Econ 219B
Psychology and Economics: Applications
(Lecture 4)

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Outline

1. Leisure Goods: Commitments and Savings

2. Five More Applications of Present Bias

3. Present Bias: Summary

4. Methodology: Errors in Applying Present-Biased Preferences

5. Reference Dependence: Introduction

6. Reference Dependence: Endowment Effect

1 Leisure Goods: Commitments and Savings

- Ashraf, Karlan, and Yin (2005), *Quarterly Journal of Economics*

  - Different Methodology: Field Experiment

  - Different Setting: Philippines

- Three treatments:

  - SEED Treatment (N=842): Encourage to save, Offer commitment device (account with savings goal)

  - Marketing Treatment (N=466): Encourage to save, Offer no commitment

  - Control Treatment (N=469)

- Evaluation:

  – Compare SEED to Marketing Treatment: Effect of Commitment Device in addition to encouragement

  – Measure the effect on total savings (also on non-committed account) – This was not true in 401(k) studies

- SEED Treatment:

  – Out of 842 treated people, 202 take up SEED

  – 167 also got lock-up box (did not observe savings there)

- Effect of SEED Treatment on Total Savings, Compared to Marketing

  - (Remember: Include all 842 people, Intent-to-Treat)

  - *Share of people with increased Balances*: 5.6 percentage (33.3 percent in SEED and 27.7 in Marketing)

  - *Share of people with increased Balances by at least 20 percent*: 6.4 percentage points

  - *Total Balances*: 287 Pesos after 6 months (not significant)

- To compute Treatment-on-The-Treated, divide by 202/842

  - Take into account no effect on non-takers (by assumption)

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TABLE VI
Impact on Change in Savings Held at Bank
OLS, Probit

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INTENT TO TREAT EFFECT

	OLS				Probit			
Length	6 months		12 months		12 months			
Dependent Variable:	Change in Total Balance	Change in Total Balance	Change in Total Balance	Change in Total Balance	Binary Outcome = 1 if Change in Balance > 0%	Binary Outcome = 1 if Change in Balance > 0%	Binary Outcome = 1 if Change in Balance > 20%	Binary Outcome = 1 if Change in Balance > 20%
Sample	All	Commitment & Marketing Only	All	Commitment & Marketing Only	All	Commitment & Marketing Only	All	Commitment & Marketing Only
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Commitment Treatment	234.678*	49.828	411.466*	287.575	0.102***	0.056**	0.101***	0.064***
	(101.748)	(156.027)	(244.021)	(228.523)	(3.82)	(0.026)	(0.022)	(0.021)
Marketing Treatment	184.851		123.891		0.048		0.041	
	(146.982)		(153.440)		(1.56)		(0.027)	
Constant	40.626	225.476*	65.183	189.074**				
	(61.676)	(133.405)	(124.215)	(90.072)				
Observations	1777	1308	1777	1308	1777	1308	1777	1308
R-squared	0.00	0.00	0.00	0.00				

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable in the first two column is the change in total savings held at the Green Bank after six months. Column (1) regresses chnage in total savings balances on indicators for assignment in the commitment- and marketing-treatment groups. The omitted group indicator in this regression corresponds to the control group. Column (2) shows the regression restricting the sample to commitment- and marketing-treatment groups. Columns (3) and (4) repeat this regression, using change in savings balances after 12 months as a dependent variable. The dependent variable in columns (5)-(8) is a binary variable equal to 1 if balances increased by x%. 154 clients had pre-intervention a savings balance equal to zero. 24 of them had positive savings after 12 months. These individuals were coded as "one," and those that remain at zero were coded as zero for the outcome variables for columns (5) through (8). Exchange rate is 50 pesos for US $1.00.

- In addition, examine correlation with a survey response to hyperbolic-discounting-type question:

  - Preference between 200 Pesos now and in 1 month

  - Preference between 200 Pesos in 6 months and in 7 months

TABLE III

Tabulations of Responses to Hypothetical Time Preference Questions

			Indifferent between 200 pesos in 6 months and X in 7 months			
			Patient	Somewhat Impatient	Most Impatient	Total
			X<250	250<X<300	300<X	
Indifferent between 200 pesos now and X in one month	Patient	X<250	606 34.4%	126 7.2%	73 4.1%	805 45.7%
	Somewhat Impatient	250<X<300	206 11.7%	146 8.3%	59 3.3%	411 23.3%
	Most Impatient	300<X	154 8.7%	93 5.3%	299 17%	546 31%
	Total		966 54.8%	365 20.7%	431 24.5%	1,762 100%

"Hyperbolic": More patient over future tradeoffs than current tradeoffs

"Patient Now, Impatient Later": Less patient over future tradeoffs than current tradeoffs.

Time inconsistent (direction of inconsistency depends on answer to open-ended question).

- On average, evidence on hyperbolic-discounting-type preferences

- Interesting idea: Correlate survey response with response to treatment (also in Fehr-Goette paper next lecture)

- Evidence of correlation for women, not for men

TABLE V
Determinants of SEED Takeup
Probit

	(1) All	(2) All	(3) Female	(4) Male
Time inconsistent	0.125*	0.005	0.158*	0.046
	(0.067)	(0.080)	(0.085)	(0.098)
Impatient, Now versus 1 Month	-0.030	-0.039	-0.036	-0.041
	(0.050)	(0.050)	(0.062)	(0.075)
Patient, Now versus 1 Month	0.076	0.070	0.035	0.119
	(0.072)	(0.072)	(0.089)	(0.110)
Impatient, 6 months versus 7 Months	0.097	0.108*	0.124	0.078
	(0.065)	(0.065)	(0.087)	(0.091)
Patient, 6 months versus 7 Months	0.015	0.022	0.057	-0.021
	(0.064)	(0.064)	(0.081)	(0.093)

2 Six More Applications of Present Bias

2.1 Acquiring Seed

- Development: Why so little adoption of fertilizer and high-yield seeds?

- Literature examining role of learning, social learning

- Duflo, Kremer, and Robinson (2006): Role of convenience
  - Effect of fertilizer in Western Kenya
  - Field Experiments: In appropriate proportions high returns
  - However, low adoption

Table 1: Returns to Fertilizer

	Top Dressing 1/4 Teaspoon			Top Dressing 1/2 Teaspoon			Top Dressing 1 teaspoon 1 Teaspoon		
	mean	median	obs	mean	median	obs	mean	median	obs
Panel A: Not Annualized									
25 Ksh per goro-goro	0.080	-0.327	116	0.189	0.156	202	-0.476	-0.494	85
40 Ksh per goro-goro	0.728	0.077	116	0.903	0.850	202	-0.161	-0.191	85
Panel B: Annualized									
25 Ksh per goro-goro	0.362	-0.794	116	1.002	0.786	202	-0.788	-0.805	85
40 Ksh per goro-goro	1.272	0.118	116	1.625	1.515	202	-0.190	-0.225	85

- Possible explanation of puzzle: Farmers would like to purchase fertilizer, but they run out of money by the time the new season comes

- Experiment (SAFI Program):

  – Manipulate timing of adoption

  – Farmers can pre-buy fertilizer at end of previous season (when 'rich')

– Significant effect on adoption

Table 8: Adoption for Parents Sampled for School-Based SAFI and Subsidy

| Season	Long Rains 2004	Short Rains 2004
Number of Seasons after School-Based Demonstration Plot	1	2
Number of Seasons after Starter Kit Program	-	1
Programs for which an effect would be expected in the given season (coefficients in **bold**)	SAFI LR 2004 Demo Plot	SAFI SR 04 Subsidy Full Price Visit Starter Kit
Panel A. Control for School	(1)	(2)
Starter Kit Farmer	0.085	**0.047**
	(0.045)*	**(0.049)**
Sampled to Participate in School Demonstration Plot	**-0.046**	0.018
	(0.064)	(0.071)
SAFI Long Rains 2004	**0.103**	-0.020
	(0.038)*	(0.043)
SAFI Short Rains 2004	-0.037	**0.169**
	-0.047	**(0.053)***
Subsidy Short Rains 2004	-0.046	**0.142**
	(0.056)	**(0.063)**
Full Price Visit Short Rains 2004	-0.089	0.070
	(0.056)	(0.063)
Observations	874	752

2.2 Addiction

- Standard model: Rational addiction (Becker and Murphy, 1988)

  – Past consumption lowers current total utility...

  – ...but raises current marginal utility

- Stylized facts:

  – Diffusion of addictions (drugs, alcohol, tobacco, obesity)

  – Repeated efforts of quitters

  – Antabuse

  – Rational addiction?

- **(F.)-T.** Data on response of consumption to present and future taxes (Gruber and Koszegi, 2001): cannot separate present bias vs. rational addition

- **F.** Data on happiness (Gruber and Mullainathan, 2006): (predicted) smokers happier in states one year after smoking taxes are raised

- **T.** Optimal taxes for present-biased addiction (O'Donoghue and Rabin, 2003; Gruber and Koszegi, 2003)

- **F.** Data on increase in obesity over time (Cutler, Glaeser, and Shapiro, 2003). Decrease in fixed cost of preparing food + self-control

2.3   Job Search

• DellaVigna and Paserman (2003)

• Stylized facts:

  – time devoted to job search by unemployed workers: 9 hours/week

  – search effort predicts exit rates from unemployment better than reservation wage choice

• **T.** Model with costly search effort and reservation wage decision:

  – search effort — immediate cost, benefits in near future — driven by β

  – reservation wage — long-term payoffs — driven by δ

a

b
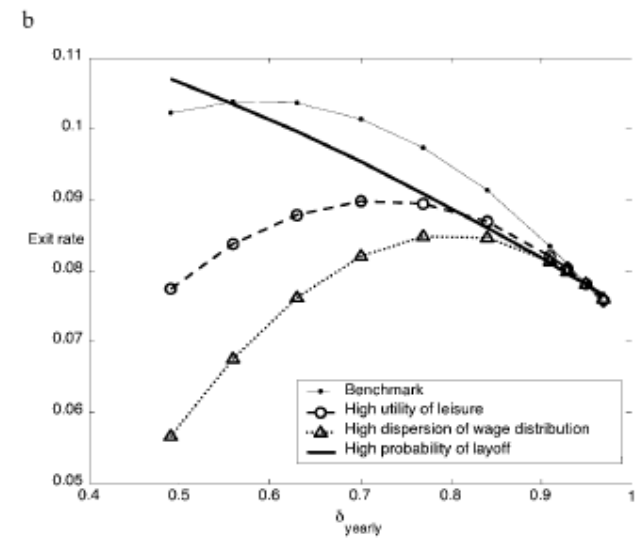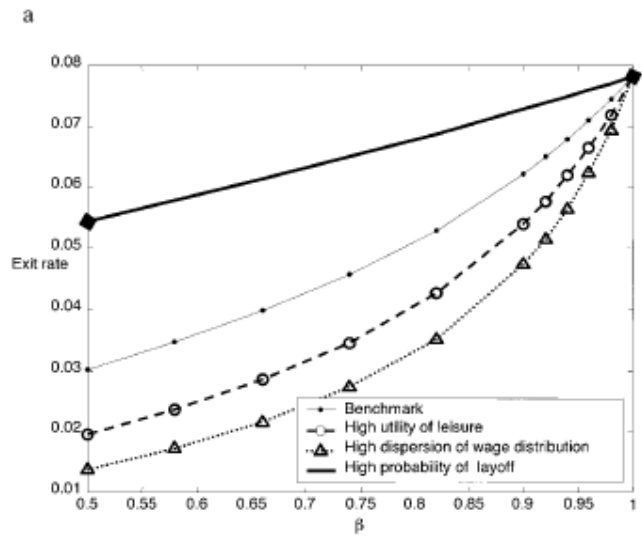
- **F.** Correlation between measures of impatience (smoking, impatience in interview, vocational clubs) and job search outcomes:

  - Impatience $\uparrow \implies$ search effort $\downarrow$

  - Impatience $\uparrow \implies$ reservation wage $\longleftrightarrow$

  - Impatience $\uparrow \implies$ exit rate from unemployment $\downarrow$

- Impatience captures variation in β

- Sophisticated or naive – does not matter

- **F.** Paserman (2007): structural model estimated by max. likelyhood: $\beta = .40$ (low-wage workers), $\beta = .89$ (high-wage workers)
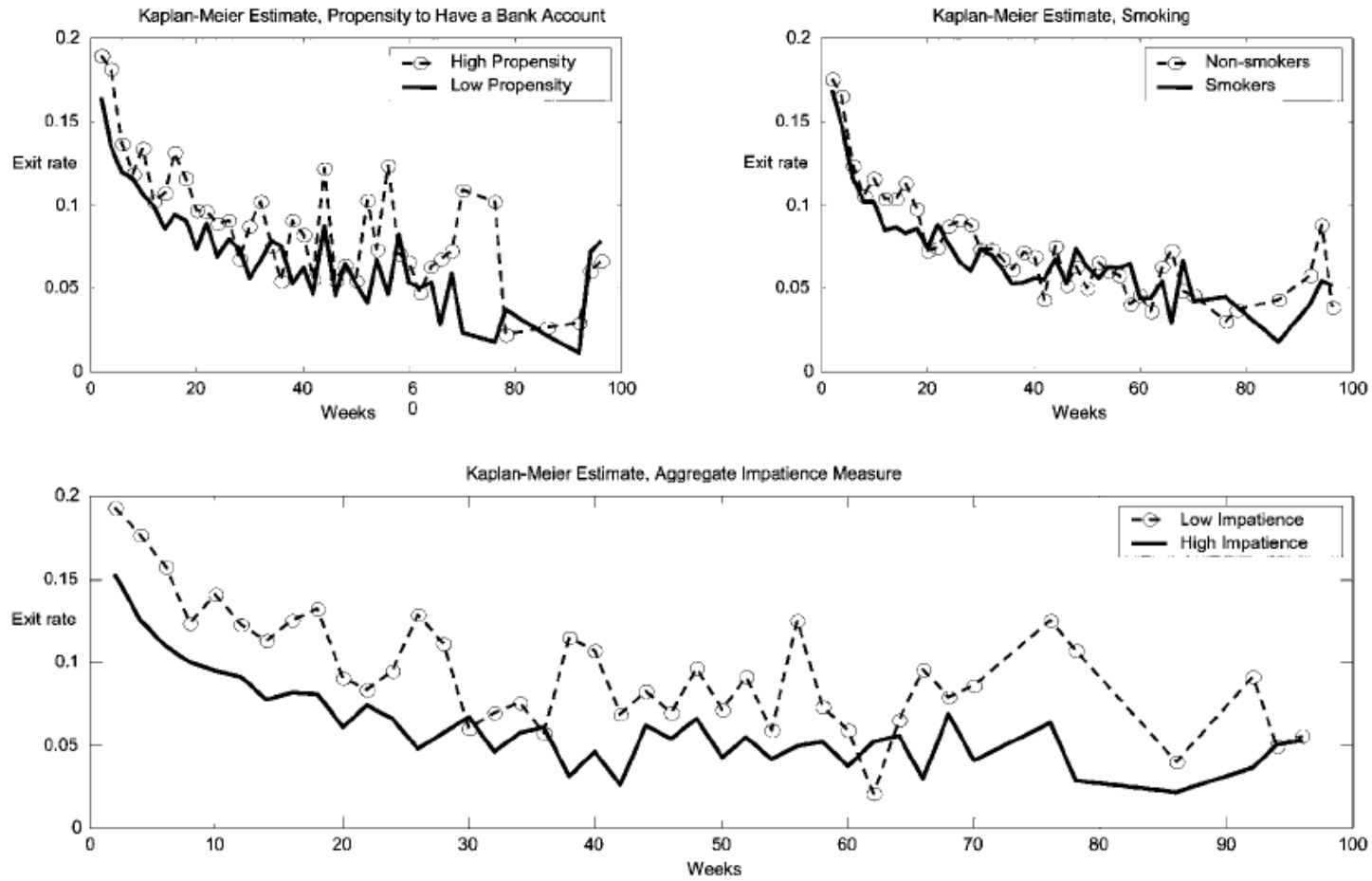
FIG. 3.—Exit rates in the NLSY

2.4 Welfare programs

- Fang, Silverman (2002, 2007)

- Stylized Facts:
  - limited transition from welfare to work
  - (more importantly) large share of mothers staying home and not claiming benefits

- Examines decisions of single mothers with kids. Three states: Welfare (leisure + benefits), Work (wages), Home (leisure)

- Mothers stay home because of one-time social disapproval of claiming benefits
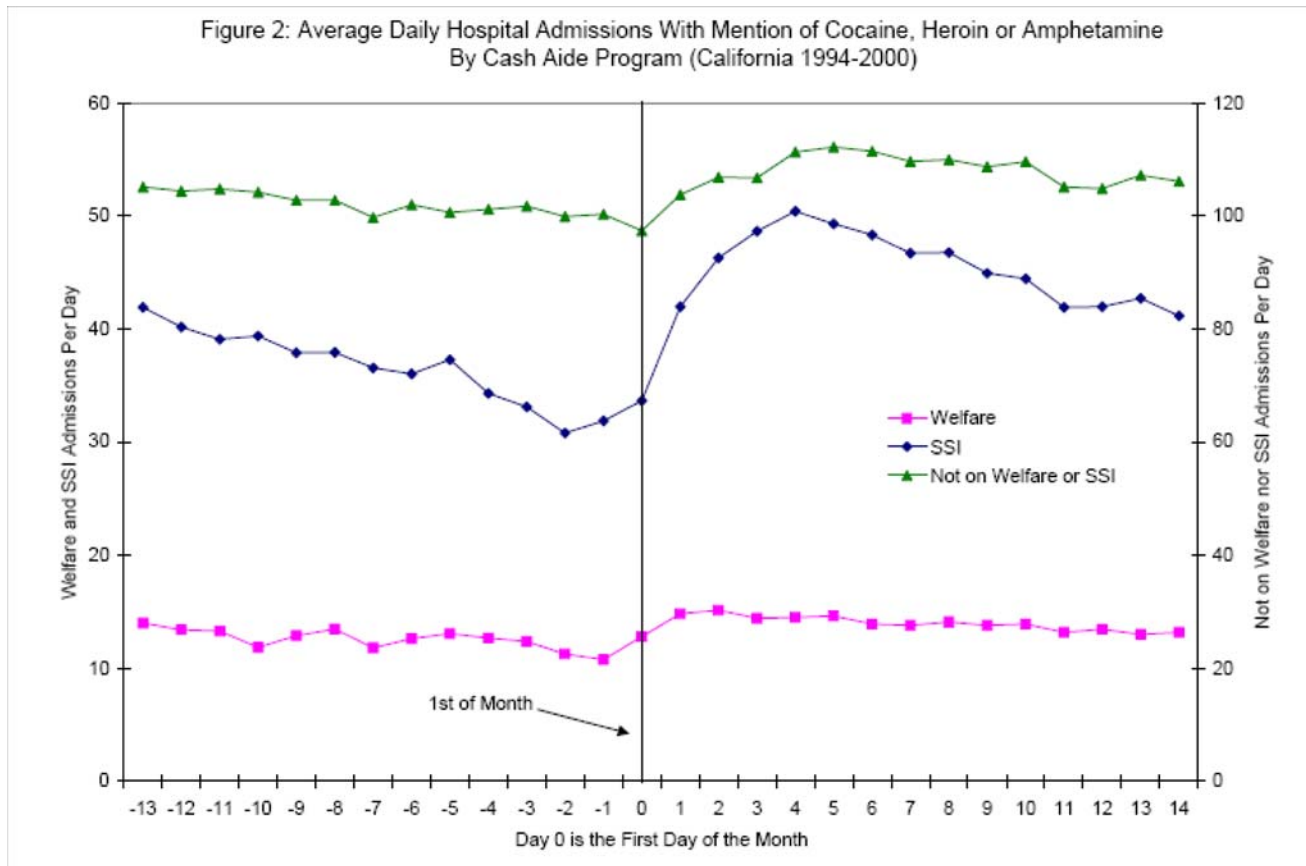
- Naiveté crucial here

2.5 Firm pricing

- **T.** Two-part tariffs chosen by firms to sell investment and leisure goods (DellaVigna and Malmendier, 2004)

- **F.** Pricing of magazines (Oster and Scott-Morton, 2005)

- See later Section on Firm Response

2.6 Payday effects

- Shapiro (2003), Melvin (2003), Huffman and Barenstein (2003)

- Stylized facts:

    - Purchases increase discretely on payday

    - Effect more pronounced for more tempting goods

    - Food intake increases as well on payday

    - Drug arrests and hospitalization spike on payday (Dobkin and Puller, 2007)

- SSI payments made on 1st of the month

Figure 2: Average Daily Hospital Admissions With Mention of Cocaine, Heroin or Amphetamine
By Cash Aide Program (California 1994-2000)

3 Present Bias: Final Lessons

- Four methodologies so far:

1. Empirical evidence of type 1 (DellaVigna and Malmendier, 2004; Miravete, 2004; Souleles, 2004):

    - **Menu choice**. Need to observe:

    (a) menu of options -> Use revealed preferences to make inferences

    (b) later consumption decision -> Compared to revealed preferences in (a)

    - Worries: hard to distinguish unusual preferences (self-control) and wrong beliefs (naiveté, overconfidence)

2. Empirical evidence of type 2 (Madrian and Shea, 1999; Choi et al.:, 2001):

- **Natural Experiments.** Observe variable:

  (a) At time t, change in regime – Look at (After t - Before t)

  (b) Possibly have control group (Diff-in-Diff)

- Worries:

  – Endogeneity of change

  – Other changes occurring at same time

  – How many observations? Maybe $n = 1$?

3. Empirical evidence of type 3 (Ashraf et al., 2005; Ausubel, 1999):

   - **Field experiment.**

   (a) Naturalistic setting

   (b) Randomize treatment – Compare Treatment and Control group

   - Plus: Randomization ensures clean identification

   - Minus: Not easy to run

4. Empirical evidence of type 5 (Laibson, Repetto, and Tobacman, 2005; Paserman, 2007):

- **Structural Identification.**

  (a) Write model explicitly

  (b) Identify parameters

- Plus: Can better link theory and evidence

- Plus: More amenable to welfare and policy evaluations

- Minus: Identification less transparent – Results can depend critically on model assumptions

- Present bias/Hyperbolic Discounting

- Reasons for success:

  1. Simple model (one-, then two- parameter deviation). YES

  2. Powerful intuition (immediate gratification) YES

  3. Support in the laboratory OK

  4. Support from field data YES

- Lead to new subfield (behavioral contract theory/behavioral IO)

- Next: Reference Dependence

- Status:

  1. Simple model (four new features). YES

  2. Powerful intuition (reference points) YES

  3. Support in the laboratory YES

  4. Support from field data OK, more needed

4 Methodology: Errors in Applying Present-Biased Preferences

- Present-Bias model very successful

- Quick adoption at cost of incorrect applications

- Four common errors

- **Error 1. Procrastination with Sophistication**

  – 'Self-Control leads to Procrastination'

  – This is not accurate in two ways

  – *Issue 1.*

    ∗ (β, δ) Sophisticates do not delay for long (see our calibration)

    ∗ Need Self-control + Naiveté (overconfidence) to get long delay

  – *Issue 2.* (Definitional issue) We distinguished between:

    ∗ Delay. Task is not undertaken immediately

    ∗ Procrastination. Delay systematically beyond initial expectations

    ∗ In this sense, sophisticates do not procrastinate, they delay

- **Error 2. Naives with Yearly Decisions**

  – 'We obtain similar results for naives and sophisticates in our calibrations'

  – Example 1. Fang, Silverman (2007)

  – Single mothers applying for welfare. Three states:

    1. Work

    2. Welfare

    3. Home (without welfare)

  – Welfare dominates Home – So why so many mothers stay Home?

| | Choice at t | | |
Choice at $t-1$	Welfare	Work	Home
Welfare			
Row %	84.3	3.5	12.3
Column %	76.7	6.3	17.9
Work			
Row %	5.3	79.3	15.3
Column %	2.6	76.4	12.1
Home			
Row %	28.3	12.0	59.7
Column %	20.7	17.3	70.0

- – Model:

  * Immediate cost ϕ (stigma, transaction cost) to go into welfare

  * For ϕ high enough, can explain transition

  * Simulate Exponentials, Sophisticates, Naives

– However: Simulate decision at **yearly** horizon.

– BUT: At yearly horizon naives do not procrastinate:

    ∗ Compare:

        · Switch now

        · Forego *one year* of benefits and switch next year

– Result:

    ∗ Very low estimates of β

    ∗ Very high estimates of switching cost ϕ

    ∗ Naives are same as sophisticates

Parameters		(1) Time Consistent		(2) Present-Biased (sophisticated)		(3) Present-Biased (Naive)	
		Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Preference Parameters							
Discount Factors	β	1	n.a.	0.33802	0.06943	0.355	0.0983
	δ	0.41488	0.07693	0.87507	0.01603	0.868	0.02471
Net Stigma	$\phi^{(1)}$	7537.04	774.81	8126.19	834.011	8277.46	950.77
(by type)	$\phi^{(2)}$	10100.9	1064.83	10242.01	955.878	10350.20	1185.27
	$\phi^{(3)}$	13333.2	1640.18	12697.25	1426.40	12533.69	1685.92

- – Conjecture: If allowed daily or weekly decision, would get:

  * Naives fit much better than sophisticates

  * β much closer to 1

  * ϕ much smaller

– Example 2. Shui and Ausubel (2005) –> Estimate Ausubel (1999)

* Cost k of switching from credit card to credit card

* Again: Assumption that can switch only every quarter

* Results of estimates (again):

· Quite low β

· Naives do not do better than sophisticates

· Very high switching costs

Table 4: Estimated Parameters [a]

	Sophisticated Hyperbolic	Naive Hyperbolic	Exponential
β	0.7863	0.8172	
	(0.00192)	(0.003)	
δ	0.9999	0.9999	0.9999
	(0.00201)	(0.0017)	(0.00272)
k	0.02927	0.0326	0.1722
	$293	$326	$1,722
	(0.00127)	(0.00139)	(0.0155)

- **Error 3. Present-Bias over Money**

  – 'We offer the choice between $10 today and $15 in a week'

  – Experiments supporting (β, δ) usually of the above type (from Ainslie, 1956 to Benhabib, Bisin, and Schotter, 2006)

  – BUT: Discounting applies to consumption, not income (Mulligan, 1999):

  $$U_0 = u(c_0) + \beta\delta u(c_1) + \beta\delta^2 u(c_2)$$

  – Assume that individual consume the $10 in the future –> Then the choice is between

    * $\beta\delta u(10)$

    * $\beta\delta u(15)$

  – Credit constraints –> Consume immediately, remove this problem to good extent (but confound with another problem)

– Ideally: Do experiments with goods to be consumed right away:

    * Low- and High-brow movies (Read and Loewenstein, 1995)

    * Squirts of juice for thirsty subjects (McClure et al., 2005)

– Same problem applies to models

    * Notice: Transaction costs of switching k in above models are real effort, apply immediately

    * Effort cost c of attending gym also 'real' (not monetary)

    * Consumption-Savings models: Utility function of consumption c, not income I

- **Error 4. Getting the Intertemporal Payoff Wrong**

    - 'Costs are in the present, benefits are in the future'

    - (β, δ) models very sensitive to timing of payoffs

    - Sometimes, can easily turn investment good into leisure good

    - Need to have strong intuition on timing

    - Example: Carrillo (1999) on nuclear plants as leisure goods

        * Immediate benefits of energy

        * Delayed cost to environment

    - BUT: 'Immediate' benefits come after 10 years of construction costs!

5   Reference Dependence: Introduction

- Kahneman and Tversky (1979) — Anomalous behavior in experiments:

  1. *Concavity over gains.* Given $1000, A=(500,1) $\succ$ B=(1000,0.5;0,0.5)

  2. *Convexity over losses.* Given $2000, C=(-1000,0.5;0,0.5) $\succ$ D=(-500,1)

  3. *Framing Over Gains and Losses.* Notice that A=D and B=C

  4. *Loss Aversion.* (0,1) $\succ$ (-8,.5;10,.5)

  5. *Probability Weighting.* (5000,.001) $\succ$ (5,1) and (-5,1) $\succ$ (-5000,.001)

- Can one descriptive model theory fit these observations?

- **Prospect Theory** (Kahneman and Tversky, 1979)

- Subjects evaluate a lottery $(y, p; z, 1 - p)$ as follows: $\pi(p) v(y - r) + \pi(1 - p) v(z - r)$

- Five key components:

  1. Narrow Framing over gains and losses

     – Basic psychological intuition that changes, not levels, matter (applies also elsewhere)

     – Utility is defined over differences from reference point r –> Explains Exp. 3

2. Concavity over gains of v –> Explains $(500,1) \succ (1000,0.5;0,0.5)$

3. Convexity over losses of v –> Explains $(-1000,0.5;0,0.5) \succ (-500,1)$

4. Loss Aversion around reference point –> Explains $(0,1) \succ (-8,.5;10,.5)$
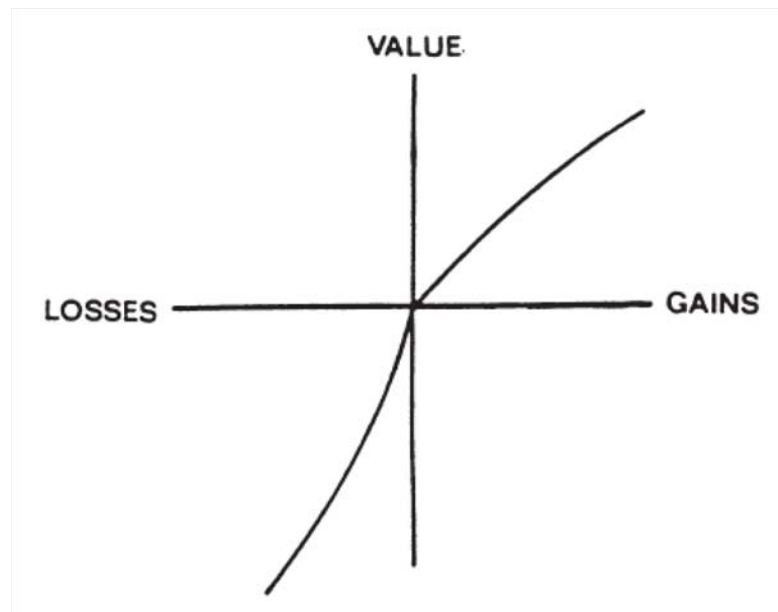
5. Probability weighting function π non-linear -> Explains (5000,.001) $\succ$ (5,1) and (-5,1) $\succ$ (-5000,.001)
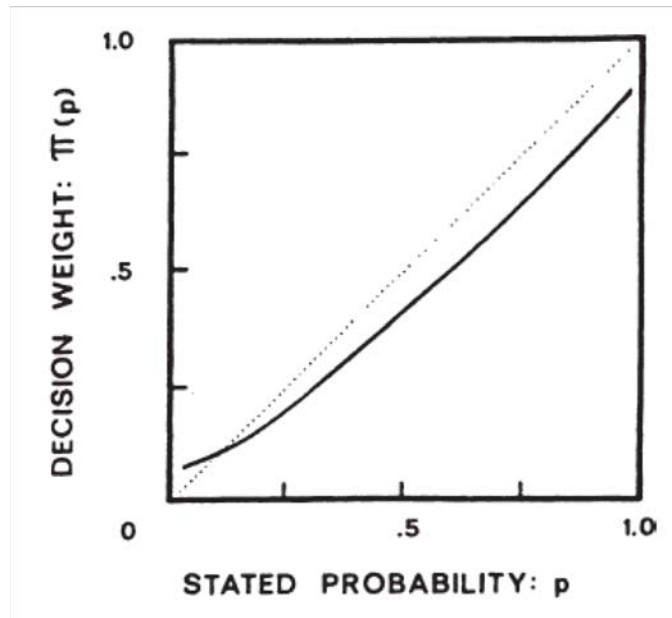
- Overweight small probabilities + Premium for certainty

- Tversky and Kahneman (1992) propose calibrated version

$$v\left(x\right) = \begin{cases} \left(x - r\right)^{.88} & \text{if } x \geq r; \\ -2.25\left(-\left(x - r\right)\right)^{.88} & \text{if } x < r, \end{cases}$$

and

$$w\left(p\right) = \frac{p^{.65}}{\left(p^{.65} + \left(1 - p\right)^{.65}\right)^{1/.65}}$$

- Most field applications use only (1)+(4), or (1)+(2)+(3)+(4)

$$v\left(x\right) = \begin{cases} x - r & \text{if } x \geq r; \\ \lambda\left(x - r\right) & \text{if } x < r, \end{cases}$$

- Reference point r?

- Open question – depends on context

- Koszegi-Rabin (2004): rational expectations equilibrium

- Narrow framing?

- Consider only problem at hand (labor supply, stock picking, house sale)

- Neglect other relevant decisions

6 Reference Dependence: Endowment Effect

- Plott and Zeiler (2005) replicating Kahneman, Knetsch, and Thaler (1990)

  - Half of the subjects are given a mug and asked for WTA

  - Half of the subjects are shown a mug and asked for WTP

  - Finding: $WTA \simeq 2 * WTP$

Table 2: Individual Subject Data and Summary Statistics from KKT Replication

Treatment	Individual Responses (in U.S. dollars)	Mean	Median	Std. Dev.
WTP (n = 29)	0, 0, 0, 0, 0.50, 0.50, 0.50, 0.50, 0.50, 1, 1, 1, 1, 1, 1.50 2, 2, 2, 2, 2, 2.50, 2.50, 2.50, 3, 3, 3.50, 4.50, 5, 5	1.74	1.50	1.46
WTA (n = 29)	0, 1.50, 2, 2, 2.50, 2.50, 3, 3.50, 3.50, 3.50, 3.50, 3.50, 4, 4.50 4.50, 5.50, 5.50, 5.50, 6, 6, 6, 6.50, 7, 7, 7, 7.50, 7.50, 7.50, 8.50	4.72	4.50	2.17

- How do we interpret it? Use reference-dependence in piece-wise linear form

  – Utility is sum of utility of owning the object $u(m - r)$ plus utility of money p

  – Assumption: No loss-aversion over money

  – If given mug, $r = 1$, so selling money feels like a loss

  – If not given mug, $r = 0$, so getting money feels like a gain

- This implies:

  – WTA: $u(1 - 1) = u(0 - 1) + WTA$

  – WTP: $u(0 - 0) = u(1 - 0) - WTP$

  – Assuming $u(1 - 1) = u(0 - 0) = 0$, it follows that

  $$WTA = -u(-1) = \lambda u(1) = \lambda WTP$$

- Result $WTA \simeq 2 * WTP$ is consistent with loss-aversion $\lambda \simeq 2$

- Plott and Zeiler (2005): The result disappears with

  - appropriate training

  - practice rounds

  - incentive-compatible procedure

  - anonymity

				6.62	6.00	4.20
Pooled Data	WTP (n = 36)					
	WTA (n = 38)			5.56	5.00	3.58

- What interpretation?

- Interpretation 1. Endowment effect and loss-aversion interpretation are wrong

- Interpretation 2. In Plott-Zeiler (2005) experiment, subjects did not perceive the reference point to be the endowment

- Suppose that, as in Koszegi-Rabin, the reference point is (.5, mug; .5, no mug) in both cases

  - WTA: $.5 * u\,(1-1) + .5 * u\,(1-0) = .5 * u\,(0-1) + .5 * u\,(0-0) + p_{WTA}$

  - WTP: $.5 * u\,(0-1) + .5 * u\,(0-0) = .5 * u\,(1-1) + .5 * u\,(1-0) - p_{WTP}$

  - This implies: $p_{WTA} = p_{WTP}$

- List (2003) – Further test of endowment effect and role of experience

- Protocol:

  - Get people to fill survey

  - Hand them memorabilia card A (B) as thank-you gift

  - After survey, show them memorabilia card B (A)

  - "Do you want to switch?"

  - "Are you going to keep the object?"

  - Experiments I, II with different object

- Prediction of Endowment effect: too little trade

- Experiment I with Sport Cards – Table II

TABLE II

SUMMARY TRADING STATISTICS FOR EXPERIMENT I: SPORTSCARD SHOW

Variable	Percent traded	p-value for Fisher's exact test
Pooled sample (n = 148)		
Good A for Good B	32.8	<0.001
Good B for Good A	34.6	
Dealers (n = 74)		
Good A for Good B	45.7	0.194
Good B for Good A	43.6	
Nondealers (n = 74)		
Good A for Good B	20.0	<0.001
Good B for Good A	25.6	

a. Good A is a Cal Ripken, Jr. game ticket stub, circa 1996. Good B is a Nolan Ryan certificate, circa 1990.
b. Fisher's exact test has a null hypothesis of no endowment effect.

- Experiment II with Pins – Table V

TABLE V

SUMMARY TRADING STATISTICS FOR EXPERIMENT II: PIN TRADING STATION

Variable	Percent traded	p-value for Fisher's exact test
Pooled sample (n = 80)		
Good C for Good D	25.0	<0.001
Good D for Good C	32.5	
Inexperienced consumers (<7 trades		
monthly; n = 60)	25.0	<0.001
Experienced consumers (≥7 trades		
monthly; n = 20)	40.0	0.26
Inexperienced consumers (<5 trades		
monthly; n = 50)	18.0	<0.001
Experienced consumers (≥5 trades		
monthly; n = 30)	46.7	0.30

- **Finding 1.** Strong endowment effect for inexperienced dealers

- How to reconcile with Plott-Zeiler?

  – Not training (nothing difficult about switching cards)

  – Not practice (people used to exchanging cards)

  – Not incentive compatibility

  – Is it anonymity? Unlikely

- **Finding 2.** Substantial experience lowers the endowment effect to zero

  – Getting rid of loss aversion?

  – Expecting to trade cards again? (Koszegi-Rabin, 2005)

- Objection 1: Is it experience or is it just sorting?

- Experiment III with follow-up of experiment I – Table IX

TABLE IX
SUMMARY STATISTICS FOR EXPERIMENT III: FOLLOW-UP SPORTSCARD SHOW

	Increased number of trades	Stable number of trades	Decreased number of trades
No trade in Experiment I; trade in Experiment III	13	1	2
No trade in Experiment I; no trade in Experiment III	8	7	11
Trade in Experiment I; Trade in Experiment III	4	0	0
Trade in Experiment I; No trade in Experiment III	2	0	5
√	27	8	18

a. Columns denote changes in subjects' trading experience over the year; rows denote subjects' behavior in the two field trading experiments.
b. Fifty-three subjects participated in both Experiment I and the follow-up experiment.

- Objection 2. Are inexperienced people indifferent between different cards?

- People do not know own preferences – Table XI

TABLE XI

SELECTED CHARACTERISTICS OF TUCSON SPORTSCARD PARTICIPANTS

	Dealers		Nondealers	
	WTA mean (std. dev.)	WTP mean (std. dev.)	WTA mean (std. dev.)	WTP mean (std. dev.)
Bid or offer	8.15 (9.66)	6.27 (6.90)	18.53 (19.96)	3.32 (3.02)
Trading experience	16.67 (19.88)	15.78 (13.71)	4.00 (5.72)	3.73 (3.46)
Years of market experience	10.23 (5.61)	10.57 (8.13)	5.97 (5.87)	5.60 (6.70)

- Objection 3. What are people learning about?

- Getting rid of loss-aversion?

- Learning better value of cards?

- If do not know value, adopt salesman technique

- Is learning localized or do people generalize the learning to other goods?

6.1   List (EMA, 2004)

- Field experiment on sport cards

- Similar to experiment I in List (2003), except that objects are mugs and chocolate

- Trading in four groups:

  1. Mug: "Switch to Chocolate?"

  2. Chocolate: "Switch to Mug?"

  3. Neither: "Choose Mug or Chocolate?"

  4. Both: "Switch to Mug or Chocolate?"

	Preferred Exchange	p-Value for Fisher's Exact Test
Panel D. Trading Rates		
Pooled nondealers ($n = 129$)	.18 (.38)	$< .01$
Inexperienced consumers	.08 (.27)	$< .01$
(< 6 trades monthly; $n = 74$)		
Experienced consumers	.31 (.47)	$< .01$
(≥ 6 trades monthly; $n = 55$)		
Intense consumers	.56 (.51)	.64
(≥ 12 trades monthly; $n = 16$)		
Pooled dealers ($n = 62$)	.48 (.50)	.80

- Large endowment effect for inexperienced card dealers

- No endowment effect for experienced card dealers!

- Learning (or reference point formation) generalizes beyond original domain

7 Next Lecture

- Reference-Dependent Preferences

  – Labor Supply

  – Insurance

  – Housing

- Problem Set 2 due next Wednesday February 20