

# Tech Governance:

*Negotiating Innovation Between the Firm and the State*

*Konrad Posch*

POLITICAL SCIENCE PH.D. CANDIDATE  
UNIVERSITY OF CALIFORNIA, BERKELEY

Panel accepted to 2020 APSA Annual Meeting “Democracy, Difference, and Destabilization.” in Division 39: Science, Technology, and Environmental Politics

**CHAIR:** Konrad Posch

**DISCUSSANTS:** Victor Menaldo; Margaret Taylor

## **PANEL ABSTRACT:**

As APSA returns to the San Francisco Bay Area, this panel considers the distinctly Bay Area contributions to Democracy, Difference, and Destabilization: the rise of “tech” as a force in politics, society, and the economy. Whether the influence of the platform economy on labor arrangements, the impact of Facebook and Cambridge Analytica on the 2016 presidential election, or the development of the GDPR to shape privacy practices, tech has joined the major social forces which governance scholars consider in political and policy analysis. From a diverse set of governance perspectives, papers on this panel considers how firms and the state have sought to harness the promises of technological innovation while managing its threats. Cases explore success, failure, and anything in between or orthogonal to such a spectrum and span across a variety of political economic and geographic contexts.

Papers on this panel focuses on the negotiations between state, firm, and public actors around innovation. It focuses on key questions about how to harness innovation for public and private good while navigating the shoals of public risk for private benefit. Menaldo presents a paper which explores the role of patents in fostering technology transfer. Posch presents a case where regulators drive innovation beyond the imagination of market actors despite clear private benefits which are subverted by ideological opposition. Anastasopoulos & Whitford consider the ethical and responsible use of innovative AI and machine learning tools in government. Maguire & Altura examine the discourse around the regulation of data privacy in California with the passage of the California Consumer Privacy Act (CCPA) in 2018.

## **PAPERS**

**DO PATENTS FOSTER INTERNATIONAL TECHNOLOGY TRANSFER? EVIDENCE FROM SPANISH STEELMAKING, 1850-1930.**

Victor A Menaldo([vmenaldo@u.washington.edu](mailto:vmenaldo@u.washington.edu))

Why do developing countries protect the intellectual property rights (IPR) of foreign inventors? Does this facilitate technology transfer from the industrial frontier? This paper addresses those

questions by telling the story of when and how technology was transferred through patent licensing to Spanish iron and steelmakers from the rest of Europe. It focuses on the period between 1850 and 1929, during which foreigners' IPR were relatively well protected. Modern steelmaking was a quantum leap over previous techniques vis-à-vis scale and sophistication. In turn, this required a revolution in technology, knowledge, and skills. However, the transition to modern steelmaking was marked by a challenging process that has gone largely unrecognized by researchers: inventors had to find ways to transfer tacit knowledge to adopters that was inordinately difficult to codify, as it was arrived at via intuition and learning-by-doing. Patents played a key role in broadcasting new steelmaking techniques to Spaniards working in that industry. They also helped Spaniards connect with original, foreign inventors and establish enduring relationships with them. The latter shared their knowhow and expertise with the former under the aegis of licensing agreements and brought them into their networks of suppliers and technicians. Moreover, when disruptive steelmaking innovations were patented in Spain, this spurred second generation foreign inventors to patent improvements. It also induced Spanish inventors to contribute their own add on innovations, which they themselves patented.

### **INNOVATION BEYOND THE IMAGINATION OF THE MARKET: HOW THE STATE DROVE AN ECONOMICALLY BENEFICIAL AND SOCIALLY RESPONSIBLE INNOVATION: THE ADOPTION OF ELECTRONIC HEALTH RECORDS IN THE US AND EU**

Konrad Posch([konrad.posch@berkeley.edu](mailto:konrad.posch@berkeley.edu))

Tech entrepreneur rhetoric paints regulation as a specter of the past fettering the future. Yet the state had to drive the market to adopt electronic health records (EHR), a technology that lowers cost, improves care, and improves health policy research. EHR shows how regulators can not only cut their dead-weight loss, not only beneficially constrain the market, but also drive adoption of innovations the market cannot.

This paper isolates the mechanism of regulation-driven innovation adoption using Bayesian process traced US & EU evidence. The 2009 US HITECH Act pushed medical practices to adopt EHR with first a subsidy carrot and then a reimbursement withholding stick. Directive 2011/24EU added healthcare to the Common Market requiring EU member-states to adopt interoperable EHR.

Most medical practices espoused EHR preferences counter to their supposed interests. Early EHR adopters recognized their interest in lower costs and improved care. Yet most practices strongly opposed EHR despite this interest due to perceptions that practices would bear transition costs and outsiders (admins, insurers, analysts) would get the benefits.

Perceptions create preferences long before outcomes breed interests. Innovators distrust regulation not because they've had bad experiences but because they think they will. EHR overcame poor perception to create good outcomes beyond the imagination of the market in the US & EU showing how innovators can work with regulators rather than against them.

## **CIVIL-SERVANT-IN-THE-LOOP: ON THE ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN GOVERNMENT**

Jason Anastasopoulos ([ljanastas@uga.edu](mailto:ljanastas@uga.edu)) & Andrew B. Whitford ([aw@uga.edu](mailto:aw@uga.edu))

From recidivism prediction in policing to screening children by child protective services, the use of machine learning algorithms by civil servants, typically in the form of “risk scoring” systems, has become pervasive. While there has been a great deal of progress made toward defining general rules for the ethical design of artificial intelligence (AI), there is little practical guidance available for ensuring fair and ethical outcomes with the “civil-servant-in-the-loop” in mind. This is especially concerning since the primary use of AI in government currently and for the foreseeable future, will be as a decision-making tool used by civil servants.

Here, we develop a three-part approach to assessing how humans and AI interact in “governance by algorithm”. Indeed, while the complexity of public organizations makes it exceedingly difficult to predict how adopting individual-level rules for handling information produced by artificial intelligence systems will affect outcomes related to fairness, ethics and equality at the organizational level, ensuring that practitioners are aware of the potential pitfalls of making decisions with these systems is undoubtedly a step in the right direction toward ethical governance with artificial intelligence. Accordingly, in this paper we develop a framework for understanding how artificial intelligence can be biased in the context of bureaucratic decision-making and establish a set of guidelines which we argue should be followed, or at least taken into consideration, by individuals at all levels of government when using these systems to make important decisions about citizens.

Specifically, we address the relative roles of human decision-making biases and algorithmic bias, how those biases may interact, and how those biases may be mitigated in the design process. For instance, we know that individual biases of humans in decision-making may be mitigated by “analog” means such as teams (e.g., the “wisdom of crowds”, Delphi method). Likewise, using “explainable AI” (e.g., not deep learning models such as neural nets) increases the likelihood that algorithmic bias can be detected and mitigated. We foresee that such mitigation defenses may be deployed individually or in tandem over time as algorithms come and go (and evolve). Of course, the degree to which such defenses are effective may depend on the role of contractors and vendors in the policy process.

We utilize the working example of recidivism prediction throughout.

## **A DISCOURSE NETWORK ANALYSIS OF THE DATA PROTECTION DEBATE IN CALIFORNIA**

Matthew Maguire ([matthew.maguire@sjsu.edu](mailto:matthew.maguire@sjsu.edu)) & Thomas Altura ([thomas.altura@sjsu.edu](mailto:thomas.altura@sjsu.edu))

Home to more leading technology companies than any other area of the world, the United States is lagging behind the European Union when it comes to consumer data protection. Even in California—a state known for advancing other forms of protective regulation (Vogel, 2018)—policymakers have been slow to act, passing the California Consumer Privacy Act (CCPA) in 2018, more than two years after the EU’s General Data Protection Regulation (GDPR). Despite numerous headline-grabbing security breaches (e.g., Equifax in 2017) and privacy violations

(e.g., Cambridge Analytica in 2018), the United States lacks a comprehensive set of rules to govern the collection and use of personal data by large technology companies like Facebook and Google. Perhaps not coincidentally, technology companies have ramped up their lobbying spending to record levels during this period.

Relating to the conference theme of Democracy, Difference, and Destabilization, this paper explores how the United States has struggled to regulate a disruptive industry that, by some accounts, has already undermined democratic institutions through the erosion of trust and the spread of misinformation. Looking specifically at the case of California, our study examines the debate and discourse surrounding consumer data protection among various actors, including public officials, nongovernmental organizations, technology companies, and residents.

Discourse consists of the interactive process by which actors construct, formulate, and legitimate ideas (Schmidt, 2008; Béland and Cox 2011). In this paper, we use discourse network analysis to examine how actors and ideas impacted, or failed to impact, the policymaking process in California. Following the recent work of Rinscheid et al. (2019), we adopt an analytic approach that focuses on the policy preferences and conflict dynamics of different actors both before and after a critical juncture. According to this view, critical junctures do not ‘wipe the slate clean.’ Whether actors shift their beliefs after a galvanizing event depends in large part on how these actors perceived alternative ideas and the structure of discourse in the preceding period.

As such, we trace the evolution of discourse on data protection in order to map the preferences of different policy actors over time. To this end, we analyze nearly a decade of public statements captured in the Los Angeles Times, arguably California’s newspaper of record. The study is particularly focused on the positions of public officials and business organizations, as both often rely on the use of personal data – whether to gain elected office, provide security, or make a profit. In analyzing the development and legitimation of ideas, the study thus considers the likelihood of actors supporting new privacy protections given their diverse interests.

Works cited:

Béland, D. and Cox, R. H. (Eds.) (2011) *Ideas and Politics in Social Science Research*. Oxford, Oxford University Press.

Rinscheid, A., Eberlein, B., Emmenegger, P., and Schneider, V. (2019) ‘Why Do Junctures Become Critical? Political Discourse, Agency, and Joint Belief Shifts in Comparative Perspective’, *Regulation & Governance*.

Schmidt, V. (2008) ‘Discursive Institutionalism: The Explanatory Power of Ideas and Discourse’, *Annual Review of Political Science*.

Vogel, D. (2018) *California Greenin’: How the Golden State Became an Environmental Leader*, Princeton, Princeton University Press.