Political Polling

Today:

- Introduce the methods associated with polling;
- Examine some failures;
- Ask whether polls are good or not.

A series of questions given to a group to learn about them through the answers.

What is opinion polling?

- **Benchmark poll** – before campaigning begins, sort of like the control in a within subject experimental design;
- **Tracking poll** – a poll conducted over time, summarized as a moving average;
- **Brushfire poll** – used by a campaign to test a message or strategy on a limited audience;
- **Straw poll** – issue focused, usually a non-statistical attempt to learn about where people stand;
- **Entrance/Exit poll** – conducted immediately before/after voting;
- **Push poll** – a poll used to influence, e.g. through question wording or timing.

Sampling methodology

- **Representative sample**: a sample is representative if its characteristics "look like" the population;
- **Generalizable**: a sample is generalizable if we can make "good" guesses about the population using the characteristics of the sample;
- **Bias**: a sample is biased if certain individuals in a population have a higher chance of being included in a sample than others;

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- **Bias**: a sample is biased if certain individuals in a population have a higher chance of being included in a sample than others;
- In general if we create a sample of size n randomly then...
  - ...the sample will be unbiased and representative of the population of size N so...
  - ...any result based on the sample with generalize to the population and therefore...
  - ...the sample statistic is a good guess for the population parameter which means...
  - ...that we can **INFER** about the population using the sample.

Margin of Error

- Consider a simple poll: **"Do you plan to vote for Biden, yes/no?"**
  - The poll has n respondents;
  - We are interested in the population proportion v_P that plan to vote for Biden;
  - We have the sample proportion v_S that plan to vote for Biden;

- We'd like to put a $\pm$ around v_S – very common to use the margin of error (another name for confidence interval) to do this;

- Assume that v_S is normally distributed around v_P – let's focus on an area that captures 95% of all possible values for v_S;

$$MOE = 1.96\sqrt{\frac{v_S(1 - v_S)}{n}}.$$

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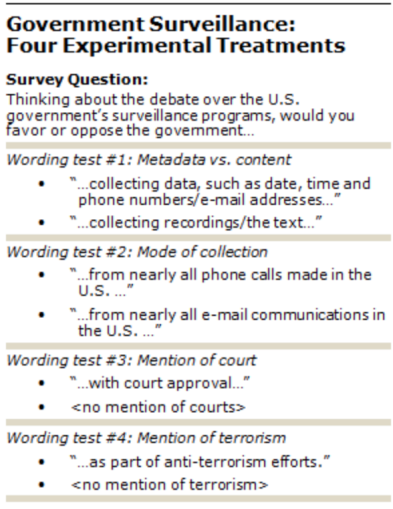
Why do polls fail?

- Not representative (e.g. selective nonresponse, collection method);
- Response bias (e.g. spiral of silence);
- Question wording (e.g. double negatives, implicit assumptions, etc.);
- Question ordering (e.g. a 'push' question can change responses to follow ups);
- Polling timing (e.g. missing dynamics);



Government Surveillance: Four Experimental Treatments

Survey Question:
Thinking about the debate over the U.S. government's surveillance programs, would you favor or oppose the government...

Wording test #1: Metadata vs. content
- "...collecting data, such as date, time and phone numbers/e-mail addresses..."
- "...collecting recordings/the text..."

Wording test #2: Mode of collection
- "...from nearly all phone calls made in the U.S. ..."
- "...from nearly all e-mail communications in the U.S. ..."

Wording test #3: Mention of court
- "...with court approval..."
- <no mention of courts>

Wording test #4: Mention of terrorism
- "...as part of anti-terrorism efforts."
- <no mention of terrorism>

PEW RESEARCH CENTER July 11-21, 2013.

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Mentioning Court Approval, Terrorism Increases NSA Support

	Favor %	Oppose %	DK %
Mention of courts			
"With court approval"	37	56	7=100
Not mentioned	25	67	8=100
Difference	*+12*	*-11*	
Mention of terrorism			
"As part of anti-terrorism efforts"	35	57	8=100
Not mentioned	26	67	7=100
Difference	*+9*	*-10*	
Type of data collected			
Metadata	34	59	7=100
Recordings and text	28	64	7=100
Difference	*+6*	*-5*	
Mode of collection			
Data from...			
Phone calls	31	60	9=100
Email communications	31	63	6=100
Difference	*0*	*-3*	

PEW RESEARCH CENTER July 11-21, 2013. PEWA1-PEWA16.
Figures may not add to 100% because of rounding.
Table shows net effect of each "treatment," independent of

Failures: polling in 1936...

- *The Literary Digest*:
  - A weekly magazine that started in 1890 w/ circulation $> 1,000,000$;
  - Correctly predicted US presidential elections from 1916 – 1932;
- 1936 Election: Langdon v Roosevelt;
  - *The Literary Digest* polled 10 million and got 2.3 million responses;
  - Langdon predicted to be the decisive winner – but Roosevelt crushed him!
- The magazine folded within 18 months – what happened?!

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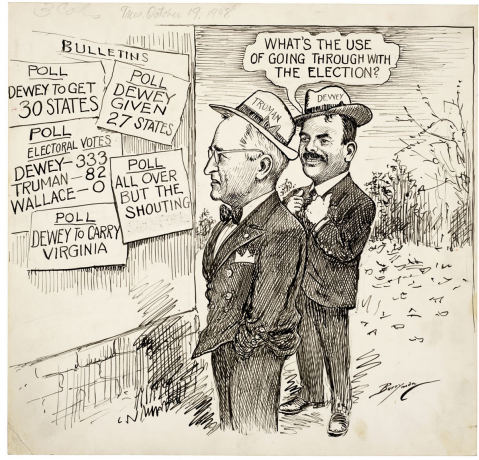
  - Auto registrations;
  - Phone number lists;
  - Country club memberships;
  - Its own subscriber list.

Failures: polling in 1948...

- Professional polling:
  - Gallup founded in 1935, pioneered representative sampling;
  - Correctly choose Roosevelt in 1936;
- 1948 Election: Truman v Dewey;
  - Polling predicted Dewey to win convincingly;
  - At no point on election day was Truman ever behind Dewey;
- What went wrong this time?!



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  - Farley's Law: the election is decided at the time of the conventions;
  - Polling dropped off end of Oct;
  - Truman picked up 14% of his voters in the two weeks before election day.

Failures: polling in 2016...

- Election forecasting:
  - We talked about fivethirtyeight but also NYT Upshot, Daily Kos, etc.;
  - Growth in ecosystem a reflection of recent successes;
- 2016 Election: Clinton v Trump;
  - Unanimity among polls/forecasts that Clinton would win;
  - We know what happened...
- Again?!

State	Electoral votes	Polling average	Final result	Difference
Florida	29	Trump +0.2[512]	Trump +1.2	Trump +1
Pennsylvania	20	Clinton +1.9[523]	Trump +0.7	Trump +2.6
Ohio	18	Trump +3.5[522]	Trump +8.1	Trump +4.6
Michigan	16	Clinton +3.4[516]	Trump +0.3	Trump +3.7
Georgia	16	Trump +4.8[513]	Trump +5.1	Trump +0.3
North Carolina	15	Trump +1[521]	Trump +3.7	Trump +2.7
Virginia	13	Clinton +5[524]	Clinton +5.4	Clinton +0.4
Arizona	11	Trump +4[510]	Trump +3.5	Clinton +0.5
Wisconsin	10	Clinton +6.5[525]	Trump +0.7	Trump +7.2
Minnesota	10	Clinton +6.2[517]	Clinton +1.5	Trump +4.7
Colorado	9	Clinton +2.9[511]	Clinton +4.9	Clinton +2
Iowa	6	Trump +3[514]	Trump +9.5	Trump +6.5
Nevada	6	Trump +0.8[518]	Clinton +2.4	Clinton +3.2
New Mexico	5	Clinton +5[520]	Clinton +8.3	Clinton +3.3
Maine	4	Clinton +4.5[515]	Clinton +2.9	Trump +1.6
New Hampshire	4	Clinton +0.6[519]	Clinton +0.3	Trump +0.3

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  - Polling not representative – too many college grads;
  - Large number of undecided voters in all polls;
  - Very late swing amongst undecideds towards Trump.

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- Polling may affect voter behavior:
  - Bandwagoning;
  - Underdog support;
  - Turnout;
  - Strategic voting;

- With plentiful (and growing) information do candidates lead or follow?

Why should we care?

Polling is a core part of how modern democracy functions.