

# Survey Design

ECON 623 Lab

# Agenda:

Today we will cover:

- What is a **survey**
- Total Survey **Error** (TSE)
- Establishing **goals** for the survey
- Deciding on your **sample**

Homework for the next class:

- “An Overlooked Approach in Survey”, Chapter 4 from “Handbook of Survey Methodology for the Social Sciences” by Lior Gideon
- “What Is a Survey? And the Survey Octopus” from “Surveys That Work” by Caroline Jarrett

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# Surveys That Work by Caroline Jarrett

All chapters and other materials are available  
on her website:

<https://www.effortmark.co.uk/surveysthatwork/>

If you would like a pdf of a book I will share one  
one with y'all.



**What is a survey?**

The survey is a  
**systematic method**  
for **gathering information** from  
(a sample of) **entities**  
for the purpose of  
**constructing quantitative descriptors**  
of the attributes of the larger population  
of which the entities are members.

Groves, Robert M.; Fowler, Floyd J.; Couper, Mick P.; Lepkowski, James M.; Singer, Eleanor & Tourangeau, Roger (2004). Survey methodology. Hoboken, NJ: John Wiley & Sons.

The survey is a  
process  
for getting answers to questions from  
(a sample of) people  
for the purpose of  
getting numbers  
that you can use to make decisions

**When can we believe a survey?**

# Total Survey Error (TSE) Important Stuff!

TSE framework allows the researcher to identify where these different types of errors come from, so that they can be minimized in future surveys.

*Total Survey Error* = Specification error + Processing error +  
Sampling error +  
Coverage error + Nonresponse error + measurement error



# TSE Components

**Specification error** occurs when there is no clear connection between theoretical concepts or constructs, and survey variables.

**Processing error** refers to flaws that occur once the survey data have been collected.

**Sampling error** occurs because we do not collect information from all individuals in our population due to the fact that we analyze a sample of cases.

**Coverage error** occurs when individuals in the population of interest are missing from the sampling frame used to draw a representative sample.

# TSE Components

**Nonresponse error** occurs when part of the information sought is not collected because sample individuals choose not to respond.

**Measurement error** occurs when there are differences between the estimated value and the “true” value due to survey design elements.

# Basic Theoretical Model of the Survey Process

Judgement of  
appropriate answer

The respondent listens and form an understanding of the concepts and terms used in the question

Comprehension of  
the question

The respondent searches for relevant information in memory

Retrieval of  
information

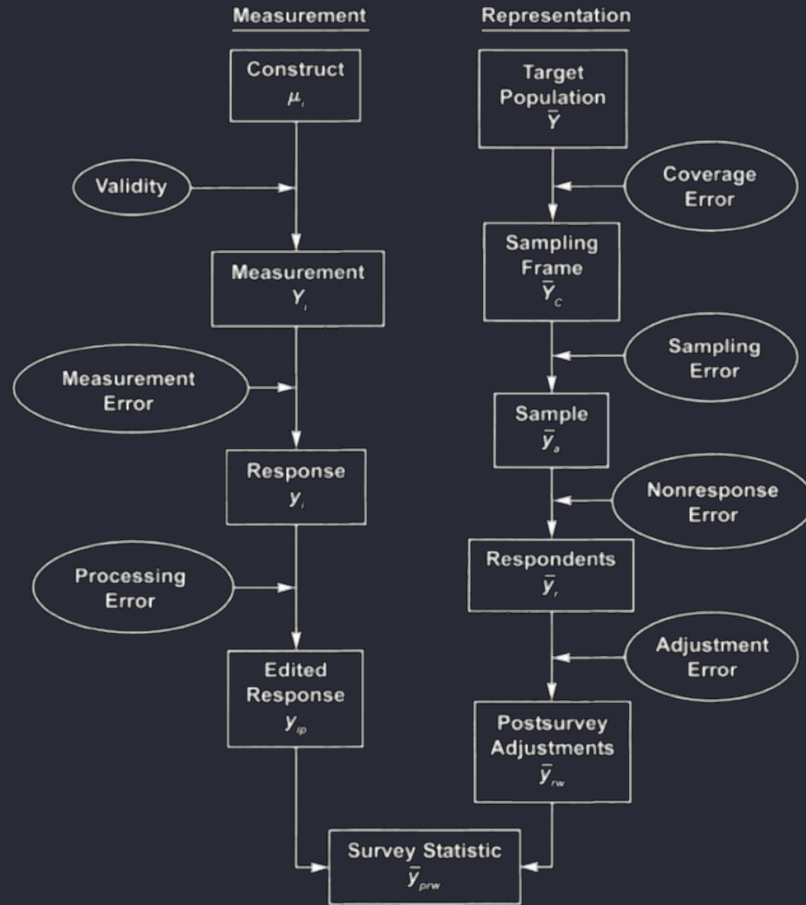
The respondent decides on how to report whatever information the respondent was able to retrieve

Communication of  
answer

The respondent provides an actual answer to the question posed

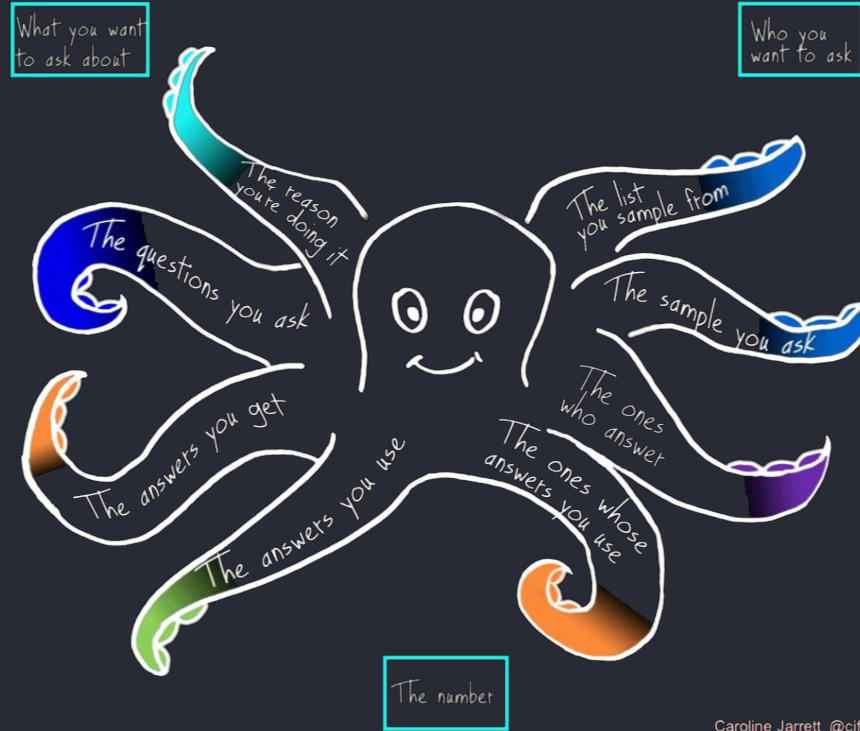
In the **last five days** at work what percentage of time did you use corporate grade communication software?

%



Total Survey Error diagram as presented in Groves, R. M., F. J. Fowler, M. P. Couper, J. M. Lepkowski, E. Singer and R. Tourangeau (2009). Survey methodology. Hoboken, N.J., Wiley.

# Questionnaire Octopus!



# Establish Goals

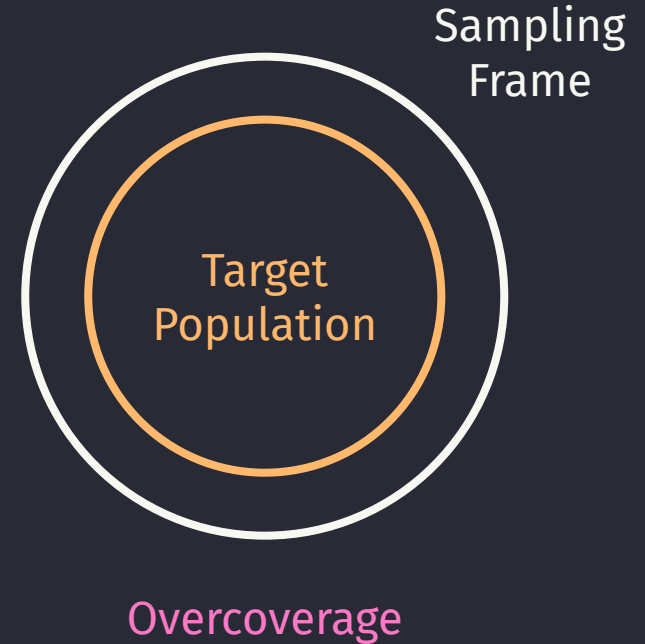
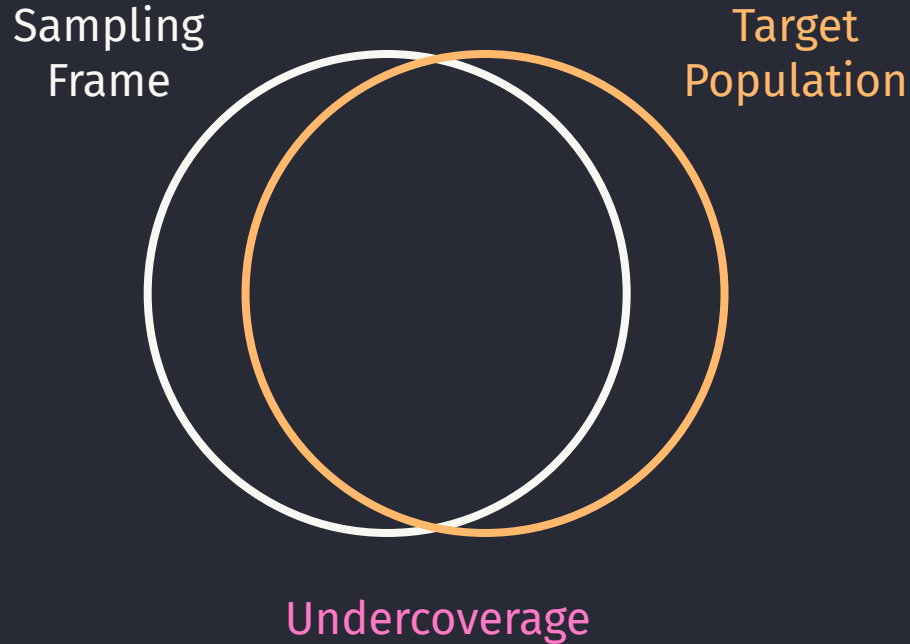
What do you want to know?

Why do you want to know?

What decisions will you make  
based on these answers?

1. Define a problem
2. Do literature review
3. Find missing pieces in the discussion
4. Why is it important to fill them in
5. Use theory to form hypotheses and decide how you are going to test them

# Target Population and Sampling Frame





# Pitbull performs in Kodiak, Alaska, after getting 'exiled' in contest hijacked by Internet prankster

By Ethan Sacks

NEW YORK DAILY NEWS • Jul 31, 2012 at 12:51 pm

## My Local Walmart

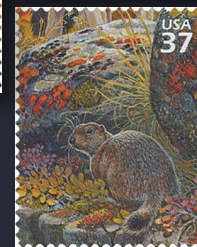
"Like" your local Walmart on Facebook, and the store with the most new likes by 7/15 will:

### Win a visit from PITBULL



# Representativeness

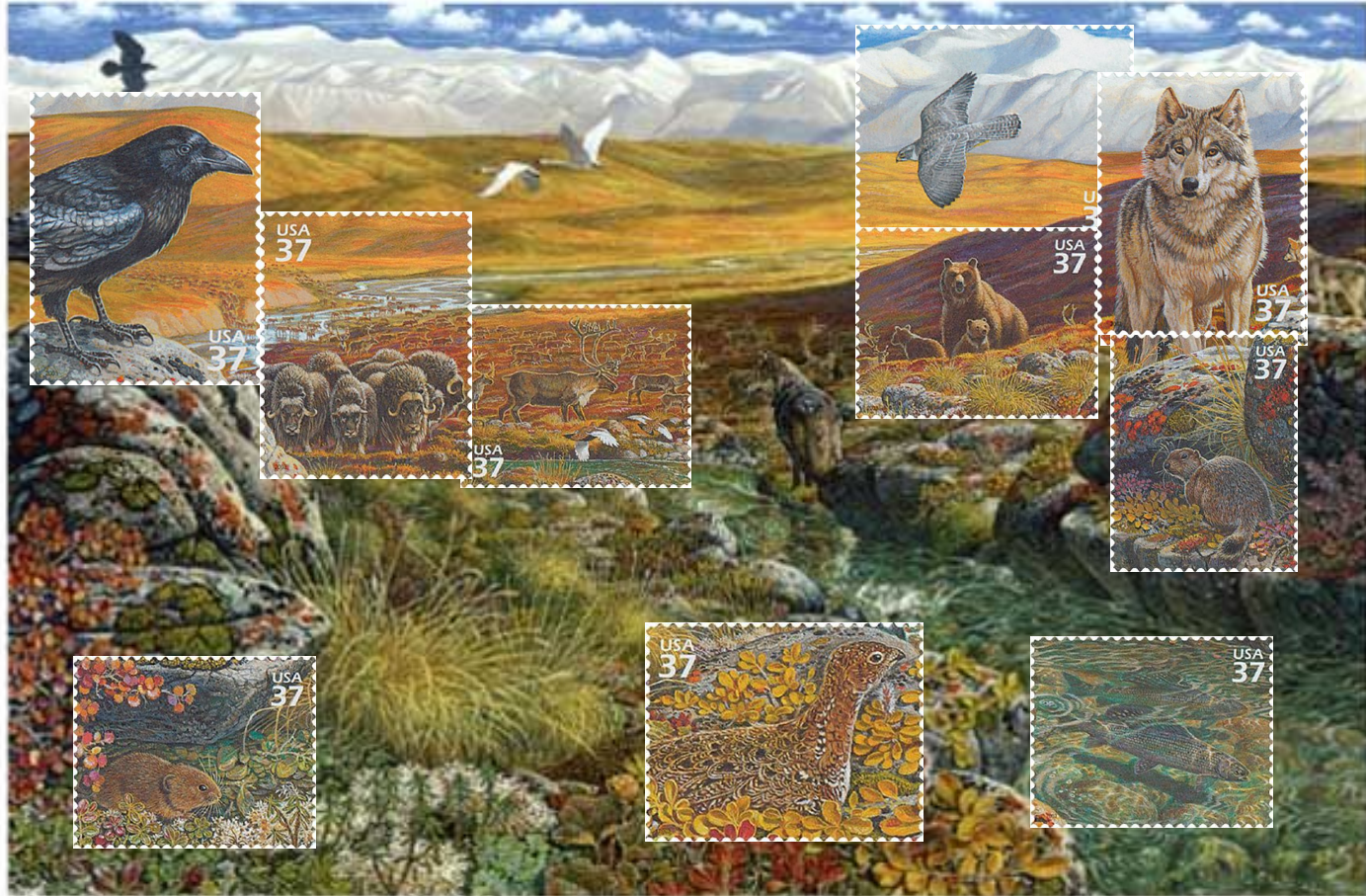






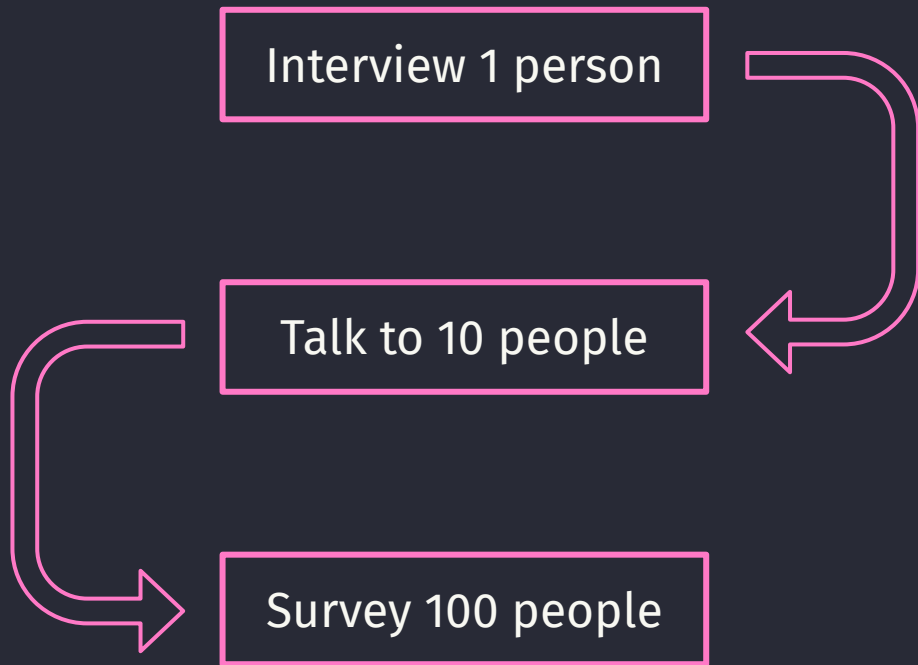
# ARCTIC TUNDRA

FIFTH IN A SERIES



N A T U R E O F A M E R I C A

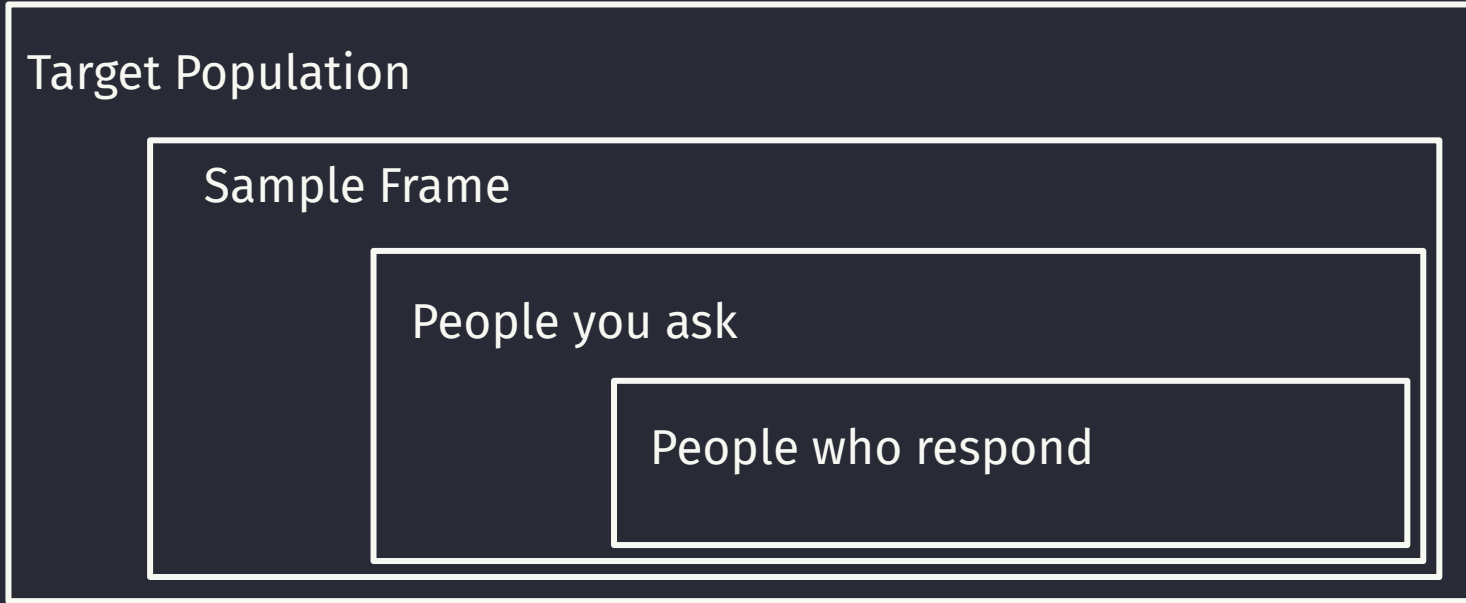
# Asking the Right People is Better than Asking Lots of People



Iterate, Improve, Scale  
to learn more about  
your target population

# Fieldwork

## the People You Ask and Those Who Respond



# Response depends on effort, reward, and trust

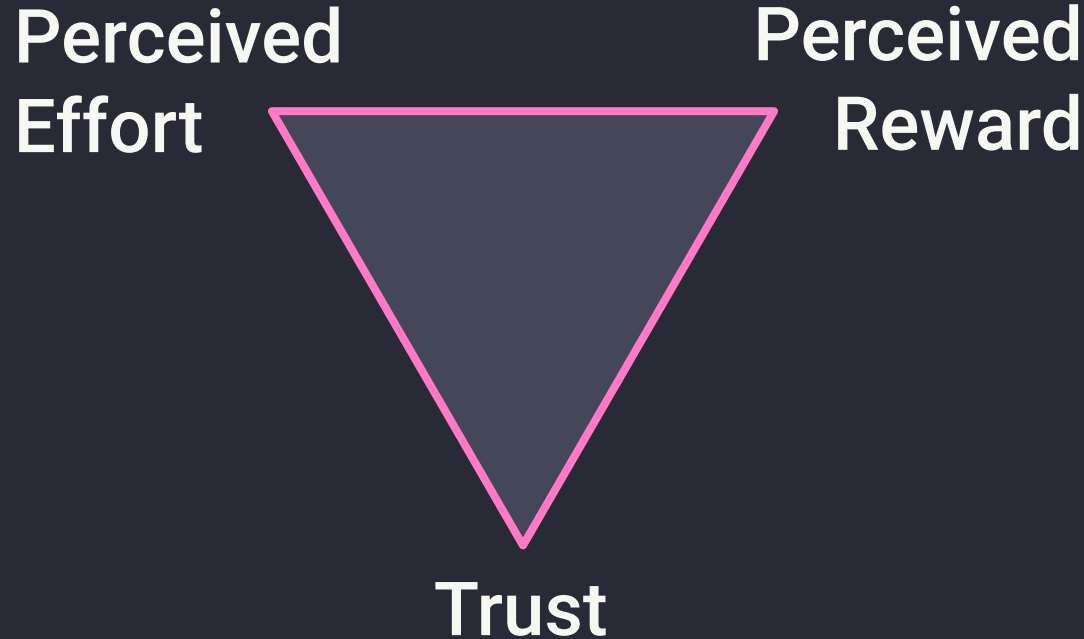


Diagram from Jarrett, C, and Gaffney, G (2008) "Forms that work: Designing web forms for usability" inspired by Dillman, D.A. (2000) "Internet, Mail and Mixed Mode Surveys: The Tailored Design Method"

# How BAD Are U???



How BAD Are U???

4. Have you ever smoked marijuana (i.e. pot, weed)?

☐ Yes

☐ No

5. Have you ever "cheated" while in a relationship?

☐ Yes

☐ No

**Carnegie Mellon**

Carnegie Mellon University Survey of Student Behaviors

4. Have you ever smoked marijuana (i.e. pot, weed)?

☐ Yes

☐ No

5. Have you ever "cheated" while in a relationship?

☐ Yes

☐ No

John, L. K., Acquisti, A., & Loewenstein, G. (2011). Strangers on a plane: Context-dependent willingness to divulge sensitive information. *Journal of consumer research*, 37(5), 858-873.



Questions?