

## Research Agenda

Ryan Copus

My main research interest is in developing an interdisciplinary approach to the empirical study, evaluation, and improvement of adjudication systems. I am particularly interested in applying this approach to issues in civil procedure, evidence, criminal justice, and the structure of federal courts. The enormous growth in data and advancements in algorithms presents an opportunity to make our justice systems more accurate, more predictable, and less biased. Borrowing from and contributing to work in law, political science, psychology, economics, and biostatistics, my primary research focuses on improving legal institutions by leveraging cutting-edge statistical and machine learning methods. Although I am interested in employing these methods in a wide variety of contexts (e.g., I have [a paper on the relationship between entertainment and crime](#)), my main research addresses core questions about legal institutions. I divide that research into three branches (1) evaluating adjudication systems, (2) mitigating inconsistency and bias in legal decision making, and (3) exploiting judicial disagreement to estimate the real-world impact of legal decisions.

### 1. Evaluating Adjudication Systems

The first step to better adjudication systems is developing an ability to measure and understand their key features. One of those key features is inconsistency, which can reduce predictability in law, reflect judicial biases, increase error, and undermine the legitimacy of legal institutions. My working paper, [Targeting Inconsistency: The Why and How of Studying Judicial Disagreement](#) (with Ryan Hubert), describes a generally applicable method for detecting the extent of inter-judge disagreement in a system. We show that standard methods for detecting inconsistency can vastly understate the true amount of disagreement, and that machine learning techniques can reveal significantly more judicial variance. Applying the method to a newly and extensively coded dataset on appellate review in the Ninth Circuit, we find that Ninth Circuit panels could disagree on the outcome in at least 40% of all civil cases. Acknowledging the difficulty of interpreting such measures in a vacuum, we outline how they could be rigorously employed to improve adjudication systems.

In a related project with Ryan Hubert, I am also working to improve empirical testing of judicial decision-making theories, which are crucial to understanding how judicial demographics – such as race, gender, or political party – affect the development of law. We argue that judicial politics researchers have been inattentive to the threat of Simpson’s Paradox – the possibility that estimated effects disappear or reverse direction when analysis is conducted at the level of subgroups. Consider, for example, research on the relationship between a judge’s political orientation and her decisions in civil rights cases. Scholars have provided evidence that judges appointed by Democratic Presidents are significantly more likely to vote in favor of civil rights plaintiffs. The implicit, if not explicit, theory is that Democrats have a preference that civil rights plaintiffs win. But there are good reasons to worry that the observed differences do a

poor job of capturing that preference. For example, Democratic judges may be less deferential to lower court determinations in civil rights cases. If defendant lower court winners are overrepresented in appellate cases, this heightened reversal proclivity – and not a preference for plaintiff victories – could explain much of the observed difference in pro-plaintiff voting rates. We offer a data-adaptive diagnostic tool that can alert researchers to such alternative explanations.

## 2. Mitigating Inconsistency and Bias in Legal Decision Making

The second branch of my research focuses on addressing two major problems in judicial decision-making systems: inconsistency and bias. In my job talk paper (coauthored with Hannah Laqueur), [Machines Learning Justice: A New Approach to the Problems of Inconsistency and Bias in Adjudication](#), we introduce a powerful new method for improving decision making that combines techniques in biostatistics with work in psychology that uses predictions of what decision makers *will decide* as recommendations for what they *should decide*. Using the Board of California Parole as an illustrative example, we provide evidence that this strategy of “judgmental bootstrapping” has the potential to greatly improve decision making. We also acknowledge serious issues with the method, most importantly the problem of status-quo bias: judgmental bootstrapping inherently ties decisions to the past, a past we may not want to tie ourselves to. Parole decisions may, for example, reflect racial biases. But algorithms can be adjusted to help solve the problem of embedded biases, and we argue for a new approach to doing so: as opposed to most commentators, who have focused on the purity of algorithmic inputs (e.g., excluding race or proxies for race from a formula), we argue for making direct changes to algorithmic output on the basis of explicit estimates of judicial bias.

I am planning a number of additional projects in this area. First, in an effort to explore and illustrate the potential of judgmental bootstrapping, I intend to test it in additional adjudication systems, including asylum decisions and other criminal justice contexts. I also plan to explore the legal ramifications of algorithms as decision aids, particularly how they can comport with equal protection law and due process. Finally, I intend to investigate the relationship between court size and inconsistency, with application to debates about splitting the Ninth Circuit.

## 3. Estimating the Impact of Legal Decisions

My newest branch of my research focuses on understanding the effect of legal decisions. The presence of judicial disagreement means that natural experiments are embedded throughout the legal system: random assignment of cases to judges – a common feature of adjudication systems – provides a promising source of exogeneity that can be used to evaluate the impact of legal decisions. Randomized assignment of judges offers the hope of being able to understand, for example, how pro-plaintiff decisions in employment discrimination cases affect employment outcomes for women, how earlier release from prison affects recidivism risk, or how the denial of social security disability benefits affects employment. Economists have developed sophisticated technique for capitalizing on such

source of randomization, but there are two main barriers to coupling this “instrumental variables” method with judicial assignment: (1) the raw inter-judge disparities in decision rates are often small, making it difficult to get much analytic purchase, and (2) the method requires an assumption that people treated with an instrument (e.g., assigned to a particular judge) are all affected in the same direction, but judges very plausibly have different effects in different types of cases. For my master’s thesis in biostatistics, I am working on a way to improve on economists’ approach to these two problems in hopes that we can better access the knowledge-producing potential of randomized judicial assignment. By using state-of-the-art predictive methods to better isolate the negative and positive effects of being assigned to a particular judge, we can both strengthen judge-specific signals and make more plausible the required assumption that effects are unidirectional. I hope to explain how legal scholars, administrators, and agencies can employ the method to better grasp the impact of legal decisions.

I am also interested in comparing the development of analytics in the criminal, civil, and administrative justice systems. I am working on a law review article, tentatively titled “Moneyball for Civil and Administrative Law? Expanding the Criminal Justice Analytics Revolution,” that presents a cohesive account of the “systems approach” to justice, including the progress it has made, impediments to its continued progress, and its potential. As a whole, the scope of court analytics pales in comparison to what society has achieved in other contexts, including finance, sales, medicine, elections, sports, fantasy sports, and even coverage of video game leagues. The criminal justice system is quickly catching up, but the same cannot be said of civil and administrative law. In this article, I explore the reasons for the disparity and assess the potential for civil and administrative adjudication systems to adopt an analytic approach. Drawing on the comparison between baseball’s early and basketball’s late embrace of analytics, I argue that the civil and administrative law’s relative dearth of analytics can largely be explained by differences in the accessibility, structure, and complexity of its data. But I also argue that we can – and should – make progress and suggest how we might do so.

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List of Teaching Preferences

Preferred Subjects:

- Civil Procedure
- Evidence
- Federal Courts
- Judicial Decision Making

- Empirical Methods
- Law and Economics
- Analytical Methods for Lawyers

Secondary Subjects:

- Criminal Law
- Torts
- Property
- E-Discovery