The Heritage Foundation

ISSUE BRIEF

No. 4525 | MARCH 8, 2016

The FAA Drone Registry: A Two-Month Crash Course in How to Overcriminalize Innovation

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Two months: That is all the time an executive branch agency needs to create a crime.

With passage of the 2012 FAA Modernization and Reform Act, Congress explicitly told the Federal Aviation Administration to leave recreational drones alone, but the FAA has charged ahead anyway. In just two months, with no input from Congress or the public, unelected and unaccountable bureaucrats have devised a way to apply the preexisting aircraft registration penalties to create a federal felony offense that can result in up to three years in prison and up to $277,500 in fines for failing to register as the owner of a qualifying drone—essentially a toy.

As bad as this is for unwary drone owners, the real legacy of the FAA's drone registry may be much broader. To justify its rushed regulatory action, the FAA, relying on trumped-up claims about the risk and harms associated with drone use, has asserted its regulatory muscle to protect society from these as yet unrealized dangers. Such thinking has important ramifications for the regulation of innovation and may be only a foretaste of future regulatory actions that deter or dissuade adoption of some new and innovative technologies.

This paper, in its entirety, can be found at
http://report.heritage.org/ib4525

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FAA Violation of Rulemaking Requirements

The FAA's drone registry went into effect remarkably quickly.[1] On October 22, 2015, the FAA published a rule determining that drones are subject to existing aircraft registry requirements.[2] One month later, the agency's special drone registry task force, composed of government and industry representatives, released a report outlining specific recommendations for a "streamlined" registration process.[3] Three weeks later, the FAA published its "interim final rule" establishing the recreational drone-owners' registry.[4] Seven days after its release, the rule went into effect, and it officially became a federal felony to operate a drone weighing more than 0.55 pounds without first registering as a drone owner.

From start to finish, the regulatory process took two months to complete.

Agency rulemaking is governed by two primary sources of law: the Administrative Procedure Act (APA) and the *Chevron* doctrine, which enables agencies to promulgate regulations when Congress has delegated that power with adequate "guidelines." The FAA registry pushes the boundaries of what an agency can do under both.

The swiftness of the FAA's drone action was possible only because it bypassed many of the requirements set forth in the APA, which governs most agency rulemaking. Under the APA,[5] administrative agencies must generally publicize their intent to promulgate new regulatory rules by filing a notice of proposed rulemaking (NPRM) in the *Federal Register*. Interested parties then have from 30 to 60 days to file comments with the agency, which then must consider the public's input before

publishing a final rule. Under the APA, a new regulation generally cannot take effect for at least 30 days after its final publication.[6] This process can take months or years to complete. The requirements of the APA clearly place a premium on public involvement, transparency, and fair notice over swiftness in the regulatory process.

There are exceptions, though, since circumstances can arise that require unusually rapid action on the part of regulatory bodies. To that end, the APA creates a "good cause" exemption to the notice-and-comment process if an agency can show that adhering to the APA's requirements is "impracticable, unnecessary, or contrary to the public interest."[7] This is meant to be a narrow exemption, not a way to circumvent the APA's broader requirements merely for reasons of bureaucratic expediency.

In creating its new drone-owners' registry, the FAA claimed this exemption,[8] owing to the immediate dangers that the agency has alleged stem from the proliferation of drones in the national airspace.[9] According to the FAA, "it is critical that the Department be able to link the expected number of new unmanned aircraft to their owners and educate these new owners prior to commencing operations."[10] But there are reasons to doubt the FAA's claims that drones have suddenly become a problem and that it could therefore not countenance any delay.

- The rapid growth of small, recreational drones is not new; in fact, Congress legislated on the subject of drone policy in 2012, fully three years before the FAA claimed a sudden exigency to justify rushing its registry into effect.

- Claims of immediate danger are greatly exaggerated. There is no documented instance of a drone colliding with another aircraft, and it is unclear how dangerous such a collision would be.

- The number of incidents—interference with emergency services, near-collisions, and other criminal misdeeds—is insignificant compared to the number of drones in circulation. For example, the FAA reported 764 *unconfirmed* drone sightings near airports or aircraft over an 11-month period at a time when there were possibly as many as a million registry-eligible drones in the hands of consumers.[11]

A full analysis of the FAA's claimed APA exemption is beyond the scope of this paper, but it is clear that there is reason to doubt the validity of the agency's claims. In the process of rushing its registry, the FAA exposed hundreds of thousands of drone owners to steep civil and criminal penalties for conduct that is not inherently wrongful and that was not unlawful before the rule went into effect.

The U.S. Supreme Court's 1984 opinion in *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*[12] clarified when and how a federal agency can make binding rules.[13] Congress can and often does delegate its legislative power to agencies with guidelines to administer a certain regulatory mission. This enables Congress to write broad legislation and leave the job of filling in the details to agencies. As recently stated by Judge Carlos T. Bea of the U.S. Court of Appeals for the Ninth Circuit, "The basic rule of *Chevron* deference is that if a statute is ambiguous, the federal agency charged with implementing the statute can issue regulations interpreting it to mean whatever the agency wants within the bounds of that ambiguity."[14]

A lawsuit has now been filed challenging the FAA drone-owners' registry, alleging that the rule violates the text and congressional intent of Section 336 of the FAA Modernization and Reform Act of 2012. The plaintiff, John Taylor, claims the registry "creates a burden on hobbyists that Congress did not want to create," as evidenced by the language of Section 336, which states that "the agency may not create new rules if such model aircraft are 'flown strictly for hobby or recreational use.'"[15] The nonprofit group TechFreedom has also filed a lawsuit challenging the registry on similar grounds.[16] If either of these lawsuits succeeds, the courts could overturn the drone registration process; if they do not, that task will most likely be left to Congress.

Power to Create the Drone Registry Not Delegated by Congress

Only Congress can enact a federal criminal law.[17] In 1911, however, the Supreme Court held in *United States v. Grimaud* that Congress could delegate legislative authority to federal agencies to issue regulations and could also enact legislation making it a crime to violate those regulations.[18] More recently, in *United States v. O'Hagan*,[19] the Court did not object to Congress "authorizing the Securities and Exchange Commission to make rules combating securities fraud and to make violations of these rules crimes."[20]

But here it seems clear that the FAA was not empowered either to criminalize the failure to register a recreational drone or to require its registration in the first place. While agencies get deference under *Chevron* to interpret vague and ambiguous statutes, the statute in this instance is not ambiguous, so *Chevron* should not apply.

In 2014, the Supreme Court declined to hear a criminal appeal in *Whitman v. United States*. While they agreed with the Court's decision not to hear the case, the late Justice Antonin Scalia, joined by Justice Clarence Thomas, clarified that "[u]ndoubtedly Congress may make it a crime to violate a regulation, but it is quite a different matter for Congress to give agencies—let alone for us to *presume* that Congress gave agencies—power to resolve ambiguities in criminal legislation."[21] While *Grimaud* and later cases like *O'Hagan* affirm agencies' ability to write regulations that implement statutory objectives even where Congress attaches a criminal penalty by statute, "agencies cannot overlook[] the reality that, if Congress wants to assign the executive branch discretion to define criminal conduct, it must speak 'distinctly.'"[22] In the context of the FAA drone registry, Congress did not so speak.

In the case of the FAA registry, Congress did provide a penalty and defined when it should apply: 49 U.S.C. § 46306(b)(5) provides that the owner of an aircraft "not used to provide air transportation" and "eligible for registration" who "knowingly and willfully operates, attempts to operate, or allows another person to operate the aircraft" is subject to imprisonment for three years and fines up to $250,000.[23] Congress also provided, however, in Section 336 that "the agency may not create new rules if such model aircraft are 'flown strictly for hobby or recreational use.'" Moreover, Congress has given the FAA the authority to register only aircraft, not aircraft *owners*, which is how the FAA has set up its drone-owners' registry to function.[24]

In addition to the fact that the FAA acted unlawfully here, the FAA drone registry merits reconsideration because it needlessly and hastily resorted to criminal penalties when civil fines would have sufficed to satisfy the government's interests.[25]

A Misuse of Criminal Law

By contrast to the over 300,000 regulatory crimes that exist today, there were only nine felonies at common law, including treason, murder, robbery, and arson.[26] If the FAA's registration requirement seems out of place when compared with those crimes, it is because criminal laws and regulations are meant to serve different purposes. Criminal laws "enforce the minimum substantive content of the social compact"—"the moral code that every person knows by heart"—"by bringing the full moral authority of government to bear on violators."[27] Regulations "efficiently manage components of the national economy using civil rules, rewards, and penalties to incentivize desirable behavior without casting aspersions on violations attributable to ignorance or explanations other than defiance."[28]

Treating such relatively trivial conduct as failing to register a child's toy the same way we treat "murder, robbery, or theft 'ignores the profound difference between the two classes of offenses and puts parties engaged in entirely legitimate activities without any intent to break the law at risk of criminal punishment.'"[29] This problem is only compounded by the fact that by the FAA's own estimates, there may be as many as a million registry-eligible drone owners, and this population grows daily.

Yet the FAA cannot guarantee that all—or even most—of this group is aware of the registration requirement or that they face draconian criminal penalties for failing to comply. Since most people do not think to check with a federal agency before using their latest toy or gadget, this leaves a significant and growing segment of the population needlessly exposed to criminal liability. The explosive growth of federal criminal law and the dramatic expansion of the administrative state have gone hand-in-hand.[30] Regulations like the FAA drone registration requirement generally make it all but impossible for individuals to know which of their toys—or any other things considered potentially "dangerous"—are permissible today but will make them felons tomorrow.

Criminalizing Innovation

The significance of the FAA's registry extends beyond its immediate impact on drone owners: It sets a precedent for criminalizing other innovations utilizing "emergency" rulemaking procedures premised on overblown claims of harm. While this is a particularly egregious abuse of the criminal law, government has a history of criminalizing or threatening to criminalize innovation under the "precautionary principle," the belief that "because a new idea or technology *could* pose *some* theoretical danger or risk in

the future, public policies should control or limit the development of such innovations until their creators can prove that they won't cause any harms."[31]

Innovations affected by precautionary government action include commercial use of the Internet (until 1989);[32] an "at-home 99 genetic analysis kit";[33] 3-D printing;[34] Caller ID;[35] Uber and Lyft, transportation services offered as an alternative to traditional taxi cabs;[36] Airbnb and other short-term home rental companies offering alternative vacation rentals;[37] driverless cars;[38] and FWD ("Skype before Skype was Skype"),[39] which eventually shut down in part because U.S. attorneys "put the reigns on FWD to seek FCC approvals" while "foreign founders of Skype proceeded apace with no regard for U.S. regulatory approvals."[40]

Criminalizing or otherwise restraining technologies like e-mail sounds laughable today, but e-mails were new and strange once, and like the driverless and Internet-connected cars just beginning to emerge in the market today, people felt that "the more we learn about [them]...the more we're learning to fear them."[41] Telephones, too, were new and strange once, but "people quickly adjusted to the new device. 'Ultimately, the telephone proved too useful to abandon for the sake of social discomfort.'"[42] When the telephone morphed into the cellular phone, the public once again became alarmed over the possibility of cell phone radiation causing cancer. That fear eventually proved to be unfounded, but imagine the consequences and the cost, both social and economic, if the government had banned cell phones until that risk was definitively disproven.

This thinking is antithetical to the core premise of a bottom-up, market-based economy and threatens technological progress, entrepreneurship, and prosperity. Precautionary rulemaking also (ironically for a theory premised on protecting society from unknown harms) leaves society exposed to "existing hazards" that new technologies might otherwise remedy. Drones, for example, might be useful tools in fighting wildfires and providing environmental disaster relief, or detecting threats to community safety, or performing tasks that would otherwise place a human being in danger. Public policies that, based on unproven potential risks, prevent or slow the development of those capabilities force society to forego the opportunity to benefit from social adaptation and repeated trial and error.[43]

Legislators and policymakers are standing by to capitalize on irrational fears or discomforts by introducing new legislation and regulations and claiming that such measures are necessary to protect the public from dangerous unknown technologies when, in fact, those fears are overblown.[44] Often, these claims are hyped to distract from other motives, whether it be protecting an entrenched and politically connected interest, enhancing one's notoriety, or establishing regulatory purview over an expansive new sector. The public would be better served by policies that allow innovative technologies to be brought to market and that let the market and society sort out the winners and losers.

Conclusion

Drones are one of many emerging technologies that can legitimately be both celebrated and feared. The question becomes: How will government respond to new technologies, and can prosecutors and judges continue to do their jobs without new criminal penalties? Permitting a dynamic, bottom-up approach—where markets and social norms govern individuals' interactions with new technologies—would be a more efficient regulatory response than a rigid, top-down, criminal law approach that threatens to deprive society of the benefits of innovation.

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Endnotes

1. For an explanation of the drone registry and its policies, *see* Jason Snead and John-Michael Seibler, *Purposeless Regulation: The FAA Drone Registry*, Heritage Foundation Issue brief No 4514 (Feb. 2, 2016), http://www.heritage.org/research/reports/2016/02/purposeless-regulation-the-faa-drone-registry.
2. *See* Fed. Aviation. Admin., Clarification of Applicability of Aircraft Registration Requirements for Unmanned Aircraft Systems and Request for Information Regarding Electronic Registration, Oct. 22, 2015, http://www.regulations.gov/#!documentDetail;D=FAA-2015-4378-0022. Model aircraft, including what are referred to colloquially as "drones," had not previously been subject to aircraft registration requirements. This decision represents a marked shift in policy.
3. *See* Unmanned Aircraft Systems (UAS) Registration Task Force (RTF) Aviation Rulemaking Committee (ARC), Task Force Recommendations Final Report, Nov. 21, 2015, http://www.faa.gov/uas/publications/media/RTFARCFinalReport_11-21-15.pdf?cid=TW373.
4. *See* Fed. Aviation. Admin., Registration and Marking Requirements for Small Unmanned Aircraft, Dec. 14, 2015, http://www.faa.gov/news/updates/media/20151213_IFR.pdf.
5. 5 USC § 551 et seq.
6. An agency may adopt a rule less than 30 days after publication if it "grants or recognizes an exemption or relieves a restriction;" if it is issuing "interpretative rules or statements of policy;" or "as otherwise provided by the agency for good cause found and published with the rule." *See* 5 USC § 553(d).
7. 5 USC § 553(b)(3)(B). Nevertheless, a sizable portion of agency rules published may circumvent the NPRM process by claiming the "good cause" exemption. An August 1998 General Accounting Office report found that fully half of all rules published during the prior year had no NPRM. Often, the justifications for avoiding the NPRM process were vague or general in nature, or asserted that it is not in the public interest to delay, even for public comment, innovative new regulations that are designed to advance the public good. Maeve Carey, *The Federal Rulemaking Process: An Overview*, Congressional Research Service (Jun. 17, 2013), https://www.fas.org/sgp/crs/misc/RL32240.pdf.
8. According to the FAA, "In light of the increasing reports and incidents of unsafe incidents, rapid proliferation of both commercial and model aircraft operators, and the resulting increased risk, *the Department has determined it is contrary to the public interest to proceed with further notice and comment rulemaking* regarding aircraft registration for small unmanned aircraft." FAA, *supra* note 3, at 14 (emphasis added).
9. The FAA cited specific examples of harms from unregulated drone use, including near-collisions between drones and manned civilian aircraft and interference with operations combating wildfires.
10. Interim final rule, billing code 4910-13-P, FAA, at 17.
11. Assuming that each sighting is valid and further assuming that each sighting is due to a unique drone operator, then malfeasant drone operators may make up as little as .076 percent of the drone-owning public. For a list of drone sightings, *see FAA Releases Pilot UAS Reports*, FAA (Aug. 21, 2015), https://www.faa.gov/news/updates/?newsId=83544.
12. 467 U.S. 837 (1984).
13. *See* The Honorable Carlos T. Bea, *Who Should Interpret Our Statutes and How It Affects Our Separation of Powers*, Heritage Foundation Lecture No. 1272 (Feb. 1, 2016), http://www.heritage.org/research/reports/2016/02/who-should-interpret-our-statutes-and-how-it-affects-our-separation-of-powers; Michigan v. EPA, 135 S. Ct. 2699, 2712–13 (2015) (arguing that "[i]n reality…agencies 'interpreting' ambiguous statutes typically are not engaged in acts of interpretation at all. Instead, as *Chevron* itself acknowledged, they are engaged in the 'formulation of policy.' Statutory ambiguity thus becomes an implicit delegation of rule-making authority, and that authority is used not to find the best meaning of the text, but to formulate legally binding rules to fill in gaps based on policy judgments made by the agency rather than Congress…[in a way that may, at times, usurp] the legislative power."). *See also* Charles J. Cooper, *Confronting the Administrative State*, Nat'l Affairs (2015); Robert E. Moffit, *Why Congress Must Confront the Administrative State*, Heritage Foundation Center for Policy Innovation Lecture No. 5 (Apr. 2, 2012).
14. *Id.* If a party challenges the constitutionality of an agency rule in court, a judge typically reviews the rule under a level of scrutiny known formally as rational basis review but informally as a "laugh test." Put succinctly, if a judge can hypothesize any legitimate purpose for the rule, it passes constitutional muster. "Leading cases support[] the view that great deference must be given to the decisions of an administrative agency applying a statute to the facts and that such decisions can be reversed only if without rational basis." Antonin Scalia, *Judicial Deference to Administrative Interpretations of Law*, 1989 Duke L.J. 511, 513 (1989); Clark Neily, *No Such Thing: Litigating Under the Rational Basis Test*, 1 N.Y.U. J. L. & Liberty 897 (2005); Timothy Sandefur, *How Rational Basis (D)evolved Into A Get Out of the Constitution Free Card*, Volokh Conspiracy (Jan. 17, 2014), http://volokh.com/2014/01/17/rational-basis-devolved-get-constitution-free-card/.
15. Cyrus Farivar, *Maryland "Hobbyist" Asks Court to Overturn FAA's New Drone Registration Rule*, Ars Technica (Jan. 5, 2016), http://arstechnica.com/tech-policy/2016/01/maryland-hobbyist-sues-faa-to-overturn-new-drone-registration-rule/.
16. *See* Evan Swarztrauber, *TechFreedom Sues the FAA on Drone Regulations*, TechFreedom, Feb. 18, 2016, http://techfreedom.org/post/139547849574/techfreedom-sues-the-faa-on-drone-regulations.

17. *See, e.g.*, United States v. Bass, 404 U.S. 336, 348 (1971) (stating that "because criminal punishment usually represents the moral condemnation of the community, legislatures…should define criminal activity."); John Calvin Jeffries, Jr., *Legality, Vagueness, and the Construction of Penal Statutes*, 71 Va. L. Rev. 189, 190 (1985) (explaining that only Congress is "politically competent to define crime" and that, generally, the "principle of legality…stands for the desirability in principle of advance legislative specification of criminal misconduct."); Steven S. Smith, *Overcoming Overcriminalization*, 102 J. Crim. L. & Criminology 537, 563 (2013) ("A bedrock principle of American criminal justice is legislative supremacy—the idea that it is for legislatures, not courts or law enforcement, to define what is a crime (and, in doing so, to prescribe the appropriate penalty)."). Arguably, however, one need not look beyond the first clause of Article I of the Constitution—which states that "[a]ll legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives"—to know that only Congress can create criminal laws. U.S. Const. art. I, § 1, cl. 1.
18. United States v. Grimaud, 220 U.S. 506 (1911). *See also* Carter v. Welles-Bowen Realty, Inc., 736 F.3d 722, 733 (6th Cir. 2013).
19. 521 U.S. 642 (1997).
20. *Carter*, 736 F.3d at 733.
21. Whitman v. United States, 135 S. Ct. 352, 353 (2014) (Scalia, J., dissenting from denial of cert).
22. *Id*.
23. *See* 18 U.S.C. § 3571.
24. 49 U.S.C. § 44103(a)(1)(A) states that when an owner properly files an application for registration with the FAA, the Administrator shall "register the aircraft" and issue the appropriate certificate. The FAA drone registry, however, does not operate on this premise, requiring instead that an individual register himself as a drone owner. Further, unlike the issuance of a tail number to an aircraft, which is unique to that aircraft, the FAA drone ID number is unique to the owner, who then must affix it to each of the possibly multiple eligible drones he owns.
25. *See generally* Jason Snead & John-Michael Seibler, *Purposeless Regulation: The FAA Drone Registry*, Heritage Foundation Issue Brief No. 4514 (Feb. 2, 2016), http://www.heritage.org/research/reports/2016/02/purposeless-regulation-the-faa-drone-registry.
26. *See* Stuart P. Green, 13 Ways to Steal a Bicycle: Theft Law in the Information Age 10, 280 n.3 (2012); *see also* Paul J. Larkin, Jr., *Regulatory Crimes and the Mistake of Law Defense*, Heritage Foundation Legal Memorandum No. 157 (July 9, 2015), http://www.heritage.org/research/reports/2015/07/regulatory-crimes-and-the-mistake-of-law-defense#_ftnref51/ (hereafter Larkin, *Regulatory Crimes*).
27. *See* Paul J. Larkin, Jr., *Prohibition, Regulation, and Overcriminalization: The Proper and Improper Uses of the Criminal Law*, 42 Hofstra L. Rev. 745, 747 (2014) (footnotes omitted).
28. *Id.*; *see also* John G. Malcolm, *Criminal Law and the Administrative State: The Problem with Criminal Regulations*, Heritage Foundation Legal Memorandum No. 130 (Aug. 6, 2014), http://www.heritage.org/research/reports/2014/08/criminal-law-and-the-administrative-state-the-problem-with-criminal-regulations.
29. Larkin, *Regulatory Crimes*, *supra* note 26.
30. *See* Michael B. Mukasey & John G. Malcolm, *Criminal Law and the Administrative State: How the Proliferation of Regulatory Offenses Undermines the Moral Authority of Our Criminal Laws*, in Liberty's Nemesis 283 (Dean Reuter, John Yoo eds. 2016); Paul J. Larkin, Jr., *Public Choice Theory and Overcriminalization*, 36 Harv. J. L. & Pub. Pol'y 715 (2013). *But see* Susan B. Klein & Ingrid B. Grobey, *Debunking Claims of Over-federalization of Criminal Law*, 62 Emory L. J. 1 (2012). Consider that only twice has the Supreme Court said that any agency interpretation of a rule went too far: in *Panama Refining Co. v. Ryan*, 293 U.S. 388 (1935), and *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495 (1935).
31. Adam Thierer, Permissionless Innovation ix (2014) (emphasis added).
32. A 1982 handbook read: "It is considered illegal to use the ARPAnet for anything which is not in direct support of government business.... Sending electronic mail over the ARPAnet for commercial profit or political purposes is both anti-social and illegal. By sending such messages, you can offend many people, and it is possible to get MIT in serious trouble with the government agencies which manage the ARPAnet." Thierer, *supra* note 31, at 3 (citing L. Gordon Crovitz, *WeHelpedBuildThat.com*, Wall St. J. (July 29, 2012), http://online.wsj.com/article/SB10000872396390443931404577555073157895692.html. It is worth noting that ARPAnet and the modern Internet are different entities. ARPAnet was a wholly owned government project, so unauthorized use would clearly have been illegal. But the principle is the same: The government could not, or did not, conceive of the myriad social benefits associated with the development of an open platform and so restricted its use. When the government changed this policy in the early 1990s, the benefits of an open platform became irrefutably obvious.
33. *Id.* at ix.
34. *Id.* at 39.
35. *See Id*. at 55.
36. Jason Snead, *New York City's Latest Attempt to Control Uber*, Daily Signal (Sept. 14, 2015), http://dailysignal.com/2015/09/14/new-york-citys-latest-attempt-to-control-uber/; Joshua D. Wright, *DC's Cab Rules Should Put Consumers First*, Wash. Post (Sept. 6, 2013), http://www.washingtonpost.com/opinions/has-the-dc-cab-commission-forgotten-who-it-serves/2013/09/06/cb3d0c18-15a6-11e3-be6e-dc6ae8a5b3a8 _story.html.

37. Goldwater Institute, *Homeowners in Jerome, Ariz. Fight to Keep Vacation Rentals Open* (May 11, 2015), http://goldwaterinstitute.org/en/work/topics/constitutional-rights/property-rights/homeowners-in-jerome-ariz-fight-to-keep-vacation-r/; Nick Gillespie, *The Government Is a Hit Man: Uber, Tesla and Airbnb Are in Its Crosshairs*, Time (Mar. 20, 2014), http://time.com/31828/the-government-is-a-hitman-uber-tesla-and-airbnb-are-in-its-crosshairs/; Shane Tews, *The Sharing Economy Under Pressure: Uber, Lyft and Airbnb's Regulatory Roadblocks Continue*, Am. Enter. Inst. (Sept. 29, 2014), http://www.techpolicydaily.com/technology/sharing-economy-pressure/.
38. Thierer, *supra* note 31, at 59; Stanford Center for Internet and Society, *Automated Driving: Legislative and Regulatory Action*, http://cyberlaw.stanford.edu/wiki/index.php/Automated_Driving:_Legislative_and_Regulatory_Action (last accessed Feb. 2, 2016); Mike Ramsay & Alistair Barr, California Proposes Driverless-Car Rules, Wall St. J. (Dec. 16, 2015), http://www.wsj.com/articles/california-proposes-rules-for-autonomous-cars-1450293308; Brian Fung, *The Government Push to Regulate Driverless Cars Has Finally Begun*, Wash. Post (July 21, 2015), https://www.washingtonpost.com/news/the-switch/wp/2015/07/21/the-push-to-regulate-driverless-cars-has-finally-begun/.
39. Thierer, *supra* note 31, at 67.
40. *See Id.* at 67–68 (citing Jonathan Askin, *A Remedy to Clueless Tech Lawyers*, Venture Beat (Nov. 13, 2013), http://venturebeat.com/2013/11/13 /a-remedy-to-clueless-tech-lawyers).
41. Fung, *supra* note 38.
42. Thierer, *supra* note 31, at 54 (citing Keith Collins, *OK, Glass, Don't Make Me Look Stupid*, Slate (May 14, 2013), http://www.slate.com/articles/technology/future_tense/2013/05/google_glass_social_norms_will_it_be_too _awkward_to_use_in_public.html).
43. *Id.* at 17 (citing Jonathan H. Adler, The Problems with Precaution: A Principle Without Principle, American (May 25, 2011), http://www.american .com/archive/2011/may/the-problems-with-precaution-a-principle -without-principle, and Aaron Wildavsky, Searching for Safety, 38 (1988)).
44. *Id.* ("Sens. Ed Markey (D–Mass.) and Richard Blumenthal (D–Conn.) unveiled a bill aimed at keeping Web-enabled cars from getting hacked. 'Rushing to roll out the next big thing, automakers have left cars unlocked to hackers and data-trackers,' said Blumenthal. 'This common-sense legislation protects the public against cybercriminals who exploit exciting advances in technology.'").