Design Features

Experimental Research

Last Week

- Research design
  - Research question
  - Hypothesis
  - Results
- Introduction to R

This Week

- Different styles of experimental designs
- Criteria
    - Internal validity
    - External validity
        - Generalizing to other samples
        - Generalizing to other settings
- Substantive research
    - Affective polarization
    - Electoral system stability

Two-arm experiment

- Elementary design
- Assignment to two conditions
  - Treatment
  - Control
- How do we define the control?
  - Absence of the treatment
  - Active treatment
  - Alternative treatment

K-arm experiment

- Two-arm experiments can be extended to k arms
- Misinformation research
    - Control
    - Misinformation
    - Misinformation + Fact-check
- Mobilization
    - Control
    - Civic Duty
    - Civic Duty + Hawthorne
    - Civic Duty + Hawthorne + Public Knowledge
    - Civic Duty + Hawthorne + Public Knowledge + Social Pressure

K-arm experiment

- Notation
  - $Y_i(k-1)$
  - Reserve $Y_i(0)$ for the control
  - Two arm experiment
    - $Y_i(1) - Y_i(0)$
  - Three arm experiment
    - $Y_i(2) - Y_i(1)$
    - $Y_i(2) - Y_i(0)$
    - $Y_i(1) - Y_i(0)$
- Number of pairwise comparisons: $k(k-1)/2$

Social Pressure Experiment

30426-2 ||| || || || | XXX

For more information: (517) 351-1975
email: etov@grebner.com
Practical Political Consulting
P. O. Box 6249
East Lansing, MI 48826

PRSRT STD
U.S. Postage
PAID
Lansing, MI
Permit # 444

ECRLOT **C002
THE JONES FAMILY
9999 WILLIAMS RD
FLINT MI 48507

Dear Registered Voter:

DO YOUR CIVIC DUTY AND VOTE!

Why do so many people fail to vote? We've been talking about this problem for years, but it only seems to get worse.

The whole point of democracy is that citizens are active participants in government; that we have a voice in government. Your voice starts with your vote. On August 8, remember your rights and responsibilities as a citizen. Remember to vote.

DO YOUR CIVIC DUTY — VOTE!

Social Pressure Experiment

30424-1

For more information: (517) 351-1975
email: etov@grebner.com
Practical Political Consulting
P. O. Box 6249
East Lansing, MI 48826

PRSRT STD
U.S. Postage
PAID
Lansing, MI
Permit # 444

ECRLOT **C001
THE SMITH FAMILY
9999 PARK LANE
FLINT MI 48507

Dear Registered Voter:

YOU ARE BEING STUDIED!

Why do so many people fail to vote? We've been talking about this problem for years, but it only seems to get worse.

This year, we're trying to figure out why people do or do not vote. We'll be studying voter turnout in the August 8 primary election.

Our analysis will be based on public records, so you will not be contacted again or disturbed in any way. Anything we learn about your voting or not voting will remain confidential and will not be disclosed to anyone else.

DO YOUR CIVIC DUTY — VOTE!

Social Pressure Experiment

ECRLOT **C050
THE WAYNE FAMILY
9999 OAK ST
FLINT MI 48507

Dear Registered Voter:

WHO VOTES IS PUBLIC INFORMATION!

Why do so many people fail to vote? We've been talking about the problem for years, but it only seems to get worse.

This year, we're taking a different approach. We are reminding people that who votes is a matter of public record.

The chart shows your name from the list of registered voters, showing past votes, as well as an empty box which we will fill in to show whether you vote in the August 8 primary election. We intend to mail you an updated chart when we have that information.

We will leave the box blank if you do not vote.

DO YOUR CIVIC DUTY — VOTE!

OAK ST	Aug 04	Nov 04	Aug 06
9999 ROBERT WAYNE		Voted	_____
9999 LAURA WAYNE	Voted	Voted	_____

Social Pressure Experiment

30423-3 ||| || || | |||

For more information: (517) 351-1975
email: etov@grebner.com
Practical Political Consulting
P. O. Box 6249
East Lansing, MI 48826

PRSRT STD
U.S. Postage
PAID
Lansing, MI
Permit # 444

ECRLOT **C050
THE JACKSON FAMILY
9999 MAPLE DR
FLINT MI 48507

Dear Registered Voter:

WHAT IF YOUR NEIGHBORS KNEW WHETHER YOU VOTED?

Why do so many people fail to vote? We've been talking about the problem for years, but it only seems to get worse. This year, we're taking a new approach. We're sending this mailing to you and your neighbors to publicize who does and does not vote.

The chart shows the names of some of your neighbors, showing which have voted in the past. After the August 8 election, we intend to mail an updated chart. You and your neighbors will all know who voted and who did not.

DO YOUR CIVIC DUTY — VOTE!

MAPLE DR	Aug 04	Nov 04	Aug 06
9995 JOSEPH JAMES SMITH	Voted	Voted	_____
9995 JENNIFER KAY SMITH		Voted	_____
9997 RICHARD B JACKSON		Voted	_____
9999 KATHY MARIE JACKSON		Voted	_____
9999 BRIAN JOSEPH JACKSON		Voted	_____
9991 JENNIFER KAY THOMPSON		Voted	_____
9991 BOB R THOMPSON		Voted	_____
9993 BILL S SMITH			_____
9989 WILLIAM LUKE CASPER		Voted	_____
9989 JENNIFER SUE CASPER		Voted	_____
9987 MARIA S JOHNSON	Voted	Voted	_____
9987 TOM JACK JOHNSON	Voted	Voted	_____
9987 RICHARD TOM JOHNSON		Voted	_____
9985 ROSEMARY S SUE		Voted	_____
9985 KATHRYN L SUE		Voted	_____
9985 HOWARD BEN SUE		Voted	_____
9983 NATHAN CHAD BERG		Voted	_____
9983 CARRIE ANN BERG		Voted	_____

Social Pressure Experiment

TABLE 3. OLS Regression Estimates of the Effects of Four Mail Treatments on Voter Turnout in the August 2006 Primary Election

	Model Specifications		
	(a)	(b)	(c)
Civic Duty Treatment (Robust cluster standard errors)	.018* (.003)	.018* (.003)	.018* (.003)
Hawthorne Treatment (Robust cluster standard errors)	.026* (.003)	.026* (.003)	.025* (.003)
Self-Treatment (Robust cluster standard errors)	.049* (.003)	.049* (.003)	.048* (.003)
Neighbors Treatment (Robust cluster standard errors)	.081* (.003)	.082* (.003)	.081* (.003)
N of individuals	344,084	344,084	344,084
Covariates**	No	No	Yes
Block-level fixed effects	No	Yes	Yes

Note: Blocks refer to clusters of neighboring voters within which random assignment occurred. Robust cluster standard errors account for the clustering of individuals within household, which was the unit of random assignment.

* $p < .001$.

** Covariates are dummy variables for voting in general elections in November 2002 and 2000, primary elections in August 2004, 2002, and 2000.

Factorial experiments

- Sometimes we expect treatment effects to vary based on other factors
- Support for candidates based on home state and party
- Factors are the different dimensions you aim to manipulate
- Factor levels are specific instantiations
- n^k = n represents factor levels, k represents factors

Factorial experiments

	Party (D)	Party (R)
Home State (NY)	$Y_i(P_i = D, S_i = NY)$	$Y_i(P_i = R, S_i = NY)$
Home State (NJ)	$Y_i(P_i = D, S_i = NJ)$	$Y_i(P_i = R, S_i = NJ)$

Factorial experiments

	Party (D)	Party (R)
Home State (NY)	$Y_i(P_i = D, S_i = NY)$	$Y_i(P_i = R, S_i = NY)$
Home State (NJ)	$Y_i(P_i = D, S_i = NJ)$	$Y_i(P_i = R, S_i = NJ)$

NY Effect = $E[Y_i(P_i = D, S_i = NY) + Y_i(P_i = R, S_i = NY)] - E[Y_i(P_i = D, S_i = NJ) + Y_i(P_i = R, S_i = NJ)]$

Factorial experiments

	Party (D)	Party (R)
Home State (NY)	$Y_i(P_i = D, S_i = NY)$	$Y_i(P_i = R, S_i = NY)$
Home State (NJ)	$Y_i(P_i = D, S_i = NJ)$	$Y_i(P_i = R, S_i = NJ)$

Party Effect = $E[Y_i(P_i = D, S_i = NY) + Y_i(P_i = D, S_i = NJ)] - E[Y_i(P_i = R, S_i = NY) + Y_i(P_i = R, S_i = NJ)]$

Conjoint experiments

- Extend the factorial experiment to many features
  - Instead of varying two or three factors
  - Vary many factors
- Outcomes are choices
  - Products
  - Candidates
  - Policies

Conjoint experiments

	Candidate 1	Candidate 2
Political Party	Independent	Democrat
Gender	Male	Female
Race/Ethnicity	White	Black
Age	35	65
Job Experience	Educator	Business Executive
Political Experience	Mayor	City Council Member

Which of these two candidates do you prefer?

Candidate 1

Candidate 2

Conjoint experiments