# Econ 219B Psychology and Economics: Applications (Lecture 13)

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### Outline

- 1. Welfare Response to Biases
- 2. Media Data
- 3. Media Bias
- 4. Media and Consumer Behavior
- 5. Imitation?
- 6. Persuasion

## **1** Welfare Response to Biases

- General idea:
  - Leverage biases to help biased agents
  - Do not hurt unbiased agents (cautious paternalism)
- Research agenda:
  - Identify biases (persuasion? reference dependence?)
  - Design contract/institution
  - Offer to agents

- BUT: Worry about political economy
  - Politicians/firms often have strong incentives in implementing reforms
  - They may not pursue voters/consumers welfare maximization
- Glaeser (2002), Political Economy of Hatred
  - Demand side:
    - \* Voters are susceptible to hatred
    - \* Media can istigate hatred
  - Supply side:
    - \* Politicians maximize chances of reelection
    - \* Set up a hatred media campaigned toward certain groups for electoral gain

- \* In particular, may target non-median voter
- Idea:
  - \* Group hatred can occur, but does not tend to occur naturally
  - \* Group hatred can be due to political incentives
- Examples:
  - \* African American hatred: South, 1865-1970
    - · No hatred before Civil War
    - Conservative politicians foment it to lower demand for redistribution
    - · Diffuse stories of violence by Blacks

- \* Hatred of Jews: 1930s
  - $\cdot$  No hatred before 1920
  - $\cdot\,$  Jews disproportionately left-wing
  - Right-wing Hitler made up Protocal of Elders of Zion

## 2 Media Data

- Media deliver information:
  - TV
  - Radio
  - Newspapers
  - Internet
- Media data is fairly easily available:
  - Lexis-Nexis: Newspaper (TV) Content
  - Vanderbilt data set: TV news stories
  - Warren News: Cable channels

- Local monopolies in media markets:
  - Towns have 1 (rarely 2) newspapers (Genesove, 2000)
  - Towns have 1 (rarely 2) cable providers
  - Only two national papers (from late 80s): USA Today, NYT
  - Owners can spin news
- Last lecture: Look at the effect of media information on behavior of politicians
- (Also paper by Jakob Svennson in Development Seminar)
- Today: Consider media content: media bias?

## 3 Media Bias

• Saurabh

Economics 219B

### A Measure of Media Bias

TIM GROSECLOSE & JEFF MILYO SEPTEMBER 2003

SAURABH BHARGAVA

April 22, 2004

The authors first discuss some of the past research on media bias

### **PLAN OF DISCUSSION**



#### • Background and vocabulary

- Data and empirical strategy
- Results and analysis
- Conclusions and comments

Past attempts to study media bias have sought to confirm the existence and identify the direction of bias, but have largely avoided clarifying its definition

### PAST RESEARCH ON MEDIA BIAS



#### **Economics of Media Bias**

G&M employ a number of terms whose transparency may not be obvious...

#### THE ABCs OF 'A MEASURE OF MEDIA BIAS'



Next the authors outline a basic empirical strategy through which to capture bias

### **PLAN OF DISCUSSION**





Data and empirical strategy

- Results and analysis
- Conclusions and comments

The authors pursue an empirical strategy consisting of three simple stages

#### **EMPIRICAL STRATEGY**

Create Congressional Scores	Assign Me	dia Scores	Benchmark
Adjust ADA Count Cites	Count Cites	Map to ADA	Comparison

Objective

- Calculate adjusted ADA score for each congressional member
- Record think-tank citations for each congressional member
- Record think-tank citations for each media outlet
- Infer ADA from congressional ADA/cite scores
- Infer ADA through MLE
- Interpret ideological leaning through comparison of inferred ADA to some centrist baseline



An often cited measure of ideological leaning is assigned by the Americans for Democratic Action (ADA)

### **CONSTRUCTING ADA MEASURES FOR CONGRESS**





## The authors use think-tank citations in order to map congressional ADA scores to media outlets

### **CONSTRUCTING BACK OF ENVELOPE ADA MEASURE FOR MEDIA**





A second mapping strategy of ADA scores does not rely on dichotomous classification of think tanks

2

### **CONSTRUCTING MLE ADA MEASURE FOR MEDIA**

#### **Modeling Congressional Cites**

• Utility of congressmen *i* from citing think tank *j*:

 $U_{ij} = a_j + b_j y_i + e_{ij}$ 

1

Where  $y_i$  is the avg. ADA score for congressman *i*, and  $e_{ij}$  is distributed according to a Weibull distribution

• Probability of member *i* choosing think tank *j*:

$$\boldsymbol{P}_{ij} = \exp(\boldsymbol{a}_j + \boldsymbol{b}_j \boldsymbol{y}_i) \,/\, \boldsymbol{\Sigma}_{k,j} \exp(\boldsymbol{a}_k + \boldsymbol{b}_k \boldsymbol{y}_i)$$

#### Modeling Media Cites

• Utility of media outlet *m* from citing think tank *j*:

$$U_{mj} = a_j + b_j c_m + e_{mj}$$

Where  $y_i$  is the avg. ADA score for congressman *i*, and  $e_{mj}$  is distributed according to a Weibull distribution

• Probability of media outlet *m* choosing think tank *j*:

$$P_{mj} = \exp(a_j + b_j c_m) / \Sigma_{k,j} \exp(a_k + b_k c_m)$$

#### Estimation

3

- Construct likelihood function from the joint probability distribution
- Estimate the likelihood function using ML
- Choose baseline think tank, set a<sub>j</sub>, b<sub>j</sub> to zero (Heritage foundation)
- Due to computational restraints, constrict estimation to top 25 TTs
- Captured excluded TTs through constructions



#### The definition of the ideological center is critical to the interpretation of these results

#### **FINDING THE CENTER**



The authors then compare ADA scores from media outlets to those of Congressional leaders

### **PLAN OF DISCUSSION**

- Background and vocabulary
- Data and empirical strategy



- Results and analysis
- Conclusions and comments

The consistency in relative ADA ranks across the multiple estimation methods is mixed but ratings for outlets below are all significantly different

### **MLE ADA SCORES OF MEDIA OUTLETS**



Inferred ADA scores of media outlets suggests that major media is left of congressional center

#### ADJUSTED ADA SCORES OF MEDIA OUTLETS VS. CONGRESS



- Fox News maps slightly right of House median
- All other media outlets are far left of House median

Finally some conclusions and short comments . . .

#### **PLAN OF DISCUSSION**

- Background and vocabulary
- Data and empirical strategy
- Alternative estimation techniques
- Results and analysis



G&M conclude by asserting that the media is biased and that such a bias is largely LOC

#### CONCLUSIONS

- A statistically significant ideological bias does exist in the major media outlets
- The bias is decidedly left-leaning, with the exception of Fox News and possibly the Drudge Report
- The paper's novel methodology (exogenous baselining) could be used to calibrate other tests of bias



The study is however open to conceptual and methodological critique

### COMMENTS

- G&M methodology lacks any reasonable transparency
- ADA scores may not be appropriate for establishing centrist position
- Think tank citations may be less representative of ideology for major media than for congress
- Is it useful to reduce the dimensionality of bias to a single measure?
- Ideology-specific differences in nature and volume of think tank publications may exist-- Lakoff critique: Conservative think tanks are better framers, structurally better suited to guiding discourse
- Specific filtering criteria is important for media outlets e.g. how were "editorial" segments defined?

One could imagine a number of other possible instruments through which to measure different forms of bias

#### **APPENDIX: POSSIBLE ALTERNATIVE MEASURES (CAUSES) OF BIAS**



There are a number of independent media watchdogs which monitor major media

### **APPENDIX: THIRD PARTY MEDIA MONITORS**

#### **Columbia Journalism Review**

- Monitors news reporting, analysis, commentary of major media new coverage
- The Campaign Desk focuses on political coverage
- www.cjr.org
- www.campaigndesk.org

#### **Other Watchdog Sites**

- PoynterOnline: www.poynter.org
- Conservative media monitor (1) www.mrc.org
- Liberal media monitor
   www.fair.org
- Conservative media monitor (2)
   www.aim.org



- Related issue: Biases may rest with listeners
- Information from media is manipulated in self-serving manner:
- Lord, C. G., Ross, L., & Lepper, M. R. (1979)
  - Subjects have to evaluate methodologies of two scientific studies, one procapital punishment conclusions and one anticapital punishment
  - Death penalty proponents accept the results of the procapital punishment study (death penalty effectively reduces crime)
  - Same students reject the results of anticapital punishment study
  - Opponents of the death penalty rate studies in opposite manner.

- After evaluating the two studies, participant attitudes toward capital punishment had become more extreme.
- Giner-Sorolla and Chaiken (1994).
  - Subjects on both sides of the Israeli-Palestinian conflict shown television news coverage of both issues.
  - Tested for memory of program content and judgments of bias and imbalance in coverage.
  - Mideast partisans judged coverage to be biased against their own side
- What do people look for in media?
- Does media bias change opinions of people (or make them more extreme)?

## 4 Media and Consumer Behavior

- Does media affect consumer behavior?
- Channels:
  - Persuasion. How easy is to convince people?
  - Attention. Focus attention on certain topics

- George and Waldfogel (2002): New York Times and voter behavior
- (Exogenous?) expansion in NYT circulation in mid-90s

### • Data:

- MSA circulation (NYT) and zip-code circulation (ABC) in 1995, 1997, 1999
- Voting data from CPS: about 45,000 individuals/year
- NYT emphasizes national stories
- Are readers distracted from local politics?

- Identification strategy.
- NYT readership at MSA level:  $NYT_{Mt}$
- Use proxy for ZIP-code circulation:  $e_z$ , share of high-school grads in Zip-code
- Dependent variable  $y_{zt}$  (readership of local papers, voter turnout)
- Regression:

$$y_{zt} = \beta_0 + \beta_1 NYT_{Mt} + \beta_2 e_z + \beta_3 NYT_{Mt} * e_z + \beta_4 X_{zt} + \varepsilon_{zt}$$

 Relevant coefficient is β<sub>3</sub>: Is there more effect of changes in NYT circulation in areas with higher (potential circulation)

### • Table 3.

- Large (too large?) Effect on circulation of local papers
- Careful: T-stats in parethesis (should have s.e.s)
- Should have put in also year fixed effect in Column 3
- Table 4. Change in content of local papers
  - Last Column: Fixed effect specification
  - Change in content of local papers: more local, less foreign news

**Table 1: Sample Statistics** 

	Ν	Mean	SD	5%	25%	50%	75%	95%
Newspaper Readership (ABC)								
MSA Per Capita NYT Sales (1995)	259	0.0027	0.0065	0.00005	0.0003	0.0009	0.0026	0.0095
MSA Per Capita NYT Sales (1999)	259	0.0028	0.0057	0.00007	0.0004	0.0010	0.0028	0.0095
Zip Per Capita Local Newspaper Sales (1995)	8,990	0.1880	0.1106	0.02305	0.1098	0.1809	0.2498	0.3765
Zip Per Capita Local Newspaper Sales (1998)	8,990	0.1838	0.1102	0.02132	0.1072	0.1751	0.2420	0.3737
Zip Code Demographics (Census)								
Zip Fraction College Educated	8,990	0.1961	0.1355	0.0496	0.0985	0.1552	0.2577	0.4820
Zip Fraction White	8,990	0.8645	0.1935	0.4099	0.8296	0.9464	0.9840	0.9984
Zip Fraction Black Pop	8,990	0.0828	0.1668	0.0000	0.0026	0.0149	0.0727	0.4542
Zip Fraction Asian Pop	8,990	0.0201	0.0431	0.0000	0.0014	0.0065	0.0190	0.0847
Zip Fraction Indian Pop	8,990	0.0066	0.0302	0.0000	0.0007	0.0025	0.0059	0.0183
Zip Fraction Other Pop	8,990	0.0261	0.0684	0.0000	0.0004	0.0035	0.0153	0.1446
Zip Fraction Young (<30)	8,990	0.4388	0.0812	0.3228	0.3973	0.4370	0.4756	0.5605
Zip Fraction Old (=65)	8,990	0.1661	0.0715	0.0701	0.1229	0.1584	0.2001	0.2811
Zip Median Income (\$1,000)	8,990	33.25	12.13	17.27	25.35	31.54	38.96	54.61

	19	94	19	96	1998 (N=42,564)	
	(N=4.	5,456)	(N=4.	3,769)		
Individual Data(CPS)	Mean	SD	Mean	SD	Mean	SD
Voting Probability (All)	0.525	0.499	0.642	0.479	0.506	0.500
Voting Probability (No College Degree)	0.469	0.499	0.581	0.493	0.448	0.497
Voting Probability (College Degree)	0.704	0.457	0.821	0.384	0.666	0.472
Fraction College Degree	0.239	0.427	0.254	0.436	0.265	0.441
Fraction Black	0.119	0.323	0.108	0.310	0.108	0.310
Fraction Asian	0.025	0.155	0.029	0.168	0.032	0.175
Fraction Indian	0.007	0.083	0.008	0.087	0.009	0.092
Fraction Hispanic	0.051	0.220	0.054	0.227	0.065	0.247
Fraction Female	0.462	0.499	0.465	0.499	0.467	0.499
Fraction Under 30	0.216	0.412	0.212	0.409	0.204	0.403
Fraction Over 64	0.168	0.374	0.160	0.366	0.163	0.369

Notes: New York CMSA excluded from all estimates.

	Cross Sectional Results		Longitudinal Results
	1995	1998	1995-1998
	(1)	(2)	(3)
Per Capita NYT $(\beta_1)$			1.5572
			(1.95)
Zip Fraction High Ed ( <b>b</b> 2)	0.1926	0.1875	0.1628
	(6.57)**	(7.04)**	(16.80)**
1998 Year Dummy			-0.0117
·			(9.53)**
Zip High Ed * 1998			0.0105
			(3.01)**
Zip Fraction High Ed * NYT ( <b>b</b> 3)	-4.6355	-5.2955	-10.9005
-	(1.64)	(2.03)*	(4.31)**
Zip Fraction Black	-0.0664	-0.0614	-0.0574
-	(7.01)**	(7.55)**	(13.03)**
Zip Fraction Asian	-0.1129	-0.1418	-0.1032
-	(3.07)**	(4.07)**	(4.30)**
Zip Fraction Native American	-0.0978	-0.0890	-0.0867
-	(1.61)	(1.79)	(4.41)**
Zip Fraction Other Race	0.0001	0.0079	-0.0994
-	(0.00)	(0.12)	(7.62)**
Zip Fraction Age>=65	0.2373	0.1299	0.1895
	(4.91)**	(2.68)**	(5.23)**
Zip Fraction Age<30	-0.1752	-0.2330	-0.2007
	(2.99)**	(4.39)**	(7.93)**
Zip Median Income (\$1,000)	0.0002	0.0005	0.0003
	(0.61)	(1.59)	(2.45)*
Constant	0.1912	0.2180	0.2061
	(4.62)**	(5.74)**	(10.31)**
Fixed Effects	MSA	MSA	MSA x Education
Observations	8,993	8,990	17,983
MSA's	259	259	259

#### Table 3: Does the New York Times Depress Local Newspaper Circulation?

Notes: Dependent variable is *per capita* local newspaper sales in the zip code. All specifications are populationweighed, with standard errors clustered by MSA for cross-sectional specifications and MSA x year for longitudinal specifications. T-statistics in parentheses: \* significant at 5% level; \*\* significant at 1% level. Constants in fixed effects regressions represent the average value of the fixed effects.

Beat Category	Mean	1993	1999	1993-1999
Art & Literature	0.023	0.193	0.130	1.942*
Business	0.140	-0.018	-1.419	-3.199
Entertainment	0.122	0.845	1.046	0.402
Home	0.027	-0.626	-0.309	-0.833
Local News	0.181	-0.410	1.572	14.169***
National & Foreign News	0.088	-0.001	0.466	-6.107**
Opinion	0.063	0.185	0.783	$-3.798^{*}$
Science & Technology	0.025	$0.765^{*}$	0.119	0.566
Special Issues	0.119	-1.694	-1.209	-5.249*
Sports	0.076	-0.438	0.746	2.029
Style	0.040	0.869	-0.461	0.230
Travel & Leisure	0.059	0.125	-1.441**	1.383

Table 4: Do Local Newspapers Respond to New York Times Penetration?

Notes: Dependent variables are shares of reporters and editors in each category. Special Issues considers topics such as environment, labor, consumer affairs, real estate and other topics that individually represent a small fraction of resources at individual papers. T-statistics in parentheses: \* significant at 10% level; \*\* significant at 5%; \*\*\*significant at 1% level. N=250.

- Table 5. Voting probability in non-Pres. election:
  - Columns 1-2: Cross-Section
  - Column 3: Pooled Cross-Section (CPS not a panel)
  - Large negative effects
- Table 6. Voting behavior also in Pres. Election
  - Interact dummy for 1996 with all variables
  - Columns 1-3: Effect is zero for 1996 election

	Voting Probability							
		Non-I	Presidential Ele	ections				
	100/	1008	Pooled	Pooled	Pooled			
	1774	1990	(94, 98)	(94, 98)	(94, 98)			
	(1)	(2)	(3)	(4)	(5)			
Per Capita NYT ( <b>g</b> )	-	-	-9.818	-1.562	-5.647			
	-	-	(1.81)	(0.71)	(1.21)			
High Ed ( $\gamma_2$ )	0.147	0.136	0.169	0.156	-			
	(6.18)**	(4.29)**	(7.07)**	(6.68)**	-			
NYT*High Ed (g)	-4.568	-3.531	-4.108	-3.824	-22.054			
	(3.26)**	(1.89)	(3.78)**	(3.43)**	(2.69)**			
1998 Year Dummy	_	-	-0.067	-0.110	-0.048			
	-	-	(1.40)	(2.04)*	(0.94)			
High Ed*1998	-	-	-0.046	-0.023	-0.115			
	-	-	(1.24)	(0.63)	(4.07)**			
Black	0.041	0.097	0.069	0.066	0.067			
	(2.69)**	(5.21)**	(5.45)**	(5.21)**	(5.36)**			
Asian	-0.163	-0.186	-0.177	-0.166	-0.175			
	(6.13)**	(5.73)**	(7.73)**	(6.40)**	(7.70)**			
Indian	-0.072	-0.086	-0.080	-0.077	-0.079			
	(3.02)**	(2.71)**	(4.06)**	(3.80)**	(4.00)**			
Hispanic	-0.069	-0.043	-0.054	-0.056	-0.058			
	(4.00)**	(3.04)**	(5.02)**	(5.07)**	(5.52)**			
Sex	-0.017	-0.020	-0.018	-0.018	-0.018			
	(4.22)**	(4.61)**	(6.25)**	(6.20)**	(6.16)**			
Age <30	-0.223	-0.233	-0.229	-0.228	-0.228			
	(28.68)**	(33.74)**	(43.87)**	(43.71)**	(43.90)**			
Age 65+	0.200	0.218	0.209	0.209	0.208			
	(28.35)**	(24.21)**	(36.23)**	(36.48)**	(36.05)**			
Constant	0.433	0.300	0.284	0.336	0.386			
	(8.33)**	(14.07)**	(5.81)**	(6.62)**	(8.00)**			
	Income,	Income,	Income,	Income,	Income,			
Other Variables	Statewide	Statewide	Statewide	Statewide	Statewide			
	Elections	Elections	Elections	Elections	Elections			
Eined Effects	NAC A			MCA - Veer	MSA x			
Fixed Effects	MSA	MSA	MSA	MSA x Year	Education			
Observations	45,456	42,564	88,020	88,020	88,020			

 Table 5: Does the New York Times Depress Voting among the College Educated?

Notes: Linear probability models with standard errors clustered by MSA for cross-sectional estimates and MSA x Year for pooled estimates. T-statistics in parentheses: \* significant at 5% level; \*\* significant at 1% level. Constants in fixed effects regressions represent the average value of the fixed effects. Fourteen income dummy variables and statewide election variables not shown. State election variables include a dummy variable for statewide races alone, interacted with high education, interacted with year dummies, and interacted with both high education and year.

	Voting Probability						
	No	on-Presidential and	Presidential Election	ons			
	1006	Pooled	Pooled	Pooled			
	1990	(94, 96, 98)	(94, 96, 98)	(94, 96, 98)			
	(1)	(2)	(3)	(4)			
Per Capita NYT ( <b>g</b> )	-	-1.331	0.637	1.961			
	-	(0.30)	(0.36)	(0.47)			
NYT*1996	-	-2.797	1.240	-2.510			
	-	(1.47)	(0.35)	(1.43)			
High Ed ( $\gamma_2$ )	0.167	0.171	0.163	0.000			
-	(13.17)**	(6.76)**	(6.72)**	(.)			
High Ed*1996	-	0.001	0.008	-0.004			
C	-	(0.04)	(0.30)	(0.17)			
High Ed*1998	-	-0.045	-0.031	-0.085			
C	-	(1.20)	(0.84)	(3.18)**			
1996 Year Dummy	-	0.172	0.102	0.172			
2	-	(4.12)**	(1.64)	(3.89)**			
1998 Year Dummy	-	-0.043	-0.069	-0.032			
2	-	(0.91)	(1.11)	(0.64)			
NYT*High Ed ( <b>g</b> )	-0.680	-4.117	-4.119	-17.790			
	(0.34)	(3.76)**	(3.58)**	(2.47)*			
NYT*High Ed*1996	-	3.441	4.139	2.305			
Ū	-	( <b>1.69</b> )	(1.95)*	(1.47)			
Black	0.077	0.072	0.069	0.071			
	(5.24)**	(7.35)**	(7.14)**	(7.30)**			
Asian	-0.132	-0.162	-0.157	-0.160			
	(4.94)**	(9.06)**	(8.67)**	(9.08)**			
Indian	-0.038	-0.067	-0.064	-0.066			
	(1.37)	(4.09)**	(3.82)**	(4.03)**			
Hispanic	-0.056	-0.055	-0.060	-0.059			
-	(5.15)**	(6.86)**	(6.88)**	(7.44)**			
Sex	-0.041	-0.025	-0.025	-0.025			
	(10.02)**	(11.12)**	(10.98)**	(11.04)**			
Age <30	-0.176	-0.211	-0.211	-0.211			
	(25.06)**	(47.45)**	(47.49)**	(47.63)**			
Age 65+	0.162	0.194	0.194	0.193			
	(22.79)**	(43.32)**	(43.58)**	(43.18)**			
Constant	0.488	0.244	0.292	0.292			
	(33.87)**	(5.59)**	(4.83)**	(6.50)**			
	Income,	Income,	Income,	Income,			
Other Variables	Statewide	Statewide	Statewide	Statewide			
	Elections	Elections	Elections	Elections			
Fixed Effects	MSA	МСЛ	MSA v Voor	MSA x			
FIATU LIITUS	IVISA	MOA	MOA X I Cal	Education			
Observations	43,769	131,789	131,789	131,789			

 Table 6: Does Distraction Drop in Presidential Years?

Notes: Linear probability models with standard errors clustered by MSA for cross-sectional estimates and MSA x Year for pooled estimates. T-statistics in parentheses: \* significant at 5% level; \*\* significant at 1% level. Constants in fixed effects regressions represent the average value of the fixed effects. Fourteen income dummy variables and statewide election variables not shown. State election variables include a dummy variable for statewide races alone,

- Conclusion:
  - NYT appears to focus attention on national politics
  - (Even though local papers then go more local)
  - Crowds out local informational sources
  - Decreases voter turnout to local elections
  - Other outcomes? Political bias?
- Obvious confound:
  - NYT expanded in areas that were becoming more 'national'-oriented.
  - Need to control for time trends in voting
  - (Was not difficult, should have been done)

- Does media convince people?
- Can media content be manipulated?
- Dyck and Zingales (2002): Manipulation of news about earnings
- Earning announcements in two formats:
  - GAAP (certified) earnings
  - Street earnings: GAAP minus one-time charges
- Company press release spins GAAP or street earnings
- Media can feature more prominently GAAP or street earnings

- Investors react to information with trading
- Data:
  - PR Newswire: Company release (first item)
  - Factiva: Newspaper coverage (first item)
  - Earning announcements:
    - \* 600 hand-searched
    - \* Stree earning from I/B/E/S
    - \* GAAP earnings from Compustat
  - Stock returns: Excess returns (-1,3)
- Use measure 1 of earning surprise for both Street and GAAP earnings (although forecasts are for street earnings)

- $\bullet$  Form  $s_{t,k}^{\mathbf{1},G}$  and  $s_{t,k}^{\mathbf{1},S}$
- Define  $d_{t,k}^{j} = 1$  if news is in media and presents first earning measure j (j = S, G)
- Specification:

$$r_{t,k}^{(,1,3)} = \alpha + \beta_0 s_{t,k}^{1,G} + \beta_1 s_{t,k}^{1,S} + \beta_2 s_{t,k}^{1,G} d_{t,k}^S + \beta_3 s_{t,k}^{1,S} d_{t,k}^G + \beta_4 s_{t,k}^{1,G} d_{t,k}^S + \beta_5 s_{t,k}^{1,S} d_{t,k}^G + \varepsilon_{t,k}$$

- Is there more response to Street (GAAP) earning when Street (GAAP) earnings are spinned?
- Table 3. Effect of Media Spin on stock response
- Too many variables. Could have more parsimoniou spec.

#### Table 3 - Does Media Coverage affect Asset Prices?

					1		Excluding news stories that mention stock market returns
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GAAP earnings surprise	0.114		0.078	0.078	0.025	0.018	0.021
Street earnings surprise	[0:00 :]	0.29	0.207	0.208	0.376	0.378	0.377
Spin on GAAP*GAAP earnings surprise		[0.136]**	[0.149]	[0.149]	[0.211]* 0.209 [0.097]**	[0.213]* 0.044 [0.110]	[0.212]* 0.208 [0.098]**
Spin on GAAP*Street earnings surprise					-0.595	-0.642	-0.592
Spin on Street*Street earnings surprise					0.84	0.729	2.076
Spin on Street*GAAP earnings surprise					-0.467	-1 [0.365]***	-0.694
Only report Street *news*Street earnings surprise					[0:202]	2.618	[0.270]
Only report GAAP *news*GAAP earnings surprise						0.264	
News				-0.005 [0.011]		[0.112]	
Observations R-squared	426 0.02	426 0.02	426 0.02	426 0.02	426 0.05	426 0.08	396 0.05

Robust standard errors in brackets \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

- Table 5. Response is mainly to media spin, not company spin per se
- Table 6. Company spin affects media spin

#### Table 5 - Do Company Press Releases affect Asset Prices?

			Firms with below median number of analysts	Firms with above median number of analysts
dependent variable = cumula	tive excess	return	(2)	
	(1)	(2)	(3)	(4)
GAAP earnings surprise	0.081	-0.052	0.018	-0.087
	[0.107]	[0.089]	[0.088]	[0.137]
Street earnings surprise	0.145	0.424	0.344	0.412
	[0.215]	[0.266]	[0.327]	[0.342]
Spin on Street in Company press release*GAAP earnings surprise	0.007	0.141	0.207	0.119
	[0.108]	[0.091]	[0.121]*	[0.132]
Spin on Street in Company press release*Street earnings surprise	0.303	0.217	0.213	0.052
	[0.265]	[0.374]	[0.550]	[0.565]
Spin on GAAP*GAAP earnings surprise		0.255	0.292	0.265
		[0.105]**	[0.117]**	[0.138]*
Spin on GAAP*Street earnings surprise		-0.607	-0.689	-0.326
		[0.297]**	[0.365]*	[0.379]
Spin on Street*Street earnings surprise		0.565	6.369	0.365
		[0.770]	[2.883]**	[0.667]
Spin on Street*GAAP earnings surprise		-0.521	-2.265	-0.446
		[0.261]**	[0.823]***	[0.327]
Observations	426	426	165	261
R-squared	0.03	0.06	0.15	0.05

Robust standard errors in brackets \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

#### Table 6 - Firm Spin and Media Spin

		logit	
	dependent variable:	dependent variable:	dependent variable:
	media report	media report	media report
	street first=1	street only	GAAP only
	(1)	(2)	(3)
Company reports street first	1.684 [0.393]***		
Company reports only street		2.197 [0.371]***	
Company reports only GAAP			1.753 [0.421]***
Observations	226	226	226
Debugt standard arrars in bree	leata		

Robust standard errors in brackets \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

- Overall, media appear to:
  - focus attention (earning surprises)
  - provide incentives (politician response)
  - affect consumer behavior (voter turnout)
- Is this mainly attention?
- Is it social learning?
- Is it persuasion?
- Open question

## 5 Imitation?

- Stylized fact. In similar places people take actions
  - number of hours worked
  - effort at workplace
  - grades in school
- Peer effect literature:
  - Sacerdote (2001) peer effects between Dartmouth undergrads. Small effect on grades
  - Kremer and Levy (2002) peer effects among college student from alsohol use
  - Udry social learning in pineapple fields
  - Ichino-Maggi (2001) Peer effects in Italian bank
    higher shirking in South

- (Bunch of other papers - no peer effects)

- What determines similarity of actions?
  - Social learning?
  - Persuasion? (distaste for social disapproval coming from doing different things form social group)
- Finding clear example of persuasion withour social learning is first-order task

## **6** Persuasion

- A clear psych. example
- Milgram experiment: post-WWII
- Do Germans yield to pressure more than others?

- Subjects: Adult males
- Recruitement: experiment on punishment and memory
- Roles:
  - teacher (subjects)

- learner (accomplice)

- Teacher asks questions
- Teacher administers shock for each wrong answer
- Initial shock: 15V
- Increase amount up to 450V (not deadly, but very painful)

- Learner visible through glass (or audible)
- Leaner visibly suffers and complains

- Results.
  - 62% subjects reach 450V
  - Subjects regret what they did ex post
  - When people asked to predict behavior, almost noone predicts excalation to 450V

- It's not the Germans most people yield to social pressure
- Furthermore, naivete'

- A clear econ example
- Garicano, Palacios-Huerta, and Prendergast, *Favoritism* Under Social Pressure

- Soccer games in Spanish league
- Injury time at end of each game (0 to 5 min.)
- Make up for interruptions of game

- Injury time: last chance to change results for teams
- Do referees provide more injury time when it benefits more the home team?

• Yielding to social pressure of public

 Note: referees professionals, are paid to be independent

- Results:
  - Figure 1
  - Table 2. Restrict sample to games with home team ahead by 1 or behind by 1.

FIGURE 1. INJURY TIME AWARDED BY SCORE MARGIN

Number of minutes awarded by referees as a function of the margin in favor of the home team at the end of the match (goals scored by home team - goals scored by visitors).



*Note: 3.3% of the matches ended with score differences smaller than -2. 5.2% of the matches ended with score differences larger than 3.* 

## TABLE 2. MINUTES OF INJURY TIME AT END OF MATCH IN CLOSE MATCHES

The dependent variable is the length of injury time in matches that ended with a 1 goal difference. Controls are included for variables that may affect 'true' stoppages in the match. Score difference is 1 if home team finished ahead by 1 goal, 0 if home team finished behind by 1 goal.

	Score	Yellow	Red	Player	Year	Budget	Budget	Rank	Difference	Team	Constant	R Sq
	Difference	Cards	Cards	Substituti	Effect	Home	Visitor	Home	in Rank⁺	Fixed		(N)
				ons					(home-vis)	Eff.		
(1)	-1.88**										3.98**	0.4852
	(0.12)										(0.09)	(268)
(2)	-1.86**	0.08**	-0.2	0.14**							2.94**	0.5221
	(0.11)	(0.02)	(0.13)	(0.05)								(268)
(3)	-1.86**	0.07**	-0.2	0.03	0.37*						3.28**	0.5328
	(0.11)	(0.02)	(0.13)	(0.07)	(0.15)						(0.31)	(268)
(4)	-1.8**	0.06**	-0.19	0.04	0.29	-0.03	0.05*				3.21**	0.5492
	(0.11)	(0.02)	(0.13)	(0.07)	(0.17)	(0.02)	(0.02)				(0.31)	(268)
(5)	-1 78**	0.06*	-0 10	0.04	0 1 1	Ο	0.05**	0.02	-0.03*		3 73**	0 5637
$(\mathbf{J})$	-1.70	(0.00)	-0.19	(0.04)	(0.10)	(0,02)	(0.00)	(0.02)	-0.03		(0.22)	(268)
	(0.11)	(0.02)	(0.12)	(0.07)	(0.19)	(0.02)	(0.02)	(0.01)	(0.01)		(0.33)	(200)
(6)	-1.77**	0.05*	-0.17	0.04	-0.09	0.06	0.05**	0.01	-0.03**	ves	3.28**	0.6025
(•)	(0.12)	(0.03)	(0.13)	(0.07)	(0.37)	(0.1)	(0.02)	(0.03)	(0.01)	home	(0.6)	(268)
	()	(0000)	()	(0.00)	(0.01)	(000)	()	()	(0.0.1)		()	()
(7)	-1.76**	0.06*	-0.16	0.02	0.52	-0.01	-0.02	0.02	-0.02*	yes	3.01**	0.6063
	(0.12)	(0.03)	(0.13)	(0.07)	(0.37)	(0.02)	(0.08)	(0.01)	(0.01)	visitor	(0.44)	(268)

Standard Errors In parenthesis \* Significant at 5% level; \*\* Significant at 1% level; + Rank Difference: Absolute value of Rank Home- Rank Visitor.