

LawOS—regulations as society's operating system

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Credit: Santa Fe Institute

Much as Linux, Windows, and iOS coordinate the execution of computing applications, laws coordinate the execution of human society. When new kinds of interactions emerge – sharing our airspace with private drones, for example, or algorithmic trading on financial markets – new laws are encoded to regulate those activities. Laws respond to conflicts of interest, keep criminals and cheats in check, and temper the abuse of power.

"Space law, tax law, online law, regulations for autonomous vehicles and artificial intelligence... if you think about laws and how they evolve to match the complexity of the functions they coordinate, laws become an interesting problem for complex systems science," says SFI President David Krakauer.

During SFI's 2016 Applied Complexity Network (ACtionN) and Board of Trustees Symposium April 3-5, themed "Law OS," Krakauer announced the beginning of a new research program at SFI on "Complexity and the Law." The planned four-year program is sponsored by SFI Trustee Andrew Feldstein.

To jump start the research effort, the symposium asked several interesting questions, Krakauer says: How bloated can our societal operating system get before its starts to fail? How sure are we that present and future societal apps will run on it? Do legal systems occasionally need complete redesigns as software operating systems do? Does the complexity of our current regulatory system exceed our human capacity for attention. Can [artificial intelligence](#) help address this constraint?

Other topics included the increasing complexity of the law, new contexts for laws and regulations, the prospects for minimal laws that (like minimal operating systems) seek the smallest number of rules to encompass the maximum number of challenges, the consequences of the strategic arms race among regulatory systems, and how we might overcome the Red Queen dilemma in which the production of new laws moves ever faster, only for us to stay in the same place.

Experts participating in the symposium represented diverse perspectives on law, government, computer coding, gaming, financial regulation, technology, art and copyright, physics, biology, and more.

The idea for the new research program emerged out of a March 2016 ACtionN topical meeting on complexity and the evolution of the law; a February 2016 paper co-authored by SFI External Professor Dan Rockmore (Dartmouth), Tom Ginsburg (University of Chicago Law School), and Krakauer on the evolution of national constitutions; and conversations with Rockmore, External Professor Jenna Bednar

(University of Michigan), Ginsburg, and Michael Livermore (University of Virginia School of Law) about the complex systems implications of the legal system for technology, and vice versa.

"Laws form [complex systems](#) that have evolved over many centuries via complex processes," said Feldstein, CEO and co-CIO of BlueMountain Capital Management and a graduate of Harvard Law School. "They regulate complex human networks and make large scale, interdependent society possible. Understanding the origins, the evolution, and the nature of law is to understand something important about civilization itself. There is no place better than SFI to undertake an interdisciplinary inquiry into this human innovation that structures and shapes our world."

Provided by Santa Fe Institute

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