Econ 219B
Psychology and Economics: Applications
(Lecture 12)

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April 16, 2008

Outline

1. Social Pressure II
2. Emotions: Mood
3. Emotions: Arousal
4. Methodology: Lab and Field
5. Market Reaction to Biases: Introduction

1 Social Pressure II

- P*eer effect* literature also points to social pressure

- **Falk-Ichino (JOLE, 2006):** effect of peer pressure on task performance
  - Recruit High-school students in Switzerland to perform one-time job for flat payment
  - Stuff letters into envelopes for 4 hours
  - Control group of 8 students did the task individually
  - Treatment group of 16 students worked in pairs (but each student was instructed to stuff the envelopes individually)

- Results:
  - Students in treatment group stuffed more envelopes (221 vs. 190)
  - Students in treatment group coordinated the effort within group: within-pair standard-deviation of output is significantly less than the (simulated) between-pairs standard deviation

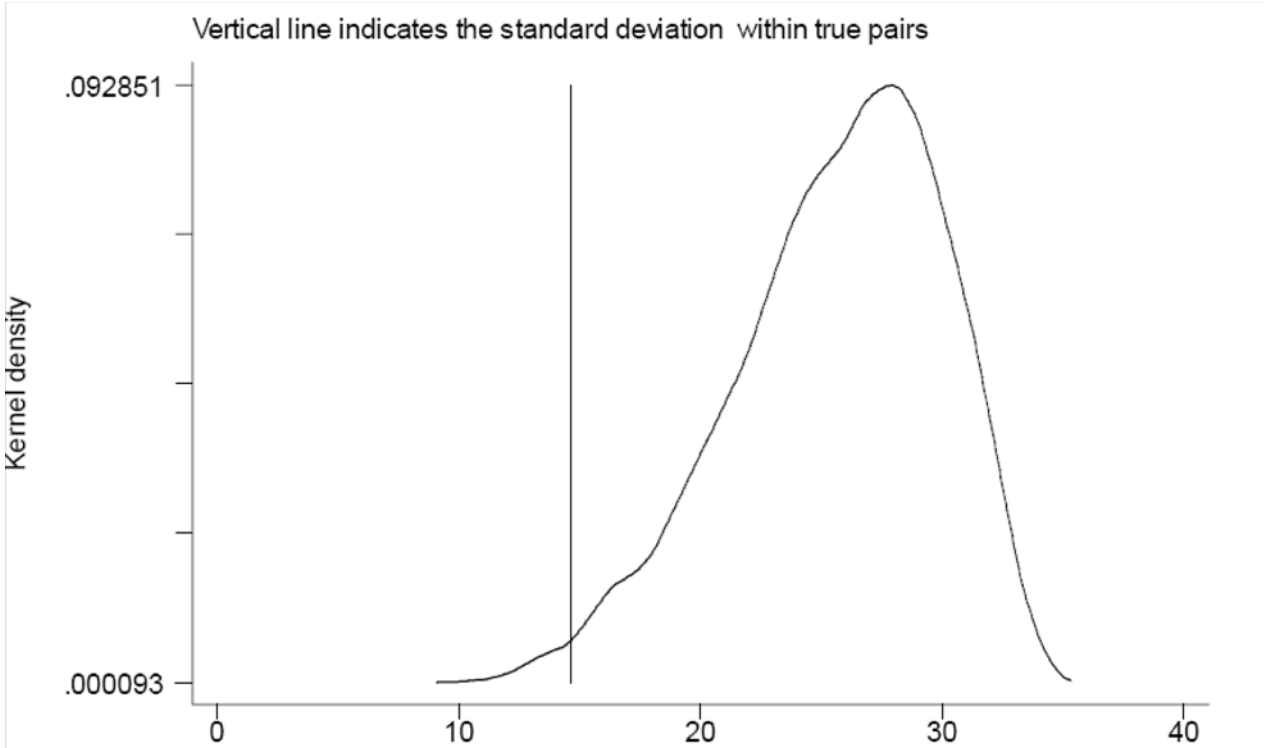


Fig. 3: St. dev. within true and hypothetical pairs in pair sample

- **Mas-Moretti (AER, forthcoming).** Evidence of response to social pressure in the workplace
  - Workplace setting –> Large retail chain
  - Very accurate measure of productivity, scanning rate
  - Social Pressure: Are others observing the employer?

- Slides courtesy of Enrico

2 Emotions: Mood

- Emotions play a role in several of the phenomena considered so far:
  - Self-control problems –> Temptation
  - Projection bias in food consumption –> Hunger
  - Social preferences in giving –> Empathy
  - Gneezy-List (2006) transient effect of gift –> Hot-Cold gift-exchange

- Psychology: Large literature on emotions (Loewenstein and Lerner, 2003)
  - Message 1: Emotions are very important
  - Message 1: Different emotions operate very differently: anger $\neq$ mood $\neq$

- Consider two examples of emotions:
  - Mood
  - Arousal

- Psychology: even minor mood manipulations have a substantial impact on behavior and emotions
  - On sunnier days, subjects tip more at restaurants (Rind, 1996)
  - On sunnier days, subjects express higher levels of overall happiness (Schwarz and Clore, 1983)

- Should this impact economic decisions?

- Field: Impact of mood fluctuations on stock returns:
  - Daily weather and Sport matches
  - No effect on fundamentals
  - However: If good mood leads to more optimistic expectations –> Increase in stock prices

- Evidence:
  - **Saunders (1993):** Days with higher cloud cover in New York are associated with lower aggregate US stock returns
  - **Hirshleifer and Shumway (2003)** extend to 26 countries between 1982 and 1997
    * Use weather of the city where the stock market is located
    * Negative relationship between cloud cover (de-trended from seasonal averages) and aggregate stock returns in 18 of the 26 cities

	OLS Regression			Logit Model		
Location	Observations	β_{iC}	t-Statistic	γ_{iC}	χ^2	P-Value
Amsterdam	3984	-0.007	-1.07	-0.024	2.76	0.0963
Athens	2436	0.012	0.71	-0.014	0.53	0.4649
Buenos Aires	2565	-0.030	-0.98	-0.019	1.60	0.2054
Bangkok	3617	0.009	0.45	-0.014	0.24	0.6259
Brussels	3997	-0.018*	-3.25	-0.036*	6.75	0.0094
Copenhagen	4042	-0.002	-0.30	-0.002	0.02	0.8999
Dublin	3963	-0.000	-0.02	-0.025	2.13	0.1445
Helsinki	2725	-0.016	-1.67	-0.034*	4.01	0.0452
Istanbul	2500	0.007	0.32	-0.001	0.00	0.9488
Johannesburg	3999	0.004	0.47	-0.012	0.67	0.4124
Kuala Lumpur	3863	0.014	0.26	-0.109	1.99	0.1586
London	4003	-0.010	-1.52	-0.019	1.41	0.2355
Madrid	3760	-0.011	-1.60	-0.015	1.41	0.2353
Manila	2878	0.018	0.83	0.003	0.02	0.9023
Melbourne	3674	-0.013	-1.45	-0.008	0.26	0.6116
Milan	3961	-0.014*	-2.03	-0.021	3.69	0.0549
New York	4013	-0.007	-1.28	-0.035*	8.64	0.0033
Oslo	3877	-0.018	-1.92	-0.025	3.31	0.0688
Paris	3879	-0.009	-1.27	-0.027*	3.93	0.0474
Rio de Janeiro	2988	-0.057	-1.93	-0.016	0.96	0.3267
Santiago	2636	0.000	0.05	-0.012	0.73	0.3935
Singapore	3890	0.008	0.37	-0.002	0.00	0.9588
Stockholm	3653	-0.014	-1.54	-0.025	2.89	0.0889
Taipei	3784	-0.016	-0.97	-0.013	0.66	0.4164
Vienna	3907	-0.013*	-2.14	-0.026*	4.11	0.0425
Zurich	3851	-0.007	-1.28	-0.012	0.89	0.3465
All Cities (naive)	92445	-0.011*	-4.42	-0.019*	41.30	0.0001
All Cities (PCSE)	92445	-0.010*	-3.97	-	-	-

- – Magnitude:
  - – Days with completely covered skies have daily stock returns .11 percent lower than days with sunny skies
  - – Five percent of a standard deviation
  - – Small magnitude, but not negligible
- After controlling for cloud cover, other weather variables such as rain and snow are unrelated to returns

- Additional evidence (**Edmans-Garcia-Norli, 2007**): International soccer matches (39 countries, 1973-2004)

Panel A. Abnormal Raw Returns						
All games	638	0.016	0.27	524	−0.212	−3.27
Elimination games	177	0.046	0.43	138	−0.384	−3.24
World Cup elimination games	76	0.090	0.53	56	−0.494	−2.71
Continental cups elimination games	101	0.013	0.09	82	−0.309	−1.99
Group games	243	0.052	0.53	198	−0.168	−1.47
World Cup group games	115	0.007	0.05	81	−0.380	−2.23
Continental cups group games	128	0.092	0.67	117	−0.022	−0.14
Close qualifying games	218	−0.049	−0.52	188	−0.131	−1.29
World Cup close qualifying games	137	−0.095	−0.78	122	−0.132	−1.05
European Championship close qualifying games	81	0.029	0.19	66	−0.130	−0.75

- Results:
  - Compared to a day with no match, a loss lowers daily returns (significantly) by .21 percent. (Surprisingly, a win has essentially no effect)
  - More important matches, such as World Cup elimination games, have larger effects
  - Effect does not appear to depend on whether the loss was expected or not
  - International matches in other sports have a consistent, though smaller, effect (24 countries)

	Wins			Losses		
	N	β_W	t-val	N	β_L	t-val
		Panel A. Abnormal Returns				
All games	903	−0.013	−0.39	645	−0.084	−2.21
Cricket	153	−0.057	−0.73	88	−0.187	−1.85
Rugby	403	−0.086	−1.73	307	−0.095	−1.74
Ice hockey	238	0.105	1.57	148	0.083	1.02
Basketball	111	0.071	0.74	102	−0.208	−2.11

- Interpretations:
  - Mood impacts risk aversion or perception of volatility
  - Mood is projected to economic fundamentals

- **Simonsohn (2007):** Subtle role of mood
  - Weather on the day of campus visit to a prestigious university (CMU)
  - Students visiting on days with more cloud cover are significantly *more* likely to enroll
  - Higher cloud cover induces the students to focus more on academic attributes versus social attributes of the school
  - Support from laboratory experiment

Table 2. Regressions of enrollment and admission decisions on cloudcover (OLS)

	(1)	(2)	(3)	(4)	(5)
Dependent variable (1-yes, 0-no)	Enrollment	Enrollment	Enrollment	Enrollment	Admission
	Baseline	Adds other weather variables	Adds Average weather conditions	Predicts with weather from two days *prior* to visit	Same as (3) but with *admission* decision as dependent variable
Intercept	0.342***	0.180	-0.013	0.407***	0.538**
	(0.055)	*(0.164)*	*(0.353)*	*(0.137)*	*(0.210)*
Cloud Cover on day of visit *(0-clear skies to 10-overcast)*	0.018**	0.027**	0.032***	--	0.004
	(0.008)	*(0.011)*	*(0.012)*	--	*(0.008)*
Cloud Cover two days prior to visit	--	--	--	0.001	--
	--	--	--	*(0.009)*	--
Maximum Temperature (max)	--	0.004	0.003	0.000	0.000
	--	*(0.004)*	*(0.004)*	*(0.004)*	*(0.003)*
Minimum Temperature (min)	--	-0.002	-0.005	0.001	-0.002
	--	*(0.004)*	*(0.005)*	*(0.004)*	*(0.003)*
Wind Speed	--	-0.004	-0.005	0.002	-0.003
	--	*(0.003)*	*(0.004)*	*(0.004)*	*(0.002)*
Rain precipitation (in inches)	--	-0.056	-0.024	-0.076	0.026
	--	*(0.091)*	*(0.119)*	*(0.144)*	*(0.078)*
Snow precipitation (in inches)	--	0.008	0.009	0.002	0.007
	--	*(0.008)*	*(0.009)*	*(0.008)*	*(0.006)*
Average weather conditions for calendar date (DF=6)	No	No	Yes	No	Yes
Month dummies	No	No	Yes	No	Yes
Number of Observations	562	562	562	562	1284
R-square	0.0096	0.0146	0.0573	0.0018	0.0279

3 Emotions: Arousal

- Separate impact of emotions: Arousal

- **Ariely-Loewenstein (2005):** Sexual arousal
  - Control group: Students
  - Treatment group: Students that are sexually aroused
  - Subjects in treatment group report a substantially higher willingness to engage in behavior that may lead to date rape
  - (Projection bias)

- **Josephson (1987):** Arousal due to violent content
  - Control group exposed to non-violent clip
  - Treatment group exposed to violent clip
  - Treatment group more likely to display more aggressive behavior, such as aggressive play during a hockey game
  - Impact not due to imitation (violent movie did not involve sport scenes)
- Consistent finding from large set of experiments (Table 11)
- **Dahl-DellaVigna (2007)**: Field evidence — Exploit timing of release of blockbuster violent movies

- **Model.** Consumer chooses between strongly violent movie a^v, mildly violent movie a^m, non-violent movie a^n, or alternative social activity a^s
  - Utility depends on quality of movies –> Demand functions $P(a^j)$

- Heterogeneity:
  - High taste for violence (Young): N_y consumers
  - Low taste for violence (Old): N_o consumers
  - Aggregate demand for group i: $N_i P(a_i^j)$

- Production function of violence V (not part of utility fct.) depends on a^v, a^m, a^n, and a_s:

$$\ln V = \sum_{i=y,o} [\sum_{j=v,m,n} \alpha_i^j N_i P(a_i^j) + \sigma_i N_i (1 - P(a_i^v) - P(a_i^m) - P(a_i^n))]$$

- Estimate (A^j is total attendance to movie of type j)

$$\ln V = \beta_0 + \beta^v A^v + \beta^m A^m + \beta^n A^n + \varepsilon$$

- Estimated impact of exposure to violent movies β^v:

$$\beta^v = x^v(\alpha_y^v - \sigma_y) + (1 - x^v)(\alpha_o^v - \sigma_o)$$

- First point — Estimate of net effect
  - Direct effect: Increase in violent movie exposure –> α_i^v
  - Indirect effect: Decrease in Social Activity –> σ_i

- Second point — Estimate on self-selected population:
  - Estimate parameters for group actually attending movies
  - Young over-represented: $x^v > N^y / (N^y + N^o)$

- Comparison with Psychology experiments
  - Natural Experiment. Estimated impact of exposure to violent movies β^v:

$$\beta^v = x^v(\alpha_y^v - \sigma_y) + (1 - x^v)(\alpha_o^v - \sigma_o)$$

  - Psychology Experiments. Manipulate a directly, holding constant a^s out of equilibrium

$$\beta_{lab}^v = \frac{N_y}{N_y + N_o}\alpha_y^v + (1 - \frac{N_y}{N_y + N_o})\alpha_o^v$$

- Two differences:
  - 'Shut down' alternative activity, and hence σ_i does not appear
  - Weights representative of (student) population, not of population that selects into violent movies

- **Movie data**
  - Revenue data: Weekend (top 50) and Day (top 10) from *The Numbers*
  - Violence Ratings from 0 to 10 from *Kids In Mind* (Appendix Table 1)
  - Strong Violence Measure A_t^v: Audience with violence 8-10 (Figure 1a)
  - Mild Violence Measure A_t^m: Audience with violence 5-7 (Figure 1b)

- **Assault data**
  - Source: National Incident-Based Reporting System (NIBRS)
  - All incidents of aggravated assault, simple assault, and intimidation from 1995 to 2004
  - Sample: Agencies with no missing data on crime for > 7 days

- Sample: 1995-2004, days in weekend (Friday, Saturday, Sunday)

- **Regression Specification.** (Table 2)

$$\log V_t = \beta^v A_t^v + \beta^m A_t^m + \beta^n A_t^n + \Gamma X_t + \varepsilon_t$$

  - Coefficient β^v is percent increase in assault for one million people watching strongly violent movies day t (A_t^v) (Similarly β^m and β^n)
  - Cluster standard errors by week
  - –> Effect of exposure to violent movies is negative. Puzzle?
  - Third factor (weather? TV?) affecting assaults and movie audience
    - Control for weather and TV audience (Column 6)
    - Instrument movie audience based on next-week weekend audience (details in paper)

- Effect of violent movies more negative (and significant) (Column 7)

- **Time of Day Results.** (Table 3)
  - No effect of movie exposure in morning or afternoon (Columns 1-2)
  - Negative effect in the evening (Column 3)
  - Stronger negative effect the night after (Column 4)
  - Effect larger for more violent movies in evening, but not in night
  - Smaller, not significant impact of non-violent movies

- **Medium-Run Effects.** (Table 4)
  - Limitation: Cannot estimate long-term effects
  - Can estimate medium-term effects after one week of exposure
    - Are effects due to intertemporal substitution of crime between days?
    - Evidence of imitation of violent behavior in next days?
  - Results:
    - No effect on Monday and Tuesday of weekend exposure (Columns 1-2)
    - No effect one, two, or three weeks later (Columns 3-8)

- **Robustness Checks.** (Appendix Table 2)

- **Individual Movie Violence Level.** (Figure 3)
  - No single violence level responsible for results

- **2-Hour Time Blocks.** (Figure 4)
  - Negative effect concentrated between 8PM and 6AM

- **Alternative Movie Violence Measure Using MPAA Rating.** (App. Table 3)
  - Strong Violence if "Violence"/"Violent" with “Bloody", “Brutal", “Disturbing”, “Graphic", “Grisly", “Gruesome”, or “Strong" in Rating
  - Mild Violence if "Violence"/"Violent"
  - Similar, but weaker effects

- **Placebos** (Table 5)
  - No effect in placebo specifications

- **Findings**:
  1. Violent movies lower same-day violent crime in the evening
  2. Violent movies lower violent crime in the night after exposure
  3. Strongly violent movies have somewhat larger negative effects compared to mildly violent movies in the evening, but *not* after exposure
  4. Nighttime hours have larger negative effects compared to evening hours –> Compositional effect
  5. No lagged effect of exposure in weeks following movie attendance –> No intertemporal substitution

- Interpretations for Findings 1-3

- **Finding 1. Lower Crime in the Evening**
- *Voluntary incapacitation* since no crime in movie theater
- Effect increases in movie violence due to self-selection
- Magnitude of findings: too large?
  - Assume incapacitate for half of time block
  - Estimate $\beta^j = -0.5 x^j \sigma_y$ –> If criminals were not over-represented, $\beta^v_{equal} = -0.5 * (1/300) \approx -0.0017$
  - Self-selection of criminals:
    - $0.0130/0.0017 = 7.6$ times in strongly violent movies
    - $0.0109/0.0017 = 6.4$ times in mildly violent movies

- Compare selection to observed selection on 'violent' demographics

- Consumer Expenditure Survey time diary for period 1995-2004
  - Estimate regression at daily level (Friday-Sunday) (Table 7)

$$share_t^{CEX} = \alpha + \beta^v \frac{A_t^v}{Pop_t} + \beta^m \frac{A_t^m}{Pop_t} + \beta^n \frac{A_t^n}{Pop_t} + \Gamma X_t + \varepsilon_t$$

  - Younger people more likely to watch violent movies (Columns 3-4):
    - $2.094/0.9469 = 2.2$ times over-sampled in strongly violent movies
    - $1.4642/0.7736 = 1.9$ times over-sampled in mildly violent movies
  - Stronger (though noisier) findings for young single males (Columns 4-5)
  - Observed magnitudes of incapacitation plausible

- **Finding 2. Lower Crime in the Night**
  - Movie attendance –> substitute away from more dangerous activities
  - Not trivial: Movie theater could have been meeting point for criminals
  - Is alcohol part of explanation? (Table 8)
    - Larger negative effect on assaults involving alcohol consumption (Columns 1-4)
    - Larger negative effect for assaults in bar and night clubs (though imprecise estimates) (Columns 5-6)
    - Some evidence from CEX data

- **Finding 3. Non-monotonicity in Violent Content**
  - Night hours: $\hat{\beta}^v = -0.0192$ versus $\hat{\beta}^m = -0.0205$
  - Pattern consistent with arousal ($\alpha^v > \alpha^m$). For strongly violent movies:
    * Substitution effect lowers crime
    * Arousal effect increases crime
  - BUT: Is selection of potential criminals linear?
  - Linear selection with IMDB data (Figure 5) — Share of young males among raters of movies online

- **Additional Evidence on Selection**
  - Test 1: Movies highly attended by violent demographics (young males) should have larger effect – Use data on demographics of audience from IMDB (see text)
  - Test 2: Movies that do not attract violent demographics do not lower crime
    - High-Profanity movies and High-Sexual-Content movies (Table 11)
    - Conditional on movie violence:
      - No additional selection of young into these movies (CEX data)
      - No effect on violent crime
  - Strong support for selection

- **Magnitudes and Psychology Experiments**

- Differences from laboratory evidence (Levitt-List, 2006): Exposure to violent movies is
  - Less dangerous than alternative activity ($\alpha^v < \sigma$)
    (Natural Experiment)
  - More dangerous than non-violent movies ($\alpha^v > \alpha^n$)
    (Laboratory Experiments and indirect evidence above)

- Both types of evidence are valid for different policy evaluations
  - Laboratory: Banning exposure to unexpected violence
  - Field: Banning temporarily violent movies

- This leaves a number of open questions

- Question 1. Peer Effects through the media.
  - To what extent do we imitate role models in the media?
  - Example 1: Movies with Car races –> Dangerous driving –> Car accidents
  - Example 2: Smoking in Movies –> Increased purchase of cigarettes
  - Is imitation higher for characters of same race and gender?

- Question 2. Psychology of Arousal
  - Does glamorized violence affect behavior differently?

4 Methodology: Lab and Field

- What do we learn about the relationship between lab experiments and field evidence?

- Contentious topic recently since **List-Levitt (JEP, 2007)**

- To simplify, define field evidence as:
  - Natural Experiments
  - Field Experiments

- Let us start from **Dahl-DellaVigna** example

- **Difference 1.** Differences in comparison group
  - *Lab Experiment*: Activity in control group exogenously assigned
  - *Natural Experiment*: Activity in control group chosen to max utility
  - Notice: *Field Experiments* are (usually) like lab experiments
- Implication: Parameters estimated very different
- Write down model: what parameter are you estimating?

- **Difference 2. Self-Selection**
  - *Lab Experiment*: Subjects are group of students unaware of nature of task –> No selection
  - *Natural Experiment*: People self-select into a setting
  - *Field Experiments:* Can have self-selection too

- Different purposes:
  - Often useful to control for self-selection and impose a treatment
  - However, can lose external validity –> Put people in a situation they normally would not be in

- Example: Social preferences
  - I give $10 if confronted with fund-raiser asking for money
  - However: I do all possible to avoid this interaction
  - –> Without sorting: Frequent giving
  - –> With sorting: No giving

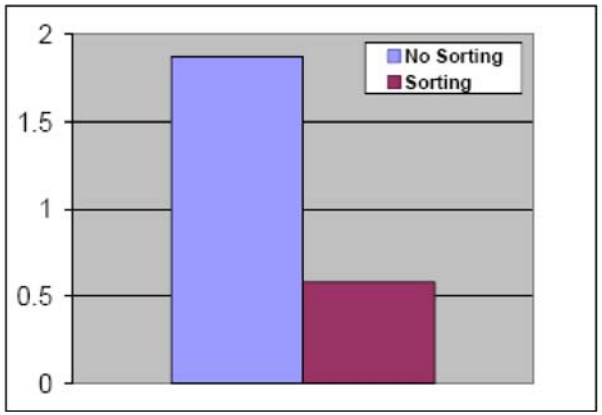
- Notice: One can integrate sorting into laboratory experiments

- **Lazear-Malmendier-Weber (2006)** (similar to **Dana-Cain-Dawes, 2007**)
  - Control: Standard dictator game (share $10)
  - Treatment: Dictator game with sorting: Can opt out and get $10

- Large difference in results

Panel A. Average Amount Shared

The amount is denoted in Euros. The left bar indicates the average amount in the treatment without a sorting option; the right bar the average amount in the treatment with a sorting option. Non-participation in the treatment with sorting is included as sharing zero.



- 28 of 39 subjects sort out

- Model:
  - Pure altruism is minority of subjects
  - Social pressure – Pay a utility cost k if say no (but no cost if sort out)
  - Self- or Other-Signalling – Like to signal that one is good type

- What captures better charitable giving in the field? Sorting or no sorting?

- Depends on situation: Fund-raiser visit can be announced or unannounced

- Can take this to a Field Experiment: **DellaVigna-List-Malmendier** (in planning)
  - Control group C: Door-to-Door Fund-raiser
  - Treatment group T: Day before, hang flyer on door-knob indicating hour of visit

- Outcomes:
  - Share opening the door: d
  - Share giving: g
- Predictions:
  - Opposite for the two main models
  - Altruism: $d_T > d_C$ and $g_T > g_C$
  - Social pressure: $d_T < d_C$ and $g_T < g_C$

- Also: Vary Quality of charity:
  - La Rabida Children's Hospital (high altruism)
  - East Carolina Center for Hazard Migration (low altruism)
  - Organ donation card (?)

- Interpretations:
  - Information on flyer affecting giving?
    - Treatment $T2w$: Flyer announces a visit in next 2 weeks
    - Visit will be unannounced, but information like in T treatment
  - Social pressure or self-signalling?
    - Treatment Too (opt-out): Flyer specifies option 'Please do not disturb'
    - Yes if social pressure, no if signalling

- Finally, magnitudes:
  - Assume $g_T = .1 < g_C = .15$
  - What does this imply about social pressure?
  - Calibrate against magnitude in other treatments
    * Survey Control Group CS: Ask to complete survey on charitable giving
    * Survey Treatment Group TS: Survey with flyer that announces visit
    * Vary payment for survey ($0 vs. $10) and length (5 min. vs. 10 min.)
  - Estimate elasticity with respect to money and value of time

- **Difference 3.** Differences in context

- Example 1: Dahl-DellaVigna
  - Laboratory experiments on movie violence: 15-min, clips (to save time)
  - Field: Full-length movies

- Example 2: Dictator experiment
  - Laboratory: Have been given $10 – Give it to anonymous subject
  - Field: Have earned money – Give some of it to someone

- Example 3: Prisoner Dilemma experiment
  - Framed as 'Community Game' –> Low defection
  - Framed as 'Wall-Street Game' –> High defection

- Tension for laboratory experiments: Resemble field at cost of losing experimental controls

- **Difference 4.** Demand effects in the laboratory
  - Subjects generate the effect that they think experimenter is looking for
  - Social preference!
- Example: Dictator game
  - I was given $10 and asked how much to give —> Inference: Should give some away
- Field evidence does not have this feature
- However:
  - This is genuine phenomenon also in field (Obedience)
  - Trade-off between demand effects and loss of control in the field

- Related: Anonymity
  - Situations are rarely double-blind even in experiments
  - If subjects worry about experimenter, this affects behavior
- Again: Same issue also in the field
- Advantage of lab: Can control for this by running double-blind sessions

- **Difference 5.** Differences in Stakes
  - Laboratory: Small stakes
  - Field: Large stakes

- Examples:
  - Dictator Games for \$10 vs. \$100+ of charitable giving
  - Aggressive hockey play in Violence epxeriments vs. violent crime

- However:
  - Evidence not consistent that large stakes change behavior
  - In field, many repeated interactions, all with small stakes

5 Market Reaction to Biases: Introduction

- So far, we focused on consumer deviations from standard model

- Who exhibits these deviations?

  1. **Self-control and naivete'.** Consumers (health clubs, food, credit cards, smoking), workers (retirement saving, benefit take-up), students (homework)

  2. **Reference dependence.** Workers (labor supply, increasing wages), (inexperienced) traders (sport cards), financial investors, consumers (insurance), house owners

  3. **Social preferences.** Consumers (giving to charities)

4. **Inattention.** Individual investors, Consumers (eBay bidding)

5. **Menu Effects.** Individual investors, Consumers (loans)

6. **Social Pressure and Persuasion.** Voters, Employees (productivity), Individual investors (and analysts)

7. **Biased Beliefs.** Individual investors, CEOs, Consumers (purchases)

- What is missing from picture?

  - Experienced agents
  - Firms
  - Broadly speaking, market interactions with 'rational' agents

- Market interactions
  - Everyone 'born' with biases
  - But: Effect of biases lower if:
    * learning with plenty of feedback
    * advice, access to consulting
    * specialization

    * Competition 'drives out of market'

- For which agents are these conditions more likely to be satisfied?
- Firms
- In particular, firms are likely to be aware of biases.

- Implications? Study biases in the market

- Six major instances:
  - Interaction between firms and consumers (contract design, price choice — today and next week)
  - Interaction between experienced and inexperienced investors (noise traders and behavioral finance — next week)
  - Interaction between managers and investors (corporate finance — next week)
  - Interaction between employers and employees (labor economics — briefly next week)
  - Interaction between politicians and voters (political economy — in two weeks)
  - Institutional design (in two weeks)

6 Next Lecture

- Market Response to Biases: Pricing
- Market Response to Biases: Asset Pricing
- Market Response to Biases: Corporate Finance
- Market Response to Biases: Employers
- Market Response to Biases: Political Economy
- Next week: Empirical Problem Set Handed Out