

# Disruptive Technologies and the Challenges of Being a Judge in a Rapidly Changing World

Council of Chief Judges of State Courts of Appeal  
October 19, 2017

Gary E. Marchant, J.D., Ph.D.



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## Change

"[P]oliticians – and judges for that matter – should be wary of the assumption that the future will be little more than an extension of things as they are."



Chief Justice Roberts

– from Jeffrey Rosen, Roberts v. The Future, *NY Times*, Aug. 28, 2005

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## Technology Revolutions of the 20<sup>th</sup> Century



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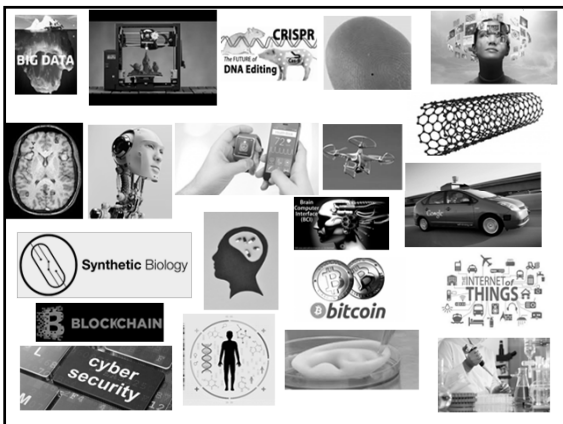
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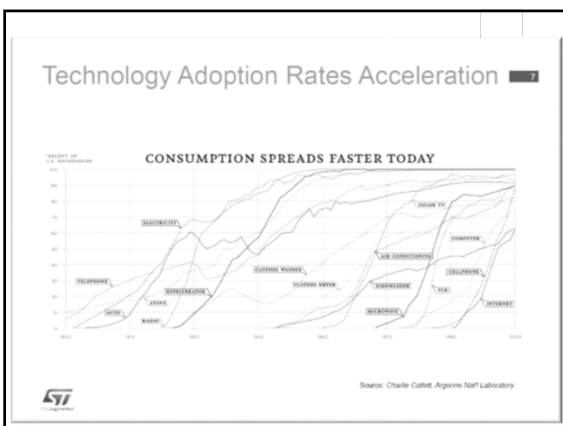
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### Exponential Change

"An analysis of the history of technology shows that technological change is exponential, contrary to the common-sense 'intuitive linear' view. So we won't experience 100 years of progress in the 21<sup>st</sup> century – it will be more like 20,000 years of progress (at today's rate)." – Ray Kurzweil

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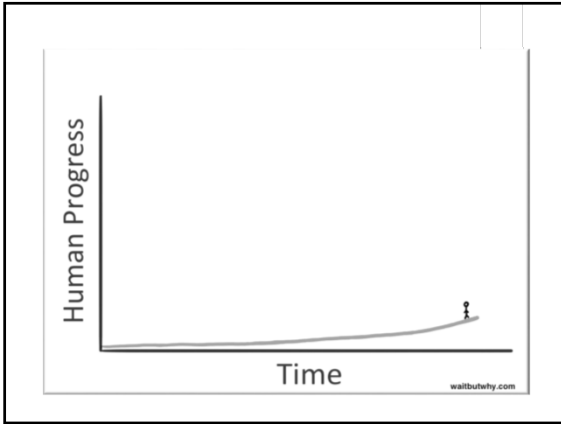
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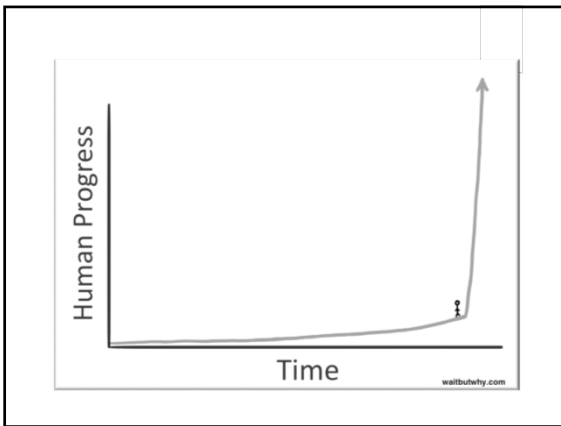
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*City of Ontario v. Quon*  
(2010)(Justice Kennedy)

- ▶ "The Court must proceed with care when considering the whole concept of privacy expectations in communications made on electronic equipment owned by a government employer. The judiciary risks error by elaborating too fully on the Fourth Amendment implications of emerging technology before its role in society has become clear.... Prudence counsels caution before the facts in the instant case are used to establish far-reaching premises that define the existence, and extent, of privacy expectations enjoyed by employees when using employer-provided communication devices.... A broad holding concerning employees' privacy expectations vis-à-vis employer-provided technological equipment might have implications for future cases that cannot be predicted. It is preferable to dispose of this case on narrower grounds."

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# Types of Cases, Claims & Defenses

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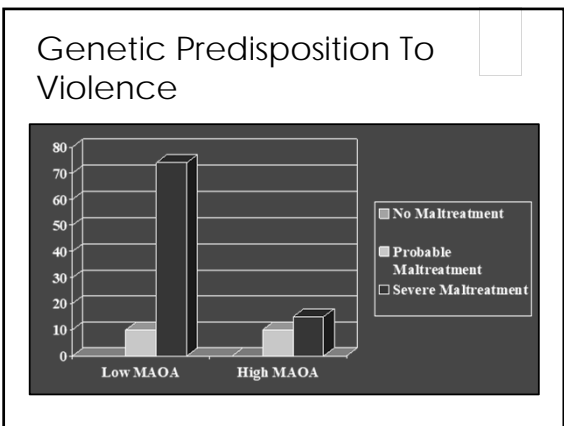
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## Bradley Waldroup Case (Tennessee 2010)

- ▶ Waldroup murdered his estranged wife's friend and tried to also murder his wife
- ▶ Charged with felony murder, a capital offense
- ▶ Tested positive for MAOA high risk gene variant; suffered from early childhood abuse
- ▶ Jury convicted him of voluntary manslaughter rather than felony murder



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Drones

Managers are using drones to monitor their employees

**First Man Arrested With Drone Evidence Vows to Fight Case**

**Judge Dismisses Charges on Man Who Shot Down Drone in Backyard**




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**Forbes** <http://ox>

**Tim Worstall** Contributor  
*I have opinions about economics, finance and public policy.*  
 Opinions expressed by Forbes Contributors are their own.

OPINION 6/18/2014 @ 8:27AM | 15,821 Views

**When Should Your Driverless Car From Google Be Allowed To Kill You?**

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**REPORT: Parents of teen with speeding ticket fighting citation with personal GPS data**

**GPS vs. RADAR**

**GPS Apps Might Give You Leverage in Fighting Traffic Tickets**



In re: Shaun Malone, Sonoma County Commission (2007)

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**A Robot That Bought Drugs Online Is Now Free From Police Custody**

Posted April 20, 2015 by John Biggs (@johnbiggs)



If that headline doesn't make much sense, welcome to the 21st century when a program designed to automatically buy random items from illegal marketplaces can be arrested by Swiss police. As you'll recall, Swiss police seized a program called Darknet Shopper, a bot that visited darknet markets and bought random items with bitcoins. Most of the items were mundane - counterfeit goods and the like - but the robot also ordered some ecstasy.

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**"Is This Man Cheating on His Wife?"**  
WSJ, Aug. 10, 2007

While his wife, Sue, watches television in the living room, Mr. Hoogestraat chats online with what appears on the screen to be a tall, slim redhead. He's never met the woman outside of the computer world of Second Life .... He's never so much as spoken to her on the telephone. But their relationship has taken on curiously real dimensions. They own two dogs, pay a mortgage together and spend hours shopping at the mall and taking long motorcycle rides



The woman he's legally wed to is not amused. "It's really devastating," says Sue Hoogestraat, ... "You try to talk to someone or bring them a drink, and they'll be having sex with a cartoon."




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**Voyeur Dorm (2001)**

- ▶ Tampa Bay zoning ordinance prohibits adult entertainment businesses in residential areas
- ▶ Voyeur Dorm is a house in an upscale Tampa residential area that contains several college-age female residents and dozens of live Web cams that transmit unvarnished images 24 hours per day to thousands of subscribers
- ▶ 11<sup>th</sup> Circuit held that the company did not offer adult entertainment in Tampa, but rather are offered in cyberspace, and is therefore not subject to the Tampa ordinance

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# Types of Evidence

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## New Types of Evidence

- ▶ Digital Discovery
  - ▶ Computers
  - ▶ Smart phones and devices
- ▶ Social Media
- ▶ Genomics
- ▶ Microbes
- ▶ GPS/Location Data
- ▶ Drones
- ▶ Virtual Worlds
- ▶ Internet of Things
- ▶ Data Analytics
- ▶ Wearables
- ▶ Brain Scans
- ▶ Biometrics
- ▶ Artificial Intelligence
- ▶ Virtual Reality

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## Issues for Courts

- ▶ Admissibility
- ▶ Privacy
- ▶ Fairness
- ▶ Deception
- ▶ 4<sup>th</sup> Amendment
- ▶ 5<sup>th</sup> Amendment
- ▶ Juror Understanding
- ▶ Prejudice
- ▶ Presentation Logistics

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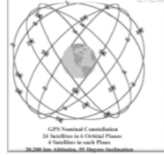
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## GPS Evidence

- ▶ Police tracking of suspect location
  - ▶ GPS device
  - ▶ Cell phone
- ▶ Digital stalkers
- ▶ Divorce attorney tracking of spouses
- ▶ Monitoring of employees
- ▶ Sex offenders
- ▶ Bank robber
- ▶ Speed limit enforcement/defense
- ▶ GPS cameras ("geotagging")




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## Brain Scanning

- ▶ Potential legal applications include:
  - ▶ Lie detection
  - ▶ Terrorist identification
  - ▶ Latent racial animus
  - ▶ Competency
  - ▶ Propensity for violence
  - ▶ Recidivism risk
  - ▶ Pain
  - ▶ Drug and alcohol use
  - ▶ Awareness in vegetative state




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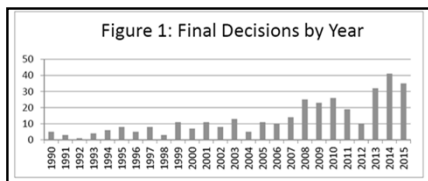
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## Brain Scanning Cases in US Courts



Source: Gaudet & Marchant, Drake L. J. (2016)

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**Image of suspect in school aide's 1992 slaying generated from his DNA**

By Crimewriter Staff AP September 29, 2016, 10:42 AM



**Sex:** Male ♂  
**Age:** Unknown (Age progressed to 50 years)  
**Body Mass:** Unknown (Shown at BMI 24)  
**Ancestry:** European - North/South Admixed, West, or South

Region	Percent
European - North	72.6%
European - South	17.1%
African - Sub-Saharan	1.1%
European - East	6.5%
Middle East - Arab	2.2%

Composite image of the suspect in the 1992 slaying of Lisa Ziegert in Agawam, Mass.

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**Genetics/Identification:**  
*Fidelity National Title*

- ▶ In small business dispute, one party and its lawyers received threatening anonymous letters
- ▶ They suspected owner of other company, but he denied it
- ▶ They deposed owner in their lawyer's office; clerk collected his used drinking glass
- ▶ DNA obtained from drinking glass matched DNA from saliva on envelopes




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**Section Annual Conference**  
**SCOTTSDALE, AZ**  
 April 9-11, 2014

**Genetic Data in Toxic Tort Litigation**

Way E. Mackinnon  
 Eugene Professor of Law  
 Faculty Director and Faculty Fellow, Center for Law, Science & Innovation  
 Lincoln Professor of Biotechnology, Endocrinology, Law and Ethics  
 Health Communication Institute, Global Institute of Sustainability  
 Arizona State University  
 Tempe, Arizona

**Genetic Data in Toxic Tort Litigation**

There are many data gaps and uncertainties about the health risks of most potentially toxic substances. When the scientific focus is on whether a particular toxic substance caused injury to a specific individual, the data gaps and uncertainties are even greater. Most disease conditions have multiple potential etiologies, and there is usually no direct evidence of which genetic cause produced the disease in a specific individual. Moreover, each person is unique in the way susceptibility to toxic agents, further complicating the inquiry into what caused illness in that individual. To do it is generally not the field of expertise and necessary that judges and juries must venture to resolve whether a particular exposure caused an individual plaintiff's illness. Not surprisingly, the research in toxic tort cases is often uncertain, contentious and open.

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### 3D Printing



For the Defense, Oct. 2016

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### Bitcoin and Blockchain



Blockchain Technology Will Transform the Practice of Law  
Bloomberg Law




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### Digital Fabrication



DIGITAL MANIPULATION AND PHOTOGRAPHIC EVIDENCE: DEFRAUDING THE COURTS ONE THOUSAND WORDS AT A TIME  
Zachariah B. Fryer

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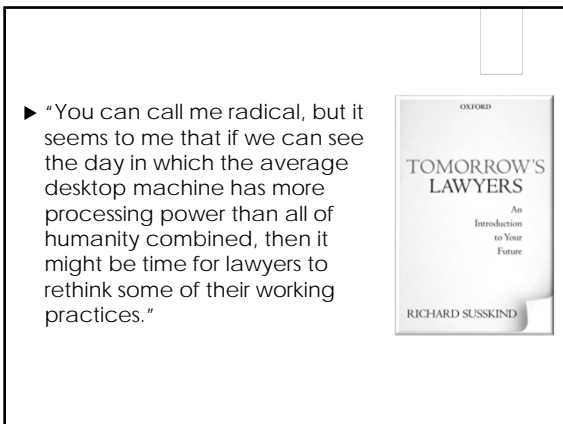
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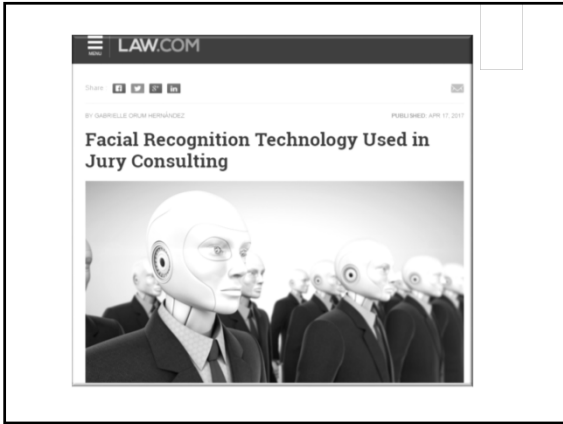
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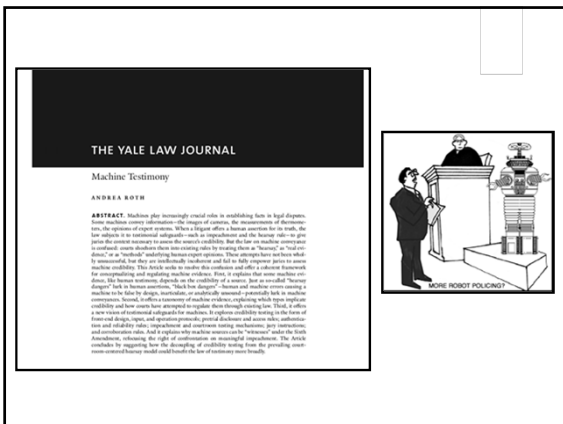
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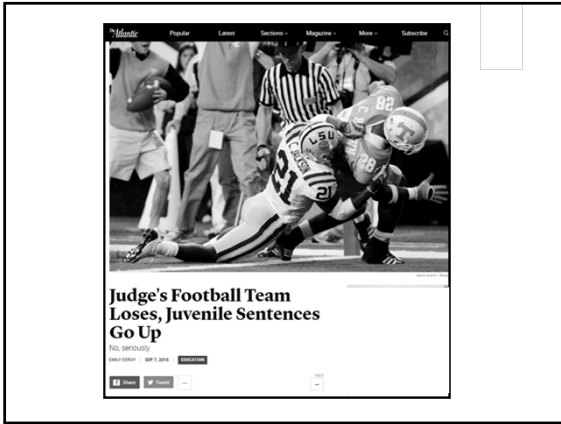
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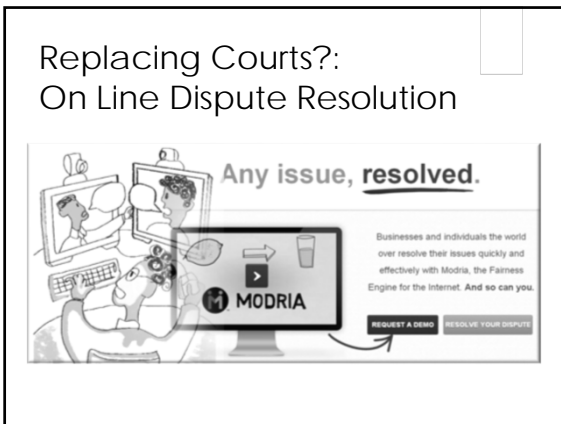
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Conclusion

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***"If facts are changing, law cannot be static."***  
-Felix Frankfurter, *The Zeitgeist and the Judiciary*, Address at the Harvard Law Review Twenty-fifth Anniversary Dinner (Mar. 30, 1912).



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Conclusion: Advice from "The Great One"

▶ "I skate to where the puck is going to be, not where it has been."  
▶ Wayne Gretzky



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