Code, Nudge, or Notice?

Ryan Calo*

ABSTRACT: Regulators are increasingly turning to means other than law to influence citizen behavior. This Essay compares three methods that have particularly captured the imagination of scholars and officials in recent years. Much has been written about each method in isolation. This Essay considers them together for the first time in order to generate a novel normative insight about the nature of regulatory choice.

The first alternative method, known colloquially as architecture or "code," occurs when regulators change a physical or digital environment to make undesirable conduct difficult. Speed bumps provide a classic example. The second method, libertarian paternalism or "nudging," refers to leveraging human bias to guide us toward better policy outcomes. For instance, the state might attempt to increase organ donation by moving to an opt-out system because people disproportionally favor the status quo. Finally, mandated disclosure or "notice" requires organizations to provide individuals with information about their practices or products. Examples include everything from product warnings to privacy policies.

These methods feel more distinct than they actually are. The timely example of graphic warnings on cigarettes illustrates how hard it can be to characterize a given intervention and why categories matter. The issue—which was headed for the Supreme Court—turned on whether the Food and Drug Administration ("FDA") intended for the warnings to change smoker behavior or merely to provide information. The FDA abandoned the intervention when it became clear the "warnings" were really about driving down smoking. Indeed, whether regulators employ code, nudge, or notice, they almost always have a deeper choice between helping citizens and hindering them. This Essay argues that regulators should choose "facilitation" over "friction" where possible, especially in the absence of the usual safeguards that accompany law.

INTRODUCTION

To code, nudge, or notice? That is the question today's regulators face—at least the growing number who would influence citizen or firm behavior without passing new laws against conduct. Absent throughout much of the twentieth century, alternatives to regulation in the classic sense, i.e., coercing behavior by laying down rules and punishing transgressions, are gaining widely in popularity.[1]

Three regulatory mechanisms in particular seem to have captured the public, academic, and official imagination. The first is architecture or "code," which refers to altering the physical or digital world to make certain conduct more difficult or costly.[2] A speed bump provides the classic illustration.[3] The second is "libertarian paternalism" or "nudging"; its mechanism is to exploit the ways that individuals deviate from rational choice in order to benefit themselves or society at large—for instance, by using our bias toward the status quo to encourage employees to put more of their paychecks into savings.[4] A third is mandated disclosure or "notice," which works by requiring the provision of facts with the hope that consumers or citizens will use those facts to protect themselves and police the market.[5] Information privacy is mostly governed in this way.[6] Each alternative has its adherents;[7] each, its critics.[8]

---

1.   *See* Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661, 662 (1998) ("Law . . . directs behavior in certain ways; it threatens sanctions ex post if those orders are not obeyed." (footnote omitted)). I do not mean by this definition to endorse the so-called command theory of law or suggest that law operates exclusively by identifying transgressions and setting and enforcing penalties. *Id.* at 662 n.4; *see also* H.L.A. HART, THE CONCEPT OF LAW 16 (3d ed. 2012) (criticizing as insufficient John Austin's theory of law as orders backed by threats). I mean only that within many civil, criminal, and administrative contexts the imposition of a rule serves as a natural starting point. The exact contours of law as such are outside the scope of this Essay.

2.   *See generally* LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999); Neal Kumar Katyal, *Architecture As Crime Control*, 111 YALE L.J. 1039 (2002); Lessig, *supra* note 1, at 663 (referring to architecture or "nature"); Joel R. Reidenberg, *Lex Informatica: The Formulation of Information Policy Rules Through Technology*, 76 TEX. L. REV. 553 (1998).

3.   *See, e.g.*, LESSIG, *supra* note 2, at 98; Leandra Lederman, *Statutory Speed Bumps: The Roles Third Parties Play in Tax Compliance*, 60 STAN. L. REV. 695, 696 (2007).

4.   *See* RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS 4–6, 107–09 (2008); *see also infra* notes 69–70 and accompanying text.

5.   Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647, 649–50 (2011).

6.   M. Ryan Calo, *Against Notice Skepticism in Privacy (and Elsewhere)*, 87 NOTRE DAME L. REV. 1027, 1031–32 (2012).

7.   *See generally* THALER & SUNSTEIN, *supra* note 4 (defending nudge); Calo, *supra* note 6 (defending notice); Edward K. Cheng, *Structural Laws and the Puzzle of Regulating Behavior*, 100 NW. U. L. REV. 655 (2006) (defending code).

8.   *See generally* Ben-Shahar & Schneider, *supra* note 5 (criticizing notice at length); Julie E. Cohen, *Pervasively Distributed Copyright Enforcement*, 95 GEO. L.J. 1 (2006) (criticizing the use

Code, nudge, and notice represent perhaps the ascendant regulatory alternatives of our time. They are much discussed in isolation. This Essay represents possibly the first effort in any discipline to treat them all together. My analysis suggests that, despite emerging out of very specific conversations, code, nudge, and notice are not in the end terribly distinct. They share mechanisms and problems to a greater degree than any existing literature would suggest.[9] Perhaps as a consequence, it is difficult to fit actual emerging regulatory interventions squarely within code, nudge, or notice.

Consider New York City's controversial attempt to limit the size of sodas.[10] A cap on portion size can be considered code in that it makes drinking an excess of soda physically more difficult. But it is also a nudge, in that consumers can override the policy by simply buying two sodas, and, like notice, it warns against the danger of overconsumption. Speed bumps are code, as I said. But what of "virtual" speed bumps, like an illusion of a little girl chasing a ball in a parking lot? Like code, this actual intervention eschews or supplements speed limits by making it harder to speed.[11] The intervention also exploits the way our brains see certain kinds of images as having three dimensions when in fact they do not. This feels like nudging. Or perhaps the virtual speed bump is a form of visceral notice to warn motorists of the possibility that children are in the area.[12]

These questions of characterization really matter. The issue of whether the Food and Drug Administration ("FDA") can require graphic visual warnings on cigarettes seemed headed to the Supreme Court until the FDA abandoned the intervention.[13] The Court of Appeals for the Sixth Circuit considered these warnings to be mere "information," a carve-out to the usual scrutiny that attends coerced speech under the First Amendment.[14] The D.C. Circuit concluded instead that the visual images that the FDA would have required—which included, for instance, a woman weeping

---

of architecture in the context of copyright); Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133 (2006) (criticizing libertarian paternalism).

9.   *See infra* Part IV (discussing why code, nudge, and notice are not treated together).

10.   Ellis Henican, *NYC's Big-Soda Ban Falls Flat—For Now*, NEWSDAY (Aug. 3, 2013), http://long-island.newsday.com/search/nyc-s-big-soda-ban-falls-flat-for-now-1.5824291. I owe this helpful and timely example to the *Iowa Law Review*.

11.   *See* Clay Dillow, *Optical Speedbumps Create Illusion of Little Girl Darting Out in Front of You*, POPULAR SCI. (Sept. 8, 2010), http://www.popsci.com/science/article/2010-09/optical-illusion-reminds-drivers-slow-down-change-pants.

12.   *See* Calo, *supra* note 6, at 1033–47 (developing the concept of visceral notice).

13.   *See infra* notes 132–34 and accompanying text.

14.   Disc. Tobacco City & Lottery, Inc. v. United States, 674 F.3d 509, 556–61 (6th Cir. 2012), *cert. denied*, Am. Snuff Co., LLC v. United States, 133 S. Ct. 1996 (2013). Coerced speech refers to the government forcing a citizen or entity to endorse a particular message, for instance, by pledging allegiance to the flag. *See* W. Va. State Bd. of Educ. v. Barnette, 319 U.S. 624, 633 (1943). This doctrine has not been held to encompass notice requirements aimed at preventing consumer deception. *See* Zauderer v. Office of Disciplinary Counsel of the Supreme Court of Ohio, 471 U.S. 626, 650–51 (1985).

uncontrollably—were aimed at changing behavior and hence pressed the cigarette industry into regulatory service.[15] In other words, the warnings were valid if they were notice, but invalid if they were code or nudge.[16]

The premise of this Essay is that there is a more fundamental choice than whether to code, nudge, or notice: the choice between helping citizens and hindering them. This Essay develops the original terms *facilitation* and *friction* to help capture the distinction. Facilitation refers to helping citizens develop and consummate their intentions. Friction refers to creating barriers—physical or otherwise—to the conduct citizens would otherwise carry out. One way to think about the criticisms of both code and nudge is that each substitutes for the coercive function of law by introducing friction, a sometimes milder, sometimes stronger form of coercion than law. Which is fine. The problem is that regulators perform this substitution without reintroducing the procedural safeguards that usually attend the passage, interpretation, and enforcement of laws. Alternatives to law should arguably prefer facilitation where possible if for no other reason than we expect less of a justification for helping citizens than for hindering them.[17]

Mandated notice, meanwhile, is facilitation—but an ineffective form. Aspects of code or nudge could help rehabilitate notice without compromising its facilitative nature. Indeed, each technique can be used alone or in combination to assist citizens in more justifiable ways. Thus, instead of a speed bump (code), regulators can encourage safer driving simply by calling the driver's attention to their speed and contrasting it with the limit in that area (code-backed notice). Regulators can use an awareness of psychology to generate better forms of notice, as when regulators convey the dangers of a particular stretch of road by reference to the number of deaths that have occurred there.[18] Or they can use code to better target notice and provide citizens with a means of acting on their choices, for

---

15.   R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205, 1221–22 (D.C. Cir. 2012).

16.   Similar debates attend the procedures required in some states to secure an abortion or to opt out of a vaccine. *See, e.g.*, Hodgson v. Minnesota, 497 U.S. 417 (1990) (upholding abortion waiting period); Steve P. Calandrillo, *Vanishing Vaccinations: Why Are So Many Americans Opting Out of Vaccinating Their Children*, 37 U. MICH. J.L. REFORM 353 (2004); Lessig, *supra* note 1, at 670 (discussing the use of architecture to regulate abortion).

17.   The soda size cap was ultimately struck down. The court reasoned, in part, that the Board of Health's action violated separation of powers by usurping the role of the legislature in identifying new health hazards. *See* N.Y. Statewide Coalition of Hispanic Chambers of Commerce v. N.Y.C. Dep't of Health & Mental Hygiene., 970 N.Y.S.2d 200 (N.Y. App. Div. July 30, 2013), *leave to appeal granted*, No. 2013-869, 2013 WL 5658229 (N.Y. Oct. 17, 2013). Another way to characterize the issue, however, would be to say that the Board sought to avoid the difficult political battle involved in designating soda as a health hazard through the use of libertarian paternalism.

18.   *See* Richel Albright, *TDOT Signs to Update Road Deaths on Friday*, TENNESSEAN (Jan. 4, 2013),   http://www.tennessean.com/article/20130104/NEWS01/301040092/TDOT-signs-update-road-deaths-Fridays?gcheck=1. I owe this example to Mary Fan.

example, by displaying a child abuse hotline number on a billboard that can only be read from the visual angle of a child and not that of an adult.[19]

The dichotomy between friction and facilitation is far from a perfect one. These values exist on a spectrum, and there are instances where—just as with code, nudge, and notice—friction and facilitation blend together. The basic mechanism of facilitation, i.e., picking and executing individual or collective preferences, is itself plenty messy, as recent legal literature explores.[20] And there will always be a role for friction in ordering human affairs. But exploring the possibilities for facilitation that code, nudge, and notice each permit—especially as these strategies are blended and recombined—may help alleviate the understandable backlash against the popular use of behavioral control.

The argument proceeds as follows. The first three Parts present unique typologies of code, nudge, and notice. I describe the contours of each intervention by reference to its respective literature; I explain some of the factors that make these particular interventions so popular; and I lay out their most salient critiques. In Part IV, I question the apparent categories of code, nudge, and notice in two ways. First, I show how several regulatory interventions could be said to fit within any of the three categories, depending on the analyst's perspective. Second, I suggest that there is ultimately little meaningful difference, or at least there is significant overlap, between the respective strategies and critiques of code, nudge, and notice. The Essay is up to this point descriptive. In Part V, I venture finally into normative territory by offering facilitation over friction as the appropriate lodestar for regulators seeking alternatives to legal prohibition, and offer examples.

I.   CODE

A government can make conduct illegal or next to impossible. Sometimes known by the labels "architecture," "code," "*lex informatica*," or "situational crime prevention," governments and firms alter human environments to channel behavior away from unwanted conduct.[21] A city can slow its traffic down by setting speed limits and pulling over violators or by making speeding impractical by dotting its roads with speed bumps. Content providers can appeal to copyright laws to protect against pirated

---

19.   *See* David Kiefaber, *Child-Abuse Ad Uses Lenticular Printing to Send Kids a Secret Message That Adults Can't See*, ADWEEK (May 6, 2013, 11:52 AM), http://www.adweek.com/adfreak/child-abuse-ad-uses-lenticular-printing-send-kids-secret-message-adults-cant-see-149197.

20.   *See, e.g.*, KENT GREENFIELD, THE MYTH OF CHOICE: PERSONAL RESPONSIBILITY IN A WORLD OF LIMITS (2011).

21.   *See, e.g.*, LESSIG, *supra* note 2 (code); SITUATIONAL CRIME PREVENTION: FROM THEORY INTO PRACTICE (Kevin Heal & Gloria Laycock eds., 1986) ("situational crime prevention"); Katyal, *supra* note 2 (architecture); Lessig, *supra* note 1 (architecture); Reidenberg, *supra* note 2 (*lex informatica*).

music, or they can wrap their content in digital rights management software that makes copying it very hard.[22]

The realization that architecture can function as a kind of regulation is not new, but regulators of the twentieth and twenty-first century appear to be developing a taste for it.[23] It did not always occur to regulators that architecture was an option. In 1951, the City of New York faced a problem with stolen wastebaskets. It seemed no amount of policing could keep the phenomenon under control. When officials decided on the idea of using architecture through the simple expedient of bolting trashcans to the sidewalk, the decision made the front page of *The New York Times*.[24] The ascendance of this regulatory method in the intervening decades is well chronicled.[25] Scholars, too, have embraced architecture as an alternative to law. Lawrence Lessig's famous book *Code and Other Laws of Cyberspace* ("*Code*") sounded a mostly cautionary note.[26] But many others have urged greater and greater reliance on architecture—often for good and interesting reasons.[27]

Partly as a consequence of its popularity, architecture is a closely studied regulatory phenomenon, its contours mapped by some of the academy's leading lights. Lessig and others have drawn a distinction between *primary* and *secondary* interventions by architecture.[28] A primary intervention alters the environment to make conduct physically more difficult.[29] A speed bump, a suicide net, and digital rights management in copyright are all examples. A secondary intervention alters the environment as well, not to prevent conduct, but to make it harder to get away with.[30]

A traffic light camera does not prevent individuals from running the light. It just makes it harder to run the light without getting a ticket. Lessig

---

22.   *See* Cohen, *supra* note 8, at 4–7.

23.   *See* JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET—AND HOW TO STOP IT 101–26 (2008).

24.   Arthur Gelb, *City Bolts Trash Baskets to Walks in Test to End Long Wave of Thefts*, N.Y. TIMES, June 13, 1951, at 1.

25.   This is not to say that regulation by architecture was non-existent. A recent article in *Slate* pointed out, for instance, that authorities poisoned grain alcohol during Prohibition, just as they sprayed paraquat on marijuana crops many years later. LESSIG, *supra* note 2, at 257 n.39; Deborah Blum, *The Chemist's War*, SLATE (Feb. 19, 2010, 10:00 AM), http://www.slate.com/ articles/health_and_science/medical_examiner/2010/02/the_chemists_war.html.

26.   LESSIG, *supra* note 2.

27.   *See infra* notes 36–40 and accompanying text.

28.   *See* Gary T. Marx, *The Engineering of Social Control: Intended and Unintended Consequences*, *in* THE NEW TECHNOLOGY OF CRIME, LAW, AND SOCIAL CONTROL 347, 351 (James M. Byrne & Donald J. Rebovich eds., 2007); *see also* Cheng, *supra* note 7, at 664 (referring to "Type I" and "Type II" structure).

29.   Marx, *supra* note 28, at 351 ("We can identify *primary* direct prevention efforts . . . , which are designed to make the offense impossible, or very difficult to carry out.").

30.   *See id.*; Cheng, *supra* note 7, at 664 (referring to architectural approaches that "make detection and prosecution easier to accomplish").

gives the example of the Communications Assistance for Law Enforcement Act, a federal law that requires networks to change their architecture to make it easier for law enforcement to isolate communications in connection with investigations of federal crimes.[31]

Jonathan Zittrain has drawn a further distinction between preemptive and post hoc interventions through primary architecture.[32] Preemptive architecture makes conduct more difficult to commit, as discussed. As for post hoc interventions, our increased reliance on digital technology has made it possible to *erase* illegality after the fact. Zittrain points to the example of a cable company that sells a digital product such as a digital video recorder, only to have another company claiming exclusive rights over the technology sue for patent infringement.[33] A court can order—and has ordered at least once—that the defendant–company retroactively terminate the service for all its customers.[34] The years since Zittrain's book have given us the literary example of Amazon being forced to erase digital copies of George Orwell's *1984*, of all books, from its popular e-reader due to a licensing disagreement.[35]

Does secondary architecture admit of a dichotomy between preemptive and post hoc interventions the way Zittrain maintains of primary architecture? Not at first blush. Secondary architecture is about changing the environment to make crimes harder to get away with. Presumably this happens *before* the crime is committed, as when rental companies install GPS devices so as to later recover stolen vehicles. Where the rental company shuts down a stolen vehicle remotely through disabling technology, the crime is stopped by post hoc primary architecture—without necessarily making it easier to catch the perpetrator.

Yet in another sense, what is forensic science but a kind of post hoc alteration of the environment in an effort to bring offenders to justice? From magnifying glasses to DNA labs, advances in technology have converted the many places crimes have been committed into crime scenes. Advances in software or computer power can and do shed new light on old facts. Such forensic interventions come after the crime—sometimes long after, as when so-called "cold cases" are revisited in light of new technology. Knowledge of these technologies could deter or change criminal behavior. Hence, much of forensics could be viewed as a secondary post hoc architectural intervention.

---

31.   LESSIG, *supra* note 2, at 44–46 (citing Communications Assistance for Law Enforcement Act, Pub. L. No. 103-414, 108 Stat. 4279 (1994) (codified in 47 U.S.C. §§ 1001–1010 (2006))).

32.   ZITTRAIN, *supra* note 23, at 108–09.

33.   *Id.*

34.   *Id.* at 104 (citing examples).

35.   Brad Stone, *Amazon Erases Orwell Books from Kindle*, N.Y. TIMES (July 17, 2009), http://www.nytimes.com/2009/07/18/technology/companies/18amazon.html?_v=0.

Officials and scholars want architectural regulation in the tool kit because they perceive it to be more effective or, in some instances, more fair than traditional enforcement mechanisms. Zittrain, a critic, acknowledges the temptation to wave a magic wand that ends murder.[36] Joel Reidenberg, with whom Lessig shares credit for the insight that "code is law," argues that code makes a "useful extra-legal instrument that may be used to achieve objectives that otherwise challenge conventional laws."[37] Neal Katyal, a well-known opponent of anti-terrorism detention practices, argues in a pair of articles that legislatures chronically undervalue crime enforcement through architecture.[38] Edward Cheng goes further to suggest that "[l]egislatures cannot rule by fiat alone."[39] Elizabeth Joh has argued for greater architectural regulation to reduce police discrimination when enforcing traffic laws.[40] The traffic light does not care about black or white, only red and green.

In addition to efficacy and fairness, regulators are attracted to architecture because it does not necessarily have to pass through a political process. No law needs to be proposed, debated, voted upon, or passed to make public stairs narrower so that teenagers do not hang on them (or to add an annoying high-pitched sound to environments that only teenagers can hear).[41] And yet these changes have the practical effect of eliminating or lowering the incidence of loitering. This "feature" of architecture is also the source of one of its central critiques: a lack of process and transparency.[42] Code can, but need not, be subject to the same procedural safeguards as law. Moreover, whereas laws must be posted to be effective (or, in some views, legitimate), code is often invisible to the uninitiated.

Perhaps the most powerful critique of architecture, however, has to do with its effect on the possibilities for institutional and individual resistance. At the level of structure, code threatens separation of powers.[43] One branch of government (say a city council) can decide to change the architecture of a road, website, or other public space and simply hire a contractor to carry out the decision. The contractor does not have "contractual discretion" analogous to a prosecutor declining to bring a case or an officer looking the

---

36.   ZITTRAIN, *supra* note 23, at 110 ("If one could wave a wand and make it impossible for people to kill each other, there might seem little reason to hesitate.").

37.   Reidenberg, *supra* note 2, at 556.

38.   Katyal, *supra* note 2; Neal Kumar Katyal, *Digital Architecture As Crime Control*, 112 YALE L.J. 2261 (2003).

39.   Cheng, *supra* note 7, at 715–16.

40.   Elizabeth E. Joh, *Discretionless Policing: Technology and the Fourth Amendment*, 95 CALIF. L. REV. 199, 200–03 (2007).

41.   Sarah Lyall, *This Mosquito Makes Unruly Teenagers Buzz Off*, N.Y. TIMES (Nov. 28, 2005), http://www.nytimes.com/2005/11/28/world/europe/28iht-journal.html.

42.   *See* LESSIG, *supra* note 2, at 224–25.

43.   *Cf. id.* at 7 (asking how separation of powers can operate in cyberspace).

other way. Erosion is the only desuetude.[44] In other words, the executive—the local police department or attorney general—does not serve as a check on the legislature. And if the change makes the offensive behavior impossible or unlikely, if there is no law to interpret or apply, then the judiciary has neither need nor opportunity to get involved.[45]

At the individual level, code decreases the possibility of civil disobedience, a fact that Lessig and other students of code recognized immediately.[46] Even after a bill becomes a law, the law is not inviolate; it is continuously tested. Sometimes a rule—for instance, no African Americans may sit in the front of the bus—later strikes us as amoral, but only after some brave person makes a symbol of herself by violating the law. Changing the architecture of a system can change the possibilities for resistance. For instance, one of the greatest advocates of civil disobedience—Henry David Thoreau—argued that paying taxes constituted a form of acquiescence in government policy; he was jailed for refusing to do so.[47] Thoreau would have to find alternatives today, given that the government withholds the bulk of our taxes in advance from our paychecks.[48]

A related critique is the effect of code on various defenses available at law—general defenses such as necessity and justification, or specific ones such as fair use in copyright.[49] Perhaps we want individuals or professionals (like ambulance drivers) to ignore speed limits on the way to the hospital, yet they cannot ignore speed bumps. Digital rights management makes it impossible for users to practice rights to fair use,[50] an exception to copyright of arguably constitutional dimensions.

---

44.   Desuetude is the doctrine that refuses to apply laws that have long fallen into disuse. For a discussion, see ALEXANDER M. BICKEL, THE LEAST DANGEROUS BRANCH: THE SUPREME COURT AT THE BAR OF POLITICS 148–56 (1962).

45.   In theory, any government activity is subject to challenge. Thus, individuals or groups might challenge the act of changing the environment or code. Such challenges are rare in practice.

46.   *See, e.g.*, Lawrence Lessig, *The Zones of Cyberspace*, 48 STAN. L. REV. 1403, 1408 (1996) ("In the well implemented system, there is no civil disobedience.").

47.   HENRY D. THOREAU, RESISTANCE TO CIVIL GOVERNMENT (1849), *reprinted in* THE HIGHER LAW: THOREAU ON CIVIL DISOBEDIENCE AND REFORM 63, 79–80 (Wendell Glick ed., 2004).

48.   Cheng, *supra* note 7, at 675 ("Structure is the cornerstone of the American income tax system . . . . [S]tructural mechanisms such as income withholding and information reporting have dramatically reduced the opportunities for tax evasion."); Lederman, *supra* note 3, at 697 ("Withholding taxes, like speed bumps, constrain compliance with the law.").

49.   *See* Timothy K. Armstrong, *Digital Rights Management and the Process of Fair Use*, 20 HARV. J.L. & TECH. 49, 59–65 (2006); Dan L. Burk & Julie E. Cohen, *Fair Use Infrastructure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41, 50–51 (2001); Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 274–76 (2002).

50.   *See* sources cited *supra* note 49.

Then there is the matter of too much enforcement. In an underappreciated chapter of a celebrated book, Zittrain argues that if there is an optimal level of enforcement, it is not one hundred percent.[51] Sonia Katyal and Eduardo Peñalver, too, explore in detail the perils of over-enforcement, by code and otherwise, in the wider context of property.[52] In short, the varieties of intervention by code, and the likelihood that regulators will look to code as a means to prohibit conduct or remedy harm, have only increased in recent years. Code, meanwhile, is proving a dangerous substitute to laws in ways we are still realizing.

II. NUDGE

Ten years after *Code* enshrined architecture as a plausible form of regulation, the best-selling book *Nudge* put its own title concept front and center.[53] Libertarian paternalism, or "nudging," refers to regulation not by foreclosing behavior through changes to a physical or digital environment, but by exploiting cognitive biases.[54] The central insight of the behavioral turn in economics is that humans deviate from rational decision-making in anticipated ways.[55]

People are "*predictably irrational*" to borrow from another book title from around the same time.[56] In *Nudge* and elsewhere, legal scholar Cass Sunstein and economist Richard Thaler propose that officials leverage these irrationalities to nudge people toward beneficial behavior.[57] The technique is paternalistic in the sense that officials choose particular policy goals in advance—they know best.[58] But it is libertarian, Sunstein and Thaler argue, because citizens are ultimately free to disregard the government's nudge and behave as they would.[59]

Like code, the nudge concept has influenced academics and policymakers alike, many of whom appear to appreciate the "third way"

---

51.   ZITTRAIN, *supra* note 23, at 110–23.

52.   *See generally* EDUARDO MOISÉS PEÑALVER & SONIA K. KATYAL, PROPERTY OUTLAWS: HOW SQUATTERS, PIRATES, AND PROTESTERS IMPROVE THE LAW OF OWNERSHIP (2010).

53.   *See generally* THALER & SUNSTEIN, *supra* note 4.

54.   *Id.* at 4–6.

55.   With roots in the 1950s work of Herbert Simon, behavioral economics famously challenges traditional economic models that assume people will behave rationally. HERBERT A. SIMON, MODELS OF MAN: SOCIAL AND RATIONAL 200 (1957).

56.   DAN ARIELY, PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS xx (2008).

57.   *See generally* THALER & SUNSTEIN, *supra* note 4; Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron,* 70 U. CHI. L. REV. 1159, 1201 (2003); Richard H. Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV., May 2003, at 175.

58.   THALER & SUNSTEIN, *supra* note 4, at 5.

59.   *Id.*

between coercion and inaction that libertarian paternalism promises.[60] More and more policies are coming to the fore that in some way nudge citizens toward more positive or productive behavior, and numerous essays and articles propose deploying nudges in one context after another.[61] Sunstein was, until recently, on leave from the University of Chicago and working within the presidential administration, where he reportedly championed behavioral approaches to regulation.[62] Thaler has served in a similar capacity in the United Kingdom.[63]

Note that nudging, as described, is only one possible move of many that behavioral economics could suggest. Writing with Christine Jolls, Sunstein also posits a role for law in attempting to neutralize irrational tendencies, a process the authors label "debiasing."[64] Debiasing is distinct from nudging in that it posits removing bias instead of repurposing it.[65] Jon Hanson and Douglas Kysar call upon law to address the concept of "market manipulation," a term Hanson and Kysar develop to describe incentives for firms to exploit consumer bias systematically in order to capture social surplus.[66] And, as discussed below in the context of notice, legal scholars repeatedly invoke behavioral economics in order to criticize the mechanics of various regulatory regimes governing a wide variety of contexts, including privacy, predatory lending, securities, and many others.[67] Scholars also

---

60.   *See* Adam Burgess, *'Nudging' Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market*, 1 EUR. J. RISK REG. 3, 6 (2012) (internal quotation marks omitted); *see also* Michael Grunwald, *How Obama Is Using the Science of Change*, TIME (Apr. 2, 2009), http://content.time.com/time/magazine/article/0,9171,1889153,00.html.

61.   *See, e.g.*, Sonny Eckhart, *A Nudged Solution to Securities Fraud*, 54 S. TEX. L. REV. 81 (2012) (advocating for nudging to curb securities fraud); Jeffrey J. Minneti, *Relational Integrity Regulation: Nudging Consumers Toward Products Bearing Valid Environmental Marketing Claims*, 40 ENVTL. L. 1327 (2010) (environmental regulation); Vada Waters Lindsey, *Encouraging Savings Under the Earned Income Tax Credit: A Nudge in the Right Direction*, 44 U. MICH. J.L. REFORM 83 (2010) (tax); *see also* Burgess, *supra* note 60, at 3–6 (describing how American and British officials have come to embrace behavioral science in general, and nudging in particular); *id.* at 6 ("In the American context, nudge is a Democrat[ic] administration initiative.").

62.   Burgess, *supra* note 60, at 4 (noting that Sunstein was appointed "nudger in chief," i.e., the head of the Office of Regulatory Affairs).

63.   *Id.*

64.   Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 J. LEGAL STUD. 199 (2006).

65.   This is sometimes described as the difference between "debiasing" and "rebiasing." *E.g.*, Richard P. Larrick, *Debiasing*, *in* BLACKWELL HANDBOOK OF JUDGMENT AND DECISION MAKING 316, 317 (Derek J. Koehler & Nigel Harvey eds., 2004).

66.   Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 637 (1999). Matthew Edwards has suggested that rebates and other schemes that rely on cognitive bias should be regulated under the Federal Trade Commission Act. *See* Matthew A. Edwards, *The FTC and New Paternalism*, 60 ADMIN. L. REV. 323, 353–59 (2008).

67.   *See* Fred H. Cate, *The Failure of Fair Information Practice Principles*, *in* CONSUMER PROTECTION IN THE AGE OF THE 'INFORMATION ECONOMY' 341, 342 (Jane K. Winn ed., 2006) (privacy); Matthew A. Edwards, *Empirical and Behavioral Critiques of Mandatory Disclosure: Socio-*

propose variants of libertarian paternalism itself, such as asymmetric paternalism, which aim to refine and improve the concept.[68]

The specific premise of *Nudge* is, again, that a familiarity with how people deviate from rational decision-making will help regulators achieve public policy goals without resorting to coercion.[69] Sunstein and Thaler propose several categories and examples. Perhaps the most famous is the use of *defaults.* To encourage various behaviors—for instance, increasing the overall amount of savings or encouraging organ donation—Sunstein and Thaler suggest that the government set the default at the preferred activity level.[70] People have something of an irrational preference for the status quo, so many will not resist the default. Those that really prefer not to save or donate, however, can still opt out.[71] Another example is *feedback,* i.e., providing people with a salient picture of their behavior in an effort to encourage changes that are better for the person, the environment, or some other goal.[72]

Nudging has its fans and its detractors. A recurrent theme in criticisms of libertarian paternalism is that nudging is inherently manipulative.[73] Read your Huxley, the argument runs—at least you can see brute force coming.[74]

Economics and the Quest for Truth in Lending, 14 CORNELL J.L. & PUB. POL'Y 199, 242 (2005) (lending); Geoffrey A. Manne, *The Hydraulic Theory of Disclosure Regulation and Other Costs of Disclosure,* 58 ALA. L. REV. 473, 476 (2007) (securities); Susanna Kim Ripken, *The Dangers and Drawbacks of the Disclosure Antidote: Toward a More Substantive Approach to Securities Regulation,* 58 BAYLOR L. REV. 139, 160–61 (2006) (securities); Steven L. Schwarcz, *Rethinking the Disclosure Paradigm in a World of Complexity,* 2004 U. ILL. L. REV. 1, 15 (securities); Lauren E. Willis, *Decisionmaking and the Limits of Disclosure: The Problem of Predatory Lending: Price,* 65 MD. L. REV. 707, 741 (2006) (lending).

68.   *E.g.,* Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for "Assymetric Paternalism,"* 151 U. PA. L. REV. 1211, 1214 (2003).

69.   THALER & SUNSTEIN, *supra* note 4, at 5–6. The book *Nudge* contains a variety of techniques, some of which appear less like rebiasing and more like debiasing or even the straightforward provision of information. But the core insight of libertarian paternalism is that regulators can make behavior more likely by leveraging known bias while preserving an element of choice. *Id.*

70.   *Id.* at 108–09 (savings); *id.* at 177–79 (organ donation).

71.   Some states have adopted mild forms of implied consent to donate organs, which were promptly challenged as unconstitutional. *See* Steve P. Calandrillo, *Cash for Kidneys? Utilizing Incentives to End America's Organ Shortage,* 13 GEO. MASON L. REV. 69, 125–26 (2004). Although these statutes survived, stronger opt outs could run into the strong instinct toward autonomy in American law. *Id.* at 126.

72.   Together, the six suggested methods form the somewhat strained mnemonic of n-u-d-g-e. THALER & SUNSTEIN, *supra* note 4, at 100.

73.   *E.g.,* Luc Bovens, *The Ethics of* Nudge, *in* PREFERENCE CHANGE: APPROACHES FROM PHILOSOPHY, ECONOMICS, AND PSYCHOLOGY 207, 208 (Till Grüne-Yanoff & Sven Ove Hansson eds., 2009); Burgess, *supra* note 60, at 10; Glaeser, *supra* note 8, at 155–56; Evan Selinger & Kyle Whyte, *Is There a Right Way to Nudge? The Practice and Ethics of Choice Architecture,* 5 SOC. COMPASS 923, 928–35 (2011).

74.   The reference is to ALDOUS HUXLEY, A BRAVE NEW WORLD (1946). Some also read this implication into the work of Michel Foucault. *See, e.g.,* Cohen, *supra* note 8, at 21–29.

Short of a brave new world, we might worry about governments developing too much of a taste or skill for subtly influencing citizen choice.[75] Sunstein and Thaler anticipate this criticism and gesture toward the publicity principle—a concept borrowed from John Rawls writing elsewhere—in reply.[76] The principle states that officials should never use a technique they would be uncomfortable defending to the public; nudging is no exception.[77] This response seems to miss the gravamen of the manipulation critique, which sounds in deeper concerns over eroding autonomy. And, of course, one official's comfort zone could be many citizens' dystopia. A second version of the criticism holds that nudging citizens tends over time to infantilize them.[78] People who do not regularly confront choices cease to be in the habit of making them.[79]

Perhaps the most trenchant criticism, however, is that libertarian paternalism, no less than standard paternalism, relies on officials to generate the goals toward which to nudge people.[80] Officials are also flawed, so how do we know officials are nudging citizens in the right direction? Several commentators take this critique one cynical step further: if firms wanted a particular outcome for (anti)competitive or other reasons, perhaps it would be easier and cheaper to influence a handful of policymakers than it would be to influence everyone else.[81] Though an elegant idea, its proponents are short on examples.[82] But here is a recent one: rather than encourage individual consumers one at a time to sign up to share their Netflix movie rental history on Facebook, the companies successfully lobbied Congress last year to change the Video Privacy Protection Act to allow for implied

---

75.   Glaeser, *supra* note 8, at 155 ("Soft paternalism requires a government bureaucracy that is skilled in manipulating beliefs. . . . There is great potential for abuse."); *cf.* 22 U.S.C. § 1461 (2012) (limiting domestic propaganda).

76.   THALER & SUNSTEIN, *supra* note 4, at 244–45 (citing JOHN RAWLS, A THEORY OF JUSTICE (1971)).

77.   *Id.* at 245.

78.   Bovens, *supra* note 73, at 215, 218.

79.   *See id.* at 215.

80.   *E.g.*, Mario J. Rizzo & Douglas Glen Whitman, *The Knowledge Problem of New Paternalism*, 2009 BYU L. REV. 905; Pierre Schlag, *Nudge, Choice Architecture, and Libertarian Paternalism*, 108 MICH. L. REV. 913, 918 (2010) (reviewing THALER & SUNSTEIN, *supra* note 4) ("Yes, human beings are sometimes prone to cognitive error, but what about the choice architects—the experts?").

81.   *E.g.,* Glaeser, *supra* note 8, at 145 ("The assumption that it is cheaper to sway a limited number of governmental decisionmakers than it is to move the beliefs of millions is supported by the much greater magnitude of spending on consumer advertising relative to political spending.").

82.   *But see* James C. Cooper & William E. Kovacic, *Behavioral Economics and Its Meaning for Antitrust Agency Decision Making*, 8 J.L. ECON. & POL'Y 779 (2012) (exploring the phenomenon in the context of antitrust).

consent.[83] They found it more efficient to influence Congress than their millions of users.

III. Notice

The most popular regulatory alternative to classic command-and-control regulation may be mandated notice, i.e., requiring or incentivizing firms to disclose their practices to consumers and others.[84] Seeking to avoid political and other costs associated with fashioning and enforcing rules, but nevertheless eager to act on a given societal problem, regulators have turned to notice in a widening variety of contexts.[85] Having a written policy regarding how consumer data is being used, for instance, is one of the only affirmative obligations of websites with respect to privacy.[86] Prosecutors can refer to arrestee statements as long as the arresting officer read the suspect her *Miranda* rights.[87] And so on.

The mechanism of mandated notice is the required provision of information.[88] The regulator assumes there is a gap in knowledge between one party (e.g., the lender, the manufacturer) and another (the consumer). The purpose of notice is to bridge that gap.[89] Notice posits a world in which better decision-making is possible where individuals have all the facts. It comes in a variety of forms. Regulators can demand—or courts, expect—that *warnings* appear on dangerous products. These notices tend to be short, consumer-facing, and appear at a decision point, such as drug packaging or the fence before a railway track.[90] To address consumer privacy, officials require firms to post *terms* describing their practices and rules, often at

---

83.   Julianne Pepitone, *New Netflix Facebook App Lets Users Share Viewing History*, CNNMONEY (Mar. 13, 2013, 4:32 PM), http://money.cnn.com/2013/03/13/technology/social/netflix-facebook/index.html. The Senate also approved the amendment, which the President signed into law. Video Privacy Protection Act Amendments of 2012, Pub. L. No. 112-258, 126 Stat. 2414 (2013) (to be codified at 18 U.S.C. § 2710).

84.   *See* Paula J. Dalley, *The Use and Misuse of Disclosure as a Regulatory System*, 34 FLA. ST. U. L. REV. 1089, 1092 (2007) ("There are dozens, possibly hundreds, of regulatory schemes that use disclosure in whole or in part to accomplish their purposes."); William M. Sage, *Regulating Through Information: Disclosure Laws and American Health Care*, 99 COLUM. L. REV. 1701, 1707–08 (1999) ("Enthusiasm for mandatory disclosure laws is reaching fever pitch. Virtually every bill under consideration by Congress to regulate managed care devotes major portions to information disclosure and dissemination.").

85.   *See* Ben-Shahar & Schneider, *supra* note 5, at 658–64 (listing contexts in which notice is used); *id.* at 681–84 (explaining why lawmakers choose notice).

86.   *See* Calo, *supra* note 6, at 1031–33.

87.   *See* Miranda v. Arizona, 384 U.S. 436, 444–45 (1966) (holding that prosecutors could not use a statement collected from custodial interrogation unless law enforcement demonstrated certain procedural safeguards were in place at the time of the statement). The suspect must also waive those rights. *Id.*

88.   *See* Ben-Shahar & Schneider, *supra* note 5, at 649–50.

89.   *Id.*

90.   *Id.* at 705–06.

length.[91] Regulators can also demand transparency in the form of very lengthy *reports* at a level of detail that may only interest sophisticated parties such as institutional investors, academics, non-profits, or the press.[92] Or they can require *notifications*: letters, emails, or other communications alerting an individual to the existence of an obligation or right.[93] But common to each form of notice is the idea that more information arms the individual or group with the capability to avoid danger, preserve rights, select the right provider and activity level, and generally make better decisions.[94]

There are many reasons regulators choose notice. One set of reasons has to do with the paucity or inconvenience of regulatory alternatives.[95] Take product warnings. The state could require hair dryers to be waterproof, an expensive and invasive form of regulating by design. Or manufacturers could simply have to warn consumers that they may be electrocuted if they use the device in the bathtub.[96] In addition to imposing expenses that firms are likely to pass along to consumers, regulators may worry that forcing particular practices may curb innovation or variety. This is largely the rationale behind the light-touch, disclosure-centric approach that regulators have historically brought to the Internet.[97]

Consumer preferences are also deeply heterogeneous. Some consumers wish for more privacy while others could not care less. Sports car enthusiasts want higher octane gas and are willing to pay for it; others just want their vehicle to run. The dream of notice is that consumers will be able to choose from among competing options, as long as they know about them.[98] And regulators, meanwhile, do not need to undertake the difficult, costly, and politically challenging task of telling firms exactly how they should run their businesses.[99]

The central criticism of notice is that it is ineffective, possibly endemically so. In a sustained critique, Omri Ben-Shahar and Carl Schneider refer to mandated disclosure as "a regulatory technique that is much used but little remarked."[100] Notice is certainly much used. But many

---

91.   *See* Calo, *supra* note 6, at 1032 (discussing a California law requiring companies to post an Internet link to privacy policies).

92.   *See id.* at 1063.

93.   *See, e.g.*, Ben-Shahar & Schneider, *supra* note 5, at 705–06 (providing examples of notifications).

94.   *Id.* at 649–50.

95.   *See* Calo, *supra* note 6, at 1048–50.

96.   Here, the incentive comes from the courts, which are unlikely to hold a firm accountable for injuries where there has been good warning. *See* RESTATEMENT (SECOND) OF TORTS § 402A cmt. j (1965).

97.   *See* Calo, *supra* note 6, at 1048.

98.   *See* Ben-Shahar & Schneider, *supra* note 5, at 649, 681.

99.   *Id.* at 681–84.

100.   *Id.* at 649; *see also id.* at 684 ("Its critics are few.").

scholars, in law and other disciplines, have engaged in sustained criticisms of notice over the years.[101]

Despite a variety of contexts and disciplines, the gist of their complaint is that notice seldom works in practice. Consumers and citizens do not benefit from more information as expected. They do not receive the information in the first place, cannot process it, or they use it to draw the wrong lessons.[102] Behavioral economics—the genesis for libertarian paternalism—has perhaps done the most to arm critics of notice with fodder for calling in doubt its most basic assumptions.[103] Sure, a perfect person would heed all the warnings she came across, but in actuality warnings wear out when we see too many of them.[104] Defects in notice have been described in theory and demonstrated empirically in lab and natural experiments.[105]

Ben-Shahar and Schneider deploy these criticisms at length. The article has a thirteen-paragraph short story about Chris Consumer, "the poster child of the disclosure paradigm," who has a reaction to all of the notices in his life worthy of Joseph K.[106] But the authors do a lot more. They also demonstrate how difficult it is for lawmakers to design disclosures in the first place, to select what traits or messages should be disclosed or highlighted, to measure a given notice's efficacy, or even to know when disclosure is the appropriate strategy to pursue.[107] They point to hidden costs and unintended consequences of even the best-laid disclosure strategies.[108] And they show the opportunities and incentives for firms purposefully to manipulate disclosures to hide disadvantageous practices in plain sight or otherwise serve their own interests.[109]

---

101.   *E.g.*, SOLON BAROCAS & HELEN NISSENBAUM, PROCEEDINGS OF THE ENGAGING DATA FORUM, ON NOTICE: THE TROUBLE WITH NOTICE AND CONSENT (2009) (criticizing privacy notice); Cate, *supra* note 67 (criticizing privacy notice); Dalley, *supra* note 84 (criticizing notice); Edwards, *supra* note 67, at 204 ("Put bluntly, many critics simply do not think that disclosure works."); Robert A. Hillman, *Online Boilerplate: Would Mandatory Website Disclosure of E-Standard Terms Backfire?*, 104 MICH. L. REV. 837 (2006) (criticizing boilerplate); Manne, *supra* note 67 (criticizing securities disclosures); Ripken, *supra* note 67 (same); Sage, *supra* note 84 (criticizing notice); Charles D. Weisselberg, *Mourning* Miranda, 96 CALIF. L. REV. 1519 (2008) (criticizing *Miranda* warnings); Willis, *supra* note 67 (criticizing lending disclosures).

102.   *See* Ben-Shahar & Schneider, *supra* note 5, at 704–29.

103.   *See supra* notes 67–68 and accompanying text.

104.   *See* Jolls & Sunstein, *supra* note 64, at 212 (describing "wear-out" as the phenomenon "in which consumers learn to tune out messages that are repeated too often").

105.   *E.g.*, Daniel E. Ho, *Fudging the Nudge: Information Disclosure and Restaurant Grading*, 122 YALE L.J. 574 (2012) (analyzing restaurant grading systems in several cities).

106.   Ben-Shahar & Schneider, *supra* note 5, at 705–09. The reference is to the protagonist of Franz Kafka's 1925 classic novel, *The Trial*, who either committed suicide or was killed by agents of the state, depending on one's interpretation.

107.   *Id.* at 679–90.

108.   *Id.* at 735–42.

109.   *Id.* at 698–702; *see also* Hanson & Kysar, *supra* note 66, 643–93, 721–49 (discussing incentives for firms to exploit cognitive bias); Hillman, *supra* note 101, at 837–40, 849–56

IV. OVERLAP

The previous three Parts develop a sketch of code, nudge, and notice, respectively. Largely because they arise out of specific contexts, these three regulatory strategies are not often treated together.[110] Code, nudge, and notice emerge from different conversations, which makes it look as though we are talking about different things. This Part examines certain meaningful overlap between each regulatory method through two lenses. First, taking a page from Lon Fuller, I show how the category that attaches to a particular regulatory intervention shifts depending on the regulator's apparent purpose.[111] Second, and more fundamentally, I explore the common basis for criticism of each method—code and nudge, in particular. Note that the claim is not that code, nudge, and notice represent *identical* approaches to governing behavior. Clear differences exist. For instance, a nudge should have no effect on a person lacking any bias, whereas code presumably works regardless.[112] The claim is only that the approaches arose in widely disparate academic contexts, which obscures a meaningful similarity—the lack of protective processes that each alternative affords.

A. *DIFFERING CONVERSATIONS*

The insight that architecture can constitute a form of governmental control dates at least as far back as the situational crime prevention movement of the 1980s,[113] perhaps even as far back as the work of late 18th century British philosopher Jeremy Bentham.[114] But we owe the contemporary popularity of code in American legal thought to Lessig's book by that title and to earlier articles by Lessig and Joel Reidenberg about

---

(discussing how boilerplate backfires against consumers). *But see* Calo, *supra* note 6, at 1065–68 (discussing strategies to combat notice gamesmanship on the part of firms).

110.   A 2011 essay mentions in passing that "libertarian paternalism can be described as the noncriminal mirror image of situational crime prevention." Danny Rosenthal, *Assessing Digital Preemption (and the Future of Law Enforcement?)*, 14 NEW CRIM. L. REV. 576, 583 (2011). Even this brief analogy is not entirely accurate, however, for reasons I develop in this Part.

111.   Lon Fuller famously critiqued H.L.A. Hart's distinction between easy and hard cases of legal interpretation through the observation that even supposedly clear rules depend on purpose for interpretation. Lon L. Fuller, *Positivism and Fidelity to Law—A Reply to Professor Hart*, 71 HARV. L. REV. 630, 661–69 (1958). Hart put forward "no vehicles in the park" as an easy rule to interpret; Fuller asked whether the law would apply to a World War II truck placed in the park as a memorial. *Id.* at 663.

112.   If person *A* suffers from the cognitive bias of anchoring but person *B* does not, then showing a high number before asking for an estimate will lead only *A* to a higher guess. *See* Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1128–30 (1974). But both person *A* and person *B* will presumably slow down at a speed bump. *Id.* at 1129.

113.   *See, e.g.*, SITUATIONAL CRIME PREVENTION: FROM THEORY INTO PRACTICE, *supra* note 21.

114.   Marc Rotenberg, *Fair Information Practices and the Architecture of Privacy (What Larry Doesn't Get)*, 2001 STAN. TECH. L. REV. 1, ¶ 6 n.6.

cyberlaw.[115] Lessig in particular was interested in disabusing proponents of Internet exceptionalism, i.e., early Internet law scholars such as David Post and David Johnson who argued at the time that the Internet was such a different space as to constitute an ungovernable sovereign, beyond the reach of the rule of law.[116] Lessig's now well-known argument is that law is only one of four "modalities" of regulation.[117] Even were it true that law could not reach Internet conduct to the same extent—itself an open question—other modalities might. In fact, because the Internet is a mediated or designed environment, it is especially susceptible to regulation by requiring or incentivizing changes to the network or software that comprises it.[118] Lessig's focus was firmly on the possibilities of control and their import for a then-emerging technology.

Nudging has a different context, one that concedes the possibility of—and consciously rejects—perfect control. Libertarian paternalism operates at the intersection of anti-paternalism discourse and psychology. Herbert Simon is largely credited with the observation that human rationality is limited or "bounded," a fact for which economic models should account.[119] Although the extent and import are in question, there is today widespread recognition that people depart from rational choice in predictable ways.[120] As discussed, this has led to a variety of insights, one of which is that the government is in a position to exploit cognitive biases to "nudge" people toward better policy outcomes. Not only can such nudges be effective, the argument runs, they are freedom-preserving as well, at least relative to command-and-control. Thus, nudge culls a "third way" between laissez-faire and paternalism from the behavioral turn in economics.[121]

Notice shares with nudge a desire to avoid command-and-control regulation while nevertheless furthering (or appearing to further) public policy goals.[122] And much of the contemporary literature discussing notice borrows heavily from bounded rationality and all that followed in order to challenge its efficacy.[123] But notice starts at a point prior to nudge in the

---

115.   *See* LESSIG, *supra* note 2; Lessig, *supra* note 1; Reidenberg, *supra* note 2, at 555 ("This Article argues, in essence, that the set of rules for information flows imposed by technology and communication networks form a 'Lex Informatica' that policymakers must understand, consciously recognize, and encourage.").

116.   *See* David R. Johnson & David Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367, 1370–76 (1996).

117.   *See* Lessig, *supra* note 1, at 662–63.

118.   *See generally* LESSIG, *supra* note 2.

119.   *See* SIMON, *supra* note 55, at 198.

120.   *See generally* ARIELY, *supra* note 56 (demonstrating the systematic nature of certain human errors); THALER & SUNSTEIN, *supra* note 4 (discussing how biases lead people to make wrong decisions).

121.   THALER & SUNSTEIN, *supra* note 4, at 252–53.

122.   *See supra* Parts II–III.

123.   *See supra* notes 55–57.

intellectual life cycle of economics: like traditional economic analysis, notice assumes that more and better information can correct for poor decision-making.[124] Notice is a response to information asymmetry that works, if at all, when it gives people the information they need to act rationally in their self-interest, thereby protecting themselves and policing the market.[125]

B. *EASY AND HARD CASES*

One might think, given the differences in the mechanisms and origins of code, nudge, and notice, that each would be easy to recognize in the wild. But the reality is otherwise: whether a given real-world intervention is properly characterized as code, nudge, or notice often depends on the reasons behind it. A speed bump represents the consummate example of regulating by architecture. What of a virtual speed bump? This is a two-dimensional drawing that tricks the eye into seeing a three-dimensional object in the street—for instance, a little girl chasing a ball.[126] The technique's objective is to slow the driver down to an appropriate speed. But how? One view says virtual speed bumps work by generating tension or discomfort, making it harder to drive fast.[127] This introduction of resistance feels like code. Another observes that virtual speed bumps (1) exploit an error in how we perceive the world, and (2) may technically be overridden without consequence.[128] This looks like textbook nudging. Yet another suggests that the little girl serves as a salient reminder that children may be present, which feels more like the creative provision of information and, hence, notice.[129]

Sunstein and Thaler suggest a number of means by which to nudge citizens toward more environment-friendly behavior, one of which is to give citizens an orb that flashes red when they are using greater than average amounts of energy.[130] They characterize the orb as a form of feedback that, unlike standard textual notifications, "really gets people's attention and makes them want to use less energy."[131] The emphasis here is on changing behavior. But another way to think about the orb is as a better, more visceral

---

124.   Ben-Shahar & Schneider, *supra* note 5, at 649–50.

125.   *Id.*; *see also* Calo, *supra* note 6, at 1044.

126.   *See supra* text accompanying notes 11–12.

127.   Dillow, *supra* note 11.

128.   *See, e.g.*, Associated Press, *Fake Speed Bumps Create Optical Illusion, Driver Confusion*, FOXNEWS.COM (June 27, 2008), http://www.foxnews.com/story/2008/06/27/fake-speed-bumps-create-optical-illusion-driver-confusion/ (explaining average driver response to virtual speed bumps).

129.   *Cf.* Calo, *supra* note 6, at 1038–41 (describing psychological response as a form of notice).

130.   THALER & SUNSTEIN, *supra* note 4, at 194.

131.   *Id.*

way to convey notice.[132] Under this story, people rationally want to use less energy to save money, but they are too busy to process information about their use unless it is sufficiently salient and distilled. Yet another angle notes that we are preprogrammed to stop for flashing red lights, so the orb acts as a kind of cultural code.

Or take the example of graphic warnings on cigarettes, an issue that seemed headed toward the Supreme Court of the United States until the FDA reversed itself.[133] Rather than make a standard textual disclosure regarding the danger of smoking, graphic warnings depict alarming scenarios such as a body pinned to an autopsy table or a woman crying hysterically.[134] The mechanism of graphic warnings was precisely at issue. If the warnings' purpose was merely to provide truthful information (cigarettes are bad for you) in a salient format, then the warnings were simply a new form of notice, and the First Amendment would not have stood in the way of requiring cigarette manufactures to add them to the package. If, as one district and circuit court suggested, the purpose was instead to drive down smoking through revulsion, then the requirement rose above mere "information" and would have triggered higher constitutional scrutiny as coerced speech.[135] The theory was that forcing a firm to try to change its customers' behavior is not best characterized as notice.

Let's return to the speed bump itself. Surely this is an easy case of code. And yet not really. A supposed difference between code and law is that one is perfect in its ability to regulate conduct and the other, imperfect.[136] But this assumption is not warranted: few architectural interventions will stop everyone, all of the time. Tim Wu and James Grimmelman, among others,

---

132. *Cf.* Calo, *supra* note 6, at 1027. Notice to consumers can also nudge firms toward better policy outcomes because companies have to take stock of their practices before they can disclose, sometimes leading them to question or change the propriety of those practices. *Id.* at 1060 (citing Peter P. Swire, *The Surprising Virtues of the New Financial Privacy Law*, 86 MINN. L. REV. 1263, 1314–17 (2002)).

133. *See supra* notes 13–15 and accompanying text.

134. The FDA regulations can be found at Cigarette Package and Advertising Warnings, 21 C.F.R. pt. 1141 (2013).

135. R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205, 1217 (D.C. Cir. 2012); R.J. Reynolds Tobacco Co. v. U.S. FDA, 823 F. Supp. 2d 36, 45–49 (D.D.C. 2011), *vacated*, 696 F.3d 1205 (D.C. Cir. 2012). The district court opinion mentions the FDA's own analysis that cites favorably to the negative effect of graphic warnings on smoking in Europe. *R.J. Reynolds Tobacco*, 823 F. Supp. 2d at 47.

136. ZITTRAIN, *supra* note 23, at 107, 110 (stating that "[t]he law as we have known it has had flexible borders . . . . When code is law, however, execution is exquisite, and the law can be self-enforcing" and referring to "[t]he prospect of more thorough or 'perfect' law enforcement"); Lessig, *supra* note 46, at 1408 (referring to code as "a start to the perfect technology of justice").

point out that resistance to architecture is not only always possible, it is also largely to be expected.[137]

If the difference between code and nudges is more a matter of probability, then nudges begin to feel more like code as their effectiveness increases. Nudges are, after all, forces designed to act on the individual, to constrain her from taking all but the desired path. They can be stronger or weaker,[138] but that nudges are predominantly *psychological* as opposed to *physical* does not seem to do much work in differentiating them from other modalities.[139] Thus, for instance, a defendant can be held liable for the tort of assault—i.e., creating the imminent apprehension of bodily harm—merely by yelling "watch out, snake!"[140] Indeed, George Loewenstein and Ted O'Donoghue talk about nudges away from an activity as a "psychic cost," a kind of tax that generates no revenue.[141] Perhaps speed bumps are architecture. But perhaps they are also nudges or even highly visceral reminders of the risks of speeding in a residential neighborhood.

C. COMMON VALUES

Regardless of whether real interventions are easily sorted in practice, surely there are differences in code, nudge, and notice as *theories*. Code is effective but undermines process or privacy. Nudging nominally preserves autonomy but relies on manipulation and threatens to infantilize. Notice is politically palatable but seldom very effective. Neither the reasons for which each method is adopted, nor the criticisms one sees levied against them, appear to have much in the way of overlap at first blush.

Yet there is abundant commonality. Code, nudge, and notice all serve as popular alternatives to enacting and enforcing new laws. Several values—

---

137.   *See* Tim Wu, *When Code Isn't Law*, 89 VA. L. REV. 679 (2003); James Grimmelmann, Note, *Regulation by Software*, 114 YALE L.J. 1719, 1742–44 (2005).

138.   Writing in the context of incremental criminalization, Dan Kahan has famously drawn a distinction between a "gentle nudge" and "hard shove." Dan M. Kahan, *Gentle Nudges Vs. Hard Shoves: Solving the Sticky Norms Problem*, 67 U. CHI. L. REV. 607 (2000). This dichotomy has since been picked up in the context of libertarian paternalism. *See, e.g.*, Kyle Powys Whyte et al., *Nudge, Nudge or Shove, Shove—The Right Way for Nudges to Increase the Supply of Donated Cadaver Organs*, 12 AM. J. BIOETHICS 32, 32–35 (2012).

139.   Recent work on willpower, for instance, suggests that people have limited reserves that can be exhausted over the course of the day. *See* ROY F. BAUMEISTER & JOHN TIERNEY, WILLPOWER: REDISCOVERING THE GREATEST HUMAN STRENGTH (2011).

140.   Assuming, of course, there was no snake. *See* RESTATEMENT (SECOND) OF TORTS § 25 cmt. a, illus. 1 (1965).

141.   *See* George Loewenstein & Ted O'Donoghue, *"We Can Do This the Easy Way or the Hard Way": Negative Emotions, Self-Regulation, and the Law*, 73 U. CHI. L. REV. 183, 190 (2006). The New Chicago School, or at least a visible proponent, sees ordinary taxes on an activity as fitting within the "market" modality of regulation. *See* Lessig, *supra* note 1, at 663, 666. It does not take much in the way of reframing to see that taxes are essentially fees on undesirable behavior, i.e., laws without norms. It may be equally difficult to sort real regulations into the four modalities of laws, norms, markets, and architecture, but such is beyond the scope of this Essay.

efficacy, transparency, process, and autonomy—arise as either a feature or a bug of these alternatives, depending on one's perspective. From the perspective of the regulator, code can be highly effective at changing behavior. Code can be hard to observe, much less challenge, such that regulation by architecture does not necessarily require expending as much political capital to enact or defend.[142] From the perspective of the critic, the very problem with code is that it lacks transparency, cannot be challenged, and may be *too* effective.[143]

Nudging is more effective than not regulating at all and leaves citizens with an option to resist. Yet nudging also suffers from a lack of transparency. Some of libertarian paternalism's most celebrated techniques may not work very well were they known to those on the receiving end.[144] Nudging, like code, can be accomplished without the intervention of the executive or the legislative branches of the government. Both nudging and code raise the possibility that firms will try to influence consumer behavior by way of influencing regulators rather than consumers—a potentially more efficient means of manipulation.[145] Nudging also undermines autonomy, albeit in a different way than code. Whereas code literally cuts off, or at least drastically reduces, possibilities for resistance, nudges may reduce in citizens even the habit or instinct of thinking and choosing for themselves.[146]

Notice does not have these exact problems. Notice's very mechanism is transparency; its chief drawback is that it is not effective enough.[147] But even notice shares with code and nudge at least one criticism: regulators use notice to avoid having to actually regulate, in part because of the resistance officials believe they will encounter from the potential subjects of substantive limits on conduct (and their lawyers). I am generally a proponent of notice

---

142.   *See* LESSIG, *supra* note 2, at 43–62.

143.   *See supra* notes 36–52 and accompanying text.

144.   People often correct against bias when they become aware of it. For instance, subjects are unlikely to commit an error by following the general consensus in the room when they are aware the other subjects are only actors. *See* ORI BRAFMAN & ROM BRAFMAN, SWAY: THE IRRESISTIBLE PULL OF IRRATIONAL BEHAVIOR 153–54 (2008). In this way, nudges resemble the use of placebos in medicine.

145.   *Compare* Glaeser, *supra* note 8, at 145 (discussing how firms can use knowledge of bias to influence officials), *with* Wu, *supra* note 137, at 693–95 (discussing how code can constitute a covert form of lobbying).

146.   Secondary architecture, as discussed, relies on surveillance, which Julie Cohen, Paul Schwartz, Daniel Solove, and others suggest reduces autonomy and polices against thinking and behavior outside of the mainstream. *See, e.g.*, DANIEL J. SOLOVE, THE DIGITAL PERSON: TECHNOLOGY AND PRIVACY IN THE INFORMATION AGE (2004); Julie E. Cohen, *Cyberspace As/and Space*, 107 COLUM. L. REV. 210 (2007); Julie E. Cohen, *Examined Lives: Informational Privacy and the Subject as Object*, 52 STAN. L. REV. 1373 (2000); Paul M. Schwartz, *Internet Privacy and the State*, 32 CONN. L. REV. 815 (2000); Paul M. Schwartz, *Privacy and Democracy in Cyberspace*, 52 VAND. L. REV. 1609 (1999).

147.   Of course, notice can be paralyzing, as Ben-Shahar and Schneider's example of Chris Consumer is meant in part to showcase. Ben-Shahar & Schneider, *supra* note 5, at 705–09; *see supra* notes 106–09 and accompanying text.

and believe it can work if updated to reflect contemporary techniques of communication.[148] But I would concede to Ben-Shahar, Schneider, and others that notice sometimes represents an abdication of official responsibility.[149]

What, if anything, does this values-overlap tell us? First, it indicates that sidestepping political and judicial process is a common goal of each of these popular alternatives to law—it animates the very decision to select an alternative in the first place. The avoidance of *ex ante* and *ex post* process is also the gravamen of the critiques of at least code and nudge, and notice to a lesser degree. Second, the values-overlap tends to reveal the difficulty officials encounter as they seek to substitute another means of behavior control for the coercive mechanism of law. One feature of law is that it can represent a strong incentive to behave without obscuring or eliminating the existence of a choice.[150]

The law's signaling function presents one example. The fact that our elected officials adopt and enforce laws reinforces their weight as social norms that should be followed.[151] But even the proverbial "bad man" knows transgression means fees, deprivation of liberty, or even death.[152] The law can be resisted and changed, and thrives on resistance at various stages, yet resistance may not be an option with regard to alternatives to law.[153] This second tension is the subject of the final Part of this Essay.

V. FRICTION OR FACILITATION?

The preceding Parts describe the attractions, pitfalls, and arguably permeable boundaries of three ascendant regulatory strategies. Here the Essay takes a normative turn. This Part offers and defends a lodestar for regulators experimenting with alternatives to law: they should try to maximize what I am calling *facilitation* and minimize *friction*. Facilitation refers to helping people arrive at their preferred outcome,[154] whereas friction operates by erecting barriers qua barriers, whether physical or

---

148. *See generally* Calo, *supra* note 6 (cautioning against an excessive skepticism of notice).

149. *See* Ben-Shahar & Schneider, *supra* note 5, at 681 (describing mandatory disclosure as a "Lorelei, luring lawmakers onto the rocks of regulatory failure").

150. The degree of incentive depends on a variety of factors—including the likelihood of enforcement, the penalty, and knowledge of each of these things. *See generally* Samuel L. Bray, *Announcing Remedies*, 97 CORNELL L. REV. 753 (2012) (discussing the benefits of announcing remedies for breaking laws versus the effects of not announcing remedies).

151. *See* Danielle Keats Citron, *Law's Expressive Value in Combating Cyber Gender Harassment*, 108 MICH. L. REV. 373, 407 (2009).

152. Oliver Wendell Holmes, Jr., *The Path of the Law,* 10 HARV. L. REV. 457, 459 (1897).

153. *See supra* notes 43–48; *see also* PEÑALVER & KATYAL, *supra* note 52 (discussing the role of law in property); ZITTRAIN, *supra* note 23, at 101–26 (discussing the role of law in computing).

154. *See infra* notes 166–77 and accompanying text.

psychological, to undesired behavior.[155] Neither is the same as a traditional legal rule, which establishes an official expectation and penalizes transgression after the fact.[156] But each substitutes a different mechanism for law. Whereas friction seeks to replace deterrence with mechanisms that head off transgression, facilitation tends to enhance law's capacity to assist, coordinate, and inform.[157]

"Legal interpretation takes place in a field of pain and death," as Robert Cover famously reminds us.[158] The classic model of law relies primarily on coercion, i.e., mandating a particular behavior on pain of some negative consequence, ranging from fees to death. Code, nudge, and notice all seek to displace or supplement laws of this type, either because regulators perceive laws to be too ineffective, because passing and enforcing laws is somehow difficult, or because of some intrinsic objection to command-and-control. But to believe that these popular alternatives avoid coercion entirely would be a mistake. For one thing, where a government mandates that a third party change its physical or "choice" architecture, or disclose certain practices, it generally does so using laws and will sanction failure to comply in the usual way.[159] Secondary architectural interventions also increase the likelihood of coercion in the event of a transgression, again, by modifying the environment to make detection more likely.

It is relatively easy to see how primary architectural intervention coerces: it seeks literally to cut off the possibility of transgression. Although we sense a $3000 fine for jaywalking to be coercive and unreasonable, it would still be possible to jaywalk were this the penalty. A pedestrian barrier that rises whenever the light is red is more coercive insofar as it takes this possibility away. Nudging, too, is coercive—albeit to a lesser degree—because it introduces various obstacles to conduct.[160] To respond that these obstacles are "all in your head" is not enough because, after all, the obstacle to jaywalking is in your head: you do not jaywalk because you are worried that you will be caught and fined. If you are extremely rich, or happen to be judgment proof, perhaps this worry is minimal. Nor is it necessarily true that resisting a nudge is without costs. There is the discomfort, the time, the

---

155.   Forcing a decision point is a barrier of a kind, but, I will argue, a more legitimate one than simply making an action harder to reduce its incidence.

156.   *See* HART, *supra* note 1, at 3.

157.   This is not to say that coercion is the only way law changes behavior. Law has a signaling function, for instance. *See supra* text accompanying note 151. One recalls H.L.A. Hart's criticism of the "bad man" theory of law: "Why should not law be equally if not more concerned with the 'puzzled man' or 'ignorant man' who is willing to do what is required, if only he can be told what it is?" HART, *supra* note 1, at 40.

158.   Robert M. Cover, *Violence and the Word*, 95 YALE L.J. 1601, 1601 (1986).

159.   *See, e.g.*, Marcia Hofmann, *Federal Trade Commission Enforcement of Privacy, in* PROSKAUER ON PRIVACY: A GUIDE TO PRIVACY AND DATA SECURITY LAW IN THE INFORMATION AGE § 4:3.3, at 4-16 to 4-47 (Kristen J. Mathews ed., 2013) (reviewing FTC enforcement of online privacy).

160.   *See supra* Part IV.C.

depletion of will power, and so forth, associated with overcoming the "architecture" of the choice.[161] Even notice can enact a form of penalty, as when ignoring the many notices Chris Consumer encounters can later compromise his rights in court in the event of a conflict.[162]

Perhaps a better way to talk about alternatives to law is that some eschew coercion only to reintroduce its close cousin, friction. Friction can be stronger or weaker than legal coercion, which itself varies in force depending on various factors.[163] But the underlying mechanism of friction is to make behavior the government does not like costlier in some sense. The problem with this substitution is that it introduces costs on the citizen but without affording the same processes that attend law.[164] Laws need to be introduced and voted upon. Even after being enacted, laws can be challenged in the courts of law and public opinion. This is not necessarily the case for the acts of installing a high pitch noisemaker to deter loitering or placing healthier food at eye level.[165]

Alternatives to law such as code and nudges can leverage another form of coercion—what I am calling friction—to substitute for law's deterrence function without the attendant safeguards, but they need not *necessarily* do so. Many interventions that are sometimes characterized as code or nudges—or, at any rate, are capable of such characterization—work precisely by helping citizens arrive at their own goals. I mention above the difference between nudging and debiasing.[166] Debiasing also encourages officials to study our cognitive biases, but for a different reason: to combat them. (Sometimes Sunstein and Thaler continue to talk this way in *Nudge*, as when they encourage better "mapping,"[167] but mostly the authors embrace using cognitive biases to direct behavior.) Moreover, environments can be altered not just to stop conduct, but also to facilitate better decision-making. Proponents of "think" as an alternative to nudge routinely refer to technology's capacity to enhance deliberative democracy.[168] Zittrain points

---

161.   *See supra* notes 130–37 and accompanying text.

162.   *See, e.g.*, Hillman, *supra* note 101.

163.   Legal coercion varies both in its severity (from a small fine to the death penalty) and in the process necessary to bring it to bear (from preponderance of the evidence to beyond a reasonable doubt).

164.   Robert Cover, for all his cynicism, does not deny the existence of process. *See* Cover, *supra* note 158.

165.   THALER & SUNSTEIN, *supra* note 4, at 1–2; *see* Lyall, *supra* note 41.

166.   *See supra* note 65 and accompanying text.

167.   THALER & SUNSTEIN, *supra* note 4, at 91–94. One reviewer holds that *Nudge* is really two books: one about correcting the bias, the other about pressing bias into a kind of paternalism. *See* Schlag, *supra* note 80, at 914. My own reading tends strongly toward the latter: the use of bias to "nudge" is what is distinct about the book.

168.   "Think" refers not to facilitation, as I've defined it, but rather to a set of techniques aimed at fostering the best conditions for arriving at collective societal preference. *See* PETER JOHN ET AL., NUDGE, NUDGE, THINK, THINK: EXPERIMENTING WITH WAYS TO CHANGE CIVIC BEHAVIOUR 13–14 (2011).

to "code-backed norms," meaning the use of architecture to bolster social constraints, as a way to help solve recurrent problems of online civility and privacy.[169]

Indeed, combining certain elements of a given strategy yields new possibilities for facilitation. The entire premise of notice is that giving people more information will help them make better choices.[170] The reason notice does not always facilitate decision-making is that it does not often work.[171] Both code and nudge hold lessons for how to improve notice, perhaps to the point that it can begin to deliver on its promise. Notices tend to be more effective, for instance, when delivered at the point of decision, which changes in architecture can help ensure.[172] A better understanding of human cognition can help create more experiential forms of notice that could, at least in theory, outperform the traditional model of words or pictures.[173] We may not pay heed to warnings, but we know when we have a gas leak because the utilities have added a certain smell.

Or take the example of so-called "fair notice."[174] It is sometimes said that the only thing laypeople know about law is that ignorance of it is no defense. And yet due process requires precisely that criminal and civil defendants have at least the opportunity to understand in advance both what conduct is wrongful and what penalties might attach.[175] Regulators looking to increase friction might introduce or encourage the use of digital rights management (code) to make copyright violations harder to commit, with the downside of encroaching on fair use.[176] Regulators who have facilitation in mind might focus on the use of code to inform citizens of the illegality of file-sharing and the penalties that can attach. There may be other contexts—tax, for instance—where citizens simply do not appreciate

---

Another potential analog is the distinction between shaming the perpetrator as a form of punishment and "guilting" as a way to educate the perpetrator as to the scope of his or her wrong. *See* Dan Markel, *Are Shaming Punishments Beautifully Retributive?: Retributivism and the Implications for the Alternative Sanctions Debate*, 54 VAND. L. REV. 2157, 2179 (2001) ("I distinguish shame and guilt in the following, and admittedly, crude manner: shame is the emotion one feels when subjected to public degradation, whereas guilt is the emotion one feels after consciously becoming aware of wrongdoing over which one feels responsible."). I owe this second distinction to Steve Calandrillo.

169.   *See* ZITTRAIN, *supra* note 23, at 223–28.

170.   *See supra* Part III.

171.   *See supra* notes 100–09 and accompanying text.

172.   *See* Willis, *supra* note 67, at 749–50.

173.   *See generally* Calo, *supra* note 6.

174.   *See* Jeffrey A. Love, Comment, *Fair Notice About Fair Notice*, 121 YALE L.J. 2395, 2395 (2012) (discussing the rule of lenity).

175.   *Id.*; *see also* BMW of N. Am., Inc. v. Gore, 517 U.S. 559, 574 (1996) ("Elementary notions of fairness enshrined in our constitutional jurisprudence dictate that a person receive fair notice not only of the conduct that will subject him to punishment, but also of the severity of the penalty that a State may impose.").

176.   *See* LESSIG, *supra* note 2, at 136.

the illegality or extent of illegality of their actions and would not choose to commit those actions if they had that knowledge.[177]

I do not mean to suggest there is no room for friction. It may always be necessary to make the penalty for corporate malfeasance, for instance, higher than the profit. What I am defending is a self-conscious preference for facilitation where possible, on the theory that we should abandon the safeguards that attend law only where it can be said that we are helping citizens do what they would do if they had the right information and tools. The role of the state as facilitator need not meet the same burden of justification. There is also a sense in which one person's facilitation is another's friction. Samuel Bray, for one, distinguishes between "harm rules"—the purpose of which is to penalize a powerful person if she harms someone vulnerable—and "power rules"—the purpose of which is to change a perceived power imbalance.[178] Thus, to prevent hold-ups, a city could enhance penalties for robbery (harm rule), but it could also require store clerks to install bulletproof glass (power rule), which introduces friction into the lives of robbers. Similarly, if officials were to offer store clerks useful information designed to facilitate self-protection—crime statistics, for instance, or tips on spotting when someone is "casing" their store—the resulting steps taken by the clerks would constitute a form of friction as seen from the perspective of the criminal.

I also do not mean to suggest that facilitation represents an easy road. First, there is the danger that facilitation will blend into friction. Conveying anything neutrally is a difficult task; how the speaker frames information can affect how the content is received, potentially pushing the audience toward a particular substantive conclusion (i.e., creating friction). Thus, for instance, study subjects were more likely to suggest increased penalties and enforcement where crime was cast rhetorically as a "wild beast preying on a city," and more likely to suggest social reforms where crime was described as a "virus infecting a city."[179] It will also be difficult to understand when and how to facilitate decision-making, just as it is difficult to know when and how to mandate disclosure, and especially when to give up on facilitation as unworkable in a given context. But these are known dangers that attend all official communication, and the regulator bent on friction has no less need to determine the right conduct to slow down or act to prevent.

Of particular concern is the serious doubt among many who study decision-making that there is even such a thing as "preference" that does not

---

177.   Thus, for instance, the tax code could modulate salience by penalty. For more on the burgeoning tax salience literature, see David Gamage & Darien Shanske, *Three Essays on Tax Salience: Market Salience and Political Salience*, 65 TAX L. REV. 19 (2011). Thank you to Shannon McCormack for making this connection.

178.   Samuel L. Bray, *Power Rules*, 110 COLUM. L. REV. 1172, 1173 (2010).

179.   Paul H. Thibodeau & Lera Boroditsky, *Metaphors We Think With: The Role of Metaphor in Reasoning*, 6 PLoS ONE, Feb. 23, 2011, at 2.

depend almost entirely on framing or context.[180] In other words, people may not have preexisting preferences that the law can help surface in the first place. The arguable impossibility of avoiding influence entirely in the provision of information is partly why this Essay suggests a lodestar—maximizing facilitation and minimizing friction—instead of a hard-and-fast rule. Perhaps the most that can be said, for now, is that the sources for preferences are many, and they may likely include law or policy.[181] Thus, regulators should be mindful of the line between providing citizens with more or better information and shaping their views.[182]

Ultimately, the lodestar of facilitation is just that. Rather than label a given regulatory intervention reflexively as code, nudge, or notice, and then defend or criticize it on the basis of this characterization, officials and academics should be looking to the extent the intervention hinders or helps. Given the initial choice, regulators should try to maximize facilitation because doing so tends to mitigate the concerns that normally attend substituting for law and its safeguards.

CONCLUSION

The last decade has seen a dramatic turn toward non-legal methods of controlling citizen behavior. The regulatory techniques colloquially known as code, nudge, and notice have proven particularly attractive to regulators seeking to alter conduct without passing or enforcing new rules. Each technique has been described, defended, and criticized in isolation. This Essay is the first to treat them together, surfacing at least two novel insights. The first is the descriptive point that the techniques are not as distinct as they appear. Their boundaries are permeable, which perhaps explains the difficulty that arises when we try to sort real-world interventions into the categories of code, nudge, and notice. And although they grow out of distinct conversations, the criticisms of these alternatives share considerable overlap—namely, that they substitute for law without replicating its safeguards.

The second insight is normative. We might ask not only whether to code, nudge, or notice, but also whether code, nudge, or notice are the right categories for study. At a minimum, theses labels tend to obscure the deeper divide between what I have labeled facilitation and friction. Each

---

180.   *See, e.g.*, GREENFIELD, *supra* note 20; Leslie K. John et al., *Strangers on a Plane: Context-Dependent Willingness to Divulge Sensitive Information*, 37 J. CONSUMER RES. 858 (2011).

181.   *Cf.* Citron, *supra* note 151 (arguing that law has a "signaling" function that can affect citizen norms and beliefs).

182.   The government will be in a position to facilitate selectively, i.e., only invest resources in facilitation where they believe citizens will come to the "right" conclusion. As long as the government does not facilitate only certain *outcomes*, I do not see this as a problem. Note that we are comparing selective facilitation to the other choices: rendering undesired conduct unlawful or otherwise introducing friction.

regulatory intervention described in this Essay is capable of both facilitation and friction, alone or in combination. They represent in this way a tremendous opportunity. In particular, a better understanding of the power of physical and "choice" architecture (coding and nudging) could enhance the historically ineffective provision of information (giving notice). Regulators should arguably exhaust the possibilities for helping citizens that inhere in code, nudge, or notice before introducing a form of coercion that lacks the usual process that attends law.