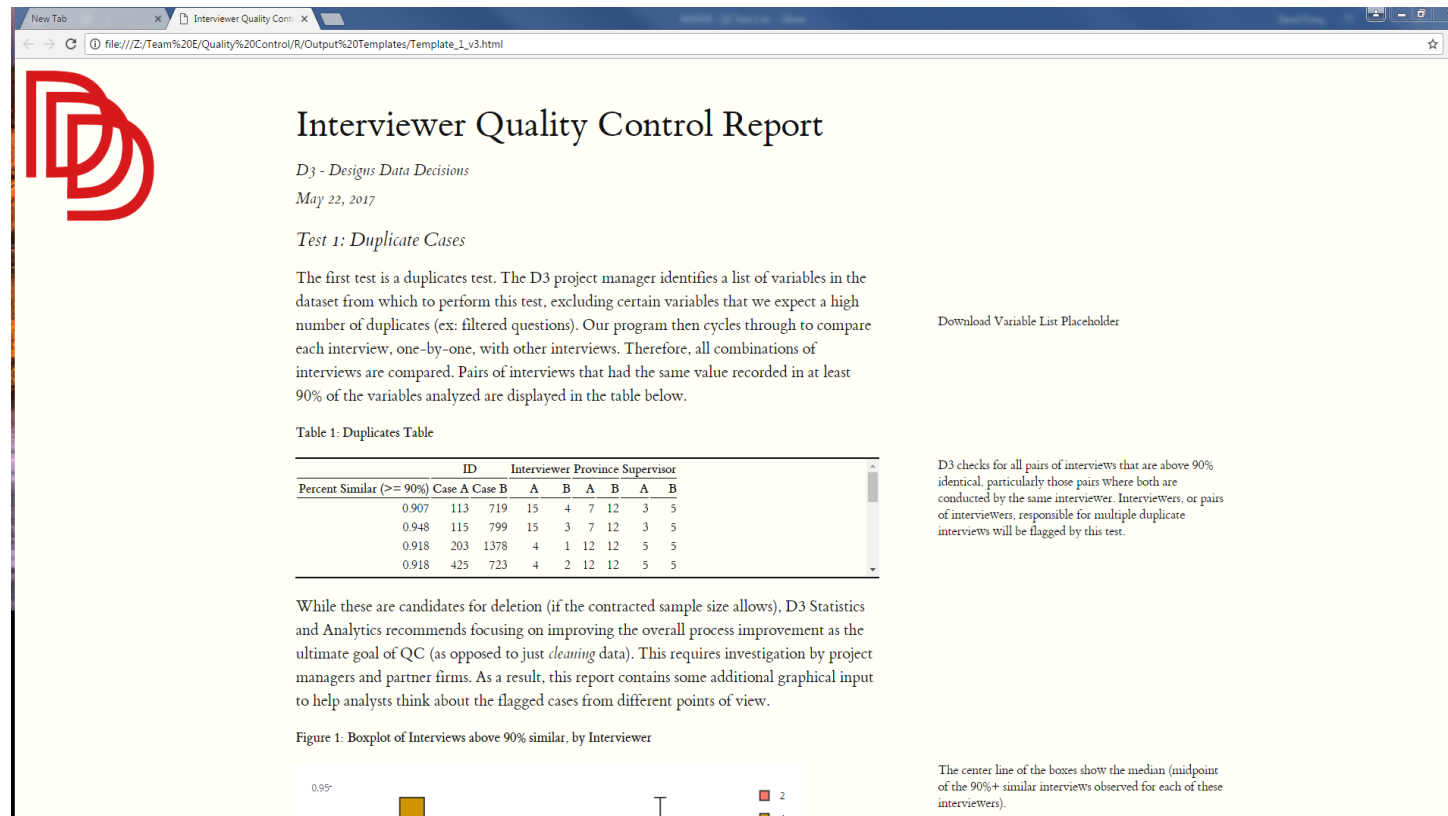
Dynamic Valkyrie reporting

Database storing QC results across studies allows for analyzing aggregate data by field partner, region, type of survey, date, etc.

# The Future of Survey Quality Control

## III. Dynamic Reporting

### Side panels



The screenshot shows a web browser window with a report titled "Interviewer Quality Control Report". The report includes a logo on the left, a title, a subtitle "D3 - Designs Data Decisions", a date "May 22, 2017", and a section "Test 1: Duplicate Cases". The text describes a duplicates test and includes a table of duplicates. A side panel on the right contains a "Download Variable List Placeholder" and a detailed explanation of the D3 check. At the bottom, a boxplot is partially visible.

### Interviewer Quality Control Report

*D3 - Designs Data Decisions*  
May 22, 2017

*Test 1: Duplicate Cases*

The first test is a duplicates test. The D3 project manager identifies a list of variables in the dataset from which to perform this test, excluding certain variables that we expect a high number of duplicates (ex: filtered questions). Our program then cycles through to compare each interview, one-by-one, with other interviews. Therefore, all combinations of interviews are compared. Pairs of interviews that had the same value recorded in at least 90% of the variables analyzed are displayed in the table below.

Table 1: Duplicates Table


Percent Similar (>= 90%)	ID	Interviewer Province Supervisor							
		Case A	Case B	A	B	A	B	A	B
0.907	113	719	15	4	7	12	3	5	
0.948	115	799	15	3	7	12	3	5	
0.918	203	1378	4	1	12	12	5	5	
0.918	425	723	4	2	12	12	5	5	

Download Variable List Placeholder

D3 checks for all pairs of interviews that are above 90% identical, particularly those pairs where both are conducted by the same interviewer. Interviewers, or pairs of interviewers, responsible for multiple duplicate interviews will be flagged by this test.

The center line of the boxes show the median (midpoint of the 90%+ similar interviews observed for each of these interviewers).

Figure 1: Boxplot of Interviews above 90% similar, by Interviewer



# III. Dynamic Reporting

## Scrollable data/tables

Table 1: Duplicates Table

Percent Similar ( $\geq 90\%$ )	ID		Interviewer		Province		Supervisor	
	Case A	Case B	A	B	A	B	A	B
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Table 1: Duplicates Table

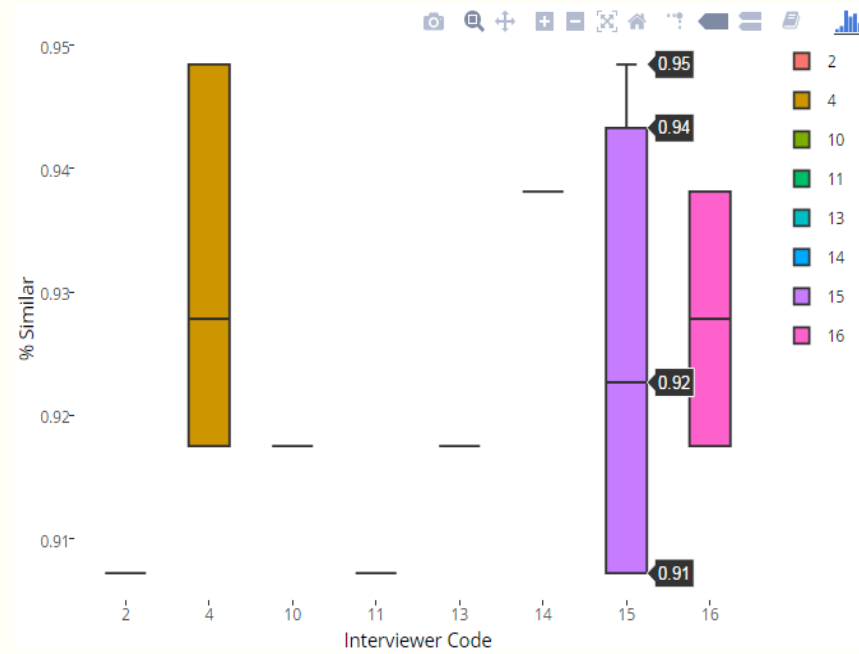
0.938	463	828	14	18	3	5	2	2
0.907	464	829	15	19	3	5	2	2
0.918	465	823	16	19	3	5	2	2
0.918	466	824	13	20	3	5	2	2
0.938	467	825	14	17	3	5	2	2
0.938	468	826	15	20	3	5	2	2

# The Future of Survey Quality Control

## III. Dynamic Reporting

### Interactive graphs

Figure 1: Boxplot of Interviews above 90% similar, by Interviewer



The center line of the boxes show the median (midpoint of the 90%+ similar interviews observed for each of these interviewers).

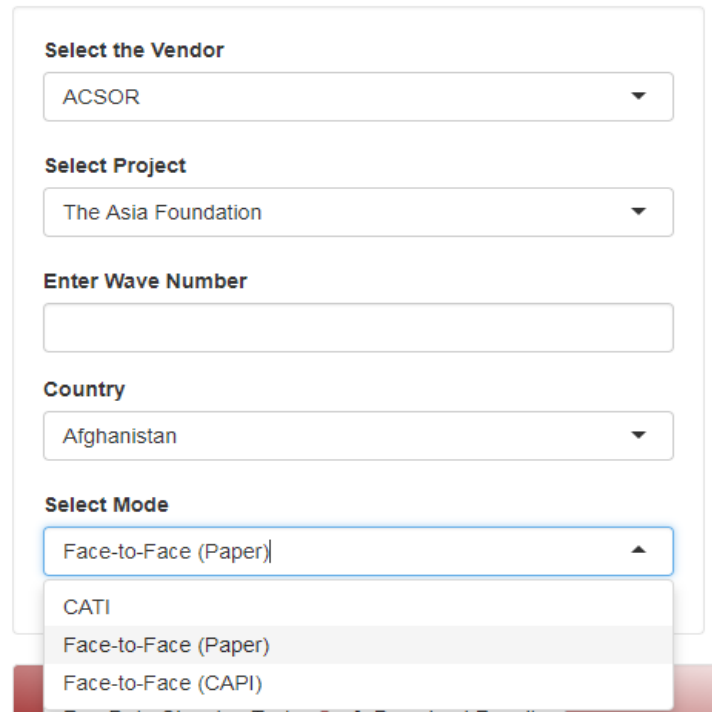
Interviewers that have taller boxplots have more interviews above the 90% threshold

The Future of Survey Quality Control

# IV. Database Development

Goal is to expand databases through past present and future surveying

## Step 1: Survey Identification



The screenshot shows a web form titled "Step 1: Survey Identification". It contains five main sections, each with a label and a corresponding input field:

- Select the Vendor:** A dropdown menu with "ACSOR" selected.
- Select Project:** A dropdown menu with "The Asia Foundation" selected.
- Enter Wave Number:** An empty text input field.
- Country:** A dropdown menu with "Afghanistan" selected.
- Select Mode:** A dropdown menu with "Face-to-Face (Paper)" selected. The menu is open, showing three options: "Face-to-Face (Paper)", "CATI", and "Face-to-Face (CAPI)".



# Conclusion

## **Eliminating Measurement Error**

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## **The Future of Survey Quality Control**

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- II. Valkyrie
- III. Dynamic reporting
- IV. Database development