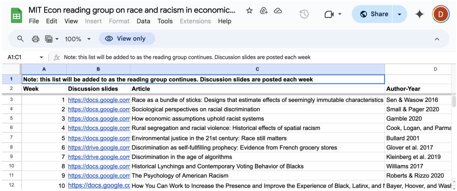
The Prejudices of Economic Ideology

The Exacerbation of Racial and Gender Inequalities by Economics Training for Judges

The Prejudices of Economic Ideology

- Is economics racist?
  - MIT Econ Race & Racism Reading Group - Do economic assumptions uphold racist systems?



MIT Econ reading group on race and racism in economic...

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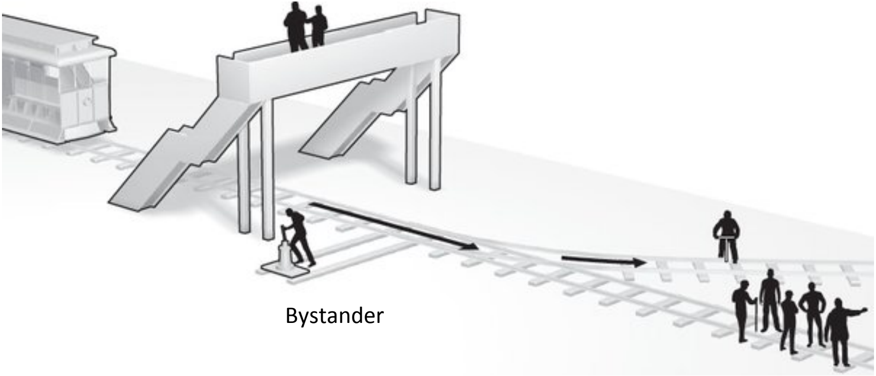
Note: this list will be added to as the reading group continues. Discussion slides are posted each week

Week	Discussion slides	Article	Author-Year
1	https://docs.google.com	Race as a bundle of sticks: Designs that estimate effects of seemingly immutable characteristics	Sen & Wasow 2016
2	https://docs.google.com	Sociological perspectives on racial discrimination	Small & Pager 2020
3	https://docs.google.com	How economic assumptions uphold racist systems	Gamble 2020
4	https://docs.google.com	Rural segregation and racial violence: Historical effects of spatial racism	Cook, Logan, and Parma
5	https://docs.google.com	Environmental justice in the 21st century: Race still matters	Bullard 2001
6	https://drive.google.com	Discrimination as self-fullfilling prophecy: Evidence from French grocery stores	Glover et al. 2017
7	https://drive.google.com	Discrimination in the age of algorithms	Kleinberg et al. 2019
8	https://docs.google.com	Historical Lynchings and Contemporary Voting Behavior of Blacks	Williams 2017
9	https://docs.google.com	The Psychology of American Racism	Roberts & Rizzo 2020
10	https://docs.google.cc	How You Can Work to Increase the Presence and Improve the Experience of Black, Latinx, and I	Bayer, Hoover, and Wash

  - "Many economists' explanations for status of POC are blaming the victims. These explanations ignore work in other fields and often ignore institutional discrimination and promote white supremacy via 'dysfunctionality' arguments
  - "Giving the same weight to an 'unknown alternative' (OVB) and a model that accounts for everything we currently think we know about how the world works"
  - "Systemic racism and racist policies remain in place because certain people benefit; includes production of ideas"
  - "What Economics Misses About American Racial Inequality: An Interdisciplinary Perspective"

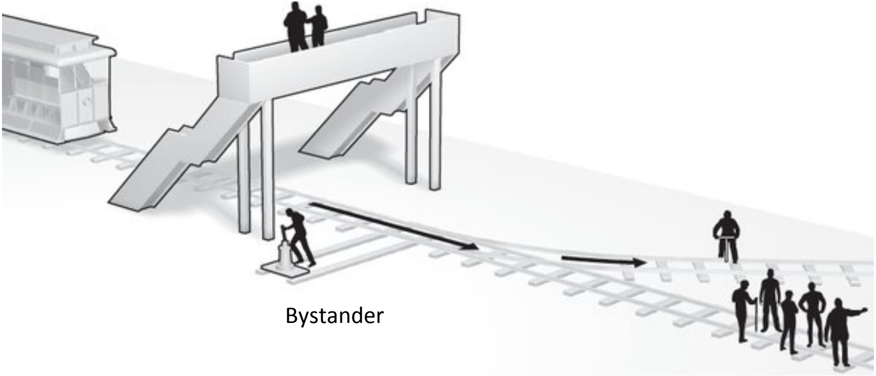
Ideas Have Consequences:
The Impact of Law and Economics on American Justice

Moral Trolley Problem



Consequentialism: Maximize the lives saved minus those killed

Moral Trolley Problem

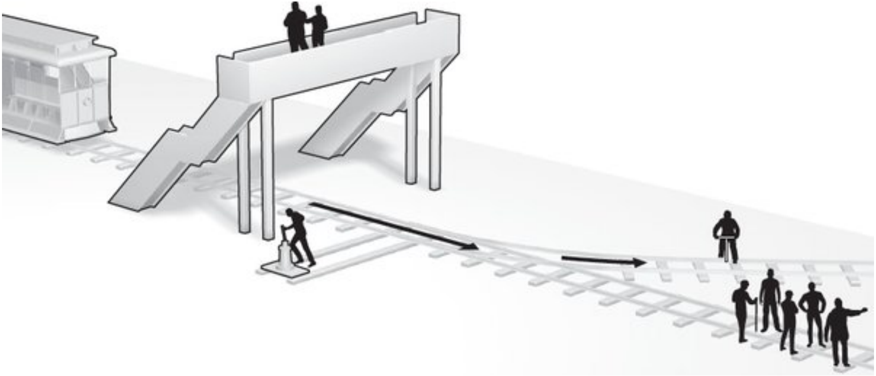


Consequentialism: Maximize the lives saved minus those killed

Normative Commitments

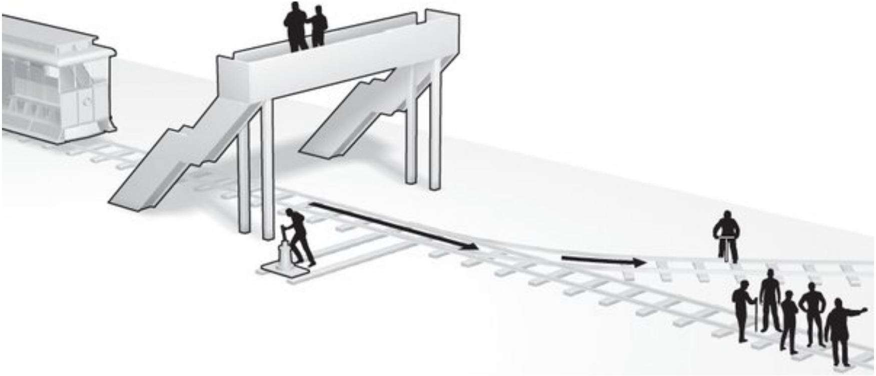
Moral Trolley Problem

Footbridge



Deontological: Duty not to do the act of pushing someone to their death

Moral Trolley Problem



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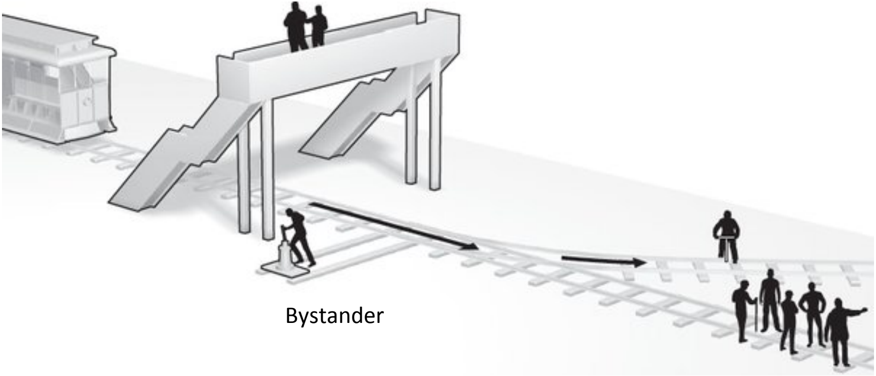
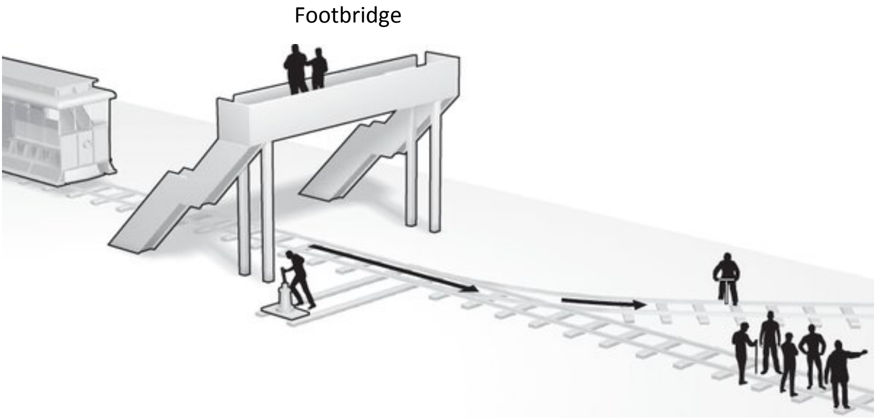


Consequentialism: Calculations of Costs and Benefits

Moral Trolley Problem



Deontological: Following Duties and Obligations

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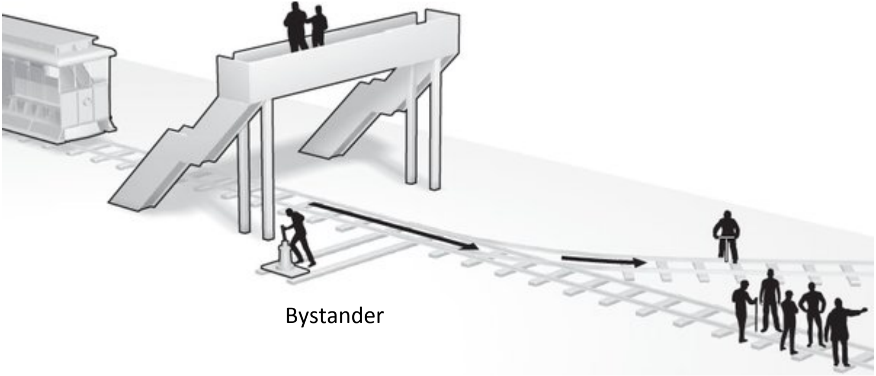
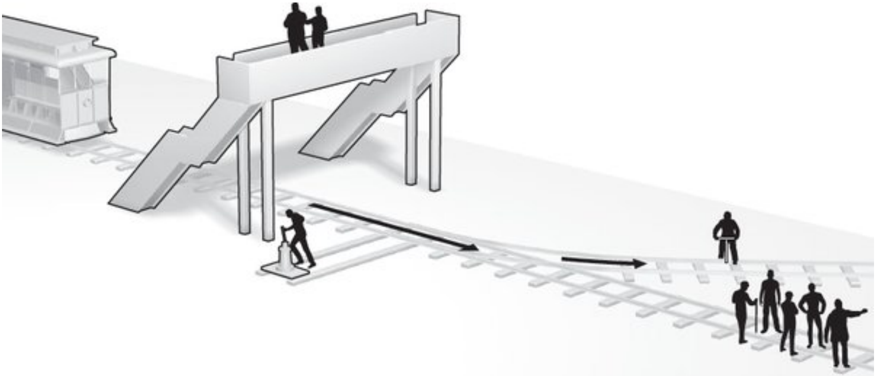


Evaluating Trade-Offs

Moral Trolley Problem



Consequentialist Reinterpretation of Duty

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Efficient Breach Theory in Contracts

- **Duty posits a general obligation to keep promises** vs.
- a party should be allowed to breach a contract and pay damages, if doing so would be more economically efficient than performing under the contract.
- Posner in *Lake River Corp. v. Carborundum Co.*, 769 F.2d 1284 (7th Cir. 1985)

Least Cost Avoider in Torts

- **Duty of care** is breached when PL > B
- P is the probability of loss (L) * L is the gravity of loss
- B is the cost (burden) of taking precautions

Expected Deterrence in Criminal Law

- Pr(detection) * sanction = $\mathbb{E}$[sanction]
- Costs of detection $\gg$ cost of sanction
- Approach as social planner

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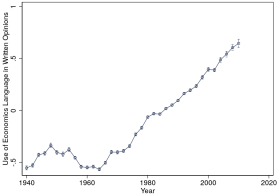
Law-and-Economics Movement

◂ Increasing pro-market orientation in judiciary

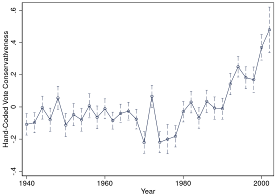
- Social Planner ("An Exit Interview With Richard Posner", New York Times, 9/11/2017)
  1. "'I pay very little attention to legal rules, statutes, constitutional provisions ... The first thing you do is ask yourself — forget about the law — what is a sensible resolution of this dispute?'"
  2. "See if a recent Supreme Court precedent or some other legal obstacle stood in the way of ruling in favor of that sensible resolution."
  3. "'When you have a Supreme Court case or something similar, they're often extremely easy to get around.'" ◂ Natural Laboratory ◂ Judges Most Textually Similar to Posner
- Influential in criminal law, antitrust, labor regulation, and more
  - Becker's analysis of crime & punishment (Posner 2004; Harcourt 2011)
    - "Rational criminals" went against prevailing wisdom re mental illness
    - ~~retribution, rehabilitation,~~ deterrence, legitimacy, fairness
  - Antitrust laws
    - Economic analysis has attained near complete consensus. (Judge Ginsburg)
    - Should promote economic efficiency and consumer welfare, rather than shield individuals from competitive market forces or redistribute income.
    - Law-and-economics judges' decisions are appealed less. (Baye et al. 2011)
  - Against New Deal labor law and union protections (Posner 1984, Epstein 1983)
  - Against EPA regulation ≈ govt expropriation (Epstein 1993, Blumm 1995)
- Conservativism: Law-and-economics focuses on efficiency. Its key criticism of regulatory policies is that they have perverse, unintended economic consequences.

Increasing pro-market orientation in U.S. judiciary

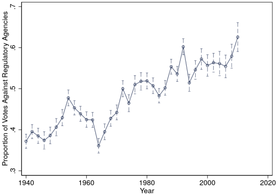
Economics style



Conservative vote share



Voting against government regulation



Natural Laboratory

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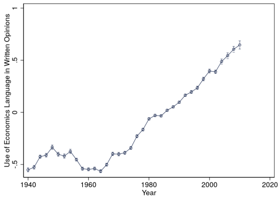
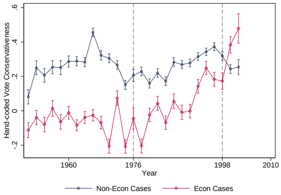
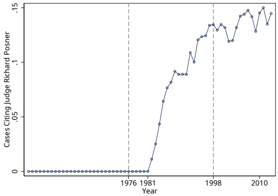


◂ Conservative vote share



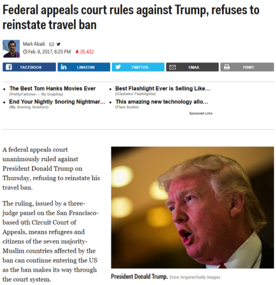
Citation to Richard Posner



◂ Natural Laboratory

US Federal Courts as "Natural Laboratory"

- Do schools of thought matter for policymaking? ◂ Examples of Cases
  - We have recently seen the importance of US federal courts ruling against DT.



Federal appeals court rules against Trump, refuses to reinstate travel ban

Mark Abadi
Feb. 9, 2017, 6:25 PM 35,432

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- Best Flashlight Ever is Selling Like... (Gladiator Flashlights)
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Sponsored Links

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The ruling, issued by a three-judge panel on the San Francisco-based 9th Circuit Court of Appeals, means refugees and citizens of the seven majority-Muslim countries affected by the ban can continue entering the US as the ban makes its way through the court system.

President Donald Trump. Drew Angerer/Getty Images

- Judges interpret the law and make precedent under uncertainty
  - Subjective decision-making creates scope for **schools of thinking**
    - Ideas and **normative commitments** forming basis for policy (Rodrik 2014)
    - Principles of thinking agents use to organize **values** (Benabou et al. 2018)
    - **Heuristics** to focus on salient attributes when deciding (Koszegi et al. 2013)
    - **Salience** in judicial decision making (Bordalo et al. 2015)
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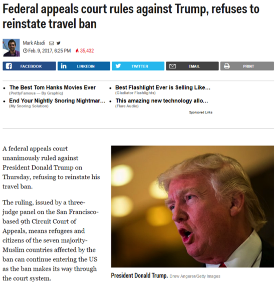

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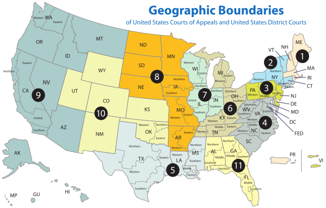

- Incremental common-law space; new rules, distinctions (Gennaioli et al. 2007)
  - Random assignment to cases & panels of 3 (in Circuit courts, no juries)
  - Appointed for life (179 Circuit judges in 12 C; 678 District judges in 94 D)
  - 327K cases/yr in D ⇒ 67K cases/yr in C ⇒ 100 cases/yr in Supreme Ct
- Influential and controversial economics training program for judges
  - "Big Corporations Bankroll Seminars For US Judges" (*Washington Post*, 1/20/1980)
  - By 1990, 40% of federal judges had attended economics training (Butler 1999)
  - Despite "swamped with criminal cases .. not seeing relevance of economics"
- Sentencing has undergone several moral revolutions (retribution, rehabilitation,
  - **Deterrence**: severity substitutes for low detection probability (Becker 1968)
  - One justification for massive build-up of prisons in 1980s and 1990s
  - Mass incarceration as "new Jim Crow" (Davis 1998, Gilmore 2007)

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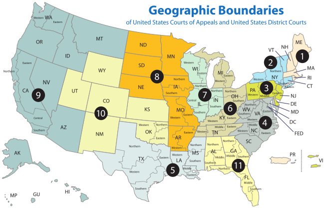

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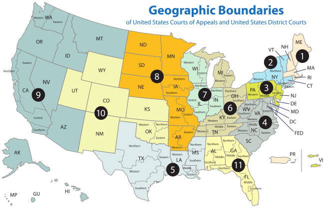

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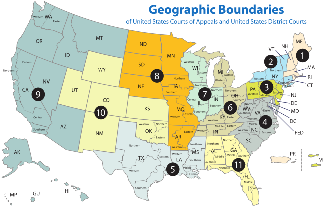

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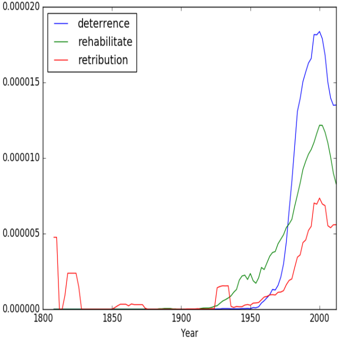
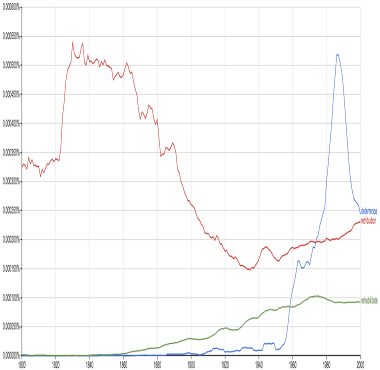


Word Frequency in State Court Opinions



Word Frequency in Google Books

◂ Massive build-up of prisons

Impact of Law and Economics on American Justice

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  - All 380K cases, 1,150K judge votes, 94 topics, from 1891- in Circuit Courts
  - 2B N-grams of length 8, 5M citation edges across cases
  - 268 judges (250 biographical features); 5% sample, 400 hand-coded features
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Validating the N-grams

Predicting Liberal vs. Conservative decisions ∼ facts or reasonings salient to judge ∼ not just words

Campaign Finance	advertis influenc outcom vote, argument appel consid definit, challeng present, case controversi district, disclosur sourc	Expens, inform elector mean provis, compel court went histori, buckley court limit
Capital Punishment	duti make reason, Involuntari, materi reason probabl, mental health	consid mitig, Attack, Inelig, counti jail
EPA	act impos, board character, Chevron, Elimin, interst transport hazard wast	factor demonstr, id statut silent ambigu respect, requir provis

(Buckley held that election spending limits are unconstitutional)

◂ WhatWeDo ◂ Manne Program ◂ ModelFit

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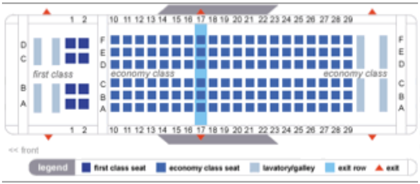
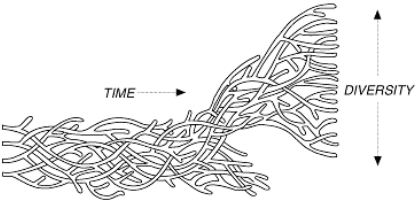
  - 3. Event study: was there a trained judge on your previous panel?

Impact of Law and Economics on American Justice





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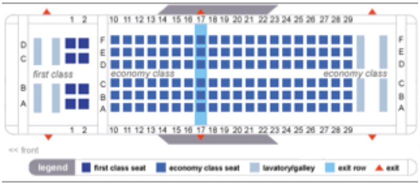
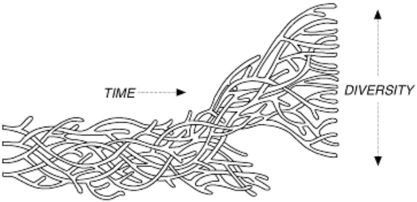
Preview Literature

Impact of Law and Economics on American Justice





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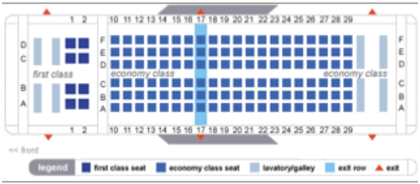

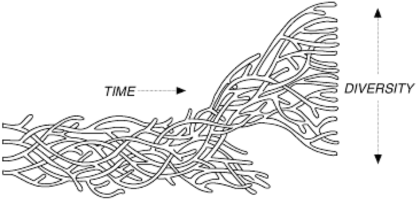

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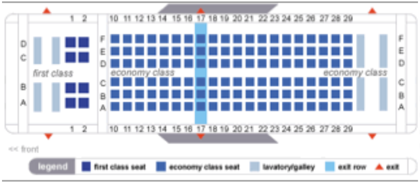

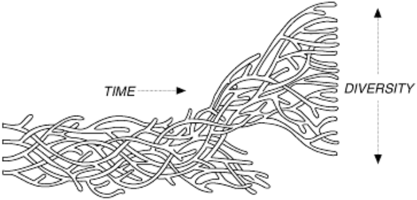

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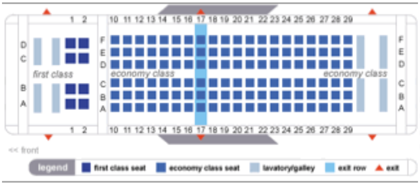

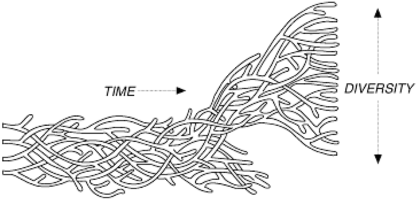

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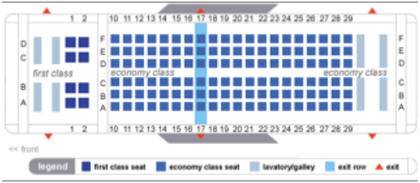

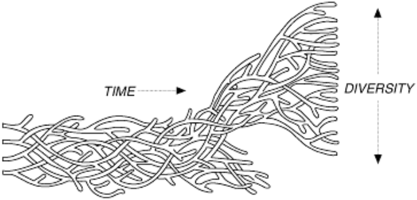

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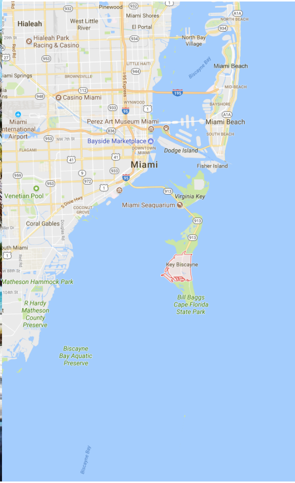
Preview Literature

Outline

Public Perception



Large Corporate Donors

1982-83 Contributors

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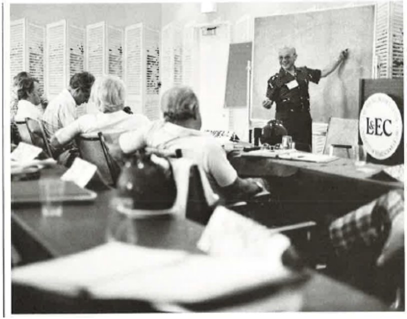
Mr Edwin J Feulner, Jr
Mr Joseph L Gidwitz
Richard W Greenebaum, Esq
Mrs F Leroy Hill
Mr and Mrs Robert H Krieble
Mr H F Langenberg
Ms Amy S Mann
Robert A Nitschke, Esq
Mr C M Ruprecht
Ms Marietta Julie Taussig
Mr and Mrs William W Weston

105 corporate contributors are almost always before a federal judge somewhere, often in antitrust, regulatory, or affirmative-action cases. Probably all federal judges face some possibility (*Washington Post*, 1/20/1980)

Photo Evidence (from annual reports - FOIA)

"FROM THE BEGINNING, THE JUDGES DEFERRED TO THEIR TEACHERS," wrote a *New York Times* reporter. Below, Nobel Laureate Milton Friedman elaborates a point at an LEC



Economics Institute for Federal Judges. Thirty-nine judges were graduated from this intensive two-week

program of study of market economics in the Center's fourth year, bringing to 58 the total number of

Photo Evidence (from annual reports - FOIA)

Class in session at First Economics Institute for Federal Judges. Students get reading assignment for the evening from LEC's director, Dr. Henry G. Manne.

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The New York Times

...ngers to the bone.

19 U.S. Judges Study Economics To Help Them in Work on Benc

Special to The New York Times

KEY LARGO, Fla., Dec. 18—For three weeks, 19 Federal judges from around the country took a grueling, six-day-a-week course in economics that ended here yesterday.

With classes starting at 9 A.M. and sometimes ending at 10 P.M. or later, the judges received the equivalent of a full semester at the college level.

Their teachers were, among others, two Nobel laureates in economics, Paul Samuelson and Milton Friedman. The courses, sponsored by the Law and Economics Center of the University of Miami School of Law, made up what is believed to have been the first such institute for Federal judges.

"It was a very enriching experience," said Chief Judge John W. Reynolds of the Federal District Court in the Eastern District of Wisconsin. "We were here not to become economists, but to understand the language of economics. Courts are only as good as judges and the lawyers who appear before us. By and large, our training in economics is not really satisfactory, and yet we are being increasingly called upon to decide economic issues."

The program dealt basically with eco-

not to relate the theoretical studies cases now pending in Federal cou "One has to be very cautious in deal with Federal judges," said Henry Man director of the center. "Our goal has be to give them the most recent think in economic theory and enable them better understand the testimony of exp witnesses and lawyers."

Chief Judge David N. Edelstein of Federal District Court in the Southe District of New York, who is the jud in the International Business Machin Corporation antitrust case—regarded many lawyers as the most important an trust litigation of the century—inform attorneys in the case of his intention attend the institute to clear any fut questions about a possible conflict of terest.

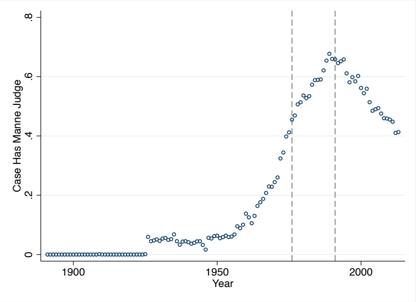
"All the lawyers were very cordial replied that they saw no grounds for conflict of interest in my coming her Judge Edelstein said.

From the beginning, the judges, so of them 60 years old or over, beha like students, deferring to their teach and reminiscing about undergradu

Manne Program in Law and Economics (now also funded by Koch Brothers)

- 2-3 week economics course for federal judges:
  - Ran continuously from 1976 to 1998 (1999 to present) Recent LEC
  - Lectures by Friedman, Samuelson, Alchian, Demsetz, .. All Instructors
  - Coase Theorem, demand/supply theory, expected value/utility, bargaining, externalities, torts, contracts, monopoly theory, statistics, basic regression
  - *Law & Economics* (Cooter & Ulen), *Exchange & Production* (Alchian & Allen)

- By 1990, forty percent of sitting federal judges had attended



"[academic attention to the role of economics in law] could actually be the most lasting contribution of the judges' program to the development of law and economics." (Henry Manne, "How Law and Economics was Marketed in a Hostile World: A Very Personal History")

Testimony from Judge's Letters | Word of Mouth | Predictors of Attendance

Syllabi 1989 (from annual reports - FOIA)

3/29/89

George Mason Univ. School of Law
Law and Economics Center (LEC)

LEC ECONOMICS INSTITUTE FOR FEDERAL JUDGES
Callaway Gardens Resort, Pine Mountain, GA
April 2 - 15, 1989

SCHEDULE

SUNDAY, APRIL 2

7:00 p.m.	Reception	Conference Ctr lounge
7:45 p.m.	Dinner	Conference Ctr 104

MONDAY, APRIL 3

8:30 - 12:00 noon — CLASS #1 ALCHIAN
Topic: Competition, Demand, Exchange
Assignment: A&A, chapters 1, 2, 3
Samuelson cross-reference: chapters 1 & appen, 2, 3A, pp. 53-55, 4, 18A, 19
Recommended Reading: Alchian, "Uncertainty, Evolution, and Economic Theory"

TUESDAY, APRIL 4

8:30 - 12:00 noon — CLASS #2 ALCHIAN
Topic: Prices and Markets, Information Costs
Assignment: A&A, chapters 4,5
Samuelson cross-reference: chapters 3B, 18B, pp. 468-472

1:00 - 4:30 p.m. — CLASS #3 ALCHIAN
Topic: Capital Values, Future Yields, Interest
Assignment: A&A, chapter 6
Samuelson cross-reference: chapter 30, pp. 51-53
Recommended Reading: Alchian, "Words: Musical or Meaningful?"

WEDNESDAY, APRIL 5

8:30 - 12:00 noon — CLASS #4 ALCHIAN
Topic: Production
Assignment: A&A, chapters 7, 8
Samuelson cross-reference: chapters 21, 22

7:45 - 9:15 p.m. — DISCUSSION: ALCHIAN

THURSDAY, APRIL 6

8:30 - 12:00 noon — CLASS #5 GOETZ
Topic: Price Takers, Price Searchers
Assignment: A&A, chapters 10, 11
Samuelson cross-reference: chapters 22, 23

FRIDAY, APRIL 7

8:30 - 12:00 noon — CLASS #6 GOETZ
Continuation of Topic: Competitive and Monopoly Markets
Assignment: A&A, chapters 11 (cont'd), 12, 13
Samuelson cross-reference: chapters 3B, 23C, 24, 32B, pp. 607-609
Recommended Reading: Goetz, pp. 441-447 (Second-Best Theory)

Friday's schedule continued on next page.

WEDNESDAY, APRIL 12

8:30 - 12:00 noon — CLASS #12 SAMUELSON
Topic: Economics of Comparative Advantage
Assignment: Samuelson, "International Trade for a Rich Country"
Samuelson cross-reference: chapters 38, 39, 40, especially chapter 38
Recommended reading: Samuelson, "To Protect Manufacturing?"

1:00 - 4:30 p.m. — CLASS #13 ASHENFELTER
Topic: Econometrics
Assignment: No advance reading; lecture only

THURSDAY, APRIL 13

8:00 - 10:00 a.m. — Breakfast available

1:00 - 4:30 p.m. — CLASS #14 GOETZ
Topic: Monopoly and Competition
Assignment: Brozen, "The Antitrust Task Force Deconcentration Recommendation"
Brozen, "Concentration and Profits: Does Concentration Matter?"
Brozen, "Bain's Concentration and Rates of Return Revisited and Rejoinders by Wenders; Brozen; MacAvoy, *et al.*; Brozen.
Demsetz, "Two Systems of Belief about Monopoly"
Demsetz, "Barriers to Entry"

FRIDAY, APRIL 14

8:30 - 12:00 noon — CLASS #15 GOETZ
Topic: Property Rights
Assignment: Demsetz, "Toward a Theory of Property Rights"
Coase, "The Problem of Social Cost"
Demsetz, "When Does the Rule of Liability Matter?"
Demsetz, "Wealth Distribution and the Ownership of Rights"

SATURDAY, APRIL 15

8:30 - 12:00 noon — CLASS #16 GOETZ
Topic: Law and Economics
Assignment: Goetz, pp. 49- 68 (Nuisance)
166-176 (Prejudgment Interest)
375-391 (Costs and Damages)

Please checkout before class and pay individual account directly to hotel.

Syllabi 1998 (from Butler 1999)

THE BASIC ECONOMICS INSTITUTE FOR FEDERAL JUDGES

Omni Tucson National Golf Resort & Spa, Tucson, Arizona

Saturday, October 17 - Tuesday, October 27, 1998

AGENDA

SATURDAY, PM, OCTOBER 17

7:00 p.m.	Reception
7:45 p.m.	Dinner

SUNDAY, AM & PM, OCTOBER 18

8:30 a.m. - 9:30 a.m.	Continental Breakfast
12:00 noon	Lunch
1:00 p.m. - 5:00 p.m.	**Class 1: Dr. Robert Cooter**
Topic:	Bargaining and Demand
Assignments:	*Bargaining*: Cooter and Ulen, Law and Economics (2nd ed., 1996): "Bargaining Theory," pp. 72-74; "Coase Theorem," pp. 79-84.
	Scarcity, Demand, and Exchange: Alchian & Allen, Exchange and Production (3rd ed., 1983): Chapter 2 Consumer Demand, pp. 13-28. (Do not labor over the explanation of the elasticity of demand on pp. 25-28).
Recommended:	Alchian & Allen, Exchange and Production (3rd ed., 1983):

SUNDAY, AM & PM, OCTOBER 25

8:30 a.m. 9:30 a.m.	Continental Breakfast
12:00 noon	Lunch
1:00 p.m. - 4:30 p.m.	**Class 7: Dr. Darrell Williams**
Topic:	Economics Regulation
Assignment:	Demsetz, Why Regulate Utilities?, *Journal of Law & Economics*, 11 April 1968, pp. 55-65.
	Demsetz, Barriers to Entry, *American Economic Review*, March 1982, pp. 47-57.
6:30 p.m. - 6:50 p.m.	Reception
7:00 p.m. - 8:00 p.m.	Dinner

MONDAY, AM & PM, OCTOBER 26

7:30 a.m. - 8:25 a.m.	Continental Breakfast
8:30 a.m. - 12:00 noon	**Class 8: Dr. Orley Ashenfelter**
Topic:	Econometrics
Assignment:	Paulos, Innumeracy, Chapters 1 and 2.
12:00 p.m. - 12:45 p.m.	Lunch
1:00 p.m .- 2:30 p.m.	*Discussion Period with Available Instructors*
6:30 p.m. - 7:15 p.m.	Reception
7:20 p.m. - 8:30 p.m.	Dinner

TUESDAY, AM, OCTOBER 27

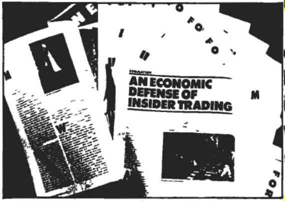
7:20 a.m. - 8:10 a.m.	Breakfast (Note earlier start)
8:15 a.m. - 11:30 a.m.	**Class 9: Orley Ashenfelter**
Topic:	Statistical Inference
Assignment:	Paulos, Innumeracy, Chapter 5.
11:30 a.m.	Lunch

Instructors' Views (from annual reports - FOIA)

“FOR ALL THE RHETORIC ABOUT THE UNFAIRNESS OF INSIDER TRADING, ITS OPERATIONAL EFFECT IS TO MAKE THE STOCK MARKET A FAIRER GAME THAN IT OTHERWISE WOULD BE”

Daniel Seligman In the article Seligman writes. “When insiders trade on their information, they make the market more efficient For all the rhetoric about the unfairness of insider trading, its operational effect is to make the stock market a fairer game than it otherwise would be.”

The *Fortune* essay also points out that Dr. Manne “has been laboring for years to make law professors and judges more cognizant of “economic principles” *Fortune* last covered Dr Manne and the L+EC with a 1979 cover story on the Federal Judges' program



A September 1983 issue of *Fortune* magazine found “time to say a few kind words about insider trading” and about L+EC director Henry Manne as well

“It is ironic that the word ‘profit’ has become a swear word, since profit is the only decent measure of the real public benefit provided by business.”
—Dr. Henry Manne in “Myths of Regulation”

Professor Goetz spoke on “ ‘Unequal’ Punishment for ‘Equal’ Crime,” arguing that discrimination in punishment can be analyzed in terms of economic efficiency.

Relevant criteria, he said, include at least three principal characteristics. First, the desire of potential victims to lower harm to themselves from any given crime. Second, citizen interest in lowering the total cost of punishment. Third, the wish of individuals to reduce their own costs of accidentally (or even intentionally) committing a crime.

Reducing the costs of these components leads to the conclusion that society will institute unequal punishments for equal crimes.

“There really should not be many different results in your cases. But you will have a better understanding of the law because of the insights economics offers, and that will help you be better judges.” – Henry Manne

*"I'm trying to change your view of the world, to show you that what you thought was **bad** really may not be."* *(Alchian)*

Antitrust

"You could make a case that lower-income people are being benefited. .. price discrimination which encourages more production is good" *(Klein)*

"If the price of bread gets too high, cake will compete with it." *(Demsetz)*

"the consumer who is supposed to benefit .. isn't represented; he isn't there in front of you with his lawyer" *(Demsetz on standing)*

Damages/Deterrence

"The plaintiffs may wait a long time before they complain, because they want damages to pile up" *(Demsetz on moral hazard of damages)*

"not likely to be caught, [so] the threat of simple damages may not be a tough enough deterrent" *(Demsetz on increasing sanctions)*

Environment/Labor

"Give me a capsule that will magically clean all the air in Los Angeles .. Beg me to crush it. .. I won't crush the capsule. Because, if I do, poor blacks will have to pay $20 a month more for land rental. .. the black in Watts, already used to living with bad air, loses his discount for doing that." *(Alchian on environmental law)*

*"you **should** be asking questions like, 'Is it more likely to be this than that?'"* *(Feldstein on equal opportunity and discrimination)*

Impact

Judge Williams, then fresh out of the center's program, .. included a diagram of marginal- and average-cost curves "the first significant opinion in history to do that"

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"not likely to be caught, [so] the threat of simple damages may not be a tough enough deterrent" (Demsetz on increasing sanctions)

Environment/Labor

"Give me a capsule that will magically clean all the air in Los Angeles .. Beg me to crush it. .. I won't crush the capsule. Because, if I do, poor blacks will have to pay $20 a month more for land rental. .. the black in Watts, already used to living with bad air, loses his discount for doing that." (Alchian on environmental law)

*"you **should** be asking questions like, 'Is it more likely to be this than that?'" (Feldstein on equal opportunity and discrimination)*

Impact

Judge Williams, then fresh out of the center's program, .. included a diagram of marginal- and average-cost curves "the first significant opinion in history to do that"

Instructors' Quotes (*Fortune*, 5/21/1979) Additional Observations

*"I'm trying to change your view of the world, to show you that what you thought was **bad** really may not be."* *(Alchian)*

Antitrust

"You could make a case that lower-income people are being benefited. .. price discrimination which encourages more production is good" *(Klein)*

"If the price of bread gets too high, cake will compete with it." *(Demsetz)*

"the consumer who is supposed to benefit .. isn't represented; he isn't there in front of you with his lawyer" *(Demsetz on standing)*

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- Differences-in-differences model:

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  - α_j = judge fixed effect
  - α_{ct} = court-year fixed effect (case randomization block)
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- Event-study model:

$$Y_{ijct} = \alpha_j + \alpha_{ct} + \sum_{k \in K} \gamma_k Z_{jt}^k + X_j' \lambda_t + \epsilon_{ijct} \tag{2}$$

  - Z_{jt}^k = leads and lags of Manne attendance, excluding year before attendance.

Regressions weighted to acount for caseload differences across courts/years. Standard errors clustered by judge.

Selection into the program

Judges were not specifically recruited; enrollment was on a first-come first-serve basis.

- suggests no selection on the program's side

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- both Republicans and Democrats attended (*"judge party" = party of nominating president*)
- Republicans attended more often, but conditional on attendance, did not attend sooner.
- Program was often oversubscribed, with later applicants bumped to next class.
  - $\rightarrow$ reduced opportunities for selection in response to short-run changes in judge beliefs/attitudes.

Addressing Selection Issues

Selection into the program:

- $\boldsymbol{X}_j'\lambda_t$ = ML-selected judge covariates, fully interacted with year fixed effects.
  - variables that are most predictive of the timing of Manne attendance.
  - selected by elastic net (lasso + L2/ridge penalty)
  - mostly judge birth cohort; does not include judge party List of Selected Covariates
  - similar robustness to adding covariates that predict the outcome.

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  - similar robustness to adding covariates that predict the outcome.

Selection into types of cases:

- Manne Program had no effect on assignment/authorship in economics cases
- results robust to dropping circuits where Levy and Chilton (2015) find non-random assignment of cases to judges.
- results robust to absorbing legal topic fixed effects.

Diagnostic for Staggered Treatment

- We have staggered treatment: different treated judges attend the program at different times.
  - the standard two-way fixed-effects estimator might not capture average treatment effect due to the potential for negative weights, when previously treated judges are present in the comparison group (e.g. Goodman-Bacon, 2018).

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- We perform the diagnostic methods from De Chaisemartin and d'Haultfoeuille (2020) and Jakiela (2021) show that issues of negative weights and heterogeneity are minimal in our two-way fixed effects regressions. Table
  - Therefore our estimates can be validly interpreted as average treatment effects.

Outline

Measuring Economics Language in Case Text

Starting point: Lexicon of phrases used by Ellickson (2000) to identify law-and-economics articles in a law journal corpus:

{capital, chicago_school, cost*_benefit*, **deterren***, efficien*, externalit*, game_theor*, marketplace, transaction_cost*}

- can't use counts over this lexicon as language outcome because it is too sparse Figure

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- We construct a vector in language space corresponding to the average of the words in the law-econ lexicon.
- Each case is scored as "uses more economics language" by its proximity to this "economics vector" (Arora et al 2016)

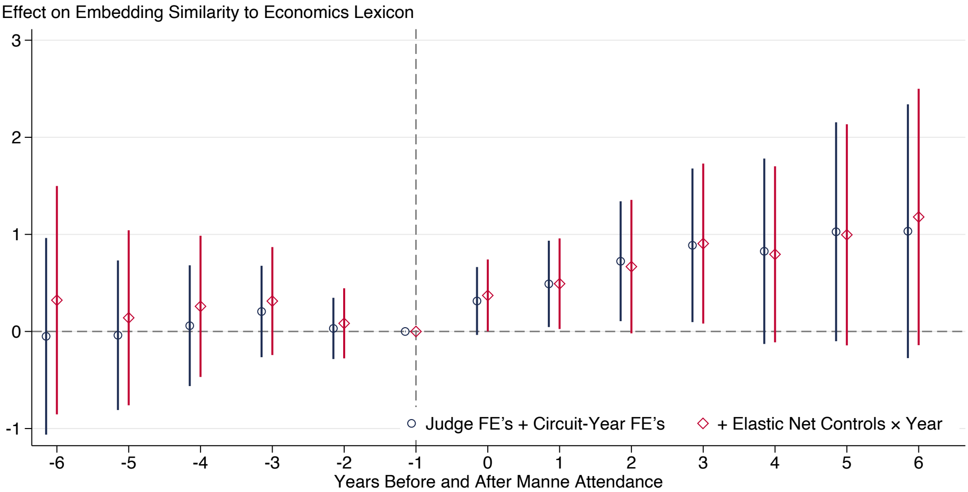
  Highest-scored sentences

  Alternative ML Measure

Economics-Associated Words

Effect of Manne Program on Economics Language

Effect of Manne Program on Economics Language



Notes. Event study effect of Manne attendance on Word Embedding Similarity to Law-and-Economics Lexicon. Sample is limited to case authors. Regressions include judge and circuit-year fixed effects (blue circles), with additional specifications adding quadratic in judge years on court (red diamonds), plus elastic-net-selected controls interacted with year fixed effects (green triangles). Observations are weighted to treat judge-years equally. Error spikes give 95% confidence intervals, with standard errors clustered by judge.

ML outcome & Regs

Outline

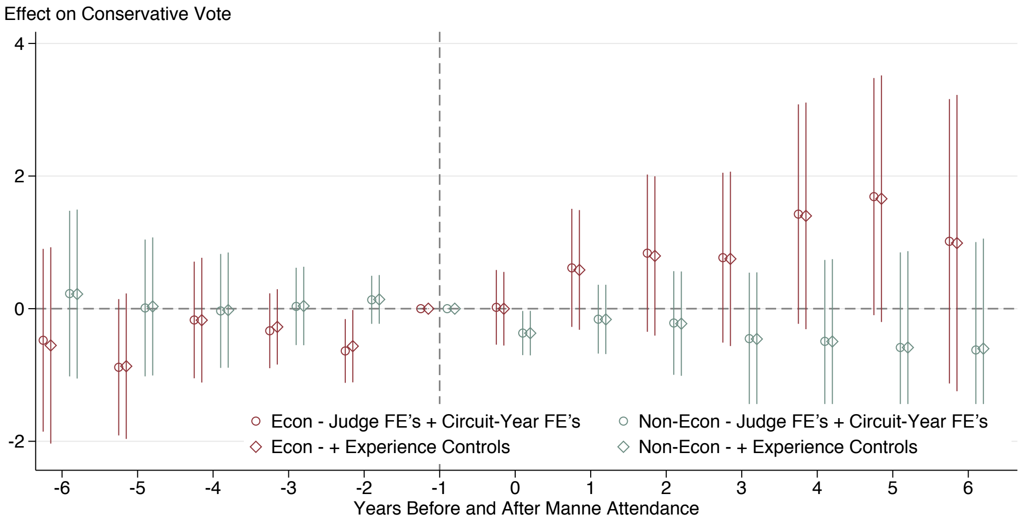
Appeals Decision Outcomes (using metadata)

1. Conservative vote direction (hand-coded 5% sample from Songer database)
2. Voting against regulatory agencies (labor/environmental)
3. Antitrust rulings (new annotated dataset on voting for/against mergers)

Summary Statistics

Effect of Manne Program on (Hand-Coded) Conservative Vote Direction

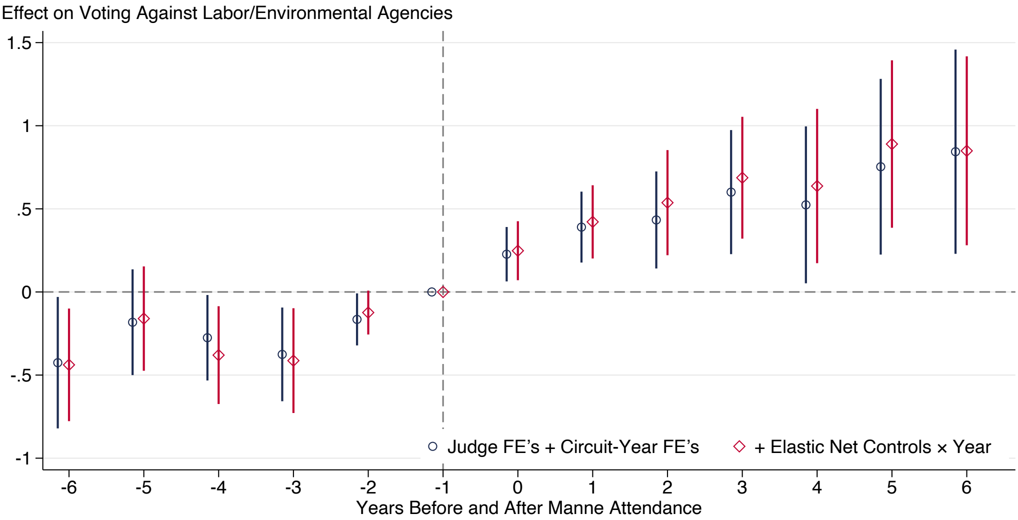
Effect of Manne Program on (Hand-Coded) Conservative Vote Direction



Notes. Event study effect on conservative vote in economics cases (regulation and labor; in red) and non-economics cases (in teal). Baseline specification (left dot in pair) includes judge and circuit-year fixed effects. Second specification (right dot in pair) includes controls for judge experience. Observations are weighted to treat judge-years equally. Error spikes give 95% confidence intervals, with standard errors clustered by judge. Regression Table

Effect of Manne Program on Ruling Against Labor/Environment Agencies

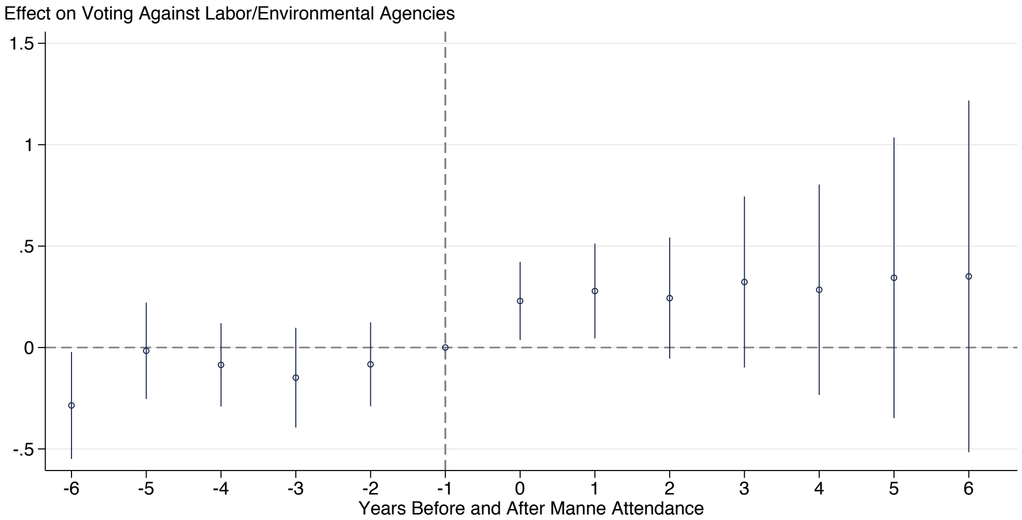
Effect of Manne Program on Ruling Against Labor/Environment Agencies



Notes. Event study effects on voting against government agency on labor and environmental issues, relative to year before attendance at Manne economics training. The baseline specification (blue circles) includes judge and circuit-year fixed effects. Additional specifications add experience controls (red diamonds) and elastic-net-selected controls interacted with year fixed effects (green triangles). Observations are weighted to treat judge-years equally. Error spikes give 95% confidence intervals, with standard errors clustered by judge.

Regression Table

Labor/EPA Event Study (with Judge-Specific Trends)



Notes. Event study effects on voting against government agency on labor and environmental issues, relative to year before attendance at Manne economics training. Includes Includes judge fixed effects, circuit-year fixed effects, and judge-specific trends.Observations are weighted to treat judge-years equally. Error spikes give 95% confidence intervals, with standard errors clustered by judge.

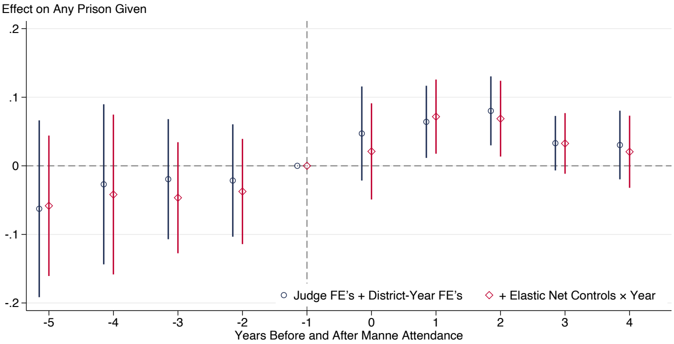
Effect on Conservative Antitrust Decision (small sample of cases)

Effect on Conservative Antitrust Decision (small sample of cases)

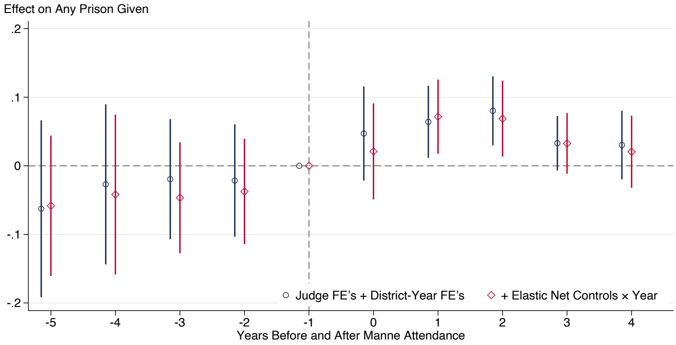
	Voting in Favor of Mergers		
	(1)	(2)	(3)
Post-Manne	0.129	0.314*	0.271+
	(0.0850)	(0.128)	(0.147)
N (Votes)	656	656	656
adj. R-sq.	0.437	0.321	0.255
Ever Attenders	X	X	X
All Judges			
Circuit-Year FE	X	X	X
Judge FE	X	X	X
Experience Vars			X
Party × Year FE			X
E-net × Year FE		X	X

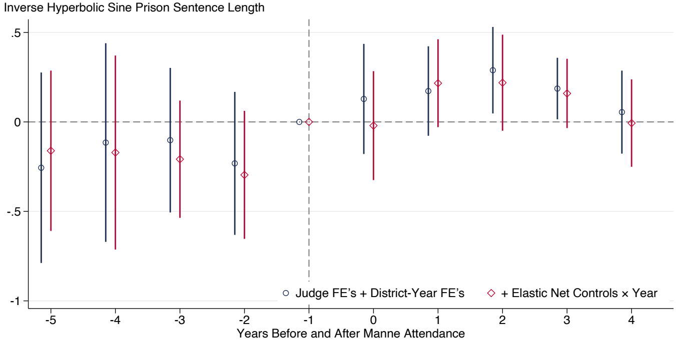
Notes. Effect of Manne economics training on conservative voting in antitrust cases. Experience Vars includes quadratic in judge years on court. Party refers to party of judge nominating president. E-net refers to elastic-net selected controls for predicting timing of Manne attendance. Event Study includes cases with Manne judges, within six years before/after attendance. Ever Attenders includes cases of Manne judges for all years of their career. All Judges includes all cases. Standard errors clustered by judge. Observations are weighted to treat judge-years equally.
$+p < .1, *p < 0.05, **p < .01$.

Outline



Effect on Any Prison Given
.2
.1
0
-.1
-.2
Judge FE's + District-Year FE's
+ Elastic Net Controls × Year
-5
-4
-3
-2
-1
0
1
2
3
4
Years Before and After Manne Attendance





Notes. Event study effect of Manne attendance on criminal sentencing outcomes in district courts, 1992-2003. Panel (a): Outcome is any prison given. Panel (b): Outcome is log of prison sentence in days (plus one, to allow for zeros). Regressions include judge and district-year fixed effects (blue circles), plus quadratic in judge years on court (red diamonds), plus elastic-net-selected controls interacted with year fixed effects (green triangles). Observations are weighted to treat judge-years equally. Error spikes give 95% confidence intervals.

Regression Table

Sentencing Guidelines and *Booker* (2005)

Appendix Figure 1: United States Sentencing Guidelines Grid
Sentencing Table (in months of imprisonment)

	Offense Level	I (0 or 1)	II (2 or 3)	III (4, 5, 6)	IV (7, 8, 9)	V (10, 11, 12)	VI (13 or more)
Zone A	1	0–6	0–6	0–6	0–6	0–6	0–6
	2	0–6	0–6	0–6	0–6	0–6	1–7
	3	0–6	0–6	0–6	0–6	2–8	3–9
	4	0–6	0–6	0–6	2–8	4–10	6–12
	5	0–6	0–6	1–7	4–10	6–12	9–15
	6	0–6	1–7	2–8	6–12	9–15	12–18
	7	0–6	2–8	4–10	8–14	12–18	15–21
	8	0–6	4–10	6–12	10–16	15–21	18–24
Zone B	9	4–10	6–12	8–14	12–18	18–24	21–27
	10	6–12	8–14	10–16	15–21	21–27	24–30
Zone C	11	8–14	10–16	12–18	18–24	24–30	27–33
	12	10–16	12–18	15–21	21–27	27–33	30–37
Zone D	13	12–18	15–21	18–24	24–30	30–37	33–41
	14	15–21	18–24	21–27	27–33	33–41	37–46
	15	18–24	21–27	24–30	30–37	37–46	41–51
	16	21–27	24–30	27–33	33–41	41–51	46–57
	17	24–30	27–33	30–37	37–46	46–57	51–63
	18	27–33	30–37	33–41	41–51	51–63	57–71
	19	30–37	33–41	37–46	46–57	57–71	63–78
	20	33–41	37–46	41–51	51–63	63–78	70–87
	21	37–46	41–51	46–57	57–71	70–87	77–96
	22	41–51	46–57	51–63	63–78	77–96	84–105
	23	46–57	51–63	57–71	70–87	84–105	92–115
	24	51–63	57–71	63–78	77–96	92–115	100–125
	25	57–71	63–78	70–87	84–105	100–125	110–137
	26	63–78	70–87	78–97	92–115	110–137	120–150
	27	70–87	78–97	87–108	100–125	120–150	130–162
	28	78–97	87–108	97–121	110–137	130–162	140–175
	29	87–108	97–121	108–135	121–151	140–175	151–188
	30	97–121	108–135	121–151	135–168	151–188	168–210
	31	108–135	121–151	135–168	151–188	168–210	188–235
	32	121–151	135–168	151–188	168–210	188–235	210–262
	33	135–168	151–188	168–210	188–235	210–262	235–293
	34	151–188	168–210	188–235	210–262	235–293	262–327
	35	168–210	188–235	210–262	235–293	262–327	292–365
	36	188–235	210–262	235–293	262–327	292–365	324–405
	37	210–262	235–293	262–327	292–365	324–405	360–life
	38	235–293	262–327	292–365	324–405	360–life	360–life
	39	262–327	292–365	324–405	360–life	360–life	360–life
	40	292–365	324–405	360–life	360–life	360–life	360–life
	41	324–405	360–life	360–life	360–life	360–life	360–life
	42	360–life	360–life	360–life	360–life	360–life	360–life
	43	Life	Life	Life	Life	Life	Life

- A 2005 Supreme Court Case, *United States v. Booker*, loosened the U.S. Sentencing Guidelines, which beforehand were mandatory.

Sentencing Guidelines and *Booker* (2005)

Appendix Figure 1: United States Sentencing Guidelines Grid

Sentencing Table (in months of imprisonment)

	Offense Level	Criminal History Category (Criminal History Points) I (0 or 1)	II (2 or 3)	III (4, 5, 6)	IV (7, 8, 9)	V (10, 11, 12)	VI (13 or more)
	1	0–6	0–6	0–6	0–6	0–6	0–6
	2	0–6	0–6	0–6	0–6	0–6	1–7
	3	0–6	0–6	0–6	0–6	2–8	3–9
	4	0–6	0–6	0–6	2–8	4–10	6–12
Zone A	5	0–6	0–6	1–7	4–10	6–12	9–15
	6	0–6	1–7	2–8	6–12	9–15	12–18
	7	0–6	2–8	4–10	8–14	12–18	15–21
	8	0–6	4–10	6–12	10–16	15–21	18–24
	9	4–10	6–12	8–14	12–18	18–24	21–27
Zone B							
	10	6–12	8–14	10–16	15–21	21–27	24–30
Zone C	11	8–14	10–16	12–18	18–24	24–30	27–33
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	20	33–41	37–46	41–51	51–63	63–78	70–87
	21	37–46	41–51	46–57	57–71	70–87	77–96
	22	41–51	46–57	51–63	63–78	77–96	84–105
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	27	70–87	78–97	87–108	100–125	120–150	130–162
Zone D							
	28	78–97	87–108	97–121	110–137	130–162	140–175
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							360–life
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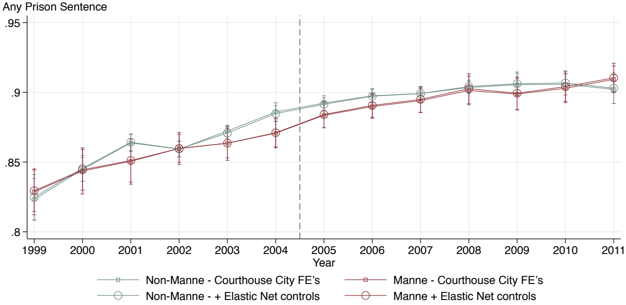
	43	Life	Life	Life	Life	Life	Life

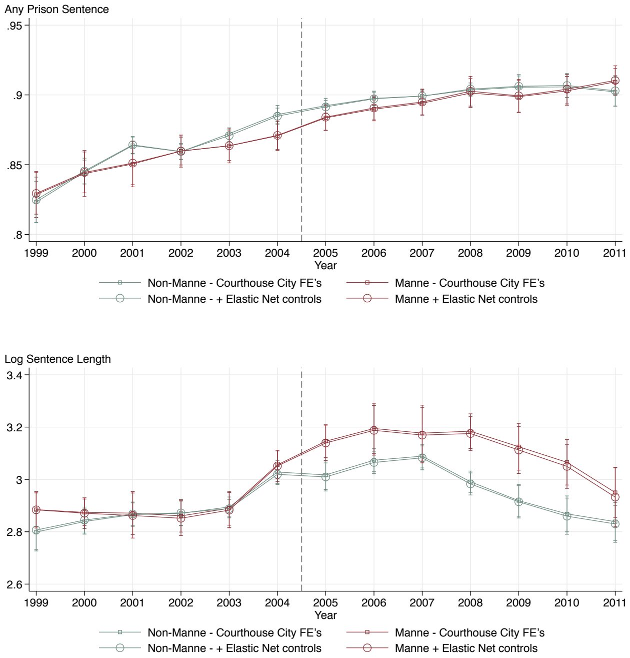
- A 2005 Supreme Court Case, *United States v. Booker*, loosened the U.S. Sentencing Guidelines, which beforehand were mandatory.
- We estimate the relative effect of *Booker* on Manne-trained District Judges.
  - Later dataset (1999-2011) has more detailed info on crime type.

Estimating Equation

Manne Training and *Booker*



Manne Training and *Booker*



Notes. Margins plots for differences between Manne and non-Manne judges in sentencing outcomes over time. Panel (a): indicator variable for any prison given; Panel (b): log of one plus prison sentence length (in months). Regressions include fixed effects for courthouse, month, day-of-the-week, crime category, and investigating agency. Spikes give 95% confidence intervals.

	Any Prison	*Log of Total Sentence*				
	(1)	(2)	(3)	(4)	(5)	(6)
Booker ($\geq$2005)	0.0350**	0.0692	-0.182**	0.114+		
	(0.00504)	(0.0825)	(0.0654)	(0.0660)		
Econ Training	-0.00141	-0.0448	-0.0403	.		
	(0.00725)	(0.0622)	(0.0468)	.		
Econ Training *	0.00887	**0.199***	**0.154***	**0.166***		
***Booker* ($\geq$2005)**	(0.00621)	**(0.0835)**	**(0.0736)**	**(0.0675)**		
N	882543	882543	781362	882940		
adj. R-sq	0.033	0.038	0.084	0.048		
Sample	All	All	Sentence $>$ 0	All		
Court FE	X	X	X	X		
Calendar FE	X	X	X	X		
Judge FE				X		

Notes. Estimates for impact of *Booker,* Manne economics training, and their interaction on sentencing outcomes. Calendar FE includes day-of-week and year-month . Standard errors clustered by district in parentheses. $+p < .1, *p < 0.05, **p < .01$. Results are similar with fully interacted Republican dummies.

- Effects on some other related outcomes
  - no effect on using academic language (based on similarity to law reviews) or use of statistical/quantitative language
  - no effect on citing U.S. Constitution or Bill of Rights
  - no effect on citing judges appointed by Reagan or Bush Sr.

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  - a positive effect on "conservative dissent rate" – dissenting against majority opinions authored by Democrat-appointed judges.

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  - no effect on citing judges appointed by Reagan or Bush Sr.
  - a positive effect on "conservative dissent rate" – dissenting against majority opinions authored by Democrat-appointed judges.
- Robustness Checks:
  - dropping circuits that seem to violate random assignment (Levy and Chilton 2015)
  - alternative clustering (e.g. by panel or by circuit-year)
  - with/without weighting
  - dropping judges with smallest and largest caseloads
  - fixed effects for legal topics or crime types
  - judge-specific trends

The Prejudices of Economic Ideology

- In "Covert Racism in Economics," for example, Komlos (2022) argues that mainstream economics is replete with implications that feed into structural racism and maintains assumptions that contribute to ongoing dispossession and exploitation of racialized groups (Greenhouse, 2020; Small and Pager, 2020)
  - Even ostensibly anti-racist agendas that effectively reproduce racial inequalities (Bobo, Kluegel and Ryan, 1996; Bonilla-Silva and Eduardo, 2006)
  - Program content described in its newsletters are replete with implied racism
    - Rationalization of disproportionately harsh sentencing for Black defendants: "Professor Goetz spoke on 'Unequal' Punishment for 'Equal Crime', arguing that discrimination in punishment can be analyzed in terms of economic efficiency... leading to the conclusion that society will institute unequal punishments for equal crimes."
    - Even more explicit, Fortune magazine quoting an instructor, "Give me a capsule that will magically clean all the air in Los Angeles .. Beg me to crush it. .. I won't crush the capsule. Because, if I do, poor blacks will have to pay $20 a month more for land rental. .. the black in Watts, already used to living with bad air, loses his discount for doing that."

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- Theoretically ambiguous
  - Less biased since they are guided by cost-benefit analysis, not interpretation
  - School-of-thought thinking conforms to norms and they may be less flexible in decision making, less attentive, and more prone to their own implicit biases
  - Even when making attentive decisions, economics trained judges might prefer longer sentences for a certain race or gender, if more cost-efficient
  - Outline
    - Impact of assigning an economics-trained judge
    - Impact of assigning economics-trained judge relative to Republicans
    - Mechanism: Offense level manipulation
    - judges are provided with discretionary powers to recommend changes to the assigned offense levels
    - Heterogeneity: case type & experience

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Random Assignment of Judges by Defendant Characteristics

	Manne	Republican	White	Female
Minority Defendant	0.004	-0.009	-0.013*	0.010*
	(0.004)	(0.005)	(0.006)	(0.005)
Female Defendant	-0.000	-0.002	-0.010*	0.002
	(0.002)	(0.003)	(0.004)	(0.003)
Defendant Age	0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Guilty Plea	-0.003	-0.002	-0.009	0.002
	(0.003)	(0.005)	(0.005)	(0.005)
Defendant New Citizen	-0.004	-0.010	-0.015	0.008
	(0.003)	(0.005)	(0.010)	(0.008)
Education = High School	0.001	0.001	0.003	0.002
	(0.002)	(0.002)	(0.003)	(0.005)
Education = Some College	0.001	-0.001	0.002	0.004
	(0.003)	(0.004)	(0.003)	(0.006)
Education = College Graduate	-0.003	-0.003	-0.000	0.013*
	(0.005)	(0.005)	(0.004)	(0.006)
Court x Sentencing Year FE	Y	Y	Y	Y
N	605684	603512	589619	589619
adj. R-sq	0.244	0.196	0.289	0.151
F	1.409	0.887	1.152	1.682
Joint Significance	0.196	0.54	0.335	0.105

Offense Level Manipulation by Judges (Schulhofer and Nagel 1997)

	Criminal History Rating	Base Offense Level	Final Offense Level
Manne Judge x Minority Defendant	0.094*	0.473***	0.610***
	(0.036)	(0.110)	(0.116)
Manne Judge x Female Defendant	0.006	-0.267*	-0.280**
	(0.024)	(0.103)	(0.100)
Judge x Sentencing Year FE	Yes	Yes	Yes
Defendant Controls	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes
N	603702	599608	600757
Adjusted R-squared	0.260	0.759	0.492
Mean Dependant Variable	2.471	18.14	19.36

Standard errors clustered by court are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. The case controls include the offense type classification. (* p<0.05, ** p<0.01. *** p<0.001)

- Manne judges appear to manipulate the offense levels for minority defendants leading to an increase of around 0.61 points for final offense level which corresponds to about a 3.1% increase over the sample mean.
- Females received 0.26 point decrease in their final offense level (1.5% of sample mean)
- This is over 4x larger than the manipulation by Republican judges (in Cohen and Yang 2019)

Race and Gender Disparities due to Economics Training

	Sentence Length (in months)		
Minority Defendant	6.545***	7.153***	6.559***
	(0.521)	(0.524)	(0.522)
Manne Judge x Minority Defendant	4.268***		4.169***
	(0.968)		(0.954)
Female Defendant	-11.919***	-11.590***	-11.643***
	(0.472)	(0.504)	(0.501)
Manne Judge x Female Defendant		-2.435**	-2.100*
		(0.916)	(0.885)
Judge X Sentencing Year FE	Yes	Yes	Yes
Defendant Controls	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes
N	603702	603702	603702
Adjusted R-squared	0.418	0.418	0.418

Standard errors clustered by courts are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. Case controls include the offense type classification and criminal history rating. (* $p<0.05$, ** $p<0.01$. *** $p<0.001$)

- Manne judges tend to give harsher sentences to minority defendants by about 4 months longer which is equal to 8% over the sample mean of 50 months.
- Manne judges tend to give lenient sentences to female defendants by about 2 months shorter which is about 4% under the sample mean.

Republican Judge Interactions with Race and Gender

	Sentence Length (in months)		
Manne Judge x Minority Defendant	4.258***		4.165***
	(0.961)		(0.946)
Republican x Minority Defendant	-0.292		-0.306
	(0.631)		(0.619)
Manne Judge x Female Defendant		-2.316*	-1.988*
		(0.946)	(0.917)
Republican x Female Defendant		-0.206	-0.215
		(0.676)	(0.658)
Court x Sentencing Year FE	No	No	No
Judge x Sentencing Year FE	Yes	Yes	Yes
Defendant Controls	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes
N	601839	601839	601839
Adjusted R-squared	0.407	0.407	0.407

Standard errors clustered by courts are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. The case controls include the offense type classification and criminal history rating. Republican us a dummy variable indicating whether the judges were appointed by a Republican President. (* p<0.05, ** p<0.01. *** p<0.001)

Race and Gender Disparities with Offense Level control

Minority Defendant	3.833***	3.949***	3.836***
	(0.301)	(0.283)	(0.301)
Manne Judge x Minority Defendant	0.816		0.794
	(0.469)		(0.462)
Female Defendant	-5.029***	-4.958***	-4.968***
	(0.326)	(0.358)	(0.358)
Manne Judge x Female Defendant		-0.531	-0.467
		(0.611)	(0.601)
Court X Sentencing Year FE	No	No	No
Judge X Sentencing Year FE	Yes	Yes	Yes
Defendant Controls	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes
N	600661	600661	600661
Adjusted R-squared	0.740	0.740	0.740

Standard errors clustered by courts are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. Case controls include the offense type classification, criminal history rating and final offense level rating for the case. (* $p<0.05$, ** $p<0.01$. *** $p<0.001$).

Heterogeneity by Offense Type

	Sentence Length (in months)						
Manne x Minority	4.593	5.138**	3.076	-1.374	-1.808	-6.280	0.412
	(4.132)	(1.780)	(1.909)	(1.333)	(1.076)	(14.302)	(0.641)
Manne x Female	5.790	-4.063*	-4.073	-0.247	-1.702	-2.166	1.238
	(4.389)	(2.011)	(3.718)	(1.806)	(2.001)	(19.735)	(0.720)
Offense Type	violent	drugs	firearms	theft	immigration	sex offense	white collar
Judge x S Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Defendant Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	23248.	230143	73917	13082	97369.	1408	102573
Adjusted R-sq.	0.424	0.424	0.314	0.426	0.442	0.280	0.266

Standard errors clustered by courts are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. Case controls include the offense type classification and criminal history rating. (* $p<0.05$, ** $p<0.01$. *** $p<0.001$)

- This is consistent with the economic thought where drug-related crimes can be viewed as expensive due to its reach and implications within the society and therefore spurring a more intensive deterrent mechanism targeting minority defendants in such cases.
- Likewise it also explains the more lenient sentencing for the female defendants in such crimes since it is relatively less harmful or more beneficial to the society or dependants at home if they were to be incarcerated for a shorter time period.

Heterogeneity by Judge Experience

	Sentence Length (in months)	
Sample	Above Median Judge Experience	Below Median Judge Experience
Manne Judge x Minority Defendant	4.243***	6.653***
	(1.014)	(1.755)
Manne Judge x Female Defendant	-1.952*	-3.188
	(0.927)	(1.859)
Judge x Sentencing Year FE	Yes	Yes
Defendant Controls	Yes	Yes
Case Controls	Yes	Yes
Observations	309326	294376
Adjusted R-squared	0.414	0.423

Standard errors clustered by courts are shown within parentheses. Defendant controls include the defendant's age, no. of dependents in the household, education level, citizenship status and whether they plead guilty or not. Case controls include the offense type classification and criminal history rating. Judge experience defined at the time of hearing as being above or below the sample median (* $p<0.05$, ** $p<0.01$. *** $p<0.001$)

- Manne judges tend to be relatively less disparate with experience.
- Could be explained by experienced judges are more attentive to implicit biases thereby mitigating the disparate effects of economic thinking on their sentencing decisions

The Prejudices of Economic Ideology

- The rationale behind awarding harsher sentences for minority defendants and lenient sentencing for female defendants could be considered to be consistent with the ideologies of economic thought.
  - The idea of deterrence being a more cost-effective approach for minority defendants who have reportedly higher arrest rates and the female defendants being relatively more economically productive in the society could have been the driving forces behind the implicit or explicit bias observed in the sentencing decisions among the Manne judges.
  - From a cognitive perspective, it could be argued that the judges were motivated by the economic aspects of the case leading to them paying lesser attention to implicit biases in their decision making (Clair and Winter, 2016).

WHERE DO WE GO FROM HERE?

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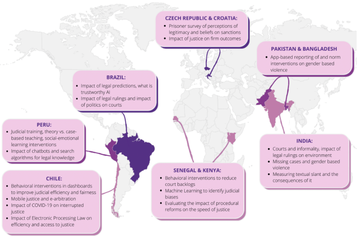
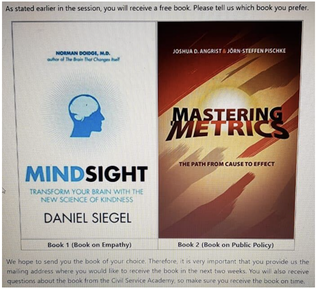
A Friendlier Economics?

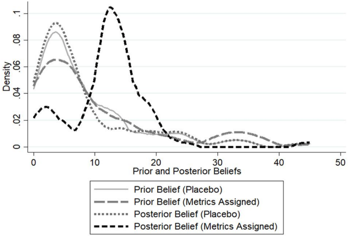
AMICUS (Analytical Metrics for Informed Courtroom Understanding & Strategy)



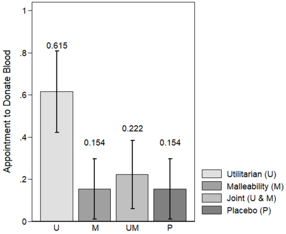
Training deputy ministers in a school of thought



Econometrics Training Increased Responsiveness to Causal Evidence



Effective Altruism Training Increased Altruism in Action



How Can We Train Judges to Improve Rule of Law?

- The training of public officials is one of the key dimensions governments use to improve bureaucratic performance
- For example, in 2017 alone, the U.S. allocated approximately 4% of its annual budget for personnel compensation and benefits, or around $10 billion, towards training civil servants (Credibility Engine 2021; USA Spending)
- Despite its significance, there is limited empirical research on effective methods to improve the training of public officials using RCTs
- Particularly relevant in the judiciary, as slow and unreliable justice systems represent a key barrier to economic growth

Do economic ideas impact decision-making?

- Closest study: randomly assigned law profs w/ econ phds (Fisman, Kariv, Markovits 2009)
    - Curricula ⇒ 10-20% shift in free market attitudes (Cantoni et al. JPE 2014)
    - Redistributive preferences (Alesina et al. AER 2007)
    - Less redistributive of potential lottery winnings (Selten and Ockenfels JEBO 1998)
    - Decline in self-reported honest behavior (Frank et al. JEP 2003)
    - Favor profit maximization in business vignette (Rubinstein EJ 2006)
    - Surge prices viewed more fairly, with any econ experience (Frey et al. EI 2003)
    - 8 hours of high school training impacts economic preferences (Sutter, etc. 201x)
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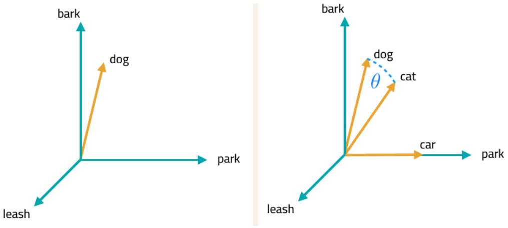
Law-and-Economics Vectors

- Want to measure take up of economic ideas in written opinions
- Cosine distance of word and document embeddings to:
  - externalit*, transaction_costs, efficien*, deterr*, cost_benefit, capital, game_theo, chicago_school, marketplace (Law & economics words - Ellickson 2000)

How does it work? Relatedness between words (Le and Mikolov 2014)

Predict the surrounding words given a current word in a current document

Words as Vectors



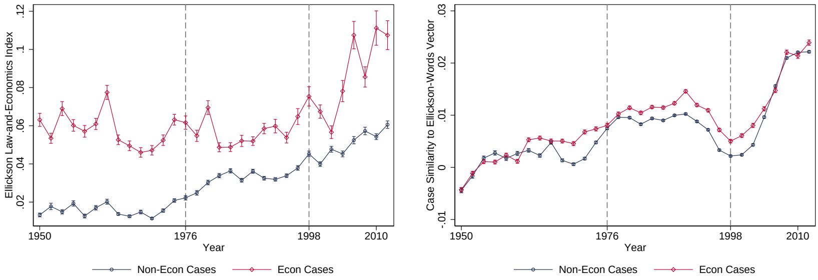
- Use cosine similarity as a measure of relatedness:

$$\cos\theta = \frac{v_1 \cdot v_2}{||v_1||||v_2||}$$

- Every word gets represented as a 300-dimensional vector
  - Similar words tend to co-locate

◂ Document embeddings

Increasing Economic Orientation in Federal Judiciary



Judge Randomization

- **Interviews** of courts and **orthogonality checks** of observables
  - (1) 2-3 weeks before oral argument, computer:
    - randomly assigns available judges including visiting judges
    - ensures judges are not sitting together repeatedly
    - senior judges reduced frequency entered into the program
  - (2) randomly assign panels on yearly basis, then randomly assign cases
    - judges can occasionally recuse
    - panel sees case again on remand
    - exceptions for specialized cases like death penalty
- **Omnibus test**: how similar string of panel assignments is to random strings
  - Not accounting for vacation, sick leave, senior status, en banc, remand, and recusal can lead to the inference that judges are not randomly assigned.
  - We assume these deviations from randomness are Rubin-ignorable.

Judge Randomization Check

	Economics Case			
	(1)	(2)	(3)	(4)
Econ Training	0.00788	-0.000716	-0.00512	0.00540
	(0.00807)	(0.00454)	(0.00893)	(0.00416)
N	123519	115561	500266	389105
adj. R-sq	0.115	0.024	0.112	0.023
Circuit-Year FE	Y	Y	Y	Y
Sample	Author	Author	On Panel	On Panel
Sample	Year < 1976	Year > 1991	Year < 1976	Year > 1991

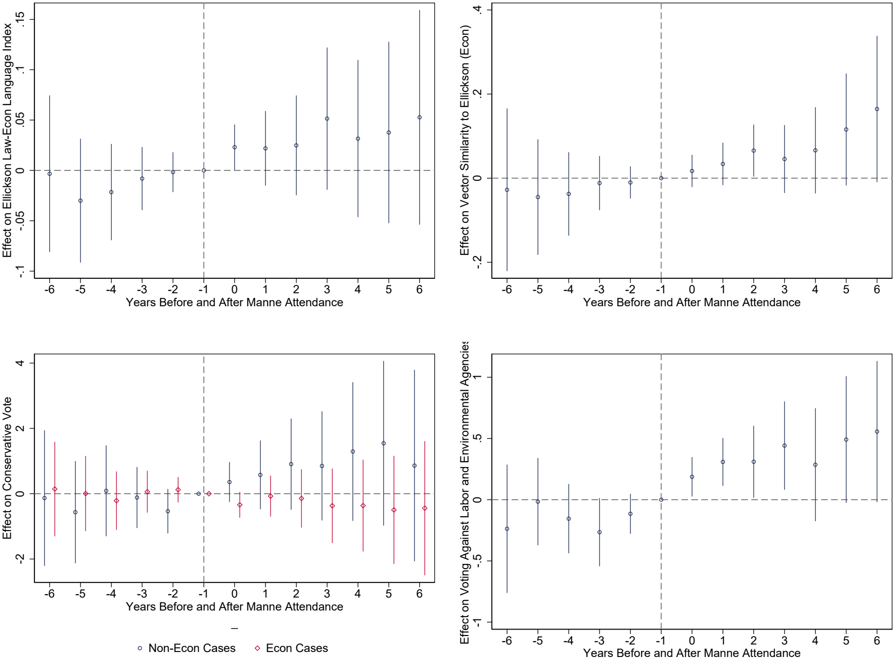
Omnibus check: No endogenous settlement or selection of cases.

Outline

Event-Study – Specification

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct}$$

- case i, judge j, court c, year t, for $n \in [-6, 6]$
- 95% CI; j clusters; jt weighted equally


Effect on Ellickson Law-Econ Language Index
-.1
-.05
0
.05
.1
.15
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
Years Before and After Manne Attendance
Effect on Vector Similarity to Ellickson (Econ)
-.2
0
.2
.4
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
Years Before and After Manne Attendance
Effect on Conservative Vote
-2
0
2
4
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
Years Before and After Manne Attendance
Non-Econ Cases
Econ Cases
Effect on Voting Against Labor and Environmental Agencie
-1
-.5
0
.5
1
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
Years Before and After Manne Attendance

Manne Attendance on Conservative votes

	Conservative Vote (+1/0/-1)		
	(1)	(2)	(3)
Econ Case	-0.203***	-0.194***	-0.187***
	(0.0304)	(0.0286)	(0.0194)
Post-Manne	-0.118	-0.0481	-0.104*
	(0.0739)	(0.0750)	(0.0544)
Econ Case *	**0.315****	**0.193***	**0.190****
Post-Manne	**(0.135)**	**(0.114)**	**(0.0768)**
N	28092	27799	25882
adj. R-sq	0.115	0.254	0.124
Circuit-Year FE	X	X	X
Judge FE		X	X
E-net-Vars ## Year FE			X
Sample	1970-2002	1970-2002	1970-2002

Judges shift by 10% the direction of their votes.

30-70 distribution of economics and non-economics cases

Manne Attendance on Government Regulations

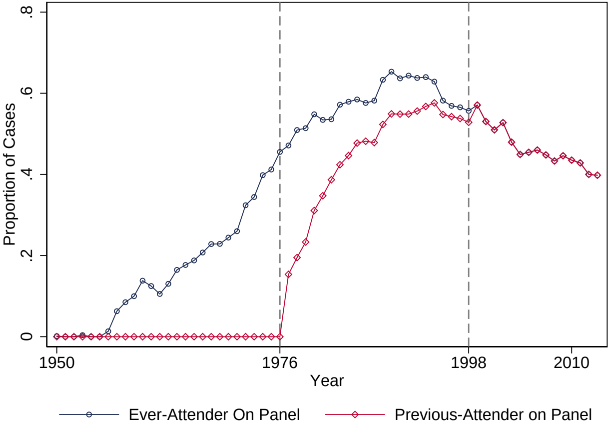
	Voting Against Government Regulations			
	(1)	(2)	(3)	(4)
Post-Manne	**0.0734****	**0.0698****	**0.117*****	**0.116*****
	(0.0345)	**(0.0334)**	**(0.0393)**	**(0.0416)**
N	68597	68597	68597	68597
adj. R-sq	0.230	0.235	0.238	0.234
Circuit-Year FE	X	X	X	X
Judge FE	X	X	X	X
Party-Year FE		X	X	
Ever-Attend-Year FE			X	
E-net Vars ## Year FE				X

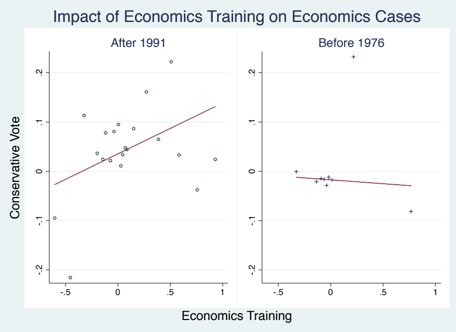
Judges are 7-12% more likely to vote against government regulations after economics training.

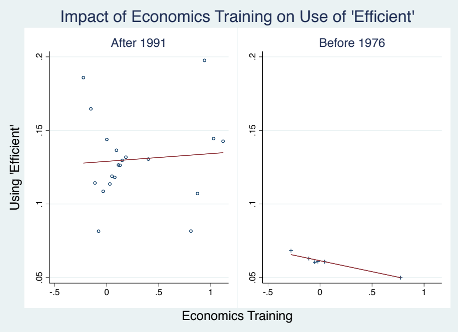
Long-Difference – Specification

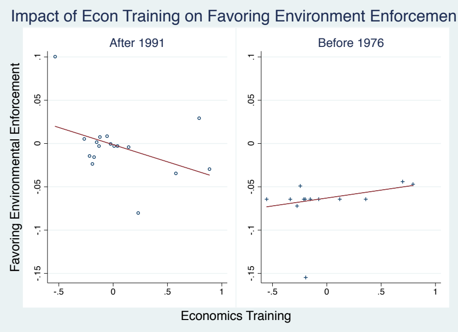
$$Y_{ijct} = \alpha_{ct} + \gamma Z_{ijt} + X_j'\beta + \varepsilon_{ijct}$$

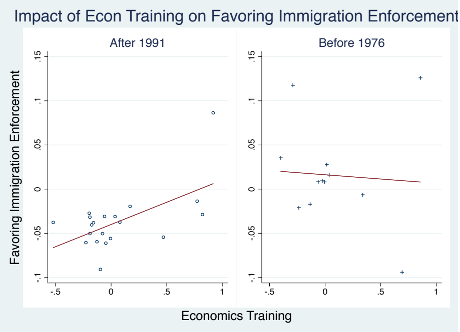
- case i, judge j, court c, year t, for $n \in [-6, 6]$
- 95% CI; j clusters; jt weighted equally
- Z_{ijt}, economics training (1976-1999)




Impact of Economics Training on Economics Cases
After 1991
Before 1976
Conservative Vote
Economics Training


Impact of Economics Training on Use of 'Efficient'
After 1991
Before 1976
Using 'Efficient'
Economics Training


Impact of Econ Training on Favoring Environment Enforcemen
After 1991
Before 1976
Favoring Environmental Enforcement
Economics Training


Impact of Econ Training on Favoring Immigration Enforcement
After 1991
Before 1976
Favoring Immigration Enforcement
Economics Training

Heterogeneity by Instructor

"Friedman always started on legalization of recreational drugs" (Butler 10/2017)

Milton Friedman taught in 1976, 1978, 1979, 1980

	Rejecting Criminal Appeal (Habeas Corpus)			
	(1)	(2)	(3)	(4)
Manne Training	**0.0608***		-0.251**	
	(0.0286)		(0.0922)	
Friedman Training	**-0.0921***	**-0.102**	0.131	0.243**
	(0.0437)	**(0.0615)**	(0.107)	(0.0819)
N	12173	1269	13895	753
adj. R-sq	0.140	0.233	0.264	0.393
Circuit-Year FE	Y	Y	Y	Y
Sample	Post 1991		Pre 1976	
Judges	All	Attend < 1986	All	Attend < 1986

Economics Trained Judges vote to reject appeal of unlawful detention or imprisonment, unless Friedman taught.

Highlights

Heterogeneity by Instructor

"Friedman always started on legalization of recreational drugs" (Butler 10/2017)

Milton Friedman taught in 1976, 1978, 1979, 1980

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	(0.0286)		**(0.0922)**	
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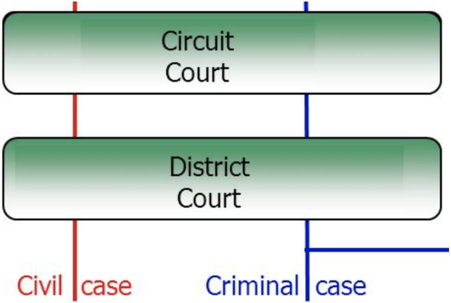
Circuit-Year FE	Y	Y	Y	Y
Sample	Post 1991		Pre 1976	
Judges	All	Attend < 1986	All	Attend < 1986

Economics Trained Judges vote to reject appeal of unlawful detention or imprisonment, unless Friedman taught.

Highlights

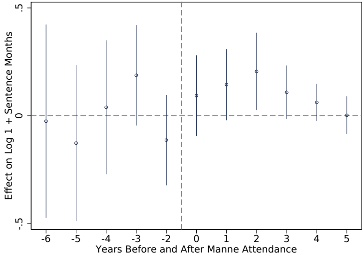
Federal Criminal Justice Setting



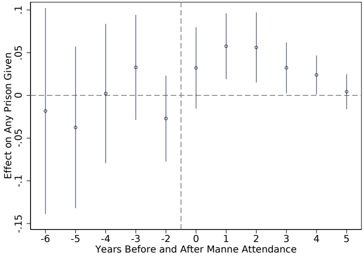
Federal courts handle the most serious criminal cases (8% of US prison population).

Randomization check of district judges

Manne Attendance on Sentencing Decisions



Sentence Length



Any Sentence

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6, 6]$$

95% CI; j clusters; 1992-2003

Manne Attendance on Sentencing Decisions

	Manne Effect on Sentencing Outcomes			
	(1)	(2)	(3)	(4)
	Log Sentence Length		Any Sentence	
Post-Manne	**0.0833****	**0.0655***	**0.0212****	**0.0186****
	(0.0366)	**(0.0395)**	**(0.00920)**	**(0.00944)**
N	1027409	978445	1029800	980735
adj. R-sq	0.067	0.063	0.075	0.072
Circuit-Year FE	X	X	X	X
Judge FE	X	X	X	X
E-net-Vars x Year FE		X		X

Judges increase sentence lengths by 7% and any sentences by 2%.

Outline

Sentencing Guidelines in District Courts

Appendix Figure 1: United States Sentencing Guidelines Grid

Sentencing Table (in months of imprisonment)

	Offense Level	Criminal History Category (Criminal History Points) I (0 or 1)	II (2 or 3)	III (4, 5, 6)	IV (7, 8, 9)	V (10, 11, 12)	VI (13 or more)
Zone A	1	0–6	0–6	0–6	0–6	0–6	0–6
	2	0–6	0–6	0–6	0–6	0–6	1–7
	3	0–6	0–6	0–6	0–6	2–8	3–9
	4	0–6	0–6	0–6	2–8	4–10	6–12
	5	0–6	0–6	1–7	4–10	6–12	9–15
	6	0–6	1–7	2–8	6–12	9–15	12–18
	7	0–6	2–8	4–10	8–14	12–18	15–21
	8	0–6	4–10	6–12	10–16	15–21	18–24
Zone B	9	4–10	6–12	8–14	12–18	18–24	21–27
	10	6–12	8–14	10–16	15–21	21–27	24–30
Zone C	11	8–14	10–16	12–18	18–24	24–30	27–33
	12	10–16	12–18	15–21	21–27	27–33	30–37
	13	12–18	15–21	18–24	24–30	30–37	33–41
	14	15–21	18–24	21–27	27–33	33–41	37–46
	15	18–24	21–27	24–30	30–37	37–46	41–51

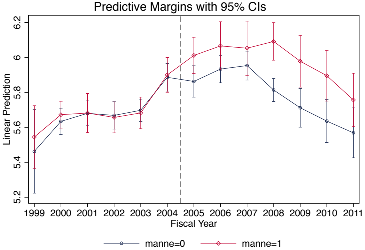
Sentencing Guidelines in District Courts

Appendix Figure 1: United States Sentencing Guidelines Grid

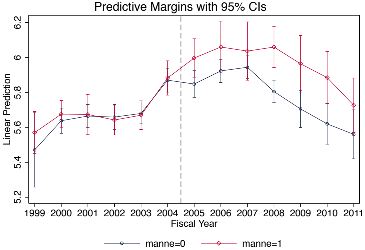
Sentencing Table (in months of imprisonment)

	Offense Level	Criminal History Category (Criminal History Points)					
		I	II	III	IV	V	VI
		(0 or 1)	(2 or 3)	(4, 5, 6)	(7, 8, 9)	(10, 11, 12)	(13 or more)
	1	0–6	0–6	0–6	0–6	0–6	0–6
	2	0–6	0–6	0–6	0–6	0–6	1–7
	3	0–6	0–6	0–6	0–6	2–8	3–9
	4	0–6	0–6	0–6	2–8	4–10	6–12
Zone A	5	0–6	0–6	1–7	4–10	6–12	9–15
	6	0–6	1–7	2–8	6–12	9–15	12–18
	7	0–6	2–8	4–10	8–14	12–18	15–21
	8	0–6	4–10	6–12	10–16	15–21	18–24
	9	4–10	6–12	8–14	12–18	18–24	21–27
Zone B							
	10	6–12	8–14	10–16	15–21	21–27	24–30
Zone C	11	8–14	10–16	12–18	18–24	24–30	27–33
	12	10–16	12–18	15–21	21–27	27–33	30–37
	13	12–18	15–21	18–24	24–30	30–37	33–41
	14	15–21	18–24	21–27	27–33	33–41	37–46
	15	18–24	21–27	24–30	30–37	37–46	41–51
	16	21–27	24–30	27–33	33–41	41–51	46–57
	17	24–30	27–33	30–37	37–46	46–57	51–63
	18	27–33	30–37	33–41	41–51	51–63	57–71
	19	30–37	33–41	37–46	46–57	57–71	63–78
	20	33–41	37–46	41–51	51–63	63–78	70–87
	21	37–46	41–51	46–57	57–71	70–87	77–96
	22	41–51	46–57	51–63	63–78	77–96	84–105
	23	46–57	51–63	57–71	70–87	84–105	92–115
	24	51–63	57–71	63–78	77–96	92–115	100–125
	25	57–71	63–78	70–87	84–105	100–125	110–137
	26	63–78	70–87	78–97	92–115	110–137	120–150
	27	70–87	78–97	87–108	100–125	120–150	130–162
Zone D							
	28	78–97	87–108	97–121	110–137	130–162	140–175
	29	87–108	97–121	108–135	121–151	140–175	151–188
	30	97–121	108–135	121–151	135–168	151–188	168–210
	31	108–135	121–151	135–168	151–188	168–210	188–235
	32	121–151	135–168	151–188	168–210	188–235	210–262
	33	135–168	151–188	168–210	188–235	210–262	235–293
	34	151–188	168–210	188–235	210–262	235–293	262–327
	35	168–210	188–235	210–262	235–293	262–327	292–365
	36	188–235	210–262	235–293	262–327	292–365	324–405
	37	210–262	235–293	262–327	292–365	324–405	360–life
	38	235–293	262–327	292–365	324–405	360–life	360–life
	39	262–327	292–365	324–405	360–life	360–life	360–life
	40	292–365	324–405	360–life	360–life	360–life	360–life
	41	324–405	360–life	360–life	360–life	360–life	360–life
	42	360–life	360–life	360–life	360–life	360–life	360–life
	43	Life	Life	Life	Life	Life	Life

Impact of Economics Judges, Pre and Post *Booker*



Raw Correlation



with Elastic Net x Year FE

After allowing judicial discretion, Economics Trained Judges increase sentencing severity in District Courts.

- In *U.S. v. Booker* (Jan 12, 2005) the Supreme Court declared existing guidelines violated Constitution. *Booker* motivated by judges' desire to depart below guidelines, which seems to be a long-term trend.
- *Booker* $\uparrow$ variance (Yang 2014); Republicans 13% harsher for 5 yrs (Cohen and Yang AEJ 2017) Results hold with fully interacted Republican (as w/ Circuit), seem persistent. **Note:** could be non-econ effect.

Impact of Economics Judges, Pre and Post *Booker*

	Any Sentence	Log of Total Sentence		
	(1)	(2)	(3)	(4)
Econ Training	-0.00433	-0.0336	-0.00527	-0.00795
	(0.00692)	(0.0594)	(0.0462)	(0.142)
Econ Training *	**0.0117***	**0.198****	**0.131***	**0.130***
Booker (≥2005)	**(0.00631)**	**(0.0829)**	**(0.0731)**	**(0.0774)**
N	930448	930448	819881	889951
adj. R-sq	0.035	0.037	0.085	0.053
Courthouse and Calendar FE	X	X	X	X
Judge FE				**X**
Sample	All	All	Sentence > 0	All

To benchmark, blacks receive almost 10% longer sentences than comparable white defendants arrested for the same crimes (Rehavi and Starr JPE 2014).

Immigration Charges

Lead Charge	Count	Rank	1 yr ago	5 yrs ago	10 yrs ago	20 yrs ago
08 USC 1325 - Entry of alien at improper time or place; etc.	35,367	1	1	1	2	3
08 USC 1326 - Reentry of deported alien	28,930	2	2	2	1	1
08 USC 1324 - Bringing in and harboring certain aliens	3,794	3	3	3	3	2
18 USC 1546 - Fraud and misuse of visas, permits, and other documents	502	4	4	4	4	4
18 USC 1544 - Misuse of passport	333	5	5	8	15	16
18 USC 1028 - Fraud and related activity - id documents	165	6	6	5	6	7
18 USC 1542 - False statement in application and use of passport	72	7	7	9	10	8
18 USC 922 - Firearms; Unlawful acts	50	8	11	12	13	22
21 USC 841 - Drug Abuse Prevention & Control-Prohibited acts A	45	9	10	14	14	11
18 USC 371 - Conspiracy to commit offense or to defraud US	40	10	16	10	11	5

Immigration crime associated with limited liability and no 'rehabilitation' margin

Impact of Economics Judges, by Crime Type

	Log of Total Sentence				
	(1)	(2)	(3)	(4)	(5)
Econ Training	-0.0695	-0.00621	-0.0369	-0.0213	-0.0226
	(0.0839)	(0.0347)	(0.0559)	(0.0619)	(0.0599)
Econ Training * Booker ($\geq$2005)	**0.245****	**0.0467**	**0.200****	**0.184****	**0.219****
	(0.100)	**(0.0411)**	**(0.0856)**	**(0.0903)**	**(0.0900)**
N	600010	697844	798823	838643	786472
adj. R-sq	0.043	0.044	0.051	0.037	0.043
Courthouse and Calendar FE	Y	Y	Y	Y	Y
Drop Crime	Drug	**Immigration**	Fraud	Weapon	Other

Largest effects of economic training found in immigration crimes

Coarse Communication

- Use of stereotypes under information constraints *(Bordalo et al. QJE 2016)*
- Communication constraint works as a magnifier of correlation (Kweik 2013)

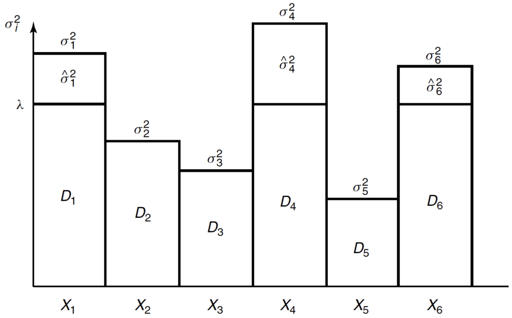


FIGURE 10.7. Reverse water-filling for independent Gaussian random variables.

Elements of Information Theory (Cover and Thomas 1991)

- No bits used to describe information with variance less than a constant
- Results in exaggerating pre-existing correlations

Impact of Economics Judges on Racial Gaps

	Life	Months	Life	Months
	(1)	(2)	(3)	(4)
Minority	*0.00395****	*20.84****	*0.00388****	*20.34****
	(0.000770)	*(1.979)*	*(0.00102)*	*(2.170)*
*** Economics**	**0.00401****	**5.413*****	**0.00379****	**3.180***
	(0.00157)	**(2.044)**	**(0.00170)**	**(1.910)**
*** Republican**			0.000641	**4.096****
			(0.00103)	**(1.723)**
*** Minority J**			-0.00119	**-7.451****
			(0.00135)	**(3.167)**
N	156650	155977	154920	154253
adj. R-sq	0.015	0.102	0.015	0.102
Judge FE	Y	Y	Y	Y
Sample	All	All	All	All

Economics Trained Judges harsher to minorities (1992-2003 30% merge to USSC)

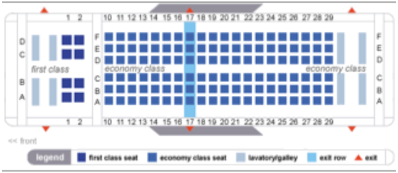
Impact of Economics Judges on Gender Gaps

	Life	Months	Life	Months
	(1)	(2)	(3)	(4)
Female	*-0.00397****	*-31.01****	*-0.00395****	*-29.84****
	(0.000562)	*(1.676)*	*(0.000718)*	*(2.127)*
*** Economics**	**-0.00247****	**-5.083*****	**-0.00227***	**-4.120****
	(0.00113)	**(1.717)**	**(0.00116)**	**(1.617)**
*** Republican**			-0.000372	**-2.549***
			(0.000678)	**(1.456)**
*** Female J**			0.000697	0.145
			(0.000750)	(1.218)
N	160402	159713	158634	157951
adj. R-sq	0.014	0.109	0.015	0.109
Judge FE	Y	Y	Y	Y
Sample	All	All	All	All

Economics Trained Judges more lenient to females (1992-2003 30% merge to USSC)

Outline

Identification of Learning & Memetic Effects



Impact of law-and-economics exposure $a_{i-\ell}$ on

- case i, judge j, court c, year t

$$F_{ijct} = \sum_{\ell=0}^{L_s} \beta_s^\ell s_{i-\ell} a_{i-\ell} + \sum_{\ell=0}^{L_d} \beta_t^\ell t_{i-\ell} a_{i-\ell} + \mu_j + \xi_{ct} + \varepsilon_{ijct}$$

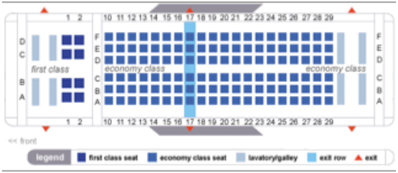
- $s_{i-\ell}$: exogenous seat network, $t_{i-\ell}$: time network, $c_{i-\ell}$: citation network
- β_s^ℓ: Impact of Economics Training on **Previous Case of this Judge**
- β_t^ℓ: Impact of Economics Training on **Previous Case in this Circuit**

Separately identify within- (β_{sT}^ℓ) vs. across-topic (β_s^ℓ) impacts:

- β_{sT}^ℓ: Impact of Economics Training on **Previous Case of Judge on Topic**
- β_{tT}^ℓ: Impact of Economics Training on **Previous Case of Circuit on Topic**

Active v. Passive Persuasion (Was previous case divided? $\hat{\rho}$(citation, reversal, dissent))

Identification of Learning & Memetic Effects



Impact of law-and-economics exposure $a_{i-\ell}$ on

- case i, judge j, court c, year t

$$F_{ijct} = \sum_{\ell=0}^{L_s} \beta_s^\ell s_{i-\ell} a_{i-\ell} + \sum_{\ell=0}^{L_d} \beta_t^\ell t_{i-\ell} a_{i-\ell} + \mu_j + \xi_{ct} + \varepsilon_{ijct}$$

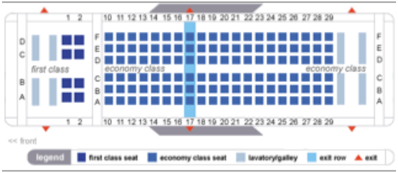
- $s_{i-\ell}$: exogenous seat network, $t_{i-\ell}$: time network, $c_{i-\ell}$: citation network
- β_s^ℓ: Impact of Economics Training on **Previous Case of this Judge**
- β_t^ℓ: Impact of Economics Training on **Previous Case in this Circuit**

Separately identify within- (β_{sT}^ℓ) vs. across-topic (β_s^ℓ) impacts:

- β_{sT}^ℓ: Impact of Economics Training on **Previous Case of Judge on Topic**
- β_{tT}^ℓ: Impact of Economics Training on **Previous Case of Circuit on Topic**

Active v. Passive Persuasion (Was previous case divided? $\hat{\rho}$(citation, reversal, dissent))

Identification of Learning & Memetic Effects



Impact of law-and-economics exposure $a_{i-\ell}$ on

- case i, judge j, court c, year t

$$F_{ijct} = \sum_{\ell=0}^{L_s} \beta_s^\ell s_{i-\ell} a_{i-\ell} + \sum_{\ell=0}^{L_d} \beta_t^\ell t_{i-\ell} a_{i-\ell} + \mu_j + \xi_{ct} + \varepsilon_{ijct}$$

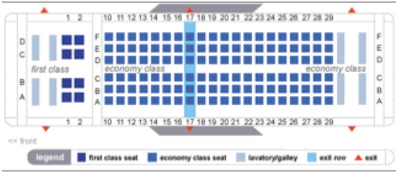
- $s_{i-\ell}$: exogenous seat network, $t_{i-\ell}$: time network, $c_{i-\ell}$: citation network
- β_s^ℓ: Impact of Economics Training on **Previous Case of this Judge**
- β_t^ℓ: Impact of Economics Training on **Previous Case in this Circuit**

Separately identify within- (β_{sT}^ℓ) vs. across-topic (β_s^ℓ) impacts:

- β_{sT}^ℓ: Impact of Economics Training on **Previous Case of Judge on Topic**
- β_{tT}^ℓ: Impact of Economics Training on **Previous Case of Circuit on Topic**

Active v. Passive Persuasion (Was previous case divided? $\hat{p}$(citation, reversal, dissent))

Identification of Learning & Memetic Effects



Impact of law-and-economics exposure $a_{i-\ell}$ on

- case i, judge j, court c, year t

$$F_{ijct} = \sum_{\ell=0}^{L_s} \beta_s^\ell s_{i-\ell} a_{i-\ell} + \sum_{\ell=0}^{L_d} \beta_t^\ell t_{i-\ell} a_{i-\ell} + \mu_j + \xi_{ct} + \varepsilon_{ijct}$$

- $s_{i-\ell}$: exogenous seat network, $t_{i-\ell}$: time network, $c_{i-\ell}$: citation network

- β_s^ℓ: Impact of Economics Training on **Previous Case of this Judge**
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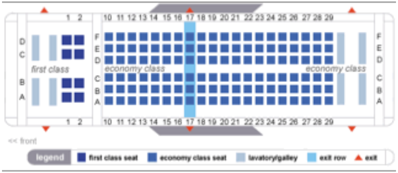

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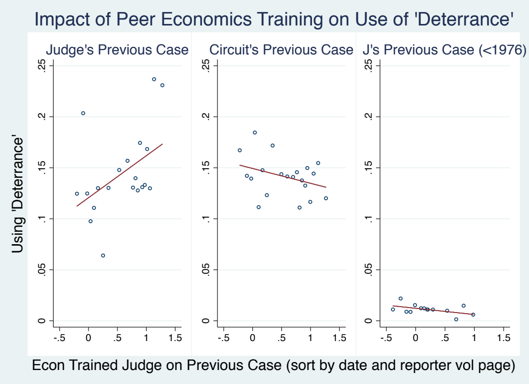
Active v. Passive Persuasion (Was previous case divided? $\hat{p}$(citation, reversal, dissent))

Impact of Peer Econ Judges on Criminal Case Reasoning



Previous judge case (median) 9 days ago; previous circuit case (median) 2 days ago. Exclude same day cases.

Identifying Memetic Economic Phrases, All Cases

	# Uses of "Deterrence"			
Econ Training on	(1)	(2)	(3)	(4)
Next Case	-0.00412			
	(0.00730)			
This Case		**0.0161****		
		(0.00683)		
Previous Case			**0.0127***	
			(0.00692)	
Two Cases Ago				**0.0120***
				(0.00678)
N	353981	355504	354695	353928
adj. R-sq	0.009	0.010	0.010	0.010
Circuit-Year FE	Y	Y	Y	Y
Circuit Order	Y	Y	Y	Y
Sample	**Year > 1991**	**Year > 1991**	**Year > 1991**	**Year > 1991**
Order within	Judge	Judge	Judge	Judge
Cluster	Judge	Judge	Judge	Judge

Identifying Memetic Economic Phrases, All Cases

	# Uses of "Law and Economics"			
Econ Training on	(1)	(2)	(3)	(4)
Next Case	0.000206			
	(0.000259)			
This Case		**0.000537****		
		(0.000243)		
Previous Case			**0.000574****	
			(0.000252)	
Two Cases Ago				**0.000536***
				(0.000280)
N	353981	355504	354695	353928
adj. R-sq	0.002	0.005	0.005	0.005
Circuit-Year FE	Y	Y	Y	Y
Circuit Order	Y	Y	Y	Y
Sample	**Year > 1991**	**Year > 1991**	**Year > 1991**	**Year > 1991**
Order within	Judge	Judge	Judge	Judge
Cluster	Judge	Judge	Judge	Judge

Identifying Memetic Economic Phrases, All Cases

	# Uses of "Deterrence" on [N] cases later					
Econ Training on	**[N]** = (-1)	(0)	(1)	(2)	(3)	(4)
[N] cases later	-0.00412	**0.0161****	**0.0127***	**0.0120***	**0.0142****	**0.0156****
	(0.00730)	**(0.00683)**	**(0.00692)**	**(0.00678)**	**(0.00647)**	**(0.00625)**
N	353981	355504	354695	353928	353192	352477
adj. R-sq	0.009	0.010	0.010	0.010	0.010	0.010
Circuit-Year FE	Y	Y	Y	Y	Y	Y
Circuit Order	Y	Y	Y	Y	Y	Y
Sample	**Year > 1991**	**Year > 1991**	**Year > 1991**	**Year > 1991**	**Year > 1991**	**Year > 1991**
Order within	Judge	Judge	Judge	Judge	Judge	Judge
Cluster	Judge	Judge	Judge	Judge	Judge	Judge

4 cases later = 43 days later on average

Identifying Memetic Economic Phrases, All Cases

	Ellickson Average			
Econ Training on	(1)	(2)	(3)	(4)
Next Case	-0.000957			
	(0.00231)			
Next Case	-0.000231			
Same Topic	(0.00192)			
This Case		**0.00585****		
		(0.00271)		
Previous Case			**0.00379***	
			(0.00212)	
Previous Case			**0.00385***	
Same Topic			**(0.00223)**	
Two Cases Ago				-0.000710
				(0.00303)
Two Cases Ago				**0.00689****
Same Topic				**(0.00272)**
N	327844	355504	338739	327821
adj. R-sq	0.017	0.011	0.014	0.016

Peer Impacts on Never-Attenders

	Ellickson Average	
	(1)	(2)
Econ Case	0.0300***	0.0294***
	(0.00524)	(0.00249)
Post-Manne	**0.0141****	
	(0.00630)	
Econ Case *	0.00170	
Post-Manne	(0.00919)	
Econ Training on	-0.00559	**0.00513***
Previous Case	(0.0106)	**(0.00292)**
N	143144	486673
adj. R-sq	0.042	0.042
Circuit-Year FE	X	X
Judge FE	X	X
Sample	**Ever-Manne**	**Never-Manne**

Transmission seems generalized, somewhat greater when panel is unified

Transmission from Regulatory to Criminal Cases

			Ellickson Average			
Econ Training	**[N] =** (-1)	(0)	(1)	(2)	(3)	(4)
			[N] Cases Ago is Regulation, Current Case is Criminal			
[N] cases later	0.0119	-	**0.0304*****	-0.00639	**0.0180***	**0.0253****
	(0.0114)	-	**(0.0103)**	(0.0146)	**(0.00951)**	**(0.0117)**
N	17314	-	17238	17714	17658	17723
adj. R-sq	0.035	-	0.314	0.119	0.078	0.209
			[N] Case Ago is Criminal, Current Case is Regulation			
[N] cases later	-0.00277	-	-0.00371	0.0110	-0.0383	-0.0243
	(0.00981)	-	(0.0136)	(0.00990)	(0.0242)	(0.0246)
N	17176	-	17355	17552	17731	17636
adj. R-sq	0.042	-	0.080	0.034	0.047	0.072
Circuit-Year FE	Y	-	Y	Y	Y	Y
Circuit Order	Y	-	Y	Y	Y	Y
Sample	Year > 1991	-	Year > 1991	Year > 1991	Year > 1991	Year > 1991
Order within	Judge	-	Judge	Judge	Judge	Judge
Cluster	Judge	-	Judge	Judge	Judge	Judge

Transmission from Regulatory to Criminal Cases

	# Uses of "Deterrence"					
Econ Training	**[N] =** (-1)	(0)	(1)	(2)	(3)	(4)
[N] Cases Ago is Regulation, Current Case is Criminal						
[N] cases later	-0.0145	-	**0.122****	**0.0340***	-0.0234	0.0245
	(0.0179)	-	**(0.0580)**	**(0.0189)**	(0.0259)	(0.0178)
N	17314	-	17238	17714	17658	17723
adj. R-sq	0.066	-	0.180	0.141	0.077	0.111
[N] Case Ago is Criminal, Current Case is Regulation						
[N] cases later	0.0172	-	0.0114	0.00765	0.00637	-0.00926
	(0.0169)	-	(0.0216)	(0.0172)	(0.0126)	(0.0124)
N	17176	-	17355	17552	17731	17636
adj. R-sq	0.097	-	0.065	0.208	0.035	0.046
Circuit-Year FE	Y	-	Y	Y	Y	Y
Circuit Order	Y	-	Y	Y	Y	Y
Sample	Year > 1991	-	Year > 1991	Year > 1991	Year > 1991	Year > 1991
Order within	Judge	-	Judge	Judge	Judge	Judge
Cluster	Judge	-	Judge	Judge	Judge	Judge

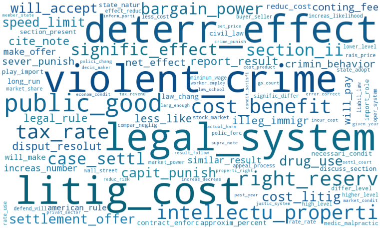
Peer Behavior Effects, Labor/Environmental

	Voting Against Environmental or Labor Agency [N] cases later					
Econ Training on	**[N] =** (-1)	(0)	(1)	(2)	(3)	(4)
[N] cases later	-0.00338	-	-0.00438	**0.0192****	0.00929	-0.00420
	(0.0111)	-	(0.0100)	**(0.00887)**	(0.00995)	(0.0101)
Circuit-Year FE	Y	-	Y	Y	Y	Y
[N] cases later	-0.00811		-0.00544	**0.0236****	0.0113	-0.0145
	(0.0160)		(0.0136)	**(0.0120)**	(0.0128)	(0.0139)
Circuit-Year FE	Y	-	Y	Y	Y	Y
Judge FE	Y	-	Y	Y	Y	Y
Circuit Order	Y	-	Y	Y	Y	Y
Order within	Judge	-	Judge	Judge	Judge	Judge
Cluster	Judge	-	Judge	Judge	Judge	Judge

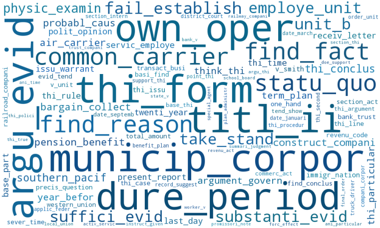
Outline

Law-and-Economics Language (N-gram)

- All JSTOR economics articles (1960-) JEL K (1990-) JLE (1960-)
  - Highest and lowest frequencies for two-grams in $\geq$ 1000 cases:



Most similar to Law-Econ Corpus

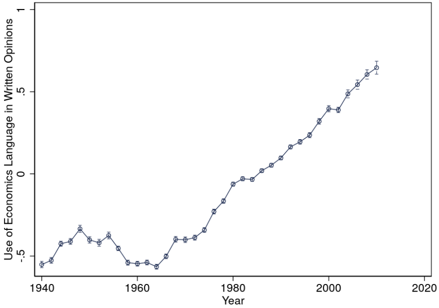


Least similar to Law-Econ Corpus

- Law-Econ: deterrent effect, cost-benefit, public goods, bargaining power, litigation costs
  - violent crime, criminal behavior, capital punishment, illegal immigration
- Non-LE: find reason, find fact, fail establish, substantive / sufficient / argue evidence
  - evidence and other constitutional theories of interpretation seem less salient

Scoring Judges By Economics Style (N-gram)

◂ Methodology



- E: vector of phrase frequencies in economics corpus
- F_i: vector of frequencies in case i
- Economics Style of case i is cosine similarity to economics corpus:

$$z_i = \frac{F_i \cdot E}{\|F_i\| \, \|E\|}$$

- A case that has terms exactly in the same proportions as they appear in economics articles will have a score of 1.

Law-and-Economics Vectors

- externalit*, transaction_costs, efficien*, deterr*, cost_benefit, capital, game_theo, chicago_school, marketplace, law1economic, law2economic identified by Ellickson (2000)

- Document vectors for each case using Le and Mikolov (2014)
  - forms an embedding for each word and each document in a common space, where words and documents that are related to each other are located near to each other in the vector space.
  - One of the sentences that is closest to "economics" in our corpus is: "The discussion then turned to economics."
  - Ellickson Vector Increasing Over Time

Word Embeddings

- (obama speaks media illinois) is orthogonal to (president greets press chicago) according to **cosine similarity**
- But **word embeddings** capture contextual similarities between words

1. Finding the degree of similarity between two words.

```
model.similarity('woman','man')
0.73723527
```

2. Finding odd one out.

```
model.doesnt_match('breakfast cereal dinner
lunch';.split())
'cereal'
```

3. Amazing things like woman+king-man =queen

```
model.most_similar(positive=
['woman','king'],negative=['man'],topn=1)
queen: 0.508
```

4. Probability of a text under the model

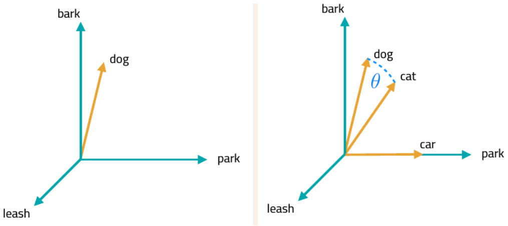
```
model.score(['The fox jumped over the lazy
dog'.split()])
0.21
```

- Each word is mapped to one vector, often hundreds of dimensions
  - Contrast to 2B N-grams for sparse word representations
- If we know the words having similar meanings in different languages, word embeddings can be used to (Google) translate!

Relatedness between words

How does it work? Predict the surrounding words given a current word

Words as Vectors



- Use cosine similarity as a measure of relatedness:

$$\cos\theta = \frac{v_1 \cdot v_2}{||v_1||\,||v_2||}$$

- Google translate
  - "he/she is a doctor"(turkish) -> "he is a doctor" (english)
  - "he/she is a nurse"(turkish) -> "she is a nurse" (english)

Document embeddings

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Word Embeddings

- Skip-gram - predict the surrounding words given a current word
  - Skip-gram model can capture two semantics for a single word. i.e it will have two vector representations of Apple (i.e. company and fruit).
- Uses neural networks
- Moment conditions
  - In 2SLS, orthogonality of instruments and prediction error
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  - In word embeddings, multi-class predictions of context

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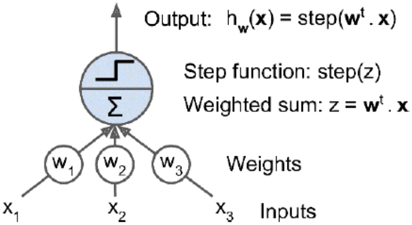
Neural network



- In a perceptron, an individual neuron (called an LTU, or linear threshold unit) is defined by

$$h(\boldsymbol{x}) = \text{step}(\omega' \boldsymbol{x})$$

  where step$(\cdot)$ is the step function.
  - The neuron computes a linear combination of the inputs; if result exceeds threshold, output positive class, otherwise negative class.

Neural network

- An DNN with a single hidden layer can be written as

$$y = \alpha_2 + g(\alpha_1 + x'\omega_1)'\omega_2$$

  - α_1 and ω_1, the intercept and coefficients in the input layer
    - ω_1 is a $d_0 \times d_1$ matrix, where d_0 is the dimension of the input and d_1 is the number of neurons in the hidden layer.
  - $g(\cdot)$, the non-linear activation function.
    - without this, the DNN could only represent linear transformations of the input.
  - α_2 and ω_2, the intercept and coefficients in the hidden layer.
    - ω_2 is a $d_1 \times d_2$ matrix, where d_2 is the dimensionality of the output.

Neural network

- Similarly, with two hidden layers we have

$$y = \alpha_3 + g_2(\alpha_2 + g_1(\alpha_1 + x'\omega_1)'\omega_2)'\omega_3$$

  - $g_1(\cdot)$ and $g_2(\cdot)$, activation functions for the first and second layers.
  - α_3 and ω_3, intercepts and coefficients for the second hidden layer.

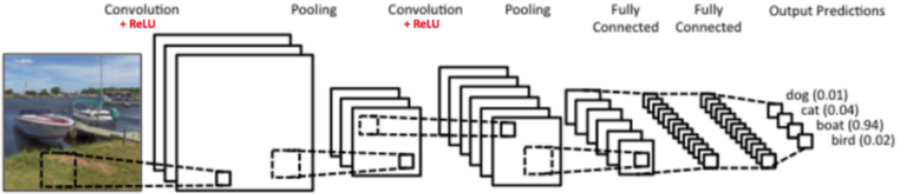
Neural network

- An embedding layer can be represented as

$$\underbrace{x}_{n\times 1} = \underbrace{\Omega'}_{n\times m}\underbrace{w}_{m\times 1}$$

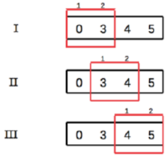
  - w, a categorical variable, a one-hot-encoded vector that is all zeros, with a single item equaling one.
    - The input to the embedding layer.
  - x, a dense representation of the variable.
    - The output of the embedding layer.
  - An embedding matrix Ω.
    - the model learns the weights of this matrix.

Neural network



- CNNS are a special category of deep neural nets that have been especially effective at image classification.

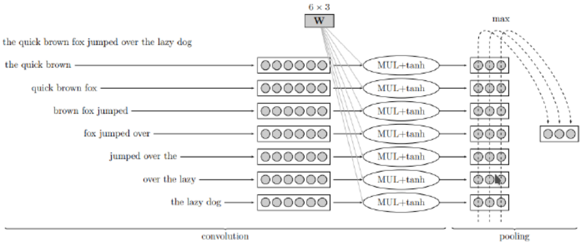
Neural network



- CNN's generate filters, such as the $\{1,2\}$ here, and slides the filters across the input sequence.
- At each window, take the dot product:
  - `[0 3] * [1 2] = 6, [3 4] * [1 2] = 11, [4 5] * [1 2] = 14`
  - output $= \{6, 11, 14\}$
- CNN learns the weights for the filter $\{w_1, w_2\}$, to try to match the output ($w_1 = 1$ and $w_2 = 2$ in this example).
  - complicated CNNs have more filters, and different filter window sizes.

Neural network

- CNNs are useful for classification tasks where we expect to find strong local clues regarding class membership, but where the clues could appear in different places in the input documents.



- The sliding window of length n learns to identify informative n-grams.

Most similar words to dog, depending on window size

	2-word window	30-word window	
More paradigmatic	cat	kennel	More syntagmatic
	horse	puppy	
	fox	pet	
	pet	bitch	
	rabbit	terrier	
	pig	rottweiler	
	animal	canine	
	mongrel	cat	
	sheep	bark	
	pigeon	alsatian	

- Small windows pick up substitutable words; large windows pick up topics.

Reinterpreting NLP as Discrete Choice

- Utility for judge i at year t:

$$u_{it} = \widetilde{\alpha}_t + \boldsymbol{x}'_{it}\widetilde{\gamma}_t + \widetilde{\varphi}_t \mathbf{1}_{i \in R_t},$$

- Utility for judge i at year t:

$$u_{it} = \widetilde{\alpha}_t + \boldsymbol{x}'_{it}\widetilde{\gamma}_t + \sum_{(c,c') \in c_j \times c_j : c \neq c'} \widetilde{\nu}_{c,c',t} \mathbf{1}_{i \in R_t},$$

- Arbitrary pattern of complements/substitution across phrases
  - $\Rightarrow$ word embeddings
  - joint choice to write and use a set of words

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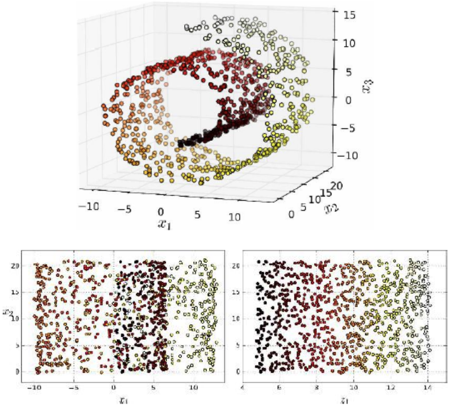
Importance of dimension reduction



- The dimension reduction process matters: projecting down to two dimensions directly (left panel) might not isolate the variation we are interested in (as done in the right panel, which unrolls the Swiss Roll)

From Bag of Words (N-grams) to Word Embeddings

	Document 1	Document 2	Document 3	Document 4	Document 5	Document 6	Document 7	Document 8
Term(s) 1	10	0	1	0	0	0	0	2
Term(s) 2	0	2	0	0	0	18	0	2
Term(s) 3	0	0	0	0	0	0	0	2
Term(s) 4	6	0	0	4	6	0	0	0
Term(s) 5	0	0	0	0	0	0	0	2
Term(s) 6	0	0	1	0	0	1	0	0
Term(s) 7	0	1	8	0	0	0	0	0
Term(s) 8	0	0	0	0	0	3	0	0

Word Vector (Passage Vector)

Document Vector

The Skip-gram Model

As an example, let's consider the dataset

`the quick brown fox jumped over the lazy dog`

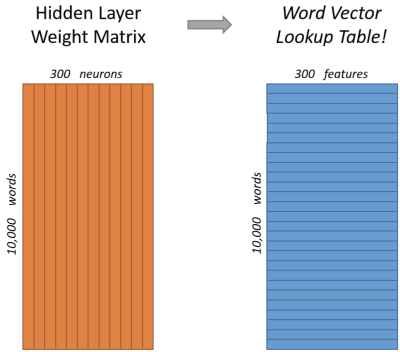
We first form a dataset of words and the contexts in which they appear. We could define 'context' in any way that makes sense, and in fact people have looked at syntactic contexts (i.e. the syntactic dependents of the current target word, see e.g. Levy et al.), words-to-the-left of the target, words-to-the-right of the target, etc. For now, let's stick to the vanilla definition and define 'context' as the window of words to the left and to the right of a target word. Using a window size of 1, we then have the dataset

`([the, brown], quick), ([quick, fox], brown), ([brown, jumped], fox), ...`

of `(context, target)` pairs. Recall that skip-gram inverts contexts and targets, and tries to predict each context word from its target word, so the task becomes to predict 'the' and 'brown' from 'quick', 'quick' and 'fox' from 'brown', etc. Therefore our dataset becomes

`(quick, the), (quick, brown), (brown, quick), (brown, fox), ...`

Neural network with single hidden layer



- Objective function: given a word in a sentence, predict probability for every word in our vocabulary of being in the context of the word
- Word embeddings are the weights of the hidden layer

Relatedness between documents

Embeddings - dimension-reduction approach in deep learning models for prediction

- identify closest documents
- allows vector math
  - *Everson vs. Board of Education* is to *Engel v. Vitale* as
    - *Griswold v. Connecticut* is to *Roe v. Wade*
  - application of the constitutional principle articulated in the former case.

Word embeddings isolate directions for gender, time, plural, etc.

- isolating directions for legal and political concepts
  - liberal vs. conservative, procedural vs. substantive, originalists vs. pragmatists, or economic analysis Judges Most Textually Similar to Posner

New objective

- Predict context *and* N-gram representation of whole document

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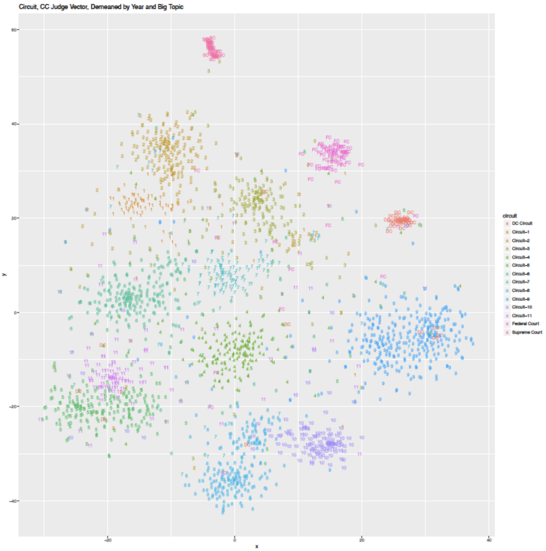
Visual Structure of Case Vectors by Circuit

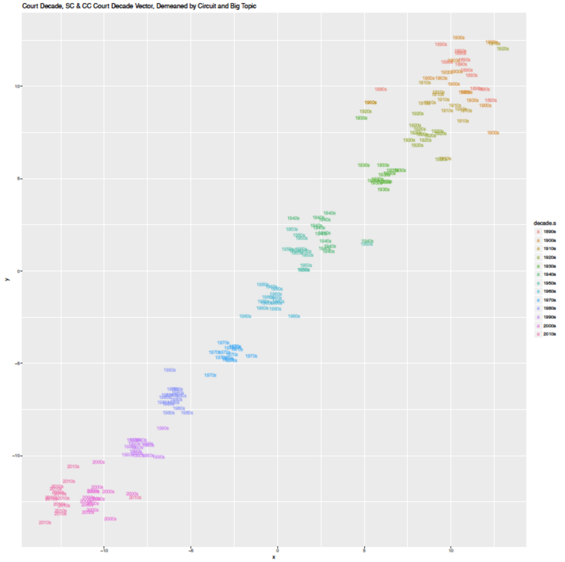
Figure 1: Centered by Topic-Year, Averaged by Judge, Labeled by Court



tsne plot

Visual Structure of Case Vectors by Decade

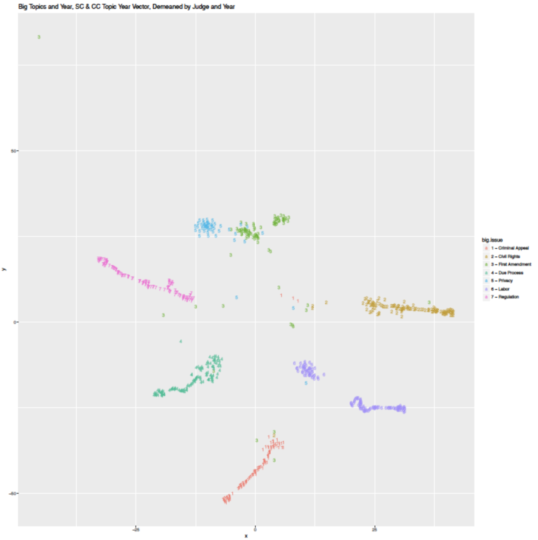
Figure 2: Centered by Court-Topic, Averaged by Court-Year, Labeled by Decade



tsne plot

Visual Structure of Case Vectors by Topic

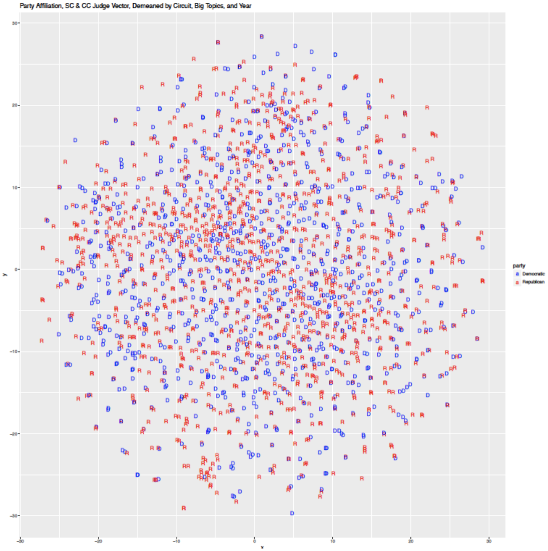
Figure 3: Centered by Judge-Year, Averaged by Topic-Year, Labeled by Topic



tsne plot

Visual Structure of Case Vectors by Party

Figure 4: Centered by Court-Topic-Year, Averaged by Judge, Labeled by Political Party



tsne plot

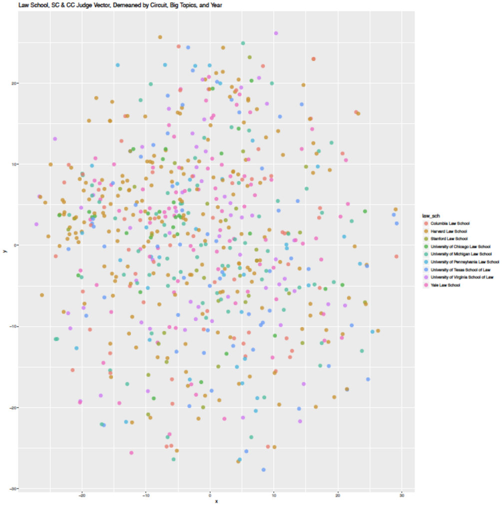
Visual Structure of Case Vectors by Birth Cohort

Figure 5: Centered by Court-Topic-Year, Averaged by Judge, Labeled by Judge Birth Cohort

tsne plot

Visual Structure of Case Vectors by Law School

Figure 6: Centered by Court-Topic-Year, Averaged by Judge, Labeled by Law School Attended



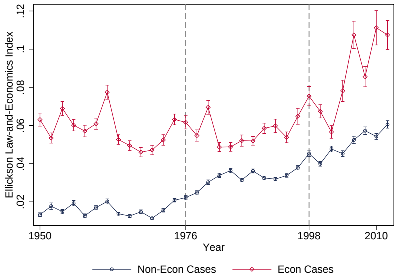
◂ Judges Most Textually Similar to Posner

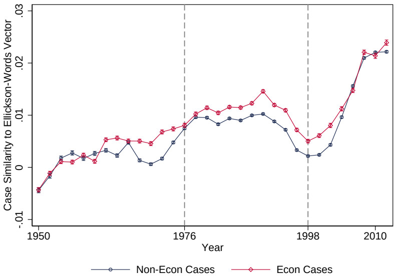
Relatedness between judges

Circuit Judge Name	Similarity	Rank	Circuit Judge Name	Similarity	Rank
POSNER, RICHARD A.	1.000	1	TONE, PHILIP W.	0.459	16
EASTERBROOK, FRANK H.	0.663	2	SIBLEY, SAMUEL	0.459	17
SUTTON, JEFFREY S.	0.620	3	SCALIA, ANTONIN	0.456	18
NOONAN, JOHN T.	0.596	4	COLLOTON, STEVEN M.	0.445	19
NELSON, DAVID A.	0.592	5	DUNIWAY, BENJAMIN	0.438	20
CARNES, EDWARD E.	0.567	6	GIBBONS, JOHN J.	0.422	21
FRIENDLY, HENRY	0.566	7	BOGGS, DANNY J.	0.420	22
KOZINSKI, ALEX	0.563	8	BREYER, STEPHEN G.	0.414	23
GORSUCH, NEIL M.	0.559	9	GOODRICH, HERBERT	0.412	24
CHAMBERS, RICHARD H.	0.546	10	LOKEN, JAMES B.	0.410	25
FERNANDEZ, FERDINAND F.	0.503	11	WEIS, JOSEPH F.	0.408	26
EDMONDSON, JAMES L.	0.501	12	SCALIA, ANTONIN (SCOTUS)	0.406	27
KLEINFELD, ANDREW J.	0.491	13	BOUDIN, MICHAEL	0.403	28
WILLIAMS, STEPHEN F.	0.481	14	RANDOLPH, A. RAYMOND	0.397	29
KETHLEDGE, RAYMOND M.	0.459	15	MCCONNELL, MICHAEL W.	0.390	30

Document vectors demeaned by court, year, and topic, then aggregated by judge.

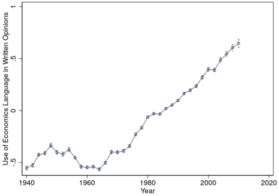
Increasing Economic Orientation in Federal Judiciary



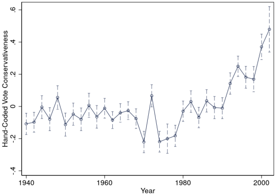


Increasing Economic Orientation in Federal Judiciary

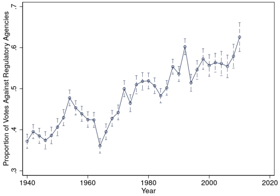
Economics style



Conservative vote share



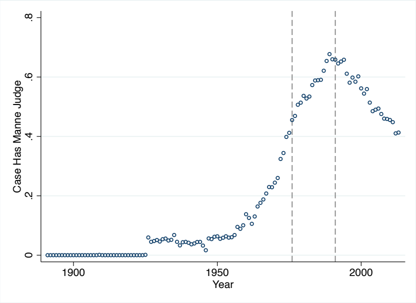
Voting against government regulation

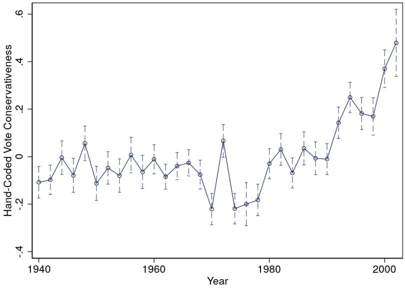


Methodology

Program Evaluate Economics Training

Long-Difference (Long-Run) Impact of Training on conservatism?



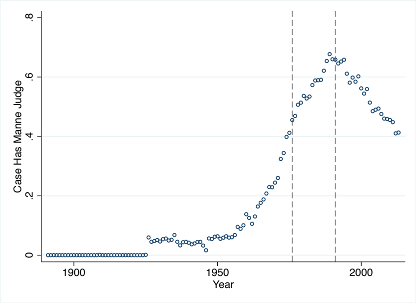


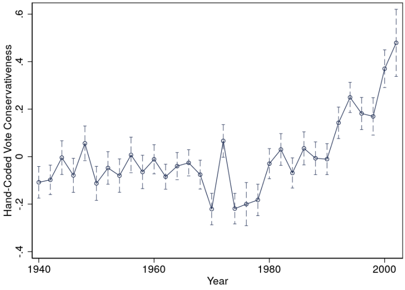
Robust to cutoffs besides 1991; measurement error biases estimates downwards; also (Short-Run) event study.

◂ Placebo Period ◂ Highlights

Program Evaluate Economics Training

Long-Difference (**Long-Run**) Impact of Training on conservatism?





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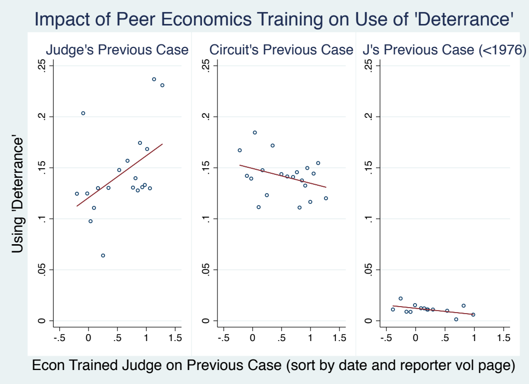
◂ Placebo Period ◂ Highlights

Outline

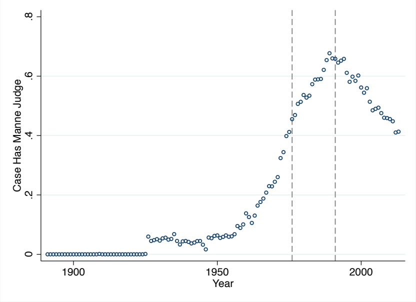
Impact of Peer Econ Judges on Criminal Case Reasoning

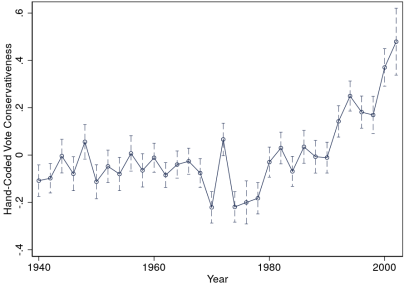


Previous judge case (median) 9 days ago; previous circuit case (median) 2 days ago. Exclude same day cases.

Long-Difference – Approach

Long-Difference (Long-Run) Impact of Training on conservatism?





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Long-Difference – Highlights (and Recap)

1. Rejection of environmental regulations
   - ◂ Opposite shifts by regulatory agency Ideological Reversals
2. Conservative votes in economics cases
   - ◂ Long difference
3. Use of economics language
   - e.g., ◂ Efficiency
4. Rejection of criminal appeals
   - ◂ unless Milton Friedman taught
5. In partial equilibrium, ◂ Manne can account for one third of great transformation
6. Additional ◂ Impacts on Criminal Cases

Long-Difference – Specification

- The coefficient γ gives the causal effect of judge-assignment
  - case i, judge j, court c, year t randomization check

$$Y_{ijct} = \alpha_{ct} + \gamma Z_{ijt} + X_j' \beta + \varepsilon_{ijct}$$

- Outcome Y_{ijct} measured four ways:
  - (1) $1 =$ conservative vote, $-1 =$ liberal vote (Songer-Auburn 5%, hand-labeled)
  - (2) Voting against government regulatory agencies (100%, machine-coded)
  - (3) Rejecting criminal appeals (100%, machine-coded)
    - from gov't in title of case, Π vs. △, for (2) Economics, Labor, and (3) Criminal Appeals cases
  - (4) Length of criminal sentence (100%, FOIA requested to include judge identity)
- Z_{ijt}, law-and-economics thinking of judge j:
  - Economics Style (leave-one-out mean $Z_{ijt} = \sum_{k \in J_i^j}^{J} \frac{z_k}{|J_i^j|}$)
  - Economics Training (1976-1999) Evaluate
  - Treatment is judge; so cluster by judge; weight to treat judge-years equally
- Controls
  - α_{ct}: court-year fixed effects Methodology
  - X_j: judge covariates, e.g. Republican (benchmark for Economics Training)

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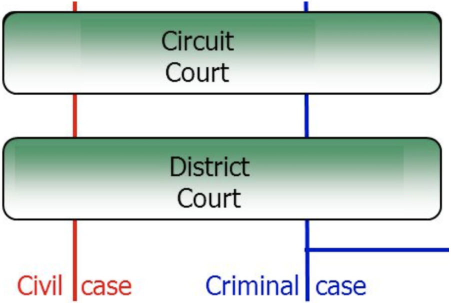
Impact of Economics Judges – Additional Highlights

1. Summary Correlations
   - Economics Training correlated with Economics Style
     - Both are independently correlated (but not synonymous) with Republican Party
   - Economics Trained Judges vote against regulation
     - Economics is more predictive than Republican Party
     - Heterogeneity by regulatory agency: for immigration enforcement
   - Economics Trained Judges reject criminal appeals
     - unless Milton Friedman taught
2. Economics Judges Impact on Economics Cases
   - Economics judges render conservative votes in economics cases
   - Economics judges render conservative votes in economics cases after training
     - Long difference
     - Opposite shifts by regulatory agency Ideological Reversals
     - Efficiency
     - Manne can account for one third of great transformation

Outline

Federal Criminal Justice Setting



Federal courts handle the most serious criminal cases (8% of US prison population).

◂ Randomization check of district judges

Impacts on Criminal Cases – Highlights

1. Discretion | increases sentencing gaps from economics training | primarily for immigration crimes
2. Economics trained judges increase racial and gender disparities

Outline

General Equilibrium Effects – Highlights

- Recap
- We see treatment effects, what about general equilibrium effects?
  - panel verdicts
  - peers
  - **psychological**
    - Textual implicit bias not correlated with economics training | but with Republicans
    - Economics judges unaffected by defendant birthdays | but non-economics judges are
  - **precedent**
    - Economics judges increase citations and dissents after training
    - Appeals to Supreme Court increase | but not reversals
    - Greater consequentialist reasoning over time and in dissents
  - **paradigm shift**
    - Identifying memes across citation network
    - Exposure to sameness increase dissents and attendance

Outline

Summary

◂ The next transformation?

(1) Economics language in academic articles being adopted in judicial opinions
(2) Economics-trained judges changing their decisions and impacting their peers
(3) Economics language travelling from judge to judge and across legal topics

- Economics likely changed how they perceived the consequences of their decisions
  - In economics cases, economics training changed by 10% the direction of their votes
  - If you teach judges markets work, they deregulate government
  - If you teach judges deterrence works, they become harsher to criminal defendants
- In District Courts, when judges had sentencing discretion, economics trained judges immediately rendered 20% longer sentences than non-economics judges
  - Economics training accounts for substantial portion of great transformation of law

Next steps

- FOIA exact day of application & cancellations (RDD "first-come, first-served" around quota)
- General equilibrium (measure impacts along citation edge, centrality & network analysis)
- Information acquisition (how education affects search, predictability)
- High-dimensional data (word2vec, document and judge embeddings)

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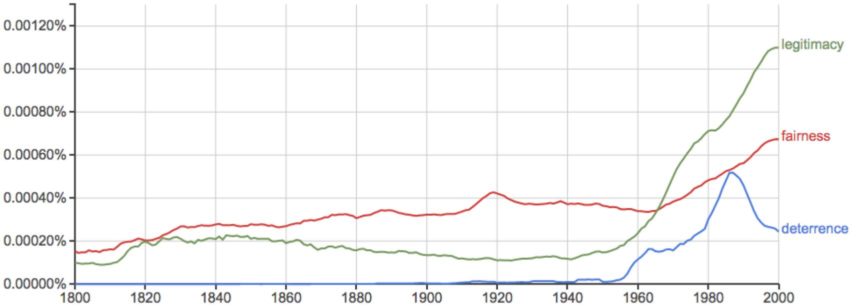
- High-dimensional data (word2vec, document and judge embeddings)

What's Next?

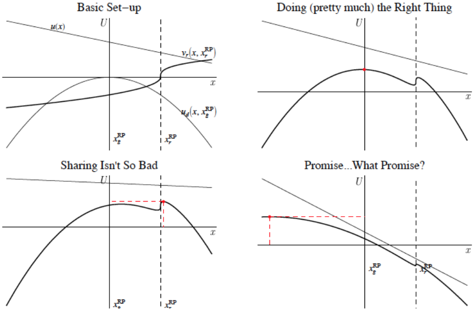


- ~~retribution, rehabilitation,~~ deterrence, legitimacy, fairness

Legitimacy and Perceived Indifference

Justice: **equal treatment before the law** $(y = f(X) + \varepsilon, a \to X)$
equality based on recognition of difference
$(y \perp W, var(\varepsilon) \perp W, a \nrightarrow W)$

Sympathy and Empathy



(Recognition-Respect theory)

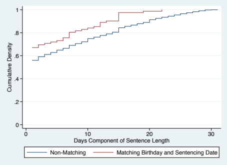
"settings where people are closer to *indifference* among options are more likely to lead to detectable effects [of behavioral biases] outside of it." (Simonsohn 2011)

Courts as Natural Incubator of Social Preferences

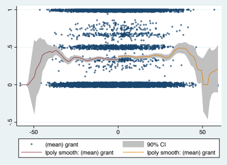
Cultural roots of social preferences (courts as "natural incubator")

- Reference points, empathy, emotional theory of mind (punishment)
- Identity, egotism, dissimilation, curvature of moral costs (duties)
- Memes, implicit bias from judicial corpora, grammar of law (4 terabytes data)

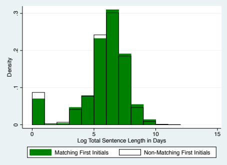
Leniency on Defendant Birthdays



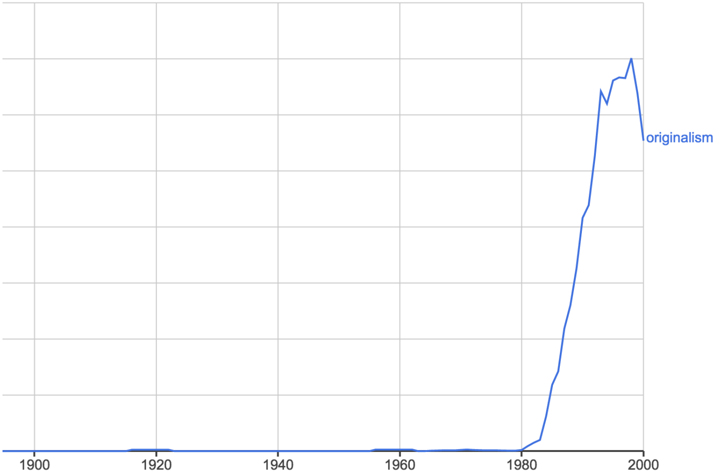
after NFL football wins



not matching first initials

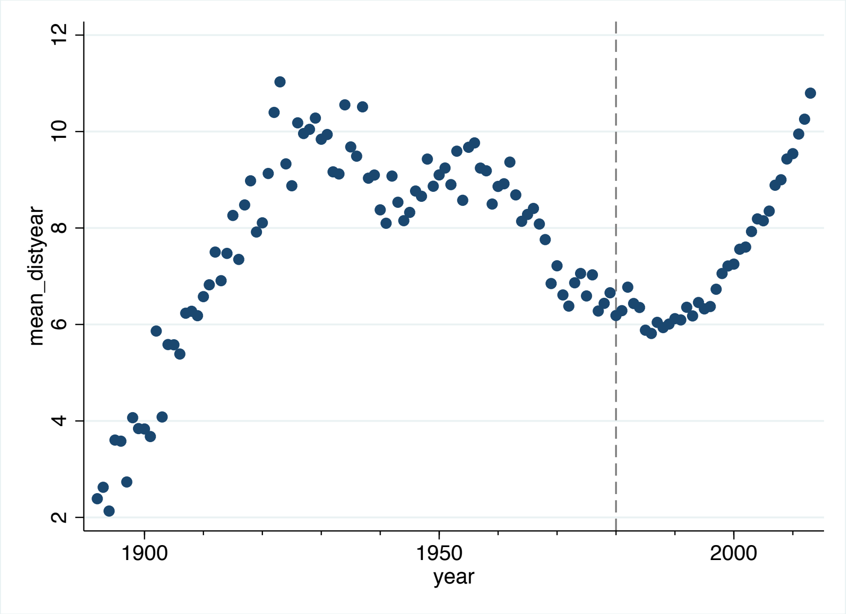


Originalism



- The word "originalism" was coined by Paul Brest in 1980.
- Here is the famous passage: *"By "originalism" I mean the familiar approach to constitutional adjudication that accords binding authority to the text of the Constitution or the intentions of its adopters."*

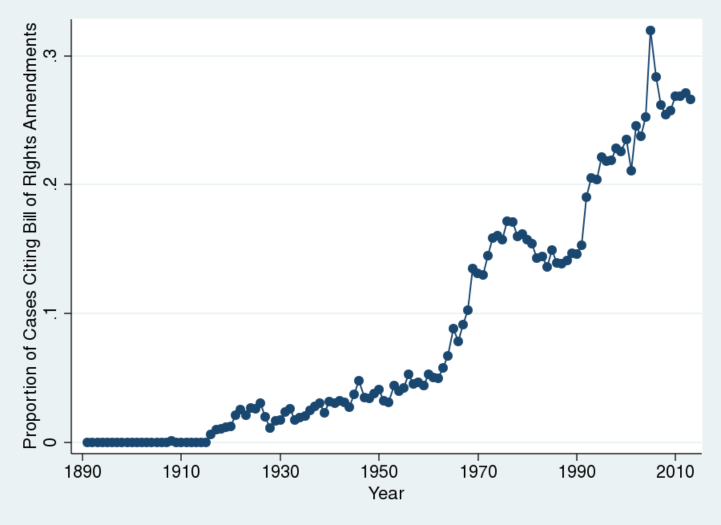
Measuring Originalism



Measuring Originalism

- "We are all Originalists now"

Figure: Trend in Citing Bill of Rights Amendments



Most Originalist Circuit Court Judges

Rank	Judge	Originalism Score
1	DUNCAN, ALLYSON	6.76
2	RAWLINSON, JOHN	6.08
3	SYKES, DIANE S.	5.29
4	**SCALIA, ANTONIN**	**5.13**
5	PARKER, BARRINGTON	4.76
6	MARCUS, STANLEY	4.33
7	LINN, RICHARD	3.88
8	LEMMON, DAL	3.78
9	GRABER, SUSAN	3.43
10	HARDIMAN, THOMAS	3.36
11	WESLEY, RICHARD	3.19
12	SACK, ROBERT DAVID	3.17
13	CLEVENGER, RAYMOND	3.13
14	MCKEAGUE, DAVID	2.77
15	**GARLAND, MERRICK**	**2.67**
16	KETHLEDGE, RAYMOND	2.30
17	**GORSUCH, NEIL M.**	**2.28**
18	CLAY, ERIC L.	2.24
	...	
	SOTOMAYOR, SONIA	**0.26**
	POSNER, RICHARD A.	**-0.4**

Consequentialist Reinterpretation of Duty

Efficient Breach Theory in Contracts

- **Duty posits a general obligation to keep promises** vs.
- a party should be allowed to breach a contract and pay damages, if doing so would be more economically efficient than performing under the contract.
- Posner in *Lake River Corp. v. Carborundum Co.*, 769 F.2d 1284 (7th Cir. 1985)

Least Cost Avoider in Torts

- **Duty of care** is breached when PL > B
- P is the probability of loss (L) * L is the gravity of loss
- B is the cost (burden) of taking precautions

Expected Deterrence in Criminal Law

- Pr(detection) * sanction = $\mathbb{E}$[sanction]
- Costs of detection $\gg$ cost of sanction
- Approach as social planner

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Law-and-Economics Movement

Increasing pro-market orientation in judiciary

- Social Planner ("An Exit Interview With Richard Posner", New York Times, 9/11/2017)
  1. "'I pay very little attention to legal rules, statutes, constitutional provisions ... The first thing you do is ask yourself — forget about the law — what is a sensible resolution of this dispute?'"
  2. "See if a recent Supreme Court precedent or some other legal obstacle stood in the way of ruling in favor of that sensible resolution."
  3. "'When you have a Supreme Court case or something similar, they're often extremely easy to get around.'" Natural Laboratory Judges Most Textually Similar to Posner
- Influential in criminal law, antitrust, labor regulation, and more
  - Becker's analysis of crime & punishment (Posner 2004; Harcourt 2011)
    - "Rational criminals" went against prevailing wisdom re mental illness
    - ~~retribution, rehabilitation,~~ deterrence, legitimacy, fairness
  - Antitrust laws
    - Economic analysis has attained near complete consensus. (Judge Ginsburg)
    - Should promote economic efficiency and consumer welfare, rather than shield individuals from competitive market forces or redistribute income.
    - Law-and-economics judges' decisions are appealed less. (Baye et al. 2011)
  - Against New Deal labor law and union protections (Posner 1984, Epstein 1983)
  - Against EPA regulation $\approx$ govt expropriation (Epstein 1993, Blumm 1995)
- Conservativism: Law-and-economics focuses on efficiency. Its key criticism of regulatory policies is that they have perverse, unintended economic consequences.

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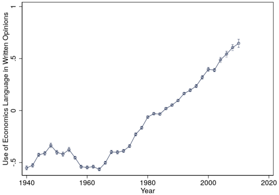
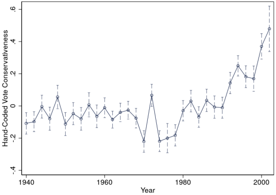
Increasing pro-market orientation in U.S. judiciary

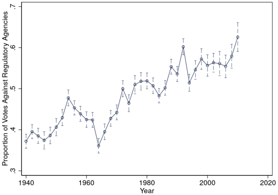
Economics style



Conservative vote share



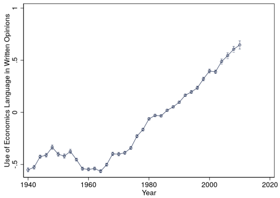
Voting against government regulation



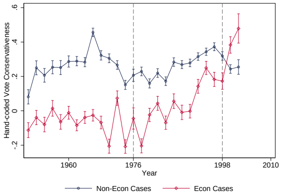
Natural Laboratory

Increasing pro-market orientation in U.S. judiciary

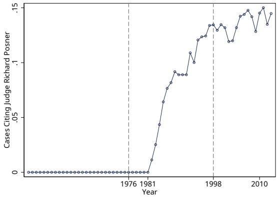
Economics style



◂ Conservative vote share



Citation to Richard Posner



◂ Natural Laboratory

Federal Cases

- Abortion example:
  - 5th Circuit **invalidated** a Mississippi statute *requiring its doctors to obtain admitting privileges at local hospitals* but allowed an identical Texas statute, resulting in one-third of Texas abortion clinics shutting down
    - Reasoned on potential **consequences** on abortion access for women.
  - A new Texas statute *requires abortion clinics to meet the building standards of ambulatory surgery centers*; this statute was **allowed** by the 5th Circuit.
    - This statute would reduce the number of centers in TX to fewer than 10.
- Labor example:
  - Shift from **reasonable person** standard to **reasonable woman** standard for what constitutes sexual harassment.
  - **Waiving need to prove emotional harm** in court by plaintiff (to a jury).
- Circuit Courts only decide "issues of new law" ◂ Common Law
  - Consequentialist (utilitarian) v. deontological (duties and rights) modes of reasoning

Consequentialist: Cost-benefit analyses (Posner 1998)

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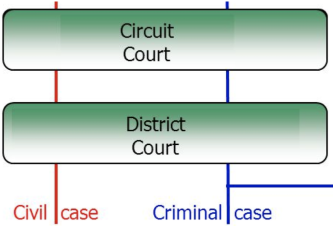
US Federal Courts as "Natural Laboratory"



- Incremental common-law space; new rules, distinctions (Gennaioli et al. 2007)
  - Random assignment to cases & panels of 3 (in Circuit courts, no juries)
  - Appointed for life (179 Circuit judges in 12 C; 678 District judges in 94 D)
  - 327K cases/yr in D ⇒ 67K cases/yr in C ⇒ 100 cases/yr in Supreme Ct
- Influential and controversial economics training program for judges
  - "Big Corporations Bankroll Seminars For US Judges" (*Washington Post*, 1/20/1980)
  - By 1990, 40% of federal judges had attended economics training (Butler 1999)
  - Despite "swamped with criminal cases .. not seeing relevance of economics"
- Sentencing has undergone several moral revolutions (~~retribution, rehabilitation,~~
  - Deterrence: **severity substitutes for low detection probability** (Becker 1968)
  - One justification for massive build-up of prisons in 1980s and 1990s ◂ WhatWeDo
  - Mass incarceration as "new Jim Crow" (Davis 1998, Gilmore 2007)

What We Find

- Judges who use **economics** language (in cases other than the current)
  - vote for and author **conservative verdicts**, especially for economics cases
  - reject government **regulation** and **criminal appeals**
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    - Not prior to 1976 Manne program inception
    - 20% gap after *Booker* made previously mandatory guidelines "advisory"
- Judges **trained** in economics impact panelists
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  - render racial and gender **sentencing disparities**
    - More so than Republican or ingroup judges
  - but do not show more **implicit race or gender bias** in their opinions
    - Unlike Republican and ingroup judges
- Exposure to ideological sameness
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    - Being in ideological minority increases ingroup conformity
    - Being in majority increases ingroup conformity and radicalization
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  - Decline in self-reported honest behavior (Frank et al. JEP 2003)
  - Favor profit maximization in business vignette (Rubinstein EJ 2006)
  - Surge prices viewed more fairly, with any econ experience (Frey et al. EI 2003)
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  - Economic NLP, LASSO on Congressional Speech (Gentzkow et al. 2015)
  - Classify economics text as conservative or liberal (Jelveh et al. 2016) Validation
  - Words of tax statutes impact tax revenues as tax rates do (Ash 2015)
- Constitution restrains policymaking (Seabright 1996; Besley et al. 1997)
  - Different legal philosophies, instead of **outcomes-based** bias? (e.g. Posner 1973)
    - e.g. first principles adherence to a strict Constitutional interpretation
- Economic reasoning and criminal justice (Foucault 1978; Harcourt 2014)

Validating the N-grams

Predicting Liberal vs. Conservative decisions ~ facts or reasonings salient to judge ~ not just words

Campaign Finance	advertis influenc outcom vote, argument appel consid definit, challeng present, case controversi district, disclosur sourc	Expens, inform elector mean provis, compel court went histori, buckley court limit
Capital Punishment	duti make reason, Involuntari, materi reason probabl, mental health	consid mitig, Attack, Inelig, counti jail
EPA	act impos, board character, Chevron, Elimin, interst transport hazard wast	factor demonstr, id statut silent ambigu respect, requir provis

(Buckley held that election spending limits are unconstitutional)

WhatWeDo Manne Program ModelFit

Validating the N-grams

- Predict hand-coded cases
- Delete N-grams which appear in no more than a threshold based on the number of observations in each individual legal field
- Logistic AUC
  - better for imbalanced data - plots true positive over false positive rate

Validating the N-grams

AUC	Logistic Regression with tf-idf
11th Abrogation	0.845
Abortion	0.642
ADA	0.751
Affirmative Action	0.653
Campaign Finance	0.876
Capital Punishment	0.650
EPA	0.72
FCC	0.96
First Amend	0.695
Homosexual Rights	0.873
NEPA	0.783
NLRB	0.715
Obscenity	0.855
Piercing Corp Veil	0.719
Sex Discrimination	0.752
Title 7	0.78

Validating the N-grams

Legal Field	Positive	Negative
11th Abrogation	accru plaintiff knew known, amend constitut unit state, argu eleventh amend, compel undertak approach, congress unequivoc express, congruent proport	cite discrimin public, compet privat enterpris doe mean, congress articl, enact statut, plaintiff appel argument exact relief seek
Abortion	appeal concern, Life health, court held proper function legislatur, health servic, pregnant minor	mother result, clinic district court abus discret, plaintiff deni,
ADA	Administr, Distress, punit damag, rehabilit act claim	medic condit, Dispar, extend
Affirmative Action	black candid, board compli, racial balanc, impermiss	Arbitrari, argu constitut, Conscienc, constitut violat

Validating the N-grams

capital punishment: involuntary, mental health v. attack

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Validating the N-grams

First Amend	materi fact, purpos regul, materi fact, purpos regul	concur result reach judg hall opinion analysi amend, direct narrowli, essenti curti content statut inclus, provid ineffect remot support govern
Homosexual Rights	claim revers, equal protect claus fourteenth amend, homosexu engag consensu sodomi court state great, prohibit homosexu conduct, sexual prefer	know corps, militari matter difficult think clearer,
NEPA	accord proper forest servic fish, area plan, increas risk, litig cost save, nativ	caprici violat. result destruct, project narrowli
NLRB	animus design rid compani financi, care includ critic, complaint alleg violat section mention, Limit, involv face simpl jurisdict question doe	alleg februari precis interrog employe threaten employe, allow mason van atter time acclim posit, expens attribut unit employ

Validating the N-grams

obscenity: constitutionally protected v. core pornographic ◂ TextAsData

Obscenity	appel court, constitut protect, regard invalid major opinion miller recogn	core pornographi, materi public, sexual relat
Piercing Corp Veil	oblig make, issu liabil, refund	agreement district, alleg complaint, court review
Sex Discrimination	district court grant summari judgment favor, dismiss complaint, complain, opinion	deni, discrimin, evid
Title 7	Faith, Reason trier fact, conclud	prima faci case racial discrimin, discrimin retali

Judge Reactions to Manne Program (Butler 1999)

Word of Mouth Syllabi

"*the instruction was far more intense than the Florida sun. .. my enduring appreciation.*" *(Justice Ruth Bader Ginsburg, SCOTUS)*

"*I don't believe I have ever attended a seminar that involved such intensive study and discussion. My wife, who accompanied me, commented, 'I don't see any more of you here than I do at home.' .. one of my fellow judges .. said, 'I can't believe how much I have learned, but I'm glad I didn't have to take this course in college.'*" *(Judge Curran, U.S.D.C. Eastern Wisconsin)*

"*a principled basis for deciding close cases.*" *(Judge Michel, Federal Circuit)*

"*a sound theoretical and rational structure for my decisions.. the potential effects and foreseeable impact of imposing a duty*" *(Judge Jolly, Fifth Circuit)*

"*I regard myself as a social progressive and all the economists in attendance, from my perspective, had Neanderthal views on race and social policy. The basic lesson I learned .. is that social good comes at a price, a social and economic cost. I had never thought that through before being exposed to Henry's teachings. .. has led me to measure the cost of the social good being furthered against the gain to be achieved.*" *(Judge Carter, S.D.N.Y.)*

"*there is a wide area of decision entrusted to us where the result can go either way, depending on how we view the evidence. That area is called 'judicial discretion.' This is the area that is most affected by these seminars .. as a result of what I have learned at these seminars, I have become a much better judge*" *(Judge Alaimo, U.S.D.C. Southern Georgia)*

"*Henry and his LEC colleagues were of a conservative persuasion. .. the class wanted to express our gratitude on the final day. The person who rose to speak was Judge Hall from West Virginia .. Without doubt he was a Democrat going back to New Deal days. He was fervent in his appreciation*" *(Judge Griesa, S.D.N.Y.)*

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Cohort-Jackknife Instrument (from annual reports - FOIA) Highlights

"The fact that participants in the first Institute have talked so [fav]orably about their experience to their colleagues is naturally [fl]attering," he said, "but deferring too many applications for too [lo]ng a period could hurt the program."

LEC is seeking funds to make a double offering of the Institute [i]n 1978 as a means of reducing the backlog.

In letters to LEC, federal judges who attended the Institute [la]st December uniformly gave it high marks, one saying, "The [ex]posure to microeconomic theory was truly mind-expanding."

Said another:

"Needless to say, I was extraordinarily stimulated by my [ex]posure to the discipline of economics and indeed how disciplined [a pr]ofession it is. I really know of no other which so relentlessly [ap]plies logic and deductive thinking. Nor one which unceasingly [see]ks out the facts underlying the premises upon which the theory is [bas]ed . . . One lasting impression was received. Never again will I

"The subject matter was too concentrated and too complex for me honestly to claim to know very much about economics. But it has caused me to see some of the fallacies that are presented in political-economic proposals. For example, in one case, a criminal antitrust case, my experience at the institute made my work a little more difficult. Prior to my attendance at the institute, I might have finessed some hard thinking and accepted a simplistic answer to a complex problem. After the institute, my conscience has forced me to do some serious work on questions which otherwise I might have bypassed. So, has the institute made my work easier? No. But it has made it more interesting. The institute also has made me feel more confident in my ability to cope with questions that have economic implications."

Such comments are common in the sheaf of evaluatory letters, and the assertion is frequent: "I have (or shall) recommend the institute to my colleagues."

After the first institute, ~**100 applied per seminar**, some 7 months in advance; First-come first-served, quota of ~25

- Instrument for attendance:
  - Bartik-type shock: leave-Circuit-out share of judges from same birth decade and law-school type who have attended Manne First Stage
  - Exclusion assumption: judges recommend that their colleagues attend, but do not teach them economics directly, nor learn simultaneously

Predictors of Attendance Syllabi

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Other Instructors (from Syllabi)

Year	Alchian	Ashenfelter	Demsetz	Friedman	Goetz	Haddock	Manne	Markham	Samuelson	Feldstein	MacAvoy	Klein	Benston	Butler	Hoffmann
1976	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0
1977	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0
1978	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0
1979	1	0	1	1	0	0	1	0	1	0	1	1	0	0	0
1979	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0
1980	1	0	1	1	0	0	1	0	1	0	0	0	0	0	0
1980	1	0	1	1	0	0	0	0	1	1	1	1	0	0	0
1981	1	0	1	0	0	0	1	0	1	1	0	1	0	0	0
1982	1	1	1	0	0	0	1	1	1	1	0	0	0	0	0
1983	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0
1987	1	1	0	0	1	0	1	0	1	0	0	0	1	0	0
1988	1	1	0	0	1	0	1	0	1	0	0	0	0	1	0
1989	1	1	0	0	1	0	0	0	1	0	0	0	0	1	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	1	1	0	0	1	0	1	0	1	0	0	0	0	1	1
1992	1	1	1	0	1	0	1	0	1	0	0	0	0	0	1
1993	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0
1994	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0
1995	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0
1996	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1997	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1998	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0

Year	Fielding	Giacomini	Priest	Smith	Johnsen	Fischel	Henderson	Lash	Hartfield	Grady	Cooter	Williams	Brady	Hoberman
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	1	1	0	0	1	0	0	0	0	0	0	0	0	0
1994	1	1	1	1	1	0	0	0	0	0	0	0	0	0
1995	0	1	0	0	1	0	0	0	0	0	0	0	0	0
1996	0	1	0	0	0	1	1	1	0	0	0	0	0	0
1997	0	1	0	0	0	1	1	0	1	1	0	0	0	0
1998	0	1	0	0	0	1	0	0	0	1	1	1	1	0

Instructors' Views (from Butler 1999)

Event Studies

During one of the earliest Economics Institutes, Paul Samuelson developed a tradition of starting his first session with the judges by emphasizing that the reason he participated in the program was to provide "ideological balance" to a program that was otherwise dominated by *laissez faire* economists. Samuelson then proceeded to discuss his views on several non-ideological areas, including finance theory and personal financial investments. He also launched a strong defense of free international trade. Not surprisingly, many judges thought his views were fairly conservative. Indeed, the evening roundtable discussions attended by Samuelson invariably included a judge's request that he identify the concepts taught by Alchian and other scholars that Samuelson found objectionable. Samuelson was not about to challenge the legitimacy of the neoclassical price theory taught by the rest of the team, so his response was usually some vague reference to their differences about the proper role of government in a market economy. When confronted, he admitted that their differences were on the normative implications, not on the positive analysis of how markets actually work.

Butler 10/2017 comments: "**Alchian** went into excruciating detail on marginal analysis, consumer choice and demand, production costs and supply, market equilibrium; **Demsetz** on team production, theory of the firm, I.O. Structure Conduct Performance paradigm, **Manne** on corporate governance and market for corporate control; **Samuelson** on whatever the heck he wanted to, usually personal investment strategies; **Friedman** always started on legalization of recreational drugs; **Ashenfelter** used climate to predict quality and prices of wine, followed by wine tasting"

Other Instructors (after 1999) Syllabi

Does Immigration Help or Hurt?	George Borjas	Harvard University Kennedy School
What Can We Do about Crime?	James Q. Wilson	Pepperdine University, Public Policy
Family and Society	James Q. Wilson	
Why Families Matter	David Popenoe	Rutgers University, Sociology
The Social Significance of Families	Jennifer Roback Morse	Writer

Probability Theory	Orley Ashenfelter *Industrial Relations, Princeton University*
Statistical Analysis	Orley Ashenfelter
A Consumer's Guide to Econometrics	Eric Rasmusen *School of Business, Indiana University*
Regression Analysis: A How-to Guide	Eric Rasmusen
Empirical Application: Crime	James Q. Wilson *Public Policy, Pepperdine University*
Empirical Application: A Nation at Risk?	Paul Peterson *Kennedy School, Harvard University*
Empirical Application: The Gun Debate	John Lott *American Enterprise Institute*

Borjas was a repeat-instructor; Jennifer Morse founded Ruth Institute designated as anti-LGBT hate group

Different empirical professors

Efficiency Concerns Crowding Out Equity Concerns

Criminal sentencing

- disparate impacts ('efficient')
- crowd out constitutional theories of minority protection
- females for raising families

Immigration

- a conservative stance
- evaluate in terms of crime (Miles and Cox 2014; Treyger, Chalfin, Loeffler 2014)
- or national security (Trebilcock 2005)

1970s Law & Economics $\approx$ Economics 101 (not 102, 103, ...)

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- So what about Law & Economics in 1990s & 2000s? Methodology Event Studies

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Predictors of Attendance (OLS and Elastic Net) (1 of 2)

	(1)	(2)		(1)	(2)		(1)	
Unified Appoint	-0.0237	-0.0386	Black	0.0469		U.S. Senator	0.0136	G
	(0.0231)	(0.0221)		(0.0583)			(0.0634)	
Cross-Party Appoint	-0.0226		Cohort: 1910s	0.108***		State Atty General	-0.00437	Distr
	(0.0407)			(0.0298)			(0.0366)	
Republican	0.0508**	0.0379*	Cohort: 1920s	0.308***	0.267***	Private Practice	0.0544	Cou
	(0.0191)	(0.0186)		(0.0508)	(0.0499)		(0.0435)	
U.S. Attorney	0.0166		Cohort: 1930s	0.249***	0.205***	Mayor	0.0783	Cit
	(0.0413)			(0.0498)	(0.0482)		(0.0959)	
Solicitor General	-0.144**	-0.162*	Cohort: 1940s	0.126**	0.0841*	State Senator	0.0439	Assi
	(0.0536)	(0.0664)		(0.0389)	(0.0391)		(0.0814)	
Solicit Gen Office	0.176	0.193	Cohort: 1950s	0.0229		State Lower Ct	-0.0287	Att
	(0.126)	(0.133)		(0.0249)			(0.0310)	
Local Court	0.0696	0.0515	Bnktcy Judge	0.135	0.140	State Supr Court	0.0469	U.
	(0.0543)	(0.0522)		(0.183)	(0.182)		(0.0372)	
Asst Dist Atty	0.109*	0.109*	Magistr Judge	-0.166**	-0.174***	State House	0.0192	Any
	(0.0530)	(0.0482)		(0.0556)	(0.0483)		(0.0427)	

Predictors of Attendance (OLS and Elastic Net) (2 of 2)

	(1)	(2)		(1)	(2)		(1)	(2)
U.S. Senator	0.0136		Governor	-0.0156		Constant	-0.0745	0.0342
	(0.0634)			(0.0711)			(0.0626)	(0.0212)
State Atty General	-0.00437		District Attorney	-0.00409		All Variables	X	
	(0.0366)			(0.0406)		Post Elastic Net		X
Private Practice	0.0544		County Comm	0.0548		N	699	699
	(0.0435)			(0.0948)		adj. R-sq	0.124	0.129
Mayor	0.0783		City Council	-0.0946				
	(0.0959)			(0.0697)				
State Senator	0.0439		Assit U.S. Atty	0.00629				
	(0.0814)			(0.0348)				
State Lower Ct	-0.0287		Atty General	-0.104				
	(0.0310)			(0.118)				
State Supr Court	0.0469		U.S. House	-0.0367				
	(0.0372)			(0.0531)				
State House	0.0192		Any Govt Exper	0.00160				
	(0.0427)			(0.0394)				

Predictors of Attendance Year (OLS and Elastic Net) (1 of 2)

	(1)	(2)		(1)	(2)		(1)	
Unified Appoint	1.392		Black	1.270		U.S. Senator	4.779**	G
	(2.360)			(1.543)			(1.493)	
Cross-Party Appoint	3.857		Cohort: 1910s	0	-8.496***	State Atty General	-0.613	Distr
	(2.395)			(.)	(1.265)		(1.911)	
Republican	1.768		Cohort: 1920s	3.769*	-4.853***	Private Practice	-2.576	Cou
	(2.303)			(1.440)	(1.403)		(2.891)	
U.S. Attorney	-1.481		Cohort: 1930s	8.038***		Mayor	-4.548	Ass
	(1.703)			(1.775)			(2.919)	
Solicitor General	1.950		Cohort: 1940s	14.48***	5.504***	State Senator	-1.693	Assi
	(2.753)			(1.852)	(1.525)		(1.351)	
Solicit Gen Office	0		Cohort: 1950s	17.28***		State Lower Ct	-1.609	Att
	(.)			(3.250)			(1.384)	
Local Court	3.149*	3.112	Bnktcy Judge	-2.896		State Supr Court	2.775	U.
	(1.575)	(2.028)		(2.734)			(1.473)	
City Council	11.17***	10.29***	Magistr Judge	0		State House	1.223	Any
	(2.340)	(0.797)		(.)			(1.309)	

Predictors of Attendance Year (OLS and Elastic Net) (2 of 2) Syllabi

	(1)	(2)		(1)	(2)		(1)	(2)
U.S. Senator	4.779**		Governor	0		Constant	1980.0***	1986.6***
	(1.493)			(.)			(3.500)	(1.167)
State Atty General	-0.613		District Attorney	-0.890		All Variables	X	
	(1.911)			(1.751)		Post Elastic Net		X
Private Practice	-2.576		County Comm	-1.751		N	85	85
	(2.891)			(2.295)		adj. R-sq	0.464	0.497
Mayor	-4.548		Asst Dist Atty	-0.803				
	(2.919)			(1.677)				
State Senator	-1.693		Assit U.S. Atty	0.914				
	(1.351)			(2.295)				
State Lower Ct	-1.609		Atty General	0				
	(1.384)			(.)				
State Supr Court	2.775		U.S. House	3.087				
	(1.473)			(3.077)				
State House	1.223		Any Govt Exper	-1.534				
	(1.309)			(2.252)				

Predictors of Attendance (Elastic Net in DCT) (1 of 1)

	(1)		(1)		(1)
Unified Appoint	-0.00925	Mayor	-0.0251	Cohort: 1910s	0.0776**
	(0.0106)		(0.0290)		(0.0152)
Republican	0.0393**	Local Court	0.0272	Cohort: 1920s	0.236**
	(0.00989)		(0.0253)		(0.0246)
State Supr Court	-0.0244	U.S. House	-0.0447**	Cohort: 1930s	0.260**
	(0.0285)		(0.0137)		(0.0266)
State House	-0.00554	Assit U.S. Atty	0.0426*	Cohort: 1940s	0.114**
	(0.0219)		(0.0190)		(0.0187)
U.S. Senator	-0.0430	Atty General	0.424		
	(0.0263)		(0.267)		
State Atty General	-0.0395	Magistr Judge	-0.0492		
	(0.0237)		(0.0254)		
District Attorney	-0.0104	City Council	-0.0848*		
	(0.0170)		(0.0387)	Post Elastic Net	X
Black	0.0423	Any Govt Exper	0.0416**	N	2276
	(0.0318)		(0.0147)	adj. R-sq	0.117

Predictors of Attendance Year (Elastic Net in DCT) (1 of 1)

	(1)		(1)
Cross-Party Appoint	-1.121	Black	1.038
	(1.092)		(1.012)
U.S. Attorney	-1.049	Cohort: 1910s	-7.247**
	(0.631)		(0.644)
State Senator	-2.155*	Cohort: 1920s	-3.947**
	(0.877)		(0.685)
State House	1.648	Cohort: 1940s	4.518**
	(1.073)		(0.768)
Solicitor General	6.424**	Cohort: 1950s	7.536**
	(0.465)		(1.307)
State Atty General	-1.752	Magistr Judge	1.069
	(1.049)		(1.405)
Governor	-4.824**		
	(1.066)	Post Elastic Net	X
Asst Dist Atty	-0.717	N	350
	(0.652)	adj. R-sq	0.468

Syllabi

Methodology – Highlights

1. Measuring Law-and-Economics Thinking
   - Economics style is cosine distance to economics articles
2. Empirical Approach
   - Estimate causal effect of assigning economics judges
3. (Polanyian) Great Transformation of American Law
   - Increasing economic orientation in federal judiciary
   - Evaluate economics training via event studies, post-elastic net, Bartik IV, long-diff, and placebos

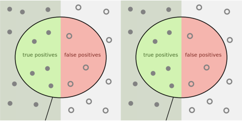
Cohort Jackknife Instrument

Syllabi

Bartik Shifter for economics training

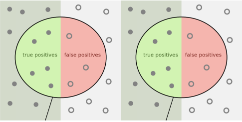
%Year$_t$ votes by judges born in your decade x law school type that attended economics training *excluding your Circuit cases*

Born in 1930s (L) or 1940s (R)



1991

Born in 1930s (L) or 1940s (R)



1992

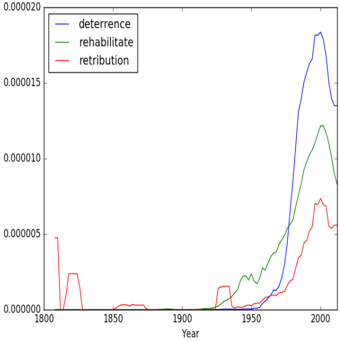
Word-of-mouth mechanism: (0.78, $p < 0.001$, Circuit) (0.92, $p < 0.001$, District)

Placebo Period

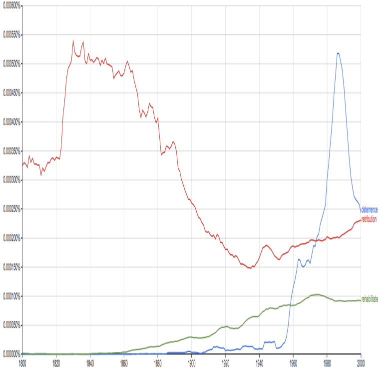
Some placebo analyses rely on pre-1976 period, where we focus on

- **votes and verdicts** (avoids endogeneity of authorship) ◂ Methodology
- **lay words like "efficient" and "deterrence"** (already present in 1960s)

Avoids issue of scarce economics terminology pre-1976, when checking long-diffs



Word Frequency in State Court Opinions



Word Frequency in Google Books

Judge Randomization

- **Interviews** of courts and **orthogonality checks** of observables
  - (1) 2-3 weeks before oral argument, computer:
    - randomly assigns available judges including visiting judges
    - ensures judges are not sitting together repeatedly
    - senior judges reduced frequency entered into the program
  - (2) randomly assign panels on yearly basis, then randomly assign cases
    - judges can occasionally recuse
    - panel sees case again on remand
    - exceptions for specialized cases like death penalty
- **Omnibus test**: how similar string of panel assignments is to random strings
  - Not accounting for vacation, sick leave, senior status, en banc, remand, and recusal can lead to the inference that judges are not randomly assigned.
  - We assume these deviations from randomness are Rubin-ignorable.

Judge Randomization Check

	Economics Case			
	(1)	(2)	(3)	(4)
Econ Training	0.00788	-0.000716	-0.00512	0.00540
	(0.00807)	(0.00454)	(0.00893)	(0.00416)
N	123519	115561	500266	389105
adj. R-sq	0.115	0.024	0.112	0.023
Circuit-Year FE	Y	Y	Y	Y
Sample	Author	Author	On Panel	On Panel
Sample	Year < 1976	Year > 1991	Year < 1976	Year > 1991

Omnibus check: No endogenous settlement or selection of cases. ◂ Stylized Facts

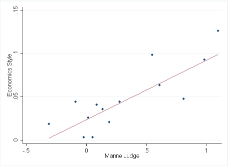
Conservative Vote

Table: Distribution of Ideology

Liberal and Conservative Votes			Party Membership		
Vote Valence	Freq.	Percent	Party of Appointment	Freq.	Percent
Liberal	17,529	33.74	Democrat	515,418	44.56
Neutral/Other	8,355	16.08	Other	38,486	3.33
Conservative	26,076	50.18	Republican	602,836	52.12
Total	51,960	100.00	Total	1,156,740	100.00

- Hand-labeled vote valence for a random 5% sample by Songer-Auburn. ◂ Stylized Facts ◂ Event Study
- 0.7 correlation between **conservative** vote and ruling against regulatory agency in economics cases.
  - rejecting defendant in a criminal procedure case,
  - rejecting plaintiff asserting violation of First Amendment rights
  - rejecting Secretary of Labor who sues a corporation for violation of child labor regulations

Summary Correlations



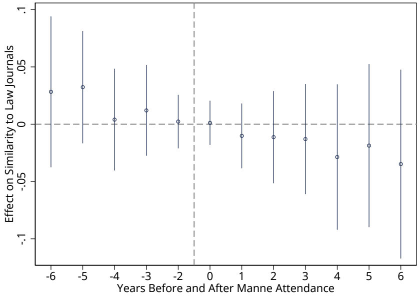
Economics Training correlated with Economics Style

	Republican		
	(1)	(2)	(3)
Economics Style	0.0367*		**0.0563****
	(0.0146)		**(0.0191)**
Economics Training		0.140**	**0.191****
		(0.0382)	**(0.0602)**
N	923866	410309	380085
adj. R-sq	0.137	0.082	0.099

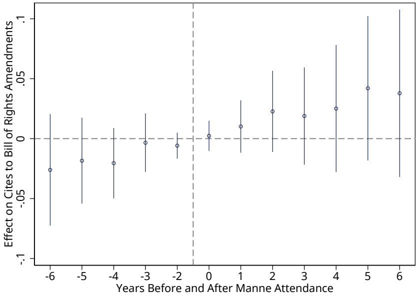
0.2 Correlation between Economics Training and Republican Party

Additional Highlights

Manne Attendance on Law Journal Similarity & Originalism



Law journal similarity



Citations to Originalist Amendments

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6, 6]$$

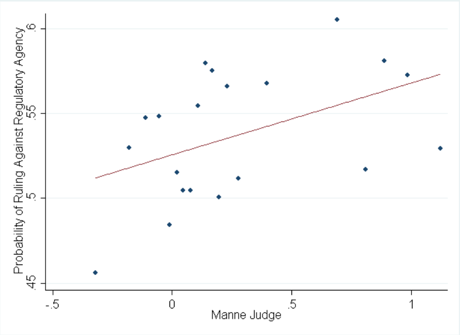
95% CI; j clusters; jt weighted equally; authoring in economics cases

Highlights Sentencing Event Study

Benchmark Effect of Economics (vs. Republican)

	Ruling Against Regulatory Agency			
	(1)	(2)	(3)	(4)
Econ Style	**0.00554****	**0.00533****		
	(0.00245)	**(0.00243)**		
Econ Training			**0.0364***	**0.0425****
			(0.0208)	**(0.0212)**
Republican		-0.00752		-0.0333
		(0.00750)		(0.0208)
N	53977	53977	12320	12320
adj. R-sq	0.100	0.100	0.173	0.173
Circuit-Year FE	Y	Y	Y	Y
Sample	All	All	Post 1991	

Benchmark Effect of Economics (vs. Republican)

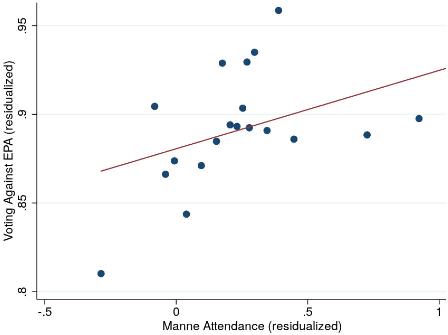


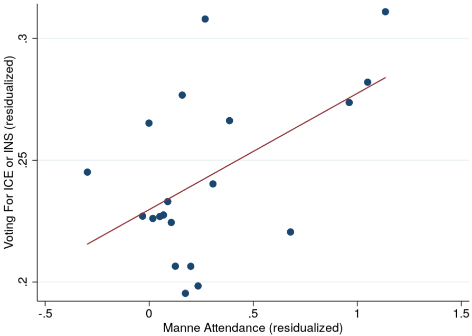
Economics Trained Judges vote against regulation

Binscatter: Probability vs. economics training, residualized on circuit-year fixed effects and Republican indicator

Additional Highlights

Heterogeneity by Regulation





Economics Trained Judges vote **against** environmental but **for** immigration enforcement (← cost benefit).

Binscatter: Probability vs. economics training, residualized on circuit-year fixed effects and Republican indicator

◂ Additional Highlights

Heterogeneity by Instructor

"Friedman always started on legalization of recreational drugs" (Butler 10/2017)

Milton Friedman taught in 1976, 1978, 1979, 1980

	Rejecting Criminal Appeal (Habeas Corpus)			
	(1)	(2)	(3)	(4)
Manne Training	**0.0608***		**-0.251****	
	(0.0286)		**(0.0922)**	
Friedman Training	**-0.0921***	**-0.102**	**0.131**	**0.243****
	(0.0437)	**(0.0615)**	**(0.107)**	**(0.0819)**
N	12173	1269	13895	753
adj. R-sq	0.140	0.233	0.264	0.393
Circuit-Year FE	Y	Y	Y	Y
Sample	Post 1991		Pre 1976	
Judges	All	Attend < 1986	All	Attend < 1986

Economics Trained Judges vote to reject appeal of unlawful detention or imprisonment, unless Friedman taught.

Highlights

Impact of Economics Judges on Economics Cases

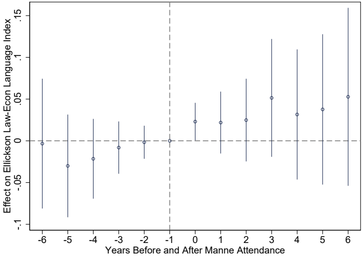
Table: Distribution of Case Topics

Songer Topic	Freq.	Percent	Detailed Topic (partial list)	Freq.	Percent
Economics	332,553	29.69	Criminal Law	246,012	22.27
Due Process	259,845	23.20	Civil Procedure	194,391	17.6
Criminal Appeal	250,281	22.34	Administrative Law	51,900	4.7
Miscellaneous	149,322	13.33	Tax & Accounting	46,404	4.2
Civil Rights	67,350	6.01	Bankruptcy Law	40,773	3.69
Labor	54,681	4.88	Constitutional Law	34,575	3.13
First Amendment	5,268	0.47	Habeas Corpus	33,429	3.03
Privacy	927	0.08	Contracts	32,700	2.96
Total	1,120,227	100.0	.. and 86 additional topics		

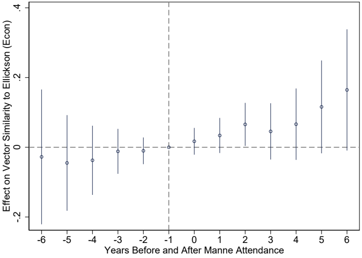
- Hand-labeled for 5% random sample by Songer-Auburn and for 100% and then aggregated to Songer topics.
- We might expect stronger effects for economics rather than non-economics cases.
    - Non-economics can include social issues like abortion or drug policy
    - The effect of economic thinking could be libertarian
        - Libertarian would be coded as American "liberal" (by Songer-Auburn)

◂ Event Study

Manne Attendance on ◂ Ellickson Index and Vector



Ellickson Index



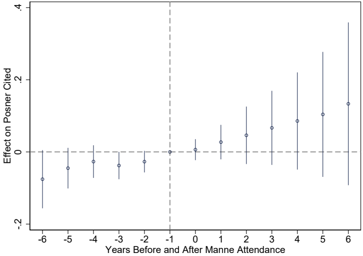
Ellickson Vector

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6, 6]$$

95% CI; j clusters; jt weighted equally; authoring in economics cases

◂ decreases in law journal similarity

Manne Attendance on Citations to Posner



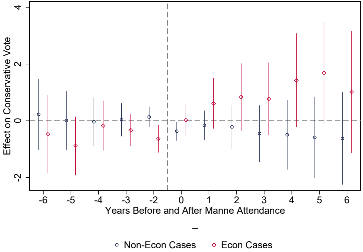
Citations to Richard Posner

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6,6]$$

95% CI; j clusters; jt weighted equally

	Ellickson Index	Ellickson Vector	Posner Cited
	(1)	(2)	(3)
Post-Manne	0.0105**	0.00525	0.00861**
	(0.00523)	(0.00342)	(0.00400)
N	632799	623874	886988
adj. R-sq	0.060	0.075	0.194
Circuit-Year FE	X	X	X
Judge FE	X	X	X

Manne Attendance on ◂ Conservative votes



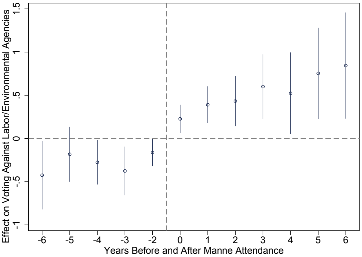
Econ vs Non-Economics Cases

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6, 6]$$

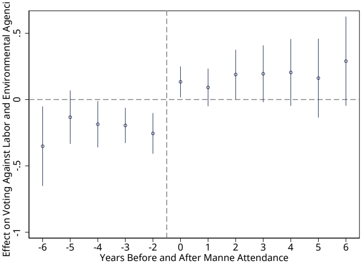
95% CI; j clusters; jt weighted equally; 5% SA sample

◂ 30-70 distribution of economics and non-economics cases

Manne Attendance on Labor/Environmental



Raw Correlation



with Elastic Net x Year FE

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6,6]$$

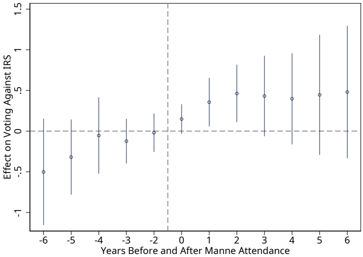
95% CI; j clusters; jt weighted equally

Manne Attendance on Labor/Environmental

	Voting Against Environmental or Labor Agency			
	(1)	(2)	(3)	(4)
Post-Manne	**0.101****	**0.0939****	**0.165****	**0.144****
	(0.0315)	**(0.0298)**	**(0.0376)**	**(0.0305)**
N	19521	19521	19521	19521
adj. R-sq	0.307	0.311	0.319	0.337
Circuit-Year FE	X	X	X	X
Judge FE	X	X	X	X
Party-Year FE		X	X	
Ever-Attend-Year FE			X	
E-net Vars ## Year FE				X

Judges are 10-15% more likely to vote against environmental and labor regulations after economics training.

Manne Attendance on Tax Decisions



with Elastic Net x Year FE

$$Y_{ijct} = \theta_{ct} + \theta_j + \sum_{n=-6..-2}^{0..6} \beta_{t-n} Manne_{ct-n} + \eta X_{jt} + \varepsilon_{ijct} \quad \text{for } n \in [-6,6]$$

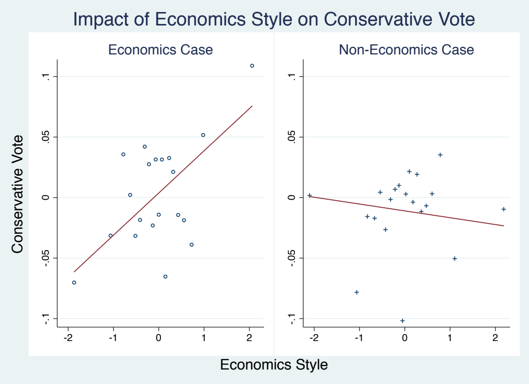
95% CI; j clusters; jt weighted equally

Manne Attendance on Tax Decisions

	Voting Against Internal Revenue Service			
	(1)	(2)	(3)	(4)
Post-Manne	**0.0840****	**0.0848****	**0.133****	**0.104****
	(0.0424)	**(0.0413)**	**(0.0528)**	**(0.0506)**
N	19957	19957	19957	19957
adj. R-sq	0.312	0.317	0.327	0.319
Circuit-Year FE	X	X	X	X
Judge FE	X	X	X	X
Party-Year FE		X	X	
Ever-Attend-Year FE			X	
E-net Vars ## Year FE				X

Judges are 10% more likely to vote against IRS after economics training.

Impact of Economics Judges on Economics Cases



In Economics Cases, Economics Style Judges render Conservative Votes (normalized).

Additional Highlights

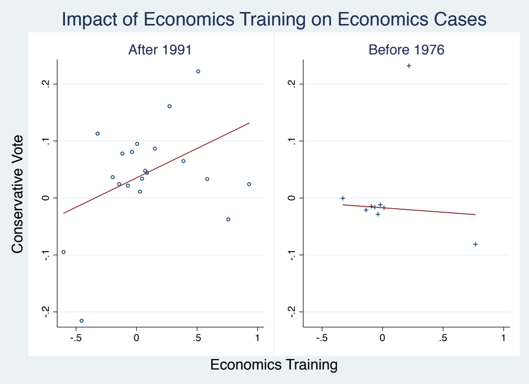
Impact of Economics Judges on Economics Cases

	Conservative Vote (+1/0/-1)				Conservative Vote (+1/0/-1)		
	(1)	(2)	(3)		(4)	(5)	(6)
Econ Style	-0.0116	-0.0120	-0.0125	Republican	0.00622	0.0113	0.00660
	(0.0102)	(0.0103)	(0.0111)		(0.0234)	(0.0147)	(0.0273)
Econ Case	-0.229***	-0.241***	-0.243***	Econ Case	-0.262***	-0.241***	-0.274***
	(0.0138)	(0.0171)	(0.0167)		(0.0236)	(0.0171)	(0.0276)
Econ Style *	**0.0609*****	**0.0600*****	**0.0636*****	**Republican ***	**0.0678***	**0.0254**	**0.0806***
Econ Case	**(0.0141)**	**(0.0140)**	**(0.0148)**	**Econ Case**	**(0.0370)**	**(0.0259)**	**(0.0434)**
N	48195	48195	33901	N	52215	48195	37921
adj. R-sq	0.089	0.089	0.100	adj. R-sq	0.123	0.089	0.138
Circuit-Year FE	Y	Y	Y	Circuit-Year FE	Y	Y	Y
Control	N	Repub	N	Control	N	Econ Style	N
Sample	All	All	Non-Author	Sample	All	All	Non-Author

Holds controlling for Republican and examining Non-Authors

Additional Highlights

Impact of Economics Judges on Economics Cases



After attendance, Economics Trained Judges render Conservative Votes (normalized). Highlights

Impact of Economics Judges on Economics Cases

	Conservative Vote (+1/0/-1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Econ Training * Econ Case	-0.129	**0.257*** **	0.000178	0.246			
	(0.126)	**(0.0977)**	(0.0581)	(0.139)			
Econ Training * Econ Case *			**0.207****	**0.254****			
Post 1991			**(0.103)**	**(0.116)**			
Econ Training * Econ Case *					**0.625*****	0.708***	0.427*
Post					**(0.160)**	(0.169)	(0.226)
N	29153	9639	52215	51861	52215	26202	25975
adj. R-sq	0.146	0.106	0.271	0.220	0.302	0.355	0.320
Circuit-Year FE	Y	Y	Y	Y	Y	Y	Y
E-Net Vars ## Econ ## Post	N	N	N	**Y**	N	N	N
Judge FE	N	N	**Y**	**Y**	**Y**	**Y**	**Y**
Sample	Year < 1976	**Year > 1991**	All	All	All	**Rep**	**Dem**

Holds with fully interacted Republican and Judge trends. Rows omitted (but not regressors).

Impact of Economics Judges on Economics Cases (Bartik)

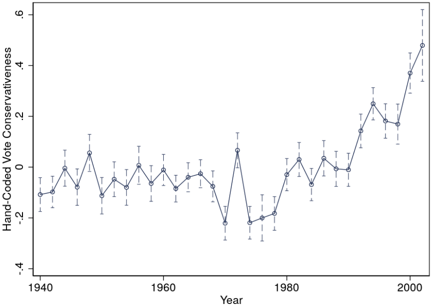
	Conservative Vote (+1/0/-1)	
	(1)	(2)
Econ Case	-0.254***	-0.283***
	(0.0177)	(0.0199)
Post-Manne	-0.0773	-0.557**
	(0.0638)	(0.236)
Econ Case * Post-Manne	**0.240*** **	**0.624*** **
	(0.0667)	**(0.157)**
N	51868	51868
adj. R-sq	0.2467	0.247
Bartik	**N**	**reduced form**
Circuit-Year FE	Y	Y
Judge FE	Y	Y
Sample	All	All

Bartik (leave-judge-out) is constructed from current year X decade of birth cohort

Word of Mouth

Additional Highlights

Impact of Economics Judges, Magnitudes

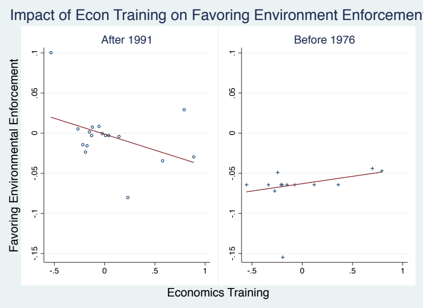


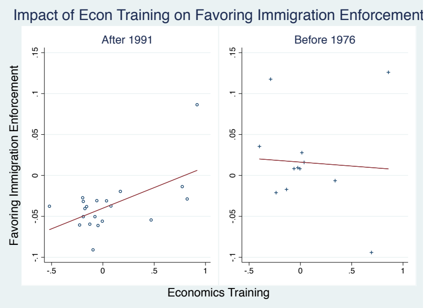
From 1976-2002, a rise of 0.2-0.3 likelihood to vote conservative, then Manne $\frac{\mathbf{0.2x0.4}}{\mathbf{0.3}}$ accounts for 28-42% of rise.

Only accounts for own attendance; if peers and precedent affect non-Manne ⇒ true Manne impact may be larger.

◂ Highlights

Ideological Shifts



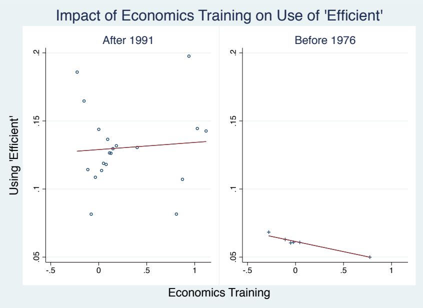


After attendance, Economics Trained Judges reject environmental enforcement (normalized)

but support immigration enforcement (normalized).

Note: both switch in direction. ◂ Highlights

Impact of Economics Judges on Regulation Cases



After attendance, Economics Trained Judges increase use of "efficient" when authoring regulatory case opinions.

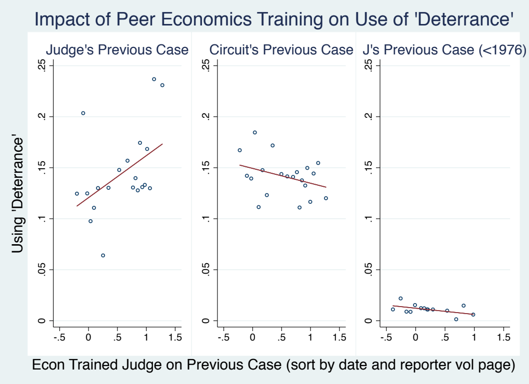
Highlights

Impact of Economics Judges on Regulation Cases

	# Uses of "Efficient"		
	(1)	(2)	(3)
Econ Training	-0.00407	**0.0494*** **	
	(0.00455)	**(0.0188)**	
Econ Training * Post 1991			**0.0495***
			(0.0272)
N	45752	11372	72005
adj. R-sq	0.125	0.148	0.261
Circuit-Year FE	Y	Y	Y
Control	N	N	N
Judge FE	N	N	Y
Sample	Year < 1976	**Year > 1991**	All

Similar with Republican control.

Impact of Peer Econ Judges on Criminal Case Reasoning



Previous judge case (median) 9 days ago; previous circuit case (median) 2 days ago. Exclude same day cases.

◂ Impacts on Criminal Cases

Immigration Charges

Lead Charge	Count	Rank	1 yr ago	5 yrs ago	10 yrs ago	20 yrs ago
08 USC 1325 - Entry of alien at improper time or place; etc.	35,367	1	1	1	2	3
08 USC 1326 - Reentry of deported alien	28,930	2	2	2	1	1
08 USC 1324 - Bringing in and harboring certain aliens	3,794	3	3	3	3	2
18 USC 1546 - Fraud and misuse of visas, permits, and other documents	502	4	4	4	4	4
18 USC 1544 - Misuse of passport	333	5	5	8	15	16
18 USC 1028 - Fraud and related activity - id documents	165	6	6	5	6	7
18 USC 1542 - False statement in application and use of passport	72	7	7	9	10	8
18 USC 922 - Firearms; Unlawful acts	50	8	11	12	13	22
21 USC 841 - Drug Abuse Prevention & Control-Prohibited acts A	45	9	10	14	14	11
18 USC 371 - Conspiracy to commit offense or to defraud US	40	10	16	10	11	5

Impact of Economics Judges, by Crime Type

	Log of Total Sentence				
	(1)	(2)	(3)	(4)	(5)
Econ Training	-0.0695	-0.00621	-0.0369	-0.0213	-0.0226
	(0.0839)	(0.0347)	(0.0559)	(0.0619)	(0.0599)
Econ Training *	**0.245****	**0.0467**	**0.200****	**0.184****	**0.219****
Booker (≥2005)	**(0.100)**	**(0.0411)**	**(0.0856)**	**(0.0903)**	**(0.0900)**
N	600010	697844	798823	838643	786472
adj. R-sq	0.043	0.044	0.051	0.037	0.043
Courthouse and Calendar FE	Y	Y	Y	Y	Y
Drop Crime	Drug	**Immigration**	Fraud	Weapon	Other

Milton Friedman for legalizing drugs (against victimless crimes). Immigration severity consistent with Circuit results.

◂ Impacts on Criminal Cases

Judge Randomization Check

	Econ Training				
	(1)	(2)	(3)	(4)	(5)
Crime Type	-0.00545	0.0148	-0.00362	0.00319	-0.000646
	(0.0157)	(0.0441)	(0.0107)	(0.00898)	(0.00939)
Crime Type *	0.0127	-0.0132	-0.00621	-0.00825	-0.00691
Booker ($\geq$2005)	(0.0127)	(0.0445)	(0.0160)	(0.0147)	(0.0142)
N	930448	930448	930448	930448	930448
adj. R-sq	0.245	0.245	0.245	0.245	0.245
Courthouse and Calendar FE	Y	Y	Y	Y	Y
Crime Type	Drug	Immigration	Fraud	Weapon	Other

Omnibus check: No endogenous settlement or selection of cases.

Impacts on Criminal Cases

Impact of Economics Judges on Racial Gaps, Pre *Booker*

	Life	Months	Life	Months
	(1)	(2)	(3)	(4)
Minority	*0.00395****	*20.84****	*0.00388****	*20.34****
	(0.000770)	*(1.979)*	*(0.00102)*	*(2.170)*
*** Economics**	**0.00401****	**5.413*****	**0.00379****	**3.180***
	(0.00157)	**(2.044)**	**(0.00170)**	**(1.910)**
*** Republican**			0.000641	**4.096****
			(0.00103)	**(1.723)**
*** Minority J**			-0.00119	**-7.451****
			(0.00135)	**(3.167)**
N	156650	155977	154920	154253
adj. R-sq	0.015	0.102	0.015	0.102
Judge FE	Y	Y	Y	Y
Sample	All	All	All	All

Economics Trained Judges harsher to minorities (1992-2003 30% merge to USSC)

Cohen and Yang (AEJ 2017): Republican J sentence 3 more months for blacks

Impact of Economics Judges on Gender Gaps, Pre *Booker*

	Life	Months	Life	Months
	(1)	(2)	(3)	(4)
Female	*-0.00397****	*-31.01****	*-0.00395****	*-29.84****
	(0.000562)	*(1.676)*	*(0.000718)*	*(2.127)*
*** Economics**	**-0.00247****	**-5.083*****	**-0.00227***	**-4.120****
	(0.00113)	**(1.717)**	**(0.00116)**	**(1.617)**
*** Republican**			-0.000372	**-2.549***
			(0.000678)	**(1.456)**
*** Female J**			0.000697	0.145
			(0.000750)	(1.218)
N	160402	159713	158634	157951
adj. R-sq	0.014	0.109	0.015	0.109
Judge FE	Y	Y	Y	Y
Sample	All	All	All	All

Economics Trained Judges more lenient to females (1992-2003 30% merge to USSC)

Cohen and Yang (AEJ 2017): Female J sentence 2 fewer months for females

Coarse Communication

- Communication constraint works as a magnifier of correlation (Kweik 2013)

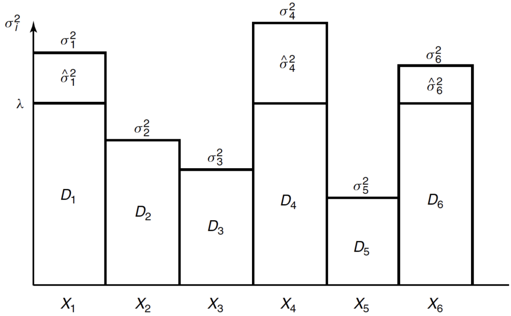


FIGURE 10.7. Reverse water-filling for independent Gaussian random variables.

Elements of Information Theory (Cover and Thomas 1991)

  - No bits used to describe information with variance less than a constant
  - Results in exaggerating pre-existing correlations
- Use of stereotypes under information constraints (Bordalo et al. 2016)
  - Representative heuristic will "overweight" and distort beliefs

General Equilibrium Effects

Recap

- Economics judges
  - **vote** for and **author** conservative verdicts, especially for economics cases
  - more **opposed** to government regulation and criminal appeals
    - Against environmental and labor, but **for** immigration enforcement
    - Friedman trainees more lenient on criminal appeals
  - **impact** their panelists and peers on subsequent cases
    - Increase use of "deterrence" in panelists' subsequent opinion
    - Transmission from regulatory to criminal cases
  - **render** harsher criminal sentences
    - Especially for immigration crimes (but not drug crimes)
    - Also predictive of Pre-*Booker* disparities along race and gender

Despite significant negative impacts of incarceration on families, communities, and **limited** deterrence effects. (e.g. Mueller-Smith 2014; Chalfin et al. 2014; Morsy et al. 2016)

◂ General Equilibrium Effects

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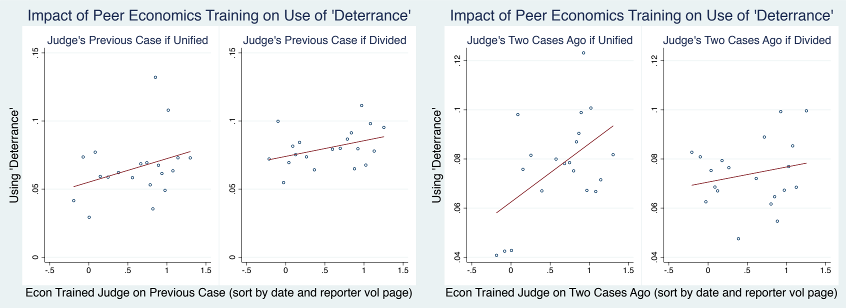
◂ General Equilibrium Effects

Active or Passive Persuasion?

Uniform panel (DDD or RRR) as proxy for passive persuasion



Transmission seems generalized, somewhat greater when panel is unified.

Leeper et al (1979) reports evidence that people are more likely to be influenced by someone whose opinion is close to theirs, and they often reject opinions which are very far from their own.

General Equilibrium Effects

Implicit Attitudes

- The text of the opinions provide a window into rich representations of legal/political institutions, as we well as **human social psychology**.
- Caliskan, Bryson, and Narayanan (Science 2017) show that implicit gender and racial biases are embedded in human language.
  - We ask whether this implicit language bias varies across judges.

Word Embedding Association Test

Sentiment Attribute Words	
joy, love, peace, wonderful,	agony, terrible, horrible, nasty,
pleasure, friend, laughter, happy	evil, war, awful, failure

Implicit Sexism Target Words	
male, man, boy, brother,	female, woman, girl, sister,
he, him, his, son	she, her, hers, daughter

Implicit Racism Target Words	
european, white, caucasian	black, african, negro

- Compute "Assocation" as the average word-vector similarities between a group of target words and a group of attribute words.

$$\text{Implicit Sexism} = \frac{\text{Male-Pleasant Association}}{\text{Male-Unpleasant Association}} - \frac{\text{Female-Pleasant Association}}{\text{Female-Unleasant Association}}$$

$$\text{Implicit Racism} = \frac{\text{White-Pleasant Association}}{\text{White-Unpleasant Association}} - \frac{\text{Black-Pleasant Association}}{\text{Black-Unleasant Association}}$$

- We train Word2Vec separately by judge, using Caliskan et. al (2017) windows

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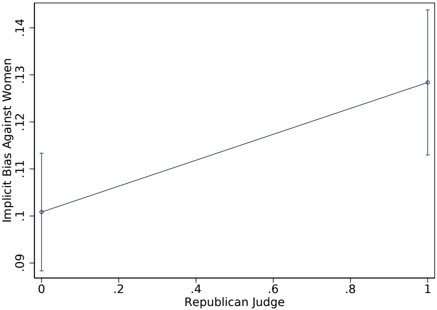
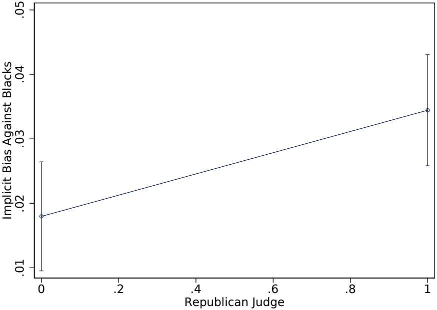
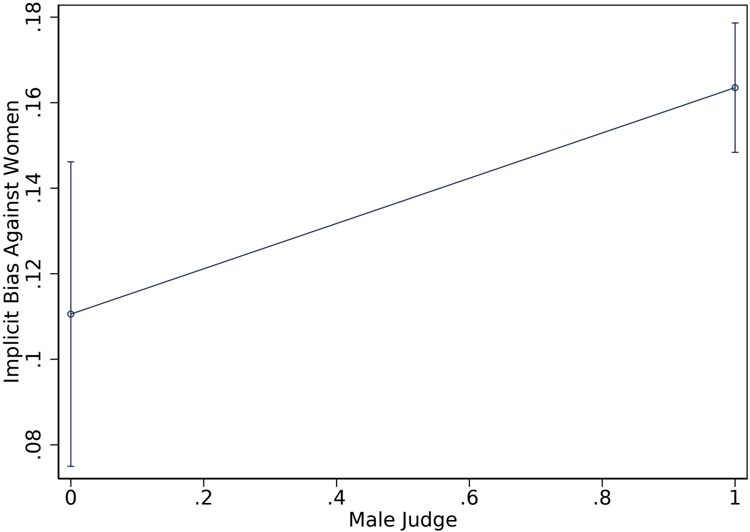
Republican judges have higher gender bias and race bias

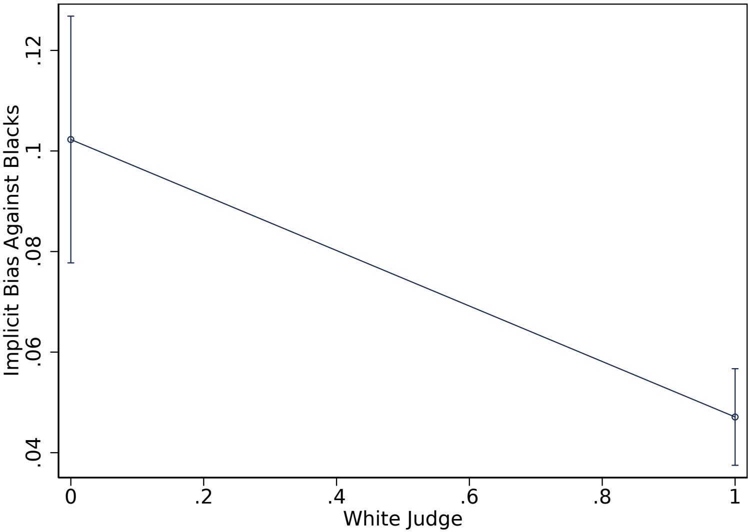




Male judges have higher gender bias than female judges



White judges have *lower* race bias than black judges



Both the words and the IAT work at an unconscious level, in contrast to the decisions which are more conscious.

Trump nominees have high race and gender bias

President Donald J. Trump's Supreme Court List

Amy Coney Barrett of Indiana, U.S. Court of Appeals for the Seventh Circuit

Keith Blackwell of Georgia, Supreme Court of Georgia

Charles Canady of Florida, Supreme Court of Florida

Steven Colloton of Iowa, U.S. Court of Appeals for the Eighth Circuit

Allison Eid of Colorado, U.S. Court of Appeals for the Tenth Circuit

Britt Grant of Georgia, Supreme Court of Georgia

Raymond Gruender of Missouri, U.S. Court of Appeals for the Eighth Circuit

Thomas Hardiman of Pennsylvania, U.S. Court of Appeals for the Third Circuit

Brett Kavanaugh of Maryland, U.S. Court of Appeals for the District of Columbia Circuit

Raymond Kethledge of Michigan, U.S. Court of Appeals for the Sixth Circuit

Joan Larsen of Michigan, U.S. Court of Appeals for the Sixth Circuit

Mike Lee of Utah, United States Senator

Thomas Lee of Utah, Supreme Court of Utah

Edward Mansfield of Iowa, Supreme Court of Iowa

Federico Moreno of Florida, U.S. District Court for the Southern District of Florida

Kevin Newsom of Alabama, U.S. Court of Appeals for the Eleventh Circuit

William Pryor of Alabama, U.S. Court of Appeals for the Eleventh Circuit

Margaret Ryan of Virginia, U.S. Court of Appeals for the Armed Forces

David Stras of Minnesota, U.S. Court of Appeals for the Eighth Circuit

Diane Sykes of Wisconsin, U.S. Court of Appeals for the Seventh Circuit

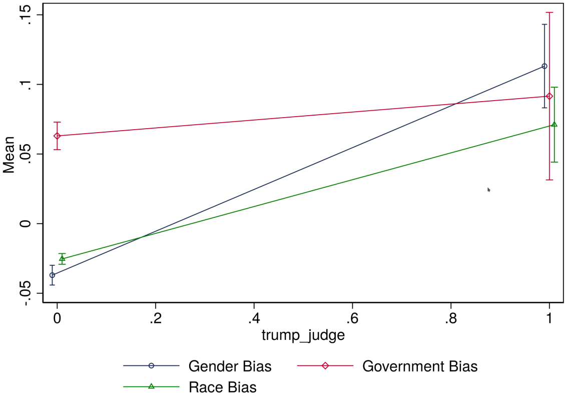
Amul Thapar of Kentucky, U.S. Court of Appeals for the Sixth Circuit

Timothy Tymkovich of Colorado, U.S. Court of Appeals for the Tenth Circuit

Robert Young of Michigan, Supreme Court of Michigan (Ret.)

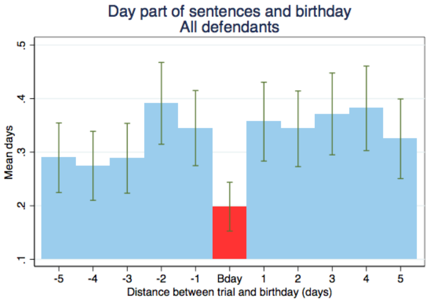
Don Willett of Texas, Supreme Court of Texas

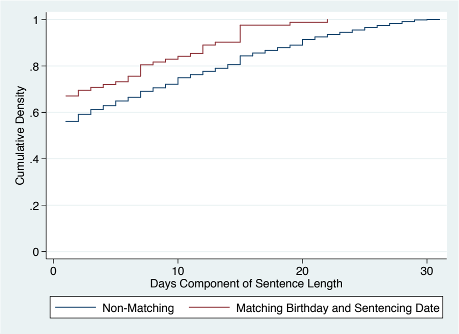
Patrick Wyrick of Oklahoma, Supreme Court of Oklahoma



General Equilibrium Effects

Judicial leniency on defendant birthdays





"Perceptibility the policy pendulum is swinging **toward rationality** and intellect and **away from** magic and **emotion**." (Manne 1980, LEC annual report)

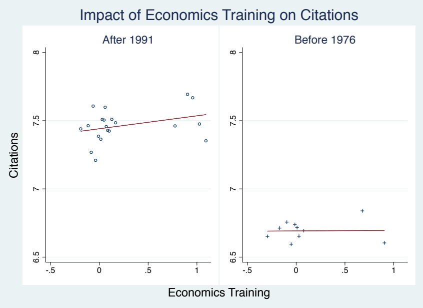
Judges' experience and training

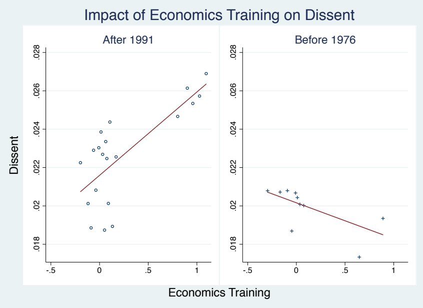
- Is the leniency on birthday dependent on judges' characteristics ?
  - Judicial experience does not mute the birthday norm...
  - but economics does (measured in their writing in civil cases).

	Day component, excluding 12 months sentences			
	Tenure >median	Tenure < median	Use econ related words	Don't use econ related words
		Panel A : control placebo and week		
Bday	-0.16	-0.030	-0.042	-0.15*
	(0.098)	(0.073)	(0.091)	(0.084)
		Panel B : control week		
Bday	-0.24***	-0.063	-0.067	-0.22***
	(0.065)	(0.065)	(0.076)	(0.054)
		Panel C : control placebo		
Bday	-0.13***	-0.11*	-0.043	-0.19***
	(0.025)	(0.057)	(0.065)	(0.0086)
Cst	0.18***	0.17***	0.14***	0.20***
Obs	82,194	88,578	84,089	83,315

General Equilibrium Effects

Citations and Dissent (Legal and Normative Innovation)





After attendance, Economics Trained Judges cited more

and increase dissents (normalized)

Dissents as contribution to **legal innovation** and **self-expression**

General Equilibrium Effects

Appeals to (but not Reversals at) Supreme Court

	Supreme Court Takes Case		Supreme Court Reverses	
Mean of dep var.	0.011		0.677	
	(1)	(2)	(3)	(4)
Manne Training	**0.00263***	0.00129	0.0185	0.0239
	(0.00139)	(0.00318)	(0.0305)	(0.0444)
N	**372244**	493728	3348	5653
adj. R-sq	**0.007**	0.024	0.350	0.300
Circuit-Year FE	**Y**	Y	Y	Y
Sample	**Post 1991**	Pre 1976	Post 1991	Pre 1976

Appeals to (but not Reversals at) Supreme Court increase after economics training.

Supreme Court increases 25% attention to economics-trained cases.

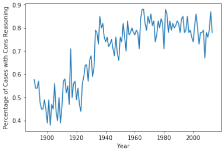
General Equilibrium Effects

Consequentialist vs. deontological reasoning

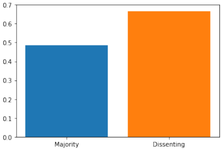
- Train classifier on applied ethics articles
- Extract phrases that are most distinctive of consequentialist reasoning
  - "the optimal number", "of likelihood of", "cost of not", "minimize expected impermissibility", "benefit someone"

Consequentialist reasoning

higher over time

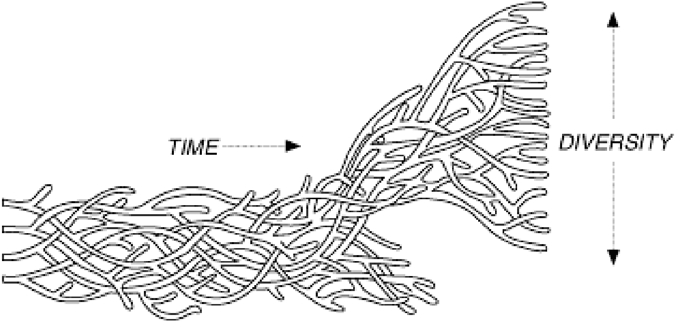


and in dissents



◂ General Equilibrium Effects

How to Examine General Equilibrium Effects?

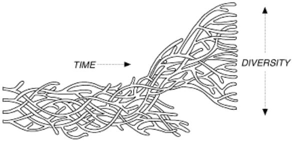


- Precedent?
- Paradigm shifts?

Constructing Memes

- Legal terminology
  - A: Adjective, N: Noun, V: Verb, P: Preposition, D: Determinant, C: Conjunction.
  - 2-grams: AN, NN, VN, VV, NV, VP.
  - 3-grams: NNN, AAN, ANN, NAN, NPN, VAN, VNN, AVN, VVN, VPN, ANV, NVV, VDN, VVV, NNV, VVP, VAV, VVN, NCN, VCV, ACA, PAN.
  - 4-grams: NCVN, ANNN, NNNN, NPNN, AANN, ANNN, ANPN, NNPN, NPAN, ACAN, NCNN, NNCN, ANCN, NCAN, PDAN, PNPN, VDNN, VDAN, VVDN.
  - 350,000 N-grams
- Phrase that propagates along the citation/seating graph
  - Citation meme that propagates along the citation/seating graph

Scoring Memetic Phrases



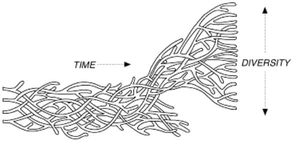
$$P_m = \frac{d_{m \to m}}{d_{\to m} + \delta} \Big/ \frac{d_{m \to \cancel{m}} + \delta}{d_{\to \cancel{m}} + \delta}$$

- $d_{m \to m}$ = # of cases with m, and cite ≥ 1 case with m
- $d_{\to m}$ = # of cases which cite ≥ 1 case with m

- $d_{m \to \cancel{m}}$ = # of cases with m, and do not cite any other case with m
- $d_{\to \cancel{m}}$ = # of cases which do not cite any other case with m

- δ is a noise factor to account for non-citing cases
- The overall meme score of a phrase is: $S_m = \frac{N_{has\ meme}}{N_{total}} \times P_m$

Scoring Memetic Phrases



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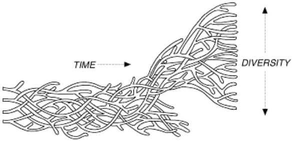

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Memetic Phrases

Phrase	Normalized Meme Score
red heat	0.138
salvage services	0.0039
said cars	0.0029
Atlantic coast	0.00216
citizens of different states	0.00212
insurance effected	0.0020
separable controversy	0.0018
taken in tow	0.0017
schooner was	0.00126
fourteenth amendment	0.00125
contract of affreightment	0.00119
patented design	0.0011
constitution or laws	0.0009
mere transient or sojourner	0.0008

Maritime Law: salvage services, Atlantic coast, citizens of different states, insurance effected, taken in tow, schooner was, contract of affreightment, mere transient or sojourner; Fourteenth Amendment one of the most litigated parts of Constitution, basis for *Brown v. Board of Education* (1954) [racial segregation], *Roe v. Wade* (1973) [abortion], *Bush v. Gore* (2000) [2000 election], and *Obergefell v. Hodges* (2015) [same-sex marriage].

General Equilibrium Effects

Integration and Assimilation? or Dis-integration, Radicalization, Other-ing, and Egotism?

◂ The Effect of Being Minority (DRR or RDD): Instead of assimilation, we see **dis-assimilation**

◂ The Effect of Being Majority (DDR or RRD): Instead of integration, we see **radicalization**

◂ The Effect of Uniformity (DDD or RRR): Instead of conformity, we see **egotism**

Minority: DRR	Majority: DDR	Uniformity: DDD
Assimilation: --→DRR	Integration: --→DDR	Conformity: --→DDD
Dis-assimilation: D←--RR	Radicalization: D←--DR	Egotism: D←--DD
Persuasion: DR←--R	Other-ing: DD←--R	Sectism: DD←--D

◂ Identification : Circuit × YearQuarter × Party Fixed Effects (stability w/ Judge FE, Topic FE)

◂ General Equilibrium Effects

Mitosis of Ideology

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Assimilation: $--\rightarrow$DRR	Integration: $--\rightarrow$DDR	Conformity: $--\rightarrow$DDD
Dis-assimilation: D$\leftarrow--$RR	Radicalization: D$\leftarrow--$DR	Egotism: D$\leftarrow--$DD
Persuasion: DR$\leftarrow--$R	Other-ing: DD$\leftarrow--$R	Sectism: DD$\leftarrow--$D

Identification: Circuit × YearQuarter × Party Fixed Effects (stability w/ Judge FE, Topic FE)

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Dis-assimilation: D←--RR	Radicalization: D←--DR	Egotism: D←--DD
Persuasion: DR←--R	Other-ing: DD←--R	Sectism: DD←--D

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Assimilation: --→DRR	Integration: --→DDR	Conformity: --→DDD
Dis-assimilation: D←--RR	Radicalization: D←--DR	Egotism: D←--DD
Persuasion: DR←--R	Other-ing: DD←--R	Sectism: DD←--D

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Minority: **D**RR	Majority: **D**DR	Uniformity: **D**DD
Assimilation: --→**D**RR	Integration: --→**D**DR	Conformity: --→**D**DD
Dis-assimilation: **D**←--RR	Radicalization: **D**←--DR	Egotism: **D**←--DD
Persuasion: **D**R←--R	Other-ing: **D**D←--R	Sectism: **D**D←--D

◂ Identification : Circuit x YearQuarter x Party Fixed Effects (stability w/ Judge FE, Topic FE)

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Minority: **D**RR	Majority: **D**DR	Uniformity: **D**DD
Assimilation: --→**D**RR	Integration: --→**D**DR	Conformity: --→**D**DD
Dis-assimilation: **D**←--RR	Radicalization: **D**←--DR	Egotism: **D**←--DD
Persuasion: **D**R←--R	Other-ing: **D**D←--R	Sectism: **D**D←--D

Identification : Circuit x YearQuarter x Party Fixed Effects (stability w/ Judge FE, Topic FE)

General Equilibrium Effects

Mitosis of Ideology

Unique setting of DDD, DDR, DRR, RRR (uniformity, majority, minority)

- Repeated random assignment to teams
    - New evidence of
        - ~~Integration: $\longrightarrow$**D**DR~~
        - ~~Assimilation: $\longrightarrow$**D**RR~~
        - Dis-assimilation: **D**$\leftarrow$- -RR
        - Radicalization: **D**$\leftarrow$- -DR
        - Other-ing: **D**D$\leftarrow$- -R
        - Egotism: **D**$\leftarrow$- -DD
    - **D** is the treated individual

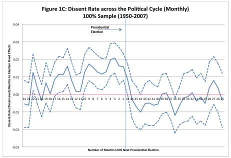
Sources of Normativity

Did seeing small differences lead to adoption of legal innovation?

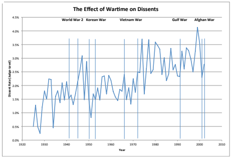
"as a result of what I have learned at these seminars, I have become a much better judge" (Judge Alaimo, U.S.D.C. Southern Georgia)

- concavity in self-image renders superstar effect (Benabou and Tirole 2011)
- small deviations from moral ideal are costly; "What the hell" (Ariely 2012)
- ego rents and judicial fact discretion (Gennaioli and Shleifer 2008)
- narcissism of small differences (Freud 1917)
- preferences for belief consonance (Golman et al 2016)
- social identity lies in difference; difference is asserted against what is closest (Bourdieu 1979)

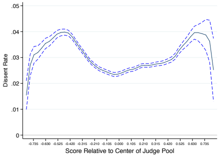
Dissents as Self-Expression



Identity

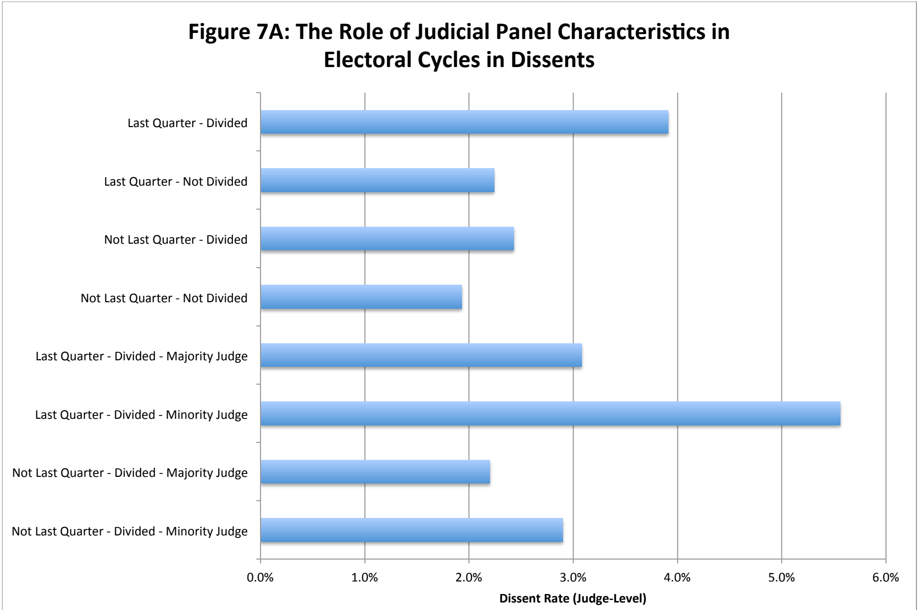


and Peer Pressure



Dissent as Self-Expression

average dissent rate is 2.1%



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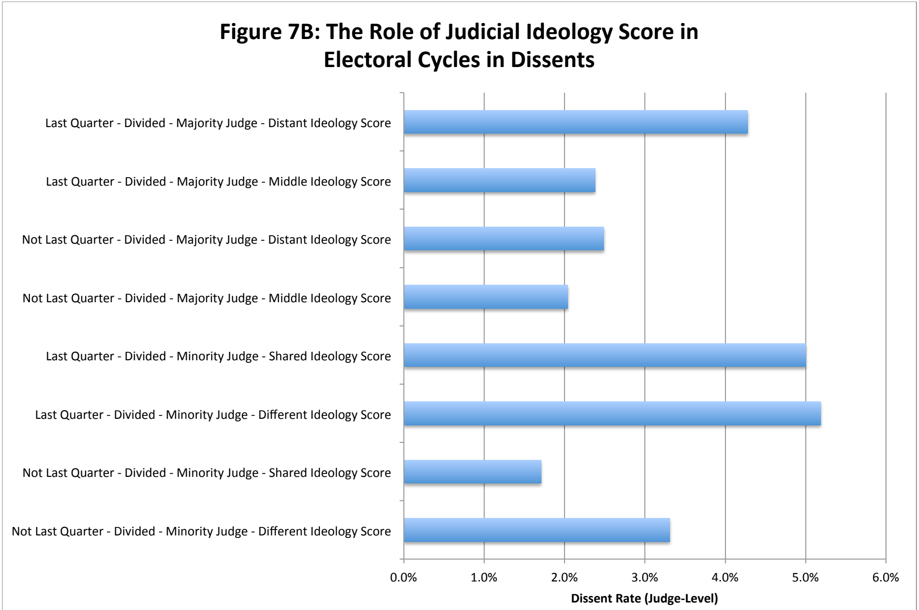

The Effect of Being Minority

- **(1) Dis-assimilation** from majority (**D**←−−RR); **conformity** to own group (−−→**D**DD)
- No significant effect of being minority in other situations of group diversity

	Dissent Vote				
	(1)	(2)	(3)	Xp $\leq$ 10 y	Xp > 10 y
Majority (e.g., DDR)	*-0.0146****	*-0.0147****	*-0.0149****	*-0.0158****	*-0.0143****
	(0.00125)	*(0.00116)*	*(0.00128)*	*(0.00157)*	*(0.00195)*
Unified (e.g., DDD)	*-0.0145****	*-0.0153****	*-0.0148****	*-0.0168****	*-0.0130****
	(0.00130)	*(0.00120)*	*(0.00134)*	*(0.00164)*	*(0.00200)*
Majority (e.g., DDR)	-0.000417	-0.000797	-0.000401	0.00126	-0.000476
* % Minority in Last Quarter	(0.00155)	(0.00117)	(0.00160)	(0.00256)	(0.00230)
Minority (e.g., DRR)	0.00156	-0.00152	0.00158	-0.000250	0.00487
* % Minority in Last Quarter	(0.00221)	(0.00167)	(0.00227)	(0.00320)	(0.00343)
(1) Unified (e.g., DDD)	**-0.00843*****	**-0.00807*****	**-0.00830*****	-0.00530	**-0.0101*****
*** % Minority in Last Quarter**	**(0.00216)**	**(0.00195)**	**(0.00223)**	(0.00348)	**(0.00330)**
N	1109611	1109611	1060203	588120	438050
adj. R-sq	0.020	0.020	0.021	0.025	0.034
Circuit-Year Quarter-Party FE	Yes	No	Yes	Yes	Yes
Judge FE	No	Yes	No	No	No

The Effect of Being Majority

- **(2) Radicalization** to dissent (D←--DR)
- **(3) Conformity** to own group (--→DDD)
- No significant effect of being majority in next experience as minority

	Dissent Vote				
	(1)	(2)	(3)	Xp $\leq$ 10 y	Xp > 10 y
Majority (e.g., DDR)	*-0.0202****	*-0.0169****	*-0.0205****	*-0.0177****	*-0.0230****
	(0.00177)	*(0.00147)*	*(0.00182)*	*(0.00238)*	*(0.00271)*
Unified (e.g., DDD)	*-0.0160****	*-0.0148****	*-0.0163****	*-0.0167****	*-0.0161****
	(0.00182)	*(0.00141)*	*(0.00186)*	*(0.00251)*	*(0.00308)*
(2) Majority (e.g., DDR)	**0.00512*** **	**0.00426*** **	**0.00508*** **	**0.00363***	**0.00533** **
*** % Majority in Last Quarter**	**(0.00146)**	**(0.00110)**	**(0.00151)**	**(0.00212)**	**(0.00264)**
Minority (e.g., DRR)	-0.00327	0.000565	-0.00329	-0.000364	-0.00517
* % Majority in Last Quarter	(0.00288)	(0.00223)	(0.00295)	(0.00409)	(0.00487)
(3) Unified (e.g., DDD)	**-0.00606*** **	**-0.00339** **	**-0.00639*** **	-0.00281	**-0.00951*** **
*** % Majority in Last Quarter**	**(0.00176)**	**(0.00138)**	**(0.00184)**	(0.00238)	**(0.00329)**
N	1109611	1109611	1060203	588120	438050
adj. R-sq	0.020	0.020	0.021	0.025	0.034
Circuit-Year Quarter-Party FE	Yes	No	Yes	Yes	Yes

The Effect of Uniformity

- **(4) Other-ing a minority** (<u>**D**</u>D←--R)
- **(5) Egotism amid uniformity** (<u>**D**</u>←--DD)
- No significant effect of uniformity in next experience as minority

	Dissent Vote				
	(1)	(2)	(3)	Xp $\leq$ 10 y	Xp > 10 y
Majority (e.g., DDR)	*-0.0141****	*-0.0128****	*-0.0144****	*-0.0138****	*-0.0157****
	(0.000989)	*(0.000870)*	*(0.00102)*	*(0.00132)*	*(0.00142)*
Unified (e.g., DDD)	*-0.0194****	*-0.0177****	*-0.0197****	*-0.0180****	*-0.0220****
	(0.00120)	*(0.00108)*	*(0.00124)*	*(0.00159)*	*(0.00183)*
(4) Majority (e.g., DDR)	**-0.00473*** **	**-0.00399*** **	**-0.00466*** **	**-0.00384* **	**-0.00645*** **
*** % Unified in Last Quarter**	**(0.00144)**	**(0.00110)**	**(0.00149)**	**(0.00213)**	**(0.00241)**
Minority (e.g., DRR)	0.000983	0.00393	0.00112	0.00427	-0.00397
* % Unified in Last Quarter	(0.00285)	(0.00260)	(0.00293)	(0.00439)	(0.00431)
(5) Unified (e.g., DDD)	**0.00675*** **	**0.00519*** **	**0.00690*** **	0.00281	**0.0103*** **
*** % Unified in Last Quarter**	**(0.00141)**	**(0.00112)**	**(0.00145)**	(0.00195)	**(0.00244)**
N	1109611	1109611	1060203	588120	438050
adj. R-sq	0.020	0.020	0.021	0.025	0.034
Circuit-Year Quarter-Party FE	Yes	No	Yes	Yes	Yes

Implicit Egotism and Manne Attendance

	Manne Attendance
	(1)
Unified on Last Panel	**0.0378*** **
	(0.0124)
Unified on Last Panel	-0.0029
in Circuit	(0.0047)
N	354,651
adj. R-sq	0.060
Circuit-Year FE	Y
Cluster	Judge
Sample	1991-

Did seeing small differences lead to adoption of legal innovation? ◂ General Equilibrium Effects