Measuring Productivity Innovatively
Judicial Corpora

U.S. Circuit Courts
- All 380K cases, 1M judge votes, from 1891-
- 2B 8-grams, 5M citation edges across cases

U.S. District Courts
- 1M criminal sentencing decisions
- 2.5M opinions from 1923-

U.S. Supreme Court
- Speech patterns in oral arguments from 1955-
- Identical introductory sentences

U.S. Immigration Courts
Prosecutors
WW1 Courts martials
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The weather

Judges deny refugees asylum when the weather is too hot or too cold
Time of Day

They grant asylum more before lunch and less after.

![Average Grant Rate per Hearing Hour Start 1980-2013](chart.png)
The defendant’s name

They assign longer sentence lengths to defendants whose first initial matches their own.

First Letter of First Name

First Letter of Last Name
The defendant’s birthday

When they do the opposite and give the gift leniency

Figure: US and French judicial leniency on defendant birthdays
Judges are more lenient the day after their team wins, rather than loses.
Snap judgments

We can use machine learning to predict asylum decisions with 80% accuracy the date the case opens and when it closes.
Elections and wartime also affect decisions.
Gambler’s Fallacy

How people often imagine a sequence of coin flips:

0101001011001010100110100

A real sequence of coin flips:

0101011111011000001001101
Up to 5% of decisions are reversed due to the gambler’s fallacy

**UMPIRE CALLS AND THE GAMBLER’S FALLACY**
MLB umpires call fewer strikes if previous call was a strike

Percentage point decline in probability of a called strike if:

- Previous call was a strike
- Previous two calls were strikes*

Obvious pitches: Within 3 inches of center of strike zone

-0.2

-0.5

Ambiguous pitches: Within 1.5 inches of edge of strike zone

-3.5

-4.8

*Compared to two previous calls that were balls
Source: Authors’ calculations using PITCHf/x data
In the US Supreme Court, the first sentence of the lawyers oral arguments are identical

“Mr. Chief Justice, (and) may it please the Court?”
Male petitioners below median in masculinity rating are 7 percentage points more likely to win
By 1990, 40% of federal judges had attended an economics-training program.
The results of these seminars were dramatic.

We can see economics language used in academic articles become prevalent in opinions.
The results of these seminars were dramatic.

We can see economics trained judges changing how they decided.

Econ vs Non-Economics Cases on Labor/Environmental Cases
Impacting their peers

We can see economic language traveling from one judge to another and across legal areas.
When judges were given discretion in sentencing economics trained judges immediately rendered 20% longer sentences relative to the non-economics counterparts.