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EXPRESSIVE SOFTWARE DEVELOPMENT

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ABSTRACT

For over two decades, First Amendment protection for software has been analyzed through the "code as speech" framework, reviewing government restrictions and analogizing the programmer's keystrokes to writing in a foreign language. This Note argues that framework is doubly outdated.

Modern software development is extensively an editorial effort. Developers today assemble applications largely from third-party libraries, often in compiled, unreadable form. Simultaneously, government regulation has shifted from prohibiting certain code to mandating approved design choices.

This Note contends that recent First Amendment jurisprudence supplies a more suitable framework for evaluating these mandates. There is an emerging argument that software development, properly understood as the editorial curation of third-party content, could itself be considered protected expression. Government mandates requiring developers to embed approved code could then be seen as impermissible compelled editorial speech, breathing fresh air into constitutional challenges to software regulation. This Note identifies impending, difficult questions for courts and litigants, and identifies possible paths forward.

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I. INTRODUCTION

Is software development covered by the First Amendment? Cases and articles examining the question have often drawn parallels between coding and writing in a foreign language, concluding that yes, coding is expressive and protected by the First Amendment. Coding does not lose First Amendment protection just because computer science is hard to understand nor just because it is useful. According to this reigning theory, when a developer puts their fingers on their keyboard to communicate with someone, it hardly matters whether they are writing in Greek or C++. But a review of how software development, First Amendment analyses, and regulatory frameworks have changed over the last two decades reveals these answers are outdated in meaningful ways.

While this "code as speech" framing has given rise to substantial debates within legal circles, these analyses misconstrue how software development (as opposed to coding) happens in practice. Today, software development relies on far more than the code the programmer types with their keyboard. Even putting artificial intelligence developments that allow for code generation aside, software developers largely build on top of code authored by third parties, writing a small amount of the logic making their applications work. This third-party code can

often come in a form unreadable to humans, further putting its communicative value in question.

This shift matters. Not only is the "code is speech" argument premised on a developer seeking to communicate with their own writing, but software regulation today is also often better described as a government mandate than a ban, where governments require developers to adopt approved solutions even if they may have preferred a different one. New Supreme Court precedent also offers an invitation for lawyers and technologists alike to consider the question of what actions may be considered protected by the First Amendment and which government actions remain constitutional.

This Note now argues that the evolving doctrines around "compelled" and "editorial" speech may offer a new lens for courts, litigants, and scholars that is more suitable for examining software development, which may reveal serious concerns with these doctrines with which courts will have to grapple. This Note contributes to the "code is speech" debate by examining whether this aggregation practice of others' code has changed the strength of the reigning framing's underlying arguments and whether other First Amendment doctrines may be better suited for modern laws and regulations targeting software development. It does so by centering on the regulation of encryption software, which has historically animated many of the cases in this area of law and has engendered many recent software regulations.

Part II reviews the early First Amendment challenges to government regulation of coding, outlining how courts have considered code to be covered by the First Amendment because of its communicative value and its parallels to other languages.

Part III argues that the standard analysis of code protections under the First Amendment has two outdated premises and then proposes a new approach. First, it argues *software development*, not coding, is the appropriate way to understand the vast majority of how software is built today. Second, it argues that modern government regulation of software development has moved from banning certain implementations towards requiring certain design choices.

Part IV argues that new developments in First Amendment jurisprudence have completely prohibited "compelled speech" regulations by governments, and argues that a category of "editorial speech," distinguishable from more traditional "first-hand speech," is developing.

Part V then argues that modern First Amendment doctrine could make the Constitution an insurmountable barrier to many regulations that would touch on changes to software. It argues the Supreme Court may be forced by practicality to revisit the trends of increasing both the definition of "speech" under the First Amendment and the level of

scrutiny it applies to the government regulations. Part VI concludes by reviewing the findings and arguments made in this Note.

II. CURRENT DOCTRINE FOR CODE REGULATIONS AND THE FIRST AMENDMENT

A. Bernstein *and Its Progeny*

As a starting point, it is important to analyze the cases and articles that some claim have "establish[ed] code as speech."[1] In the early 1990s, the U.S. government passed a series of laws and regulations that required, among other things, people seeking to import or export certain cryptographic components or software to seek a license with specified government agencies before being allowed to do so.[2] At the time, Daniel Bernstein sought a determination from the State Department as to whether his encryption algorithm — including two files of the algorithm in the C programming language — would be covered by these regulations.[3] Receiving responses that his algorithms and the accompanying files were indeed included in the export restrictions (and that "export" included the disclosure of the algorithm to a foreign person), Bernstein challenged the regulations in the Northern District of California and then the Ninth Circuit.[4]

The government's primary argument was that the source code files for the encryption programs were "conduct" and not "speech" under the First Amendment.[5] The trial court disagreed, deciding that code was speech.[6] First, it established that "language is speech":

> [S]peech in any language consists of the "expressive conduct" of vibrating one's vocal chords [sic] . . . or of putting . . . hand to keyboard. [T]he fact that such "conduct" is shaped by language — that is, a

1. Alison Dame-Boyle, *EFF at 25: Remembering the Case That Established Code As Speech*, EFF (Apr. 16, 2015), https://www.eff.org/deeplinks/2015/04/remembering-case-established-code-speech [https://perma.cc/45UL-MUVE].

2. Bernstein v. U.S. Dep't of State, 922 F. Supp. 1426, 1429–30 (N.D. Cal. 1996).

3. *Id.* at 1428–30.

4. *Id.* at 1430.

5. *Id.* at 1434. Specifically, the government based its challenge to the speech analogy on *Texas v. Johnson*, 491 U.S. 397 (1989), arguing that "the source code, as a functioning cryptographic product, is not intended to convey a particular message" — that is, that code cannot be speech where "its purpose is functional rather than communicative." *Bernstein*, 922 F. Supp. at 1434. The *Bernstein* court rebutted that argument by noting that *Johnson* suggests that the inquiry "into the communicative nature of conduct" takes place only after a court concludes that the act at issue "was indeed conduct and not speech." *Id.* The court then went on to analyze that first step, concluding that coding was speech, and thus the expressive value of conduct was unneeded. *See id.* at 1434–35.

6. *Id.* at 1435.

> sophisticated and complex system of understood meanings — is what makes it speech.[7]

And the court could not find "meaningful difference between computer language . . . and German or French."[8] "All participate in a complex system of understood meanings within specific communities," the court found, since "[t]he expression of ideas, commands, objectives and other contents of the source program are merely translated into machine-readable code."[9] The functionality of the code was immaterial, the court found, and the parallels available to (First Amendment-protected) music inscriptions on the roll of a piano player, in addition to copyright protections for software, further confirmed source code's status as a protected form of expression.[10]

The case was eventually appealed to the Ninth Circuit, where a three-judge panel affirmed the decision.[11] The split panel found that encryption software in its source code form "must be viewed as expression for First Amendment purposes."[12] The "distinguishing feature of source code," the opinion argued, is that "it is meant to be read and understood by humans and that it can be used to express an idea or a method."[13] Source code was particularly important for communication among cryptographers and their peers, Judge Fletcher wrote, as it enabled the "express[ion] [of] algorithmic ideas with precision and methodological rigor that is otherwise difficult to achieve."[14]

The *Bernstein* decision hardly settled the debate. Only a couple of years later, the Northern District of Ohio critiqued *Bernstein*'s conclusive connection between "language" and "speech" and came to the conclusion that "exporting source code is *conduct* that can occasionally have communicative elements" and that these possibilities "do[] not necessarily extend First Amendment protection to it."[15] The Sixth Circuit reversed that decision, adopting a reasoning similar to that in

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7. *Id.* (citing Yniguez v. Arizonans for Off. Eng., 69 F.3d 920, 934–36 (9th Cir. 1995) (en banc)).

8. *Id.*

9. *Id.*

10. *Id.* at 1435–36.

11. Bernstein v. U.S. Dep't of Just., 176 F.3d 1132 (9th Cir. 1999).

12. *Id.* at 1141.

13. *Id.* at 1140.

14. *Id.* at 1141. Rehearing en banc was eventually granted, with the three-judge decision withdrawn, but the government made changes to its regulations before the rehearing could take place, and the case was eventually dismissed as moot. *See* Bernstein v. U.S. Dep't of Com., No. C 95-0582 MHP, 2004 WL 838163, at *2 n.2 (N.D. Cal. Apr. 19, 2004). Daniel Bernstein, then a graduate student, eventually became a computer science professor at the University of Illinois. Daniel J. Bernstein, U. ILL. CHI.: COMPUT. SCI., https://cs.uic.edu/profiles/daniel-j-bernstein/ [https://perma.cc/R7CZ-CCM4] (last visited Feb. 13, 2026, 10:12 ET).

15. Junger v. Daley, 8 F. Supp. 2d 708, 716–17 (N.D. Ohio 1998), *rev'd*, 209 F.3d 481 (6th Cir. 2000) (emphasis added).

Bernstein, but concluding that the functional capabilities of code "should be considered when analyzing the governmental interest in regulating the exchange of this form of speech."[16]

Around the same time, the Second Circuit decided *Universal City Studios, Inc. v. Corley*.[17] The court reviewed a First Amendment challenge to an application of the "anti-trafficking" provisions of the Digital Millennium Copyright Act ("DMCA"), which Congress had passed to "strengthen copyright protection in the digital age."[18] Corley, who published a print magazine and an affiliated website catering to "hackers," had posted an algorithm that allowed users to remove the encryption that major motion picture studios used to secure their content on DVDs from piracy.[19] Motion picture studios sued, and Corley argued the DMCA application violated the First Amendment because the code was "speech."[20]

The Second Circuit agreed with Corley, at least in part. The Circuit's opinion embraced a less all-encompassing theory than *Bernstein* did. It started by establishing that code is speech, but that computer programs might not be.[21] Code, by itself, the court found, is no different from English in the sense that it allows for communication and could be used to write novels — even if it is not easy to understand the message communicated.[22] Computer programs, however, were different. They were considered protected when serving as communication from the programmer to another programmer or another user but not protected at all when they merely "communicated" with the computer.[23] Further, that protection was qualified.[24] Standard First Amendment analysis, based on tiers of scrutiny, applied to these expressive elements.[25]

As technology expanded, *Bernstein* and *Corley* featured prominently in the new waves of litigation. The success of constitutional

16. Junger v. Daley, 209 F.3d 481, 485 (6th Cir. 2000).

17. 273 F.3d 429 (2d Cir. 2001).

18. *Id.* at 435.

19. *Id.* at 435–36. A "DVD" was a form of physical data storage popularly used for consumer access to audiovisual products. DVD, BRITANNICA, https://www.britannica.com/technology/DVD [https://perma.cc/65GH-FEAA] (last visited Mar. 8, 2026, 10:02 ET).

20. *Corley*, 273 F.3d at 436.

21. *Id.* at 445–46.

22. *Id.*

23. *Id.* at 447–49. The court distinguished its ruling from the one it had made in *Commodity Futures Trading Comm'n v. Vartuli*, 228 F.3d 94 (2d Cir. 2000). "Vartuli considered two ways in which a programmer might be said to communicate through code: to the user of the program (not necessarily protected) and to the computer (never protected) . . . . [I]t did not have occasion to consider a third manner in which a programmer might communicate through code: to another programmer." 273 F.3d at 449.

24. *Id.* at 449–50.

25. *Id.* at 450.

challenges has been mixed,[26] but the theory has impacted how laws interact with technology. As the two cases show, "code is speech" has limited export control and copyright regulations. In 2016, when the FBI demanded access to the iPhone data of one of the terrorists suspected of the San Bernadino shooting that killed fourteen people the year before, Apple pointed to its First Amendment rights.[27] And as *303 Creative*[28] and *Moody*[29] respectively show, the issue of whether software development is speech can impact regulations as non-technical as anti-discrimination laws and as technical as attempts to shift the weights of social media platforms' secret algorithms.[30]

Legal scholars have also picked up the baton of considering the implications of the expressive value of software development to First Amendment litigations as several commentators and scholars have expanded the field with theories that may reaffirm the *Bernstein* conclusion that code is a form of expression itself.[31] Some have made the argument that programmers, like conventional artists, perform their work on the basis of "aesthetic and stylistic criteria of beauty and

26. Although few statutes have been struck down, courts have largely affirmed the holdings that coding is generally speech like speaking any natural language. *See, e.g.*, United States v. Bondarenko, No. 2:17-CR-306 JCM (VCF), 2019 WL 2450923 at *10–11 (D. Nev. June 12, 2019) (approving of *Bernstein*); Green v. U.S. Dep't of Just., 392 F. Supp. 3d 68, 86 (D.D.C. 2019), *aff'd*, 111 F.4th 81 (D.C. Cir. 2024) (approving of *Corley*); United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1126 (N.D. Cal. 2002) (approving both cases' theories); 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1100 (N.D. Cal. 2004) (approving of *Corley*); United States v. Osadzinski, 97 F.4th 484, 491 (7th Cir. 2024) (same); CDK Glob. LLC v. Brnovich, 461 F. Supp. 3d 906, 925 (D. Ariz. 2020) (approving of both cases' theories). *But see* Kyle Langvardt, *Crypto's First Amendment Hustle*, 26 YALE J.L. & TECH. 130, 152 (2023) ("[W]hen the interference with expression is merely incidental — as it has been in every case except Bernstein — courts apply intermediate scrutiny. The government has never once failed to clear the bar in one of these cases.").

27. *See* Kim Zetter & Brian Barrett, *Apple to FBI: You Can't Force Us To Hack the San Bernardino iPhone*, WIRED (Feb. 25, 2016), https://www.wired.com/2016/02/apple-brief-fbi-response-iphone [https://perma.cc/36RK-KL8Z]; Lev Grossman, *Inside Apple CEO Tim Cook's Fight With the FBI*, TIME (Mar. 17, 2016), https://time.com/4262480/tim-cook-apple-fbi-2 [https://perma.cc/8C92-FLFN]. The litigation eventually became moot as the FBI claimed it was able to find an alternative approach to access the iPhone data without Apple's intervention. *See* Katie Benner & Eric Litchbau, *U.S. Says It Has Unlocked iPhone Without Apple*, N.Y. TIMES (Mar. 29, 2016), https://www.nytimes.com/2016/03/29/technology/apple-iphone-fbi-justice-department-case.html [https://perma.cc/T2C8-JY4N].

28. 303 Creative LLC v. Elenis, 600 U.S. 570 (2023).

29. Moody v. NetChoice LLC, 603 U.S. 707 (2024).

30. *See* discussion *infra* Part IV.

31. *See, e.g.*, Norman Andrew Crain, Comment, Bernstein*,* Karn*, and* Junger*: Constitutional Challenges to Cryptographic Regulations*, 50 ALA. L. REV. 869, 888 (1999) (arguing that "the natural progression" of Supreme Court cases before *Bernstein* "leads to the conclusion that source code should be recognized as speech"); Lee Tien, *Publishing Software as a Speech Act*, 15 BERKELEY TECH. L.J. 629, 661 (2000) (Bernstein's lawyer, arguing that programming languages are "complex" and "define particular communit[ies]" of developers like speakers of "natural languages" that might have "sub-communities of speakers" based on a subset of a language").

elegance."[32] Others have provided alternative theories, advocating for protections only where coding serves a functional purpose related to self-expression.[33] But virtually all have still looked at the problem from the same framing: code is expression by being a first-hand way of communication, where the *coder* expresses themselves by typing the code out.[34]

III. NEW PRACTICES, NEW LAWS

As Part II has established, the vast majority of scholarship and case law has approached the question of whether software development is covered by the First Amendment through the lens of the "code is speech" argument. These arguments have mostly served courts, litigants, and scholars in cases that, like *Bernstein* and *Corley*, concern a legal prohibition on the sharing of source code. This approach,

32. Tien, *supra* note 31, at 661–62; *see also* FREDERICK P. BROOKS, THE MYTHICAL MAN-MONTH 7–8 (1975) ("The programmer, like the poet, works only slightly removed from pure thought-stuff. He builds . . . by exertion of the imagination. Few media of creation are so flexible, so easy to polish and rework, so readily capable of realizing grand conceptual structures . . . . Programming . . . gratifies creative longings built deep within us and delights sensibilities we have in common with all [people]."); Paul Graham, *Hackers and Painters*, PAUL GRAHAM (May 2003), http://www.paulgraham.com/hp.html [https://perma.cc/J7KG-F42Y] ("[O]f all the different types of people I've known, hackers and painters are among the most alike . . . . [H]ackers . . . are trying to write interesting software[.] [C]omputers are just a medium of expression, as concrete is for architects or paint for painters."); Xiangnong Wang, *De-Coding Free Speech: A First Amendment Theory for the Digital Age*, 2021 WIS. L. REV. 1373, 1394 ("Writing code is an inherently creative and generative activity.").

33. *See* Robert C. Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713, 717–19 (2000) ("First Amendment coverage, therefore, depends upon how the object of regulation is integrated into First Amendment media."). Professor Robert Post argued that code should be examined for the role that it plays in the public discourse and that the "decisive question" should be "whether or not the publication of the source code forms part of a First Amendment medium." But if a person has not shared the code or does not talk about it, Post would argue, "the code speaks directly to the [user's] computer," does not participate in "public debate," and thus should not be protected. *See id.* at 719–20; *see also* Steven E. Halpern, *Harmonizing the Convergence of Medium, Expression, and Functionality: A Study of the Speech Interest in Computer Software*, 14 HARV. J.L. & TECH. 139, 154–55 (2000) (arguing the code should be covered by the First Amendment in part by being seen as "scientific expression" in truth-seeking); Andrea M. Matwyshyn, *Hacking Speech: Informational Speech and the First Amendment*, 107 NW. U. L. REV. 795, 828–29 (2013) (arguing for an approach that accounts for the "time, place, and manner" of the speaker's communications); R. Polk Wagner, Note, *The Medium Is the Mistake: The Law of Software for the First Amendment*, 51 STAN. L. REV. 387, 398 (1999) (arguing an approach based on the context of the code "ask[ing] whether the regulation is intended to suppress free expression").

34. While some scholars have written about the editorial perspective in software regulation, they have largely done so in the context of editorial choices that code regulates. *See, e.g.*, Eugene Volokh & Donald M. Falk, *Google: First Amendment Protections for Search Engine Search Results*, 8 J.L. ECON. & POL'Y 883, 887 (2012) (arguing for the protection of "editorial judgments about selection and arrangement of [search engine results'] content").

however, does not accord entirely with the real challenges that software developers face today.

A. Modern Software Development Practices

The first fundamental flaw with the "code is speech" argument as a basis for litigation is that it presumes coding, in the "fingertips on the keyboard" sense, to be the description of what software developers do. In theory and in some computer science departments, that might be the case. Practice in industry is much different. Developing software is a far more nuanced process than merely writing code to express an idea. Rather than write large amounts of code by hand, the vast majority of software developed today (even excluding AI-generated code) relies heavily on third-party libraries written by other developers and other organizations.[35] This is not an entirely new practice, but modern technologies have expanded it tremendously.

Due to the expansion of internet access and bandwidth since the turn of the century, third-party software has seen an explosion. Github, a website allowing developers to share and find code libraries, expanded so broadly that Microsoft acquired it in 2018 for $7.5 billion.[36] In 2022, over 180 million developers relied on Github to host over 518 million software projects, generating a billion dollars in revenue.[37]

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35. *See* Veronika Bauer, Lars Heinemann & Florian Deissenboeck, *A Structured Approach to Assess Third-Party Library Usage*, IEEE (2012), https://ieeexplore.ieee.org/document/6405311 [10.1109/ICSM.2012.6405311] ("Reuse with software libraries plays a central role in modern software development–instead of writing a complete software system from scratch, significant parts of its building blocks are reused from third-party libraries."); Pasquale Salza, Fabio Palomba, Dario Di Nucci, Andrea De Lucia & Filomena Ferrucci, *Third-Party Libraries in Mobile Apps*, 25 EMPIRICAL SOFTWARE ENG'G 2341, 2341 (2020) ("In modern development practices, a common practice to implement new software is to reuse existing code, as it avoids the costs related to the implementation of complex functions and modules, and it guarantees the usage of source code previously tested and validated.").

36. Frederic Lardinois & Ingrid Lunden, *Microsoft Has Acquired GitHub for $7.5B in Stock*, TECHCRUNCH (June 4, 2018, at 06:08 PDT), https://techcrunch.com/2018/06/04/microsoft-has-acquired-github-for-7-5b-in-microsoft-stock [https://perma.cc/R5G4-KWSF].

37. *See* GITHUB, *Let's Build from Here* (Feb 11, 2026, at 23:37 ET), https://github.com/about [https://perma.cc/ZNC5-5WP3]; Frederic Lardinois, *Microsoft Says GitHub Now Has a $1B ARR, 90M Active Users*, TECHCRUNCH (Oct. 25, 2022, at 12:42 PDT), https://techcrunch.com/2022/10/25/microsoft-says-github-now-has-a-1b-arr-90m-active-users [https://perma.cc/VR2P-Z6SM]; GITHUB, *Octoverse: AI Leads Python to Top Language as the Number of Global Developers Surges* (Oct. 29, 2024), https://github.blog/news-insights/octoverse/octoverse-2024 [https://perma.cc/YW8T-22YM] ("In 2024, developers around the world made more than 5.2 billion contributions to more than 518 million open source, public, and private projects."). Before Github, other open software repositories like SourceForge enjoyed popularity, but to a far lesser extent. *See* SOURCEFORGE, *A Brief History of SourceForge, and a Look Towards the Future* (June 2, 2018), https://sourceforge.net/blog/brief-history-sourceforge-look-to-future/

Language-specific tools for managing third-party code like npm and pip for JavaScript and Python, respectively, have seen significant growth, too.[38]

In writing code, developers often embed the logic of the third-party libraries by referencing versions of these libraries in their machine form, instead of their source code. In other words, a developer might write a piece of software that says the code-equivalent "use the 'Foo' code to compute the value of 'X' when the user clicks this button." But instead of copy-pasting the actual code of Foo, or even downloading it into their machines, the developers (and their machines) generally use a reference to that code, typically in a "compiled"[39] format distributed for computer logic boards rather than human eyes. Although developers might typically prefer to rely on libraries that are "open source" where anyone (including the developers using the library) can review the source code that led to the compiled version, a large amount of this usage includes proprietary code intended to avoid public access.[40]

This practice is especially common where the third-party code provides functionality that is complex to implement or where the coding requires sensitive rigor. Perhaps ironically, the most preeminent example of this practice is the use of cryptography code like those examined in *Bernstein* and *Corley*. The practice of using standard third-party libraries in the cryptography context is so common that a "golden rule" has emerged among developers: writing your own code for cryptography is typically so critical and risky that it is better to rely on someone

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[https://perma.cc/QAM4-ENU3]; Greg Foster, *How GitHub Replaced SourceForge as the Dominant Code Hosting Platform*, GRAPHITE (Mar. 27, 2024) https://graphite.com/blog/github-monopoly-on-code-hosting [https://perma.cc/HV8N-2LPT]; Ingrid Lunden, *Dice Holdings Pays $20M Cash for Slashdot, SourceForge and Freecode from Geeknet*, TECHCRUNCH (Sep. 18, 2012, at 07:15 ET), https://techcrunch.com/2012/09/18/dice-holdings-buys-slashdot-sourceforge-and-freecode-from-geeknet/ [https://perma.cc/VYX6-8X9Q] (reporting a user count of 40 million unique monthly visitors).

38. *See* Gabi Dobocan, *State of Npm 2023: The Overview*, SANDWORM (July 3, 2023), https://blog.sandworm.dev/state-of-npm-2023-the-overview [https://perma.cc/VD4B-KAMQ] (finding over three million "packages" for Javascript); *PyPI - The Python Package Index*, PYPI (Feb. 11, 2026), https://pypi.org/ [https://perma.cc/7GEL-P3U9] (showing 741,000 Python projects).

39. "Compiled" here refers to the process by which human-oriented source code is turned into machine-oriented code. *See* Rahul Awati & Robert Sheldon, *What Is a Compiler?*, TECHTARGET (Apr. 11, 2025), https://www.techtarget.com/whatis/definition/compiler [https://perma.cc/5MCD-JFXW]. Of course, it is possible that a human is trained to understand the machine code, though that would be unusual. Some have defended that compiling source code should remove the constitutional protection. *See, e.g.*, Steven E. Halpern, *Harmonizing the Convergence of Medium, Expression, and Functionality: A Study of the Speech Interest in Computer Software*, 14 HARV. J.L. & TECH. 139, 167 (2000) ("The gap between object code and source code is an appropriate place to draw the line between utilitarian machine and instructional literature.").

40. This is particularly important under the *Corley* analysis, which held that when the code is communicating only with a computer, it is never protected. Universal City Studios v. Corley, 273 F.3d 429, 447–49 (2d Cir. 2001).

else's implementation that has been broadly vetted and adopted by others.[41] Or, more succinctly, "Don't roll your own crypto, bro."[42]

B. Attempts at Regulation Through Coding Mandates

The second flaw of the argument around "code is speech" is that it fails to recognize a shift in how the government has sought to regulate software. In both *Bernstein* and *Corley*, the legal actions largely concerned government regulations and laws that forbade the development or sharing of a piece of code.[43] However, modern attempts at regulating code have largely focused on requiring the development of certain kinds of code or the embedding of a government-provided piece of code into certain kinds of software.

After the 2015 San Bernadino shooting and the ensuing Apple disputes over law enforcement access to iPhone data,[44] Senators Burr and Feinstein made a bipartisan proposal of legislation that would permit state and federal courts to order "any person who provides a product or method to facilitate a communication or the processing or storage of data" to develop means to unlock encrypted data in their products.[45] This would include following government orders requiring developers to "render technical assistance" to decrypt the relevant data.[46]

A few years later, as the Supreme Court reviewed a case concerning a dispute between Microsoft and law enforcement on whether the

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41. *See* Susan Morrow, *The Dangers of "Rolling Your Own" Encryption*, INFOSEC (Mar. 28, 2019), https://www.infosecinstitute.com/resources/cryptography/the-dangers-of-rolling-your-own-encryption [https://perma.cc/9P42-T3AP]; *see also* Comment, @richo, *on* Y COMBINATOR: HACKERNEWS (Apr. 14, 2015), https://news.ycombinator.com/item?id=9376827 [https://perma.cc/787U-L6KN] ("If you believe that 'don't roll your own crypto' is some kind of absurd mantra the security industry uses to keep us in business, I recommend that you roll your own crypto, and keep us in business."); Bauer et al., *supra* note 35.

42. Joseph Cox, *Why You Don't Roll Your Own Crypto*, VICE (Dec. 10, 2015, at 14:29 ET), https://www.vice.com/en/article/why-you-dont-roll-your-own-crypto [https://perma.cc/P4WT-J92P].

43. *See* Bernstein v. U.S. Dep't of State, 922 F. Supp. 1426, 1428–30 (N.D. Cal. 1996); *Corley*, 273 F.3d at 435.

44. *See* Zetter & Barrett, *supra* note 27; Grossman, *supra* note 27.

45. *See* Riana Pfefferkorn, *Here's What the Burr-Feinstein Anti-Crypto Bill Gets Wrong*, STANFORD CTR. FOR INTERNET & SOC'Y (Apr. 15, 2016), https://cyberlaw.stanford.edu/publications/heres-what-burr-feinstein-anti-crypto-bill-gets-wrong/ [https://perma.cc/3H2E-DVLT]; Dustin Volz & Mark Hosenball, *Leak of U.S. Senate Encryption Bill Prompts Swift Backlash*, REUTERS (Apr. 9, 2016), https://www.reuters.com/article/us-apple-encryption-legislation-idUSKCN0X52CG [https://perma.cc/5H4H-HKJZ]; Mark Hosenball & Dustin Volz, *Senate Panel Releases Draft of Controversial Encryption Bill*, REUTERS (Apr. 13, 2016, at 11:38 ET), https://www.reuters.com/article/technology/senate-panel-releases-draft-of-controversial-encryption-bill-idUSKCN0XA2B4 [https://perma.cc/WB2X-6Y3Z].

46. *See* Volz & Hosenball, *supra* note 45; Cody M. Poplin, *Burr-Feinstein Encryption Legislation Officially Released*, LAWFARE (Apr. 13, 2016, at 18:12 ET),

government's warrant allowed for the company to retrieve user data in servers located abroad,[47] Congress quickly passed the Clarifying Lawful Overseas Use of Data Act (or "CLOUD Act").[48] The Act provided in part that U.S.-issued warrants may apply to data in the "possession, custody, or control" of service providers abroad.[49] In practical terms, companies may be required to implement software to enable the cross-border access.[50]

In 2019, the federal government started to directly address encryption technology. Then-Attorney General William P. Barr, in his remarks at a law enforcement conference, expressed concern about the availability of "warrant-proof" and "irresponsible" encryption, which had led at times "the Government's investigative capabilities [to] 'go[] dark.'"[51] Barr proposed the pursuit of "effective ways to provide secure encryption while also providing secure legal access."[52] He specifically pointed to proposals that would require software companies implement features into their encryption-based products to allow the addition of "silent" law enforcement recipients in otherwise secure chats, "exceptional access keys" that allow decryption by the government, or "Layered Cryptographic Envelopes" for data-at-rest on providers' disks.[53] To those who would object to interference with software design and

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https://www.lawfaremedia.org/article/burr-feinstein-encryption-legislation-officially-released [https://perma.cc/V25A-DCGL].

47. United States v. Microsoft Corp., 584 U.S. 236, 236 (2018).

48. Pub. L. 115–141; Lawrence Hurley & Dustin Volz, *U.S. Supreme Court Wrestles with Microsoft Data Privacy Fight*, REUTERS (Feb. 27, 2018, at 14:37 ET), https://www.reuters.com/article/technology/us-supreme-court-wrestles-with-microsoft-data-privacy-fight-idUSKCN1GB0GR [https://perma.cc/8KBE-ZBP6]; Ericka A. Johnson, *The CLOUD Act, Bridging the Gap Between Technology and the Law*, NAT'L L. REV. (Mar. 19, 2018), https://natlawreview.com/article/cloud-act-bridging-gap-between-technology-and-law [https://perma.cc/3HRX-XPGX].

49. 18 U.S.C. § 2713; *see* Johnson, *supra* note 48.

50. In Microsoft's case, however, the issue was moot since the company conceded that they had implemented the ability to do so. *See* Microsoft Corp. v. United States, 829 F.3d 197, 203 (2d Cir. 2016) ("Microsoft acknowledges that, by using a database management program that can be accessed at some of its offices in the United States, it can 'collect' account data that is stored on any of its servers globally and bring that data into the United States."). The case as a whole was eventually mooted due to Congress's passage of the CLOUD Act, which amended contested sections of the Stored Communications to apply to stored communications outside of the United States. *See Microsoft*, 584 U.S. at 236.

51. William Barr, Attorney General, Keynote Address at the International Conference on Cyber Security (July 23, 2019), https://www.justice.gov/archives/opa/speech/attorney-general-william-p-barr-delivers-keynote-address-international-conference-cyber [https://perma.cc/GYJ8-J5EJ].

52. *Id.*

53. *Id.*

that it may "place[] an unreasonable burden on companies," he offered the response, "[w]elcome to civil society."[54]

In 2020, bipartisan senators sponsored another bill seeking to change software development. The "EARN IT" act required technology companies to meet internet "best practices," as defined by a commission led by the Attorney General, in order to maintain certain legal protections.[55] That same year, Republican senators sponsored another bill seeking to change software development. The Lawful Access to Encrypted Data Act sought to "end[] the use of 'warrant-proof' encrypted technology by . . . bad actors."[56] Privacy advocates called it "even worse than EARN IT," observing that it would require companies to ensure that the design of their encryption services would allow for government access to user data, though not prescribing a particular

54. *See id.* Attorney General Barr also acknowledged that cybersecurity advocates "dogmatically" believe that proposals like the "exceptional access keys" will weaken security of products against bad actors. *See id.* Such proposals are often described as creating a "back door" for access. *See* Bruce Schneider, *A 'Key' for Encryption, Even for Good Reasons, Weakens Security*, N.Y. TIMES (July 15, 2016, at 17:12 ET), https://www.nytimes.com/roomfordebate/2016/02/23/has-encryption-gone-too-far/a-key-for-encryption-even-for-good-reasons-weakens-security [https://perma.cc/V8FT-8VRZ]. Senator Ron Wyden reacted by calling the attorney general's remarks "outrageous, wrongheaded and dangerous." Zack Whittaker, *US Attorney General William Barr Says Americans Should Accept Security Risks of Encryption Backdoors*, TECHCRUNCH (July 23, 2019, at 6:38 PDT), https://techcrunch.com/2019/07/23/william-barr-consumers-security-risks-backdoors/ [https://perma.cc/R7PV-EZUH].

55. *See* Joe Mullin, *Urgent: EARN IT Act Introduced in House of Representatives*, EFF (Oct. 2, 2020), https://www.eff.org/deeplinks/2020/10/urgent-earn-it-act-introduced-house-representatives [https://perma.cc/HTA2-VS94]; Joe Mullin, *The New EARN IT Bill Still Threatens Encryption and Free Speech*, EFF (July 2, 2020), https://www.eff.org/deeplinks/2020/07/new-earn-it-bill-still-threatens-encryption-and-free-speech [https://perma.cc/5269-KM5X]; Adi Robertson, *The EARN IT Act Is Back in Congress*, VERGE (Feb. 1, 2022, at 11:46 EST), https://www.theverge.com/2022/2/1/22912387/earn-it-act-section-230-amendment-reintroduced [https://perma.cc/Z2YA-RU9B]; *see also* Riana Pfefferkorn, *The EARN IT Act: How To Ban End-to-End Encryption Without Actually Banning It*, CTR. FOR INTERNET & SOC'Y (Jan. 30, 2020, at 02:42 ET), https://cyberlaw.stanford.edu/blog/2020/01/earn-it-act-how-ban-end-end-encryption-without-actually-banning-it [https://perma.cc/XQ3U-EQ2L] (claiming EARN IT was a "bait-and-switch" law to indirectly ban end-to-end encryption). In 2022 and in 2023, the bill was again introduced in the 117th and the 118th Congress (respectively), but as with the original attempt, the bill did not become law. *See* S.3538, 117th Cong. (2022); S.1207, 118th Cong. (2023).

56. Press Release, U.S. Senate Comm. on the Judiciary, Graham, Cotton, Blackburn Introduce Balanced Solution to Bolster National Security, End Use of Warrant-Proof Encryption that Shields Criminal Activity (June 23, 2020), https://www.judiciary.senate.gov/press/rep/releases/graham-cotton-blackburn-introduce-balanced-solution-to-bolster-national-security-end-use-of-warrant-proof-encryption-that-shields-criminal-activity [https://perma.cc/G2NK-WG2L].

implementation and instead leaving the companies "to figure out for themselves how to comply with a decryption directive."[57]

These proposals are part of a growing worldwide trend. In 2016, with U.S. support,[58] the British Parliament enacted into law the "Investigatory Powers Act 2016,"[59] which in part allowed the British government to require technology companies to introduce encryption "backdoors" into their technology.[60] In 2025, the government made such an order to Apple, and Apple, despite appealing, was not at first allowed to disclose the existence of the order.[61] Similar efforts have

57. Andrew Crocker, *The Senate's New Anti-Encryption Bill Is Even Worse Than EARN IT, and That's Saying Something*, EFF (Jun. 24, 2020), https://www.eff.org/deeplinks/2020/06/senates-new-anti-encryption-bill-even-worse-earn-it-and-thats-saying-something [https://perma.cc/AW99-F5Y9]; Riana Pfefferkorn, *There's Now an Even Worse Anti-Encryption Bill Than EARN IT. That Doesn't Make the EARN IT Bill OK.*, CTR. FOR INTERNET & SOC'Y (Jun. 24, 2020), https://cyberlaw.stanford.edu/blog/2020/06/theres-now-even-worse-anti-encryption-bill-earn-it-doesnt-make-earn-it-bill-ok [https://perma.cc/4JK9-EJGJ].

58. Danny Yadron, *Obama Sides with Cameron in Encryption Fight*, WALL ST. J. (Jan. 16, 2015, at 16:52 ET), https://www.wsj.com/articles/BL-DGB-39944 [https://perma.cc/MK2Z-SRN2].

59. *See generally* Investigatory Powers Act 2016, c. 25 (U.K.).

60. *See* Andrew Griffin, *UK Spying Laws: Government Introduces Law Requiring Whatsapp and iMessage to Break Their Own Security*, INDEPENDENT (Mar. 1, 2016, at 10:09 ET), https://www.the-independent.com/tech/uk-spying-laws-uk-government-introduces-law-requiring-whatsapp-and-imessage-to-be-broken-a6905106.html [https://perma.cc/627T-PLQY]; Kieren McCarthy*, UK's New Snoopers' Charter Just Passed an Encryption Backdoor Law by the Backdoor*, REGISTER (Nov. 30, 2016, at 07:04 UTC), https://www.theregister.com/2016/11/30/investigatory_powers_act_backdoors [https://perma.cc/N8W8-8Q76]. For an argument that the Investigatory Powers of 2016 is at least in part a violation of the Charter Fundamental Rights, see generally Rubin S. Waranch, *Digital Rights Ireland Dèja Vu?: Why the Bulk Acquisition Warrant Provisions of the Investigatory Powers Act 2016 Are Incompatible with the Charter of Fundamental Rights of the European Union*, 50 GEO. WASH. INT'L L. REV. 209 (2017).

61. Joseph Menn, *U.K. Orders Apple To Let It Spy On Users' Encrypted Accounts*, WASH. POST (Feb. 7, 2025), https://www.washingtonpost.com/technology/2025/02/07/apple-encryption-backdoor-uk/ [https://perma.cc/4Q3M-GJ33]; Zoe Kleinman, *Apple Takes Legal Action in UK Data Privacy Row*, BBC (Mar. 4, 2025), https://www.bbc.com/news/articles/c8rkpv50x01o [https://perma.cc/2LFS-89TH].

been pushed by the European Commission[62] and governments in France,[63] Sweden,[64] and Spain[65] over the last few years.

The throughline in all of these regulations is the same: the government's approach is to impose certain software development mandates, rather than trying to outright ban a particular type of code from being written. Although the majority of the proposals are focused on the end-goal of technology companies providing the government with access to otherwise secure data (or "best practices"), the expectation is that developers will largely follow one of the few approaches that preserves some semblance of security to users while allowing government backdoors into encrypted data. In other words, the idea all these proposals share is the same: software developers must use the cryptographic design the government approves of, not the one that developers would otherwise choose.

IV. FIRST AMENDMENT DEVELOPMENTS

Part III's discussion of software development practices presents a new way of thinking about software engineers' expression due to changes in technical practices. But the case for rethinking "code is speech" is not limited to updates on software questions. The Supreme Court's recent jurisprudence has provided meaningful perspectives on what constitutes expression and where the government may "mandate" a particular form of expression. Taken together, these recent decisions also invite litigants and courts to rethink the definition of "expression"

62. *See* Chris Riotta, *EU Pushes for Backdoors in End-to-End Encryption*, BANKINFO SEC. (Apr. 3, 2025), https://www.bankinfosecurity.com/eu-pushes-for-backdoors-in-end-to-end-encryption-a-27920 [https://perma.cc/25RE-3LXV].

63. *See* Evan Schuman, *Signal Threatens To Leave France if Encryption Backdoor Required*, COMPUTERWORLD (Mar. 20, 2025), https://www.computerworld.com/article/3850597/signal-threatens-to-leave-france-if-encryption-backdoor-required.html [https://perma.cc/938S-YM6T]; *Lutte Contre le Narcotrafic : Adoptions d'une Proposition de Loi et d'une Proposition de Loi Organique [The Fight Against Narcotraffic: Adopting of a Proposition of Law and a Proposition of Organic Law]*, ASSEMBLÉE NATIONALE (Apr. 1, 2025), https://www.assemblee-nationale.fr/dyn/actualites-accueil-hub/lutte-contre-le-narcotrafic-adoptions-d-une-proposition-de-loi-et-d-une-proposition-de-loi-organique [https://perma.cc/E5TZ-95TJ].

64. Evan Schuman, *Signal Will Exit Sweden Rather Than Dilute Message Security*, COMPUTERWORLD (Feb. 26, 2025), https://www.computerworld.com/article/3833959/signal-will-exit-sweden-rather-than-dilute-message-security.html [https://perma.cc/329Z-WRHG].

65. Lily Hay Newman, Morgan Meaker & Matt Burgess, *Leaked Government Document Shows Spain Wants To Ban End-to-End Encryption*, Wired (May 22, 2023, at 15:23 ET), https://www.wired.com/story/europe-break-encryption-leaked-document-csa-law/ [https://perma.cc/24HY-EX93].

and how far the government may go to direct (or compel) that expression under the First Amendment.

A. 303 Creative*'s Claims and Compelled Speech Doctrine*

In 2023, when the Supreme Court decided the case of *303 Creative LLC v. Elenis*,[66] much of the attention turned to the impact the decision would have on anti-discrimination laws.[67] The case concerned a graphic designer in Colorado who wished to get in the business of making wedding websites.[68] Fearing that Colorado would enforce its Anti-Discrimination Act if she refused to create websites for same-sex weddings, Lorie Smith (through her business persona, 303 Creative LLC) sued state officers, seeking an injunction to prevent that enforcement and to determine whether such an action would violate her First Amendment rights.[69]

The test the plaintiff sought to meet was that for whether "compelled speech" by the government is permissible as it had been described in *Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston, Inc*.[70] *Hurley* requires challengers to government actions to show, first, that the activity they are engaged in is expressive and, second, that the message expressed by that activity would be changed by what they consider to be speech "compelled" by the government in violation of the First Amendment.[71] In her cert petition, Smith established that she intended to offer "services for couples seeking websites for their weddings," which would involve customized creations attributed to her and "designed 'to communicate a particular message.'"[72]

Rather than independently analyze the question of what made this a "speech" or "expression" case, the Court deferred to the parties'

66. 303 Creative LLC v. Elenis, 600 U.S. 570 (2023).

67. *Compare* Kenji Yoshino, *Rights of First Refusal*, 137 HARV. L. REV. 244, 245–46 (2023) ("Since the Second Reconstruction, the Court has rejected religious exemptions from civil rights measures designed to advance racial equality. Those precedents erected a firewall . . . . *303 Creative* demolishes the free speech version of that firewall with regard to acts of discrimination it considers speech."), *with* David D. Cole, *"We Do No Such Thing":* 303 Creative v. Elenis *and the Future of First Amendment Challenges to Public Accommodations Laws*, YALE L.J.F. 499, 501–02 (2024) (arguing that "the decision should have minimal impact on the enforcement of public accommodations and antidiscrimination laws").

68. 600 U.S. at 570. Whereas here the case was formally under the name of 303 Creative LLC because that was the corporation Lorie Smith provided design services under, by all accounts the case concerned only Ms. Smith's activities. As such, the different opinions frequently discuss Ms. Smith directly (rather than the business). Accordingly, the text here focuses on Smith, not the corporation.

69. *Id.*

70. 515 U.S. 557 (1995).

71. *Id.* at 567–68, 570.

72. 600 U.S. at 579.

stipulations.[73] Critically, Colorado had conceded several points about whether Smith's intended conduct was in fact customized, expressive, and attributable to her.[74] As a result, this case was not complicated, the Court decided, because "[t]he parties *stipulated*" this was about "expressive activity."[75] At the same time, the majority conceded: "Doubtless, determining what qualifies as expressive activity protected by the First Amendment can sometimes raise difficult questions."[76]

The Court went on to consider the law's impact on this speech and found that Colorado "surely" sought "to compel speech Ms. Smith does not wish to provide."[77] The last step was to decide whether the law, as applied to Smith, was permissible under the "compelled speech" doctrine. Unlike the lower court's consideration of strict scrutiny, the majority was more straightforward. Strict scrutiny was unwarranted: *all* compelled speech is impermissible, the Court decided.[78] When it comes to compelled speech, there is no government interest so compelling or government action so narrow that would make the regulation permissible under the First Amendment.[79] And the commercialization of the speech does not impact the analysis.[80]

B. Editorial Speech

But what made *303 Creative* a Speech Clause case in the first place? Despite the parties' stipulation, much of the argument in the case was about the initial question of whether website design — Smith's or otherwise — was in fact an expressive activity.[81] Justice Sotomayor's

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73. *Id.* at 582–83. Among other things, the parties agreed:

> All of the graphic and website design services Ms. Smith provides are "expressive." The websites and graphics Ms. Smith designs are "original, customized" creations that "contribut[e] to the overall messages" her business conveys "through the websites" it creates . . . . [T]he wedding websites Ms. Smith plans to create "will be expressive in nature" . . . [and] "customized and tailored" through close collaboration with individual couples, and they will "express Ms. Smith's . . . message celebrating and promoting" her view of marriage.

Id.

74. *Id.*

75. *Id.* at 599 (emphasis in the original). The majority often reinforced that the classification of Smith's activity as speech "flow[ed] directly from the parties' stipulations." *Id.* For instance, it rejected the argument that Smith's creations might be an "ordinary commercial product" because that would be "difficult to square with the parties' stipulations." *Id.* at 593.

76. *Id.*

77. *Id.* at 588.

78. *Id.* at 588–89.

79. *Id.* at 596.

80. *Id.* at 594.

81. Questions on the issue occupied much of Smith's lawyer's oral argument. For example, Justice Sotomayor asked the lawyer why it would not be "speech" for a variety of commercial vendors to refuse service on the basis of a race or disability status. *See* Transcript of Oral

dissent unsurprisingly argued that "the law in question target[ed] conduct, not speech."[82] So this leaves the "difficult question": Why is Smith's web design "speech" under the First Amendment? And what kind of speech or expression is it? A few theories are available.[83]

The first question in any First Amendment inquiry is to determine how the alleged speech is brought into the Constitution's coverage.[84] There are two main ways to understand how web-designing may be protected by the First Amendment. The first idea is that whenever a developer designs something original, with her own ideas, she is creating the equivalent of "pure speech." This is closest to the traditional view of expression, and the *303 Creative* majority paralleled it to the creation of "pictures, films, paintings, drawings, . . . engravings," and to "oral utterance and the printed word."[85] (In this Note, I describe this as "first-hand" expression.)

The second idea is that, even if some (or all) of the materials provided were someone else's original creations — and, to that extent, someone else's speech — Smith's activity is expressive in its editing, assembly, and presentation of that other person's materials in Smith's own way.[86] (In this Note, I describe this as "editorial" expression.) But for purposes of the First Amendment, whether Smith's speech is entirely her own or consists of an assembly of another person's "changes nothing."[87] *303 Creative* laid its doctrinal and theoretical framework

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Argument at 31, 303 Creative LLC v. Elenis, 600 U.S. 570 (2023), https://www.supremecourt.gov/oral_arguments/argument_transcripts/2022/21-476_k43e.pdf [https://perma.cc/8USR-32Z6].

82. *303 Creative*, 600 U.S. at 604 (Sotomayor, J., dissenting); *see also id.* at 628 ("CADA's Accommodation Clause and its application here are valid regulations of conduct.").

83. For instance, Smith's lawyer for *303 Creative LLC* during oral arguments called it "symbolic" speech, though the classification never appeared in the opinions. Transcript of Oral Argument, *supra* note 81, at 40–41; *see also* Dale Carpenter, *How To Read* 303 Creative v. Elenis, REASON: VOLOKH CONSPIRACY (July 3, 2023, at 14:11 ET), https://reason.com/volokh/2023/07/03/how-to-read-303-creative-v-elenis [https://perma.cc/4779-PDFZ] (arguing that the opinion establishes protections for "customized and expressive" products with messages embedded).

84. Robert C. Post, *Recuperating First Amendment Doctrine*, 47 STAN. L. REV. 1249, 1250–51 (1995).

85. 600 U.S. at 587.

86. For a more illustrative example, consider a version of Smith's facts where the couple provides her with exact screenshots of what they wish the website to look like, and all that she is doing is encoding them into a machine-readable code so it becomes functional. It may be said that Smith did not contribute to the *expressive* element at all — like a typographer generally does not contribute to the expression of someone else's spoken words by putting them to paper. *See also* Transcript of Oral Argument, *supra* note 81, at 8 (Smith's lawyer conceding the point in an exchange with Justice Kagan, where this scenario is called a "plug-and-play website"). But if the couple provides less specific guidance (for example, by choosing a color scheme and providing the photos, but leaving the specific assembly to Smith), Smith would contribute more to the expression in her choice of how to put the clients' expressions (choice of color and photos) into a finished product — like a autobiography's ghost writer might provide in putting someone else's stories into words. *See id.* at 9.

87. *See 303 Creative*, 600 U.S. at 588.

by frequently turning to two other cases where the Court had struck down legal actions addressing anti-LGBTQ discrimination because of the Speech Clause: *Hurley*[88] and *Boy Scouts of America v. Dale*.[89]

In *Hurley*, the Court examined a Massachusetts law that would have required paraders to accept participants that were members of an LGBT group.[90] The Court unanimously found the law's application impermissible, in part because a "parade is expressive," and the parade organizers "select[ed] the expressive units of the parade from potential participants."[91] And in deciding "what merit[ed] celebration on that day," the parade's organizers sought to "shape [their] expression by speaking on one subject while remaining silent on another.[92]

In *Dale*, the Court examined a case where New Jersey would have required the Boy Scouts not to exclude assistant scoutmaster James Dale from membership after learning of Dale's background, which the Boy Scouts saw as "promot[ing] homosexual conduct as a legitimate form of behavior."[93] Although the Court called it "expressive association," the idea was largely the same as editorial expression, in that the control over the inclusion (or exclusion) of another's independent speech is still an expressive exercise itself. Requiring Boy Scouts to allow Dale to be a full member was considered an infringement on the organization's right to not "send" Dale's message.[94]

A more direct discussion of editorial speech was presented in *Miami Herald Publishing Co. v. Tornillo*.[95] There, the Court faced a challenge to a Florida law that would have required newspapers to carry a reply to the paper's criticism of a candidate.[96] The Court found that the law "fail[ed] to clear the barriers of the First Amendment because of its intrusion into the function of the editors."[97] As part of its reasoning, it noted that the newspaper was more than a "conduit" to the pieces it published; the law unconstitutionally infringed the role of the editors in exercising editorial "control and judgment" even if it did not "fall into

88. Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos., Inc., 515 U.S. 557 (1995).
89. 530 U.S. 640 (2000).
90. 515 U.S. at 561–62.
91. *Id.* at 574.
92. *Id.*
93. 530 U.S. at 651, 653.
94. *Id.* at 653.
95. 418 U.S. 241 (1974).
96. *Id.* at 244–45.
97. *Id.* at 258. The Court also considered the fact that a newspaper's limited amount of space meant that it would sacrifice space for other speech. *Id.* at 256–57.

familiar or traditional patterns . . . subject to constitutional limitations."[98]

More recently, the Court again considered — but did not entirely clarify — the extent of how the idea of "editorial speech" might influence the application of the First Amendment to the development of a web application. In *Moody v. NetChoice LLC*, the Court reviewed facial challenges to Florida and Texas laws that would have influenced the algorithms that social media companies use to filter, prioritize, and label user content on its platforms.[99] In an opinion joined by four justices,[100] Justice Kagan began by emphasizing courts' "necessary role in protecting [social-media] entities' rights of speech."[101] The Court began by removing any doubts about the standalone expressive value of editorial choices. Social media companies are "indeed engaged in expression" in the First Amendment context when they "include and exclude, organize and prioritize . . . [and] produce their own distinctive compilations of expression," according to the Court.[102] This was not new, the opinion continued, as its "essence" was the same as the "editorial choices" the Court had held to be covered by the First Amendment's requirements.[103]

Moody did not decide how the First Amendment applied to the social media companies' editorial choices, instead remanding the case for further consideration of the facial challenges at issue.[104] The opinion offered a few guideposts, however. First, the Court clearly rejected the Fifth Circuit's reasoning insofar as the lower court found that "the content choices the major platforms make for their main feeds are 'not speech' at all."[105] Second, the analysis should not be changed by the

98. *Id.* at 256, 258. The Court suggested that the editors have First Amendment rights themselves: "Even if a newspaper would face no additional costs to comply . . . the Florida statute fails to clear the barriers of the First Amendment because of its intrusion into the function of the editors." *Id.* at 258.

99. 603 U.S. 707, 720–21 (2024); *see also* Pacific Gas & Elec. Co. v. Pub. Utils. Comm'n, 475 U.S. 1 (1986) (prohibiting California law that would have required private utility company to carry a consumer advocacy group's policy positions in its mailing envelopes); Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622, 636 (1994) ("[C]able operators . . . are entitled to the protection of the speech . . . provisions of the First Amendment," since "[t]hrough . . . 'exercising editorial discretion over which stations or programs to include in its repertoire,' cable programmers and operators 'see[k] to communicate messages on a wide variety of topics and in a wide variety of formats.'") (citation omitted); Denver Area Educ. Telecommns. Consortium, Inc. v. FCC, 518 U.S. 727, 737 (1996) (plurality opinion) (finding that "the editorial function itself is an aspect of 'speech'"); Ark. Educ. Television Comm'n v. Forbes, 523 U.S. 666, 674 (1998) (finding that the "[exercise of] editorial [function] discretion in . . . selection and presentation" is "speech activity").

100. Justice Jackson also joined the opinion in the parts of the majority discussed here.

101. 603 U.S. at 716.

102. *Id.*

103. *Id.* at 716–17.

104. *Id.* at 723–24, 726.

105. *Id.* at 726–27.

inclusion of "most items and [the] "exclu[sion of] just a few."[106] The Court also recognized that the constitutionally protected editing may be done by code and that social media companies must make "millions" of decisions of what to "include and exclude, organize and prioritize . . . ."[107]

The defining limits of this "editorial speech" doctrine is under development,[108] but the overall message from the cases establishing the doctrine is clear in that editorial activities at least facially implicate the First Amendment in their own right. Editorial expression — whether in the assembly of the contents of a parade, a Boy Scouts group, a newspaper, a newsfeed, or a web application — appears to be most protected by the First Amendment when it is done with the purpose of expressing a message and, in the process of doing so, relying on products that are themselves considered first-hand forms of expressions. And as *303 Creative* shows, once "editorial speech" is established, it is absolutely protected from government requirements that would have government-mandated speech be included by the editor — even if the regulation advances compelling interests and targets only commercial speech.[109]

V. SPEECH AND SOFTWARE DEVELOPMENT'S NEW DOCTRINE

As the Parts above have established, the consideration of whether (and how) the First Amendment applies to software development has evolved far beyond the question of whether "code is speech" that entranced courts in the early twenty-first century. Now, developers are using substantial amounts of third-party code, and their claim to *that* code being *their* speech must be considered anew.[110] Here, I offer an alternative way to examine the question, framed around these more practical concerns. In doing so, I combine these discussions with the analysis in Part IV suggesting that the Supreme Court has embraced an all-or-nothing approach for compelled speech and established a new tier of editorial speech. Properly understood, modern software

106. *Id.* at 732.

107. *See id.* at 716.

108. This lack of clarity is hardly unusual for a First Amendment doctrine. *Cf.* Robert C. Post, *Racist Speech, Democracy, and the First Amendment*, 32 WM. & MARY L. REV. 267, 278 (1991) ("[F]irst Amendment doctrine is neither clear nor logical. It is a vast Sargasso Sea of drifting and entangled values, theories, rules, exceptions, predilections.").

109. *See* 303 Creative LLC v. Elenis, 600 U.S. 570, 586 (2023).

110. *See supra* Section III.A.

development is better analyzed as "editorial speech" and modern regulations, "compelled speech."

A. Putting the Puzzle Together: What Editorial Compelled Speech in Software Looks Like

For many developers, adding secure encryption to their products is simply a piece of doing business. Those who build software that handles highly regulated data may be required by law to use encryption.[111] Many others may simply choose to do so. For those developers, this requirement is part of their process of software development, where developers — as *Moody* put it — "include and exclude, organize and prioritize . . ." pieces of code into "distinctive compilations" of software development that together make unique applications.[112] It is nothing short of the editorial speech that *Moody* described, or the unique code-based assembly of expressive materials that Lorie Smith would have engaged with in website design.[113]

Apple has made no secret of how its ability to choose its own encryption implementation is part of its identity. After a legal showdown over its ability to encrypt iPhones against government access, Apple made an open commitment to having consumers know that their phones are "private," buying large billboards and going to conferences "to preach about privacy." [114] Likewise, the Signal Foundation, the organization behind the Signal application,[115] described the first element of its mission to be "Privacy First," expanded as to "[p]rotect free expression and enable secure global communication through open source

111. For example, software that handles medical data in the United States may be required to comply with certain encryption obligations. *See* Steve Alder, *HIPAA Encryption Requirements*, HIPAA J. (Jan. 3, 2025), https://www.hipaajournal.com/hipaa-encryption-requirements [https://perma.cc/5T22-ZRUT].

112. Moody v. NetChoice LLC, 603 U.S. 707, 716 (2024).

113. *303 Creative*, 600 U.S. at 579, 582–83.

114. Michael Grothaus, *Apple's First Privacy-Themed iPhone Ad Is Fun, Quirky–and Compelling*, FAST CO. (Mar. 14, 2019), https://www.fastcompany.com/90320263/apples-first-privacy-themed-iphone-ad-is-fun-quirky-and-compelling [https://perma.cc/39GX-6ZCS]; Rishi Iyengar, *Apple's New iPhone Ad Puts Privacy Front and Center Again*, CNN BUSINESS (Sept. 3, 2020, at 09:02 EDT), https://www.cnn.com/2020/09/03/tech/apple-iphone-privacy-ad/index.html [https://perma.cc/GZD3-2792]; Kaya Yurieff, *Apple Returns to CES To Talk Privacy, Not Products*, CNN BUSINESS (Jan. 8, 2020, at 11:50 EST), https://www.cnn.com/2020/01/07/tech/apple-privacy-ces/index.html [https://perma.cc/4X9E-6EZ3]; Brian Heater, *CES 2025: What To Expect from the Year's First and Biggest Tech Show*, TECHCRUNCH (Jan. 2, 2025, at 09:40 PST), https://techcrunch.com/2025/01/02/ces-2025-what-to-expect-from-the-years-first-and-biggest-tech-show/ [https://perma.cc/9HCN-4RGX].

115. Tom Gerken, *What Is the Signal Messaging App and How Secure Is It?*, BBC (Apr. 21, 2025), https://www.bbc.com/news/articles/c1kjd091019o [https://perma.cc/22D4-DRRQ]. *See generally* SIGNAL, https://signal.org/#signal [https://perma.cc/L9ZC-VGVB] (describing Signal application).

privacy technology."[116] WhatsApp has also described "privacy and security [to be] at the core of [its] mission."[117] Although in most cases examined an editor did not need to specify that each of their choices is critical to their speech,[118] these public positions could serve to meet even Justice Alito's stricter requirements that the editor "use the compilation of speech to express 'some sort of collective point'" and that their own message would be impacted. [119] Embedding their choice of encryption is essential to these actors, and the government making that choice for them could damage that choice.

Government officials are also aware that to software developers, the ability to choose the encryption algorithm they will use is more than a small technicality. When Attorney General Barr called for mandates that would change the implementation of encryption algorithms, he recognized that developers have made "dogmatic pronouncements that lawful access [to encrypted data] simply cannot be done," with "[s]ome object[ing] that requiring providers to design their products to allow for lawful access is incompatible with some companies' 'business models,'" suggesting that he is aware that encryption goes beyond profits and losses for many. [120]

The second part of the puzzle is that laws and regulations have moved on from the bans that were so common in the earlier disputes. Rather, the vast majority now require software developers to act within the bounds created by the government. As described above, in the context of encryption regulations, this has consistently meant using one of the few security features the government has approved of in securing their messaging.[121]

If code is expressive, then software development could be deemed editorial speech as defined under *Moody* since it is a clear attempt to use editorial discretion, in addition to one's own coding, in building a new application. And legal demands that developers embed

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116. SIGNAL FOUND., https://signalfoundation.org/ [https://perma.cc/G739-Q67M].

117. *Strengthening WhatsApp's End-to-End Encryption Guarantees*, META (Apr. 13, 2023), https://tech.facebook.com/engineering/2023/4/strengthening-whatsapp-end-to-end-encryption-key-transparency [https://perma.cc/Q2ZX-KWMZ].

118. *Dale* was explicit in that the Boy Scouts did not need to "trumpet" Dale's message to have it alter their speech, and in *Hurley*, parading was by itself expressive. *See* Boy Scouts of Am. v. Dale, 530 U.S. 640, 653–56 (2000); Hurley v. Irish-American Gay, Lesbian & Bisexual Grp. of Bos., 515 U.S. 557, 574 (1995).

119. Moody v. NetChoice LLC, 603 U.S. 707, 782–84 (Alito, J., concurring) (first quoting Ark. Educ. Television Comm'n v. Forbes, 523 U.S. 666, 674 (1998); then quoting *Hurley*, 515 U.S. at 568; and then quoting Rumsfeld v. Found. for Acad. and Institutional Rts., 547 U.S. 47, 63 (2006)).

120. *See* Barr, *supra* note 51; *see also* Patrick Howell O'Neill, *Barr's Call for Encryption Backdoors Has Reawakened a Years-Old Debate*, MIT TECH. REV. (July 24, 2019), https://www.technologyreview.com/2019/07/24/134062/trumps-justice-department-calls-for-encryption-backdoor-law/ [https://perma.cc/Q58F-YKXQ] (reporting U.S. Attorney Geoffrey Berman's statement acknowledging that companies "market" encryption features).

121. *See supra* Section III.B.

government-approvement code could well be understood as the government compelling speech from software developers. Much like Colorado would have required Smith to assemble together expression she opposed into a website, an advocate with dogmatic cybersecurity views may argue, the government would now have developers assemble together code they oppose into an application. This could meet both prongs of the compelled speech analysis, which, as described in *303 Creative*, does not allow the government to mandate *any* speech, no matter how pressing the government interest is.[122]

B. Changes to Existing Analyses

How exactly do these changes impact the First Amendment analysis? Take the example of a website designer again. Suppose that the website had its traffic encrypted with HTTPS, a cryptographic technology that ensures that the content the user enters for a website remains encrypted "in transit" so that only the sender (the user) and the receiver (the website's servers) can know the content of the sender's input.[123] Suppose as well that the U.S. government has mandated that developers only use HTTPS if they rely on an "approved" implementation.[124] What is the proper way to analyze a challenge to that mandate under the First Amendment?

First, it is worth considering this exercise in practical terms. The developer, as discussed above, is not likely to write their own HTTPS

122. *See* 303 Creative LLC v. Elenis, 600 U.S. 570, 588–89 (2023).

123. *What is HTTPS?*, CLOUDFLARE, https://www.cloudflare.com/learning/ssl/what-is-https/ [https://perma.cc/V38K-KZG2].

124. This is partly inspired by real proposals. In 2023, the EU proposed requiring that browsers change the way they implement HTTPS in order to trust government-provided parts of it. Jacob Hoffman-Andrews, *Article 45 Will Roll Back Web Security by 12 Years*, EFF (Nov. 7, 2023), https://www.eff.org/deeplinks/2023/11/article-45-will-roll-back-web-security-12-years [https://perma.cc/D239-W3AS]. The change would have allowed the government providing those parts to "intercept encrypted communications, meaning they can read private information like emails." *Id.*

implementation.[125] Instead, they should use a third-party option. The code the developer is writing might look something like:

```
import http.client as http_client
. . .
connection =
  http_client.HTTPSConnection("www.example.com")
```

With the new regulations, the developer may prefer not to engage in the use of HTTPS at all. If they do continue to use it, however, the updated code might have to look more like:

```
import usapprovedhttp.client as http_client
. . .
connection =
  http_client.HTTPSConnection("www.example.com")
```

There are two ways to approach a challenge to a regulation like this one. One framing is to see this as the government prohibiting the developer from writing the code that they want (here, to rely on an unmodified HTTPS implementation — the government may be seen as prohibiting the first code snippet provided). Alternatively, this can also be seen as the government mandating a government-provided code choice (here, effectively mandating that the developer uses the prefix in choosing the HTTPS software).

Under the framework of "code is speech," the analysis largely follows that of the former. Courts might perform a "scrutiny" analysis for the speech that the developer is prevented from engaging in.[126] For a prohibition implicating the Speech Clause, courts review the government regulation under a degree of scrutiny — in particular, "strict scrutiny" is applicable for content-based restrictions on speech, requiring a compelling government interest motivating the regulation and for the government actions to be "narrowly tailored."[127] Perhaps the regulation would be held constitutional — it may depend on the motivation behind it and the details of the constraints imposed.

But the expressive value in the implementation is not in writing the code to "import" the third-party software implementing HTTPS. The expressive decision is in choosing to include a particular security

125. *See supra* Section III.A.
126. *See supra* Section I.A.
127. *E.g.*, Reed v. Town of Gilbert, 576 U.S. 155, 163 (2015).

feature.[128] For many developers, code like the one in the example provided is far less about telling what specific computations the computer should engage in — in fact, it is quite likely most developers could not even explain what these computations are. It is far more about being able to tell their users that their traffic has been secured by the developers with a certain level of care against unauthorized eavesdropping, including that by the government.

Under this second framing, the analysis is much different. First, under *Moody*, this is best understood as editorial speech. Developers exercise "editorial choices" about what third-party code to include or exclude in producing their own software applications, much like social media companies' "editorial choices" to "include and exclude, organize and prioritize" third-party posts allow them to "produce their own distinctive compilation of expressions" in a newsfeed. [129] Here, the developer would be choosing to include the standard HTTPS approach and excluding the government-approved version of it as part of their expression.

Second, the government's requirement is best described as "compelled speech." The developers' choices in what source of third-party code to use is much like how Lorie Smith communicated a message by choosing which couples' messages to include while designing wedding websites.[130] And much like Colorado's laws would have applied to Smith, the developer here may argue that they are being compelled by the government to embed speech into their products that they "do[] not wish to provide."[131]

The third step is the simplest. Once it is established that the developer is engaging in speech and that the government is compelling speech from the developer, no further analysis is necessary. Compelled speech is *always* impermissible, the *303 Creative* Court stated, and the

128. This is also why analyzing whether the government is compelling the developer to type out "usapproved" in the example would miss the mark. It would not be compelling expression because the typing of the letters itself is not the expression; the *choice* of what software to use (whether through typing or otherwise) is.

129. Moody v. NetChoice LLC, 603 U.S. 707, 716–17 (2024).

130. 303 Creative LLC v. Elenis, 600 U.S. 570, 579 (2023). Recall that Smith did not yet know what the details of the speech would be; what she claimed was to have the right to select that speech. *Id.* Here, too, the developers would not need to know the specifics of any particular code (speech) but rather they would claim the right to choose whose code to select and whose to exclude.

131. *Id.* at 588.

further analysis of strict scrutiny does not apply.[132] The HTTPS regulation would be unconstitutional.

C. Additional Considerations

The actual analysis performed by courts, however, will not be that simple. Resistance is likely to mount to the idea that software development is a form of expression, based on the argument that the regulation takes aim at the "functional" elements of the software, and thus that any impact is incidental to the developer's expression. That is, the argument would be that the laws in question are targeting encryption code that does not communicate any idea or belief. This argument finds special support where the code is "compiled." In other words, the software being embedded is not delivered to the developer (or their end user for that matter) in a format that is largely unreadable to that developer. Under the old framework of "code is speech," some Courts and authors have suggested that the code must be used as a way of speaking to another human, rather than just the computer.[133] Indeed, courts have read the *Bernstein* and *Corley* decisions to reject the notion that code can never be speech, without going as far as finding that code is always speech.[134] The critical question that courts facing the "code is speech" argument have settled on has generally been whether the government is targeting the expressive aspect of code.[135]

Courts may thus be invited to evaluate software development arguments along the same lines: using the new framework, courts may reject the idea that software development can never be speech without adopting the view that it is always speech. This then invites an evaluation of whether the development choices themselves are expressive and whether the regulation changes that expression. But it is worth considering that approach in light of the shift in understanding software development as editorial speech rather than as first-hand speech. Properly considered, the expressive value of a piece of software (if any) will lie in the developer's decision to include or exclude third-party code in their own application. This is a meaningful distinction, as the editorial decision is far closer to the outwardly-facing expression of the

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132. *Id.* at 588–89.

133. *See, e.g.*, Universal City Studios, Inc. v. Corley, 273 F.3d 429, 447–49 (2d Cir. 2001); Post, *supra* note 84, at 719–20. This distinction may also matter to looking at an editorial approach. Although Part I shows that editorial speech is considered expression by itself, all the cases analyzed in that Part may also be framed as about the editing of expressive content: *303 Creative* concerned the customers' messages, *Moody* concerned user posts, *Dale* concerned its members' advocacy, *Hurley* concerned banners carried in a parade. But the distinction is not clear — *Moody* could be read to discuss weights given to variables visible only to machines instead, for instance.

134. *See* Langvardt, *supra* note 26, at 145.

135. *See id.* at 146.

developer towards the audience of its software products than the particular writing of the code. For example, turning to the scenario where the third-party software is delivered in a "non-readable" format is less relevant where the choice is based on which third-party software than the specific way in which it is written.

Deciding what makes an editorial activity like software development "expressive" (or, for that matter, what makes any editorial activity expressive) is a task for which courts enjoy limited guidance. Concurring in *Moody*, Justice Alito would have imposed a three-part test, requiring those seeking constitutional protections to (1) establish "that its practice is to exercise 'editorial discretion in the selection and presentation' of the content it hosts"; (2) "use the compilation of speech to express 'some sort of collective point' — even if only at a fairly abstract level"; and (3) "show that its 'own message [is] affected by the speech it [is] forced to accommodate.'"[136] These steps could provide some guidance, but not a full roadmap: What level of effort is required to demonstrate a sufficient exercise of editorial discretion? How material must the impact of the regulation be? Justice Alito's second factor presents particularly difficult questions and would require courts to outline how a particular editorial choice gains expressive value. For instance, how well understood must the point being made be? Is the expressive value of the underlying pieces meaningful to this analysis? Are there editorial activities that are inherently more expressive than others due to particular qualities? Applying these questions to the consideration of whether software development is expressive, one might argue that a choice of an algorithm is not an expressive activity in the way that choosing newsfeed posts or website colors are due to qualitative differences between what is being edited; or one might find that a commitment to privacy as a general practice is insufficient to implicate the regulation of the choice of a particular encryption algorithm.

These questions are particularly difficult in this setting because ultimately, software development is still a remarkably rigorous, sophisticated, and nuanced activity.[137] In many ways, it is more complicated than coding itself. Much like coding requires careful choices of the symbols offered by a programming language to express an idea, software development with third-party code requires the developer to handle the logic provided by the project they are relying on with care so that the complete product does what they hope for. In addition to that assembly, the developer must also decide when to write their own code

136. Moody v. NetChoice LLC, 603 U.S. 707, 782–85 (2024) (Alito, J., concurring).

137. *See* MATTHIAS FELLEISEN, ROBERT BRUCE FINDLER, MATTHEW FLATT & SHRIRAM KRISHNAMURTHI, HOW TO DESIGN PROGRAMS (1st ed. 2003) ("*[G]ood programming* is a fun activity, a creative outlet, and a way to express abstract ideas in a tangible form . . . . *[D]esigning programs* teaches a variety of skills that are important in all kinds of professions: critical reading, analytical thinking, creative synthesis, and attention to detail.") (emphasis added).

and when to rely on code provided by others (and whose code to use). As the adage about not rolling one's own cryptography shows, knowing how and when to go with each option is a developed skill in itself. And as Attorney General Barr's comments show, choices of software development practices can rise to dogmatic beliefs. It is thus feasible that courts will end up finding certain areas of software development choices to be expressive. Whatever answers courts settle on, it is still critical to recognize that modern jurisprudence and new technologies have breathed fresh air into the lungs of the "code is speech" debate.

Finally, it is also worth noting that some legal authors have suggested other alternatives to the "code is speech" framework that reigned in *Corley* and *Bernstein*. But even then, they still do not grapple with how the product is about the embedding of others' speech. For instance, some have suggested that code should be covered because of the impact that it can have on other speech — particularly the completed software's impact on how people communicate online.[138] But that approach has two flaws when reviewed against the current state of software development. First, it still adopts a framework around first-hand expression, focusing on users' speech. Second, even if extended to cover software development as an editorial exercise, these approaches call for First Amendment protections on the basis of how the software relates to other expressive materials (rather than software as a standalone expressive activity itself), an approach *Moody* recently rejected.[139]

D. Implications and Limits

The legal conclusion proposed could lead to significant results. Taken to its furthest extreme, it suggests that there is no constitutional regulation that requires technology companies to embrace certain design patterns if developers consider the design part of their expression. It would put into question not only legal proposals for encryption, but

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138. *See, e.g.*, Wang, *supra* note 32, at 1412 (arguing that "code is speech" should be "abandoned," but that first-hand coding should be covered by the First Amendment because the applications it is used to create enable public discourse and allow for public information dissemination); Katherine A. Moerke, Note, *Free Speech to a Machine? Encryption Software Source Code Is Not Constitutionally Protected "Speech" Under the First Amendment*, 84 MINN. L. REV. 1007, 1027 (2000) (arguing that code is not speech but may be protected by the First Amendment because it protects speech); Volokh & Falk, *supra* note 34 (arguing for protection because of impact on the selection of content in search engines). Smith's lawyer in *303 Creative* also argued that some level of the expression being visible in the outcome is important. *See* Transcript of Oral Argument, *supra* note 81, at 26–28 (claiming that a racist photographer would not be able to reject Black clients on the basis that they are re-creating scenes without members of demographic minorities because "the specific objection . . . [would not be] necessarily in that photograph").

139. *See* Moody v. NetChoice LLC, 603 U.S. 707, 717 (2024); *see also* discussion in Section IV.B.

also proposals for laws that would have large technology corporations build their products to serve consumers' best interests[140] and to impede government action on antitrust and tort liability.[141] It may well invite what Frederick Schauer has termed First Amendment "opportunism": the use of free speech claims to vindicate mostly deregulatory and commercial interests.[142] Of course, each case will be different. Some choices of what code to use may not be "expressive" enough to qualify as editorial speech, and some government requirements may be better read as "restrictions" than "mandates."

The purpose of this Note is not to make a normative assessment of these results.[143] This Note only highlights that this framing is likely the contemporaneous way to review software protection under the First Amendment after changes in recent Supreme Court decisions and development practices. If there is cause for alarm, that is only because challenges to software regulation could become a step in reaching an impending breaking point for modern First Amendment jurisprudence. As the Court expands recognition of "editorial speech" and makes "compelled speech" entirely prohibited, it leaves itself little room to allow for governments to regulate software.[144]

What changes to the doctrine could address these concerns? No one option presently appears like the obvious way forward, much less one that seems to appeal to a majority of the justices. The path of least resistance for the Court seems to be reconsideration of the all-or-nothing approach to compelled speech, at least for technology or editorial speech. Not too long ago, the Supreme Court warned that "differences in the characteristics of new media justify differences in the First Amendment standards applied to them."[145] As the Court begins to review regulation of software development, flexibility may be the answer. Accordingly, it may also be worth reconsidering whether the tiers of scrutiny, a tool well understood by courts and constitutional law litigants, should be the standard to be used for at least some of the speech regulations it reviews. This option would allow the Court to maintain a

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140. *See, e.g.*, Press Release, Elizabeth Warren, Warren, Graham Unveil Bipartisan Bill To Rein in Big Tech (July 27, 2023), https://www.warren.senate.gov/newsroom/press-releases/warren-graham-unveil-bipartisan-bill-to-rein-in-big-tech [https://perma.cc/U5QT-EXM8]; *see also* Neil M. Richards & Woodrow Hartzog, *A Duty of Loyalty for Privacy Law*, 99 WASH. U.L. REV. 961, 966 (2021).

141. *See* Wang, *supra* note 32, at 1376.

142. Frederick Schauer, *The Politics and Incentives of First Amendment Coverage*, 56 WM. & MARY L. REV. 1613, 1627–29 (2015). *But see* Kyle Langvardt, *The Doctrinal Toll of "Information as Speech"*, 47 LOY. U. CHI. L.J. 761, 763 (2016).

143. For an examination of governments' options in regulating encryption, see Olivia Gonzalez, *Cracks in the Armor: Legal Approaches to Encryption*, U. ILL. J.L. TECH. & POL'Y 1 (2019).

144. Commentators have described this broader trend as an "alarming expansion" of First Amendment coverage. *See, e.g.*, Wang, *supra* note 32, at 1375.

145. Red Lion Broad. Co. v. FCC, 395 U.S. 367, 386 (1969).

broad view of what is covered by the First Amendment, while allowing compelling government action. For instance, in cases dealing with regulations of discrimination, the "compelled" effect of preventing the exclusion on impermissible basis could still implicate, but not violate, the First Amendment.

A second option is to tackle the "frontend" of the problem and to harden the requirements for editorial speech to implicate the First Amendment. Applied here, that could include import of some of the elements underlying the "code is speech" decisions. As discussed *supra*, courts will be invited to identify the expressive value in software development. Borrowing from the "code is speech" setting, courts may adopt the Second Circuit's *Corley* proposal that some level of communication needs to be established with another human in the software development choices, not just to a computer.[146] Encryption software would then be more protected if it enabled developers to tell others that the software they are producing reflects their particular level of concern for data security. With such an implementation, features included in the software design to cause crime, fraud, or harm (typically choices that developers would prefer to *hide*) would enjoy lesser or no protection.[147]

Another guidepost comes from cases like *Daley*, where the Sixth Circuit determined that the code's functionality may be important to the protection analysis.[148] Perhaps a piece of software built strictly to achieve an end-result, without particularly for *how* that result is achieved (as with a simple calculator implementation) might enjoy fewer protections than one where the means are just as important as its ends (as with messaging software highlighting end-to-end encryption).

Finally, it is worth considering the limits of this debate and that constitutional protections of the regulation of the software development only goes that far. Consider again a circumstance where a developer announces that their software is designed to enable harm. Even if courts were to find some kind of expression in that decision, governments could still tailor regulations to address the harm outside of the development itself. Regulation might not reach software development specifically, but it may still apply to the *use* of that software to *actually* engage

146. *See* Universal City Studios, Inc. v. Corley, 273 F.3d 429, 449 (holding that the coders must still engage in First Amendment values, not merely "follow . . . commands 'mechanically'"); *see also* Post, *supra* note 84 (making a similar discourse-focused argument).

147. The concern may arise that a developer may in fact announce that their software is designed to enable harm. The regulations could address the harm outside of the development itself. For instance, consider if a developer were to develop software enabling deceptive sales practices as a way to express their disagreement with consumer protection laws. Regulation might not reach that software development specifically, but it may still apply to the *use* of that software to *actually* engage in the conduct of deception, which itself enjoys more limited First Amendment protections.

148. *See* Junger v. Daley, 209 F.3d 481, 485 (6th Cir. 2000). *But see* Halpern, *supra* note 33 (arguing that scientific truth-seeking itself is generally expressive).

in the criminal conduct, which itself enjoys more limited First Amendment protections.

VI. CONCLUSION

This Note set out to answer the question of whether software development is protected by the First Amendment. As established, this question is best understood from a different perspective than how it has been approached so far. Software development is better understood as a combination of writing code and leveraging third-party solutions, and "code is speech" is not enough of an answer when so much of software is no longer the product of a developer's own coding. Governments certainly seem to have realized as much. Rather than ban developers from writing certain code, lawmakers have switched their approach to having developers conform with certain standards. Many software regulations may now be fairly described as ensuring that developers pick the government code when relying on third-party logic.

At the same time, the Supreme Court has set the stage for a difficult fight in the courts. If it sticks to the analysis in some of its recent decisions, then it has established that editorial speech — the most accurate description of modern software development — is a category of expression independent from the speech being edited. And any efforts by the government to compel any part of that editing may be completely prohibited.

Putting the pieces together, this Note highlights that the inevitable result — if litigants and courts adopt this new framing — is that substantial amounts of new software regulations will be challenged in courts. This may create an untenable situation, possibly pushing the Supreme Court to adjust its new First Amendment doctrine. Whatever the better option is for the law, however, it is important that the question it answers be framed to reflect practical realities.