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INTRODUCTION

The video opens on a rural Texas landscape as a man in blue jeans, a black collared shirt, and dark sunglasses takes aim at some unknown but downfield target.1 In his hand is the Liberator pistol, the world's first fully functional, 3D-printed handgun.2 With a firm squeeze of the trigger, a shot rings out that, should one believe the title and subsequent images of a sunrise and warplanes, ushers in the “Dawn of the Wiki Weapons.”3 Yet only a few days later, Defense Distributed, the creator of the Liberator and the video, received a letter from the U.S. Department of State mandating the files used to make the gun be taken down.4

While the notion of a 3D-printed handgun raises clear Second Amendment issues—indeed, as will be seen, the Liberator’s creators hoped to provoke broader debate over the right to bear arms—this Recent Development focuses primarily on two First Amendment issues the State Department’s letter raises. The first is whether the files, like those used to create and print the Liberator, can be considered speech under the First Amendment, thereby warranting its protection. In determining whether something qualifies as speech, the question is whether the “activity was sufficiently imbued with elements of communication to fall within the scope of the First . . . Amendment[].”5 An analysis of the nature and context of the Liberator’s files reveals them to be both expressive—even more so than computer code, an activity many courts consider to be protected speech6—and communicative; that is, all the elements of

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* © 2014 Barton Lee.
2. Id.
3. Id. It is worth noting that the video also includes snippets detailing how the gun works (0:22) and how it is printed (0:18). See id.
6. See infra Part II.B.
communication are present—a speaker, an intent, a message, an audience, and a likelihood of receipt.\(^7\) On that basis, this Recent Development argues that the Computer-Aided Design ("CAD") files,\(^8\) like those of the Liberator, deserve First Amendment protection.

The second issue raised by the State Department's letter is whether, as speech, the government can, under an existing theory of regulation, justifiably regulate the Liberator's CAD files. These theories take the form of exceptions to the First Amendment's protection, and this Recent Development focuses on two: the *Brandenburg* standard, which allows regulation of speech when it is intended and likely to incite imminent lawless action,\(^9\) and the regulation of speech that facilitates crime—a less definitive area of the law that looks to the intent of the speaker, the nature of the speech itself, and the government interest at stake.\(^10\) On this second issue, this Recent Development argues that both theories, as applied to the Liberator's CAD files, are inexact fits at best, suggesting that regulation of the Liberator and other 3D-printed weapons should be left to Congress and not the courts. Indeed, the shortcomings of both theories, when viewed in light of the rapid development of the technology and Congress' recent inaction on the subject,\(^11\) suggest congressional—and not State Department—regulation is needed sooner rather than later.\(^12\)

Part I of this Recent Development focuses on the background material necessary for understanding both the State Department's action and the subsequent First Amendment analysis. In Part II, the focus turns to a speech determination for CAD files like those of the Liberator. Having established that the files should be considered speech, Part III first demonstrates that the government cannot justify

\(^7\) See infra Part II.

\(^8\) See infra Part I.A.


\(^12\) See infra text accompanying notes 228–29.
regulation under a *Brandenburg* theory and then argues that, while it could arguably do so under a crime facilitation theory, the inexact fit suggests congressional regulation is needed. Finally, Part IV briefly considers both the larger implications of regulation in this area and the future of 3D-printed weapons.

I. UNDERSTANDING THE CONTEXT AND CHARACTERS

A. 3D Printing Generally

In the simplest sense, 3D printing is a form of manufacturing that operates similarly to a paper printer. The primary difference is, instead of combining ink on a flat surface to form words or pictures, a 3D printer builds a particular item up layer by layer in accordance with file specifications.\(^1\) Also known as Additive Layer Manufacturing, this process not only results in less waste, but also allows for an incredibly intricate and customized product made from a variety of materials—including plastic and metal.\(^1\) The starting point, and the lynchpin of the State Department's letter to Defense Distributed, is CAD files, which function more like a 3D blueprint than typical computer code.\(^1\) These CAD files are readily available online and easy to utilize, provided users have software capable of reading them.\(^1\) A common source for many of these files is Thingiverse, an online community established by MakerBot, a leading manufacturer of 3D printers.\(^1\)

Besides boasting a unique range of printable items, 3D printing is defined by rapid advancement not only in what is available to print, \(^13\) Jon Excell & Stuart Nathan, *The Rise of Additive Manufacturing*, ENGINEER (May 24, 2010), http://www.theengineer.co.uk/in-depth/the-big-story/the-rise-of-additive-manufacturing/1002560.article.

\(^14\) See id. The potential for 3D printers is not limited to one industry, as *The Engineer*’s article points out. See id. Indeed, the medical industry is experimenting with this technology as well. Ashley Dara, *3D Printing Umbilical Cord Clamps in Haiti*, MAKE (Oct. 18, 2013, 12:45 PM), http://makezine.com/2013/10/18/3d-printing-umbilical-cord-clamps-in-haiti/ (describing 3D printers used in Haiti to print umbilical cord clamps); Jeremy Hsu, *3D Printed Organs May Mean End to Waiting Lists, Deadly Shortages*, HUFFINGTON POST (Sept. 25, 2013, 8:36 AM), http://www.huffingtonpost.com/2013/09/25/3d-printed-organs_n_3983971.html (describing the printing of organs).


\(^16\) The software needed to view these files is generally free. See, e.g., *Services and Support*, AUTODESK, http://usa.autodesk.com/support/viewers/ (providing free software for reading CAD files) (last visited Feb. 11, 2014).

but also in improvements to the technology itself. For example, since 2006, the year in which the 3D printer is thought to have become commercially viable, 3D-printed products have grown to include small planes, car bodies, and even self-replicating 3D printers.  

Similarly, the materials used in making those products have improved over time, with current technology allowing gold, silver, and even human cells to be used in the manufacturing process. This same sort of advancement is also true of 3D printers themselves, as lower price points have drastically improved public accessibility. The rate of improvement can be attributed to the 3D-printing community itself, which has emphasized from an early stage the value of collaboration in creating, sharing, and manufacturing products.

The Liberator reflects this community by embodying many of its characteristics, including the improvements relating to product availability, materials, and price. Released in early May of 2013 and capable of firing one shot, the Liberator was only the beginning. Within a month, a Wisconsin man successfully printed and fired a Liberator pistol using a $1,725 printer and about $25 worth of plastic. By August, the “Grizzly 2.0”—capable of firing Winchester

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19. Id.

20. See generally Nick Bilton, Disruptions: On the Fast Track to Routine 3-D Printing, N.Y. TIMES BITS BLOG (Feb. 17, 2013, 11:00 AM), http://bits.blogs.nytimes.com/2013/02/17/disruptions-3-d-printing-is-on-the-fast-track/?_r=0 (“The price of 3-D printers has also dropped sharply over the last two years, with machines that once cost $20,000, now at $1,000 or less.”). For example, a 3D printer from MakerBot comes fully assembled for $2,199 and can build an object up to 285 mm x 153 mm x 155 mm. See Price Compare – 3D Printers, 3DERS.ORG, http://www.3ders.org/pricecompare/3dprinters/ (last visited Feb. 9, 2014). A smaller version from Solidoodle retails for $599. See id. Recently, an inventor released his idea for a 3D printer that would cost as little as $100. See PEACHY PRINTER, http://www.peachyprinter.com/ (last visited Feb. 25, 2014).

21. See Bilton, supra note 20; see also About Thingiverse, supra note 17 (“Thingiverse is a thriving design community for discovering, making, and sharing 3D printable things.”).


bullets and topping out at fourteen shots—had made its debut. The following month a semi-automatic firearm emerged, although this one was only mostly 3D-printed. The available materials used in manufacturing the guns reached a new height in November 2013, when Solid Concepts, a Texas company, produced a 3D-printed metal gun. Given the speed with which this industry is evolving, it is not difficult to understand why many government officials in the United States and elsewhere have expressed concerns about keeping this growth in check, with one group describing 3D-printed weapons as an “imminent risk” with unknown future capabilities.

B. Defense Distributed

As for who is behind the Liberator pistol, in its own words, Defense Distributed is “a pending 501(c)(3) status nonprofit corporation in the state of Texas, organized and operated exclusively for charitable and literary purposes.” Its organizing purpose includes the defense of the “civil liberty of popular access to arms . . . through facilitating global access to, and the collaborative production of, information and knowledge related to the 3D printing of arms.”


28. See Sherfinski, supra note 11. As of January 5, 2014, Defense Distributed had updated its website and changed some of its language. See About Defense Distributed, DEF. DISTRIBUTED, http://defdist.org/about/ (last visited Feb. 9, 2014). This original mission statement can be found in an article from The Washington Times. See Sherfinski, supra note 11. Of note is the literary stated purpose. It appears to be an attempt to invoke protection from the State Department’s regulations, which are different for library materials. See 22 C.F.R. §§ 120.10(a), 120.11(a)(4) (2013) (stating that the regulation does not include “information in the public domain,” which section 120.11 says includes material available in libraries open to the public).

29. See Alexis Kleinman, The First 3D-Printed Gun Has Been Fired, HUFFINGTON POST (May 6, 2013, 10:48 AM), http://www.huffingtonpost.com/2013/05/06/3d-printed-gun-fired_n_3222669.html. Defense Distributed has also since altered their goals, but this
Defense Distributed lists Ben Denio and Cody Wilson as its founders, with the entity forming in the summer of 2012. Wilson, a law student, "calls himself a crypto-anarchist" who hopes that "new technologies like bitcoin and 3-D printing will do nothing less than abrogate government, returning power to individuals and small sovereign communities."

Perhaps unsurprisingly, given its stated purpose and founders’ beliefs, Defense Distributed has faced substantial resistance at times and not just from the government. For example, Indiegogo, a crowdsourcing platform, shut down Defense Distributed’s fundraising efforts, and Stratasys, a 3D printer manufacturer, seized the rented printer Wilson was using to construct the Liberator. PayPal briefly suspended services for the organization, resuming service only when PayPal would be used for donations rather than gun sales, while JPMorgan Chase requested Defense Distributed find another bank. Similarly, Defense Distributed does not appear to be particularly popular within the industry itself, as evidenced by events at the 2013 South by Southwest ("SXSW") Interactive Festival, where MakerBot’s CEO Bre Pettis gave the keynote address at the festival.

iteration can be found in an article from The Huffington Post. The current list of goals includes working to “subvert the physical and digital architecture of oppression on behalf of the general public.” See About Defense Distributed, supra note 28.


32. Id.

33. Id.

34. J.D. Tuccille, PayPal Makes Nice with Defense Distributed, But DefCad Needs a New Bank, REASON.COM (July 24, 2013, 1:19 PM), http://reason.com/blog/2013/07/24/paypal-makes-nice-with-defense-distribut. As the article notes, PayPal has since resumed providing services for Defense Distributed. See id. This overall pattern of hostility towards Defense Distributed seems to be echoed within the 3D printing community, although the source of the dislike may be less about Defense Distributed specifically and more about concerns over the legal repercussions of printing the Liberator. See Philip Bump, It’s Not So Easy to 3D Print a Gun, WIRE (May 7, 2013), http://www.thewire.com/national/2013/05/its-not-so-easy-3-d-print-gun/64951/ (discussing several firms’ reluctance to print the Liberator all).

35. See Silverman, supra note 31. SXSW was originally a music festival in Austin, Texas, that has now grown to include film and interactive events with the goal being “to create an event that would act as a tool for creative people and the companies they work with to develop their careers, to bring together people from a wide area to meet and share ideas. That continues to be the goal today whether it is music, film or interactive technologies.” See SXSW History, SXSW, http://sxsw.com/about/sxsw-history (last visited Feb. 26, 2014).
while Cody Wilson spoke to a mostly empty ballroom. Evidently then, Defense Distributed itself is somewhat of an outlier.

C. The State Department's Letter

On May 8, 2013, the U.S. State Department’s Office of Defense Trade Controls Compliance sent Cody Wilson a letter notifying him that the Liberator pistol and several other Defense Distributed creations were in violation of the Arms Export Control Act (“AECA”). Under the AECA, the President has the power to control the import and export of “defense articles” that appear on the United States Munitions List (“USML”), which includes everything from firearms and ammunition to tanks and amphibious landing vehicles. Pursuant to the AECA, the State Department acts under the International Traffic in Arms Regulations (“ITAR”). Collectively, the AECA and ITAR “impose certain requirements and restrictions on the transfer of, and access to, controlled defense articles and related technical data” as designated by the USML. In short, the State Department believed the Liberator files were “technical data” governed by the regulations and should have been submitted for a Commodity Jurisdiction determination to assess whether the Liberator should be on the USML and therefore subject to regulation. Until such a determination could be made, however, Defense Distributed was forced to remove the plans from their website.


37. For example, the letter also requested that Defense Distributed remove from public access all technical data concerning a selection of data files, including a Springfield XD-40 tactical slide assembly, a silencer adapter, and a 125mm BK-14M high-explosive anti-tank warhead. See State Dep’t Letter, supra note 4.


40. Id. §§ 120–130.

41. State Dep’t Letter, supra note 4.

42. “Technical data” is defined at 22 C.F.R. § 120.10(a)(1) as, among other things, “[i]nformation ... which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles. This includes information in the form of blueprints, drawings, photographs, plans, instructions or documentation.” 22 C.F.R. § 120.10(a)(1).


44. See State Dep’t Letter, supra note 4. It is worth noting that the State Department is not the only one concerned about 3D-printed guns. See California, New York and DC Look to Ban 3D-Printed Guns, RT (May 8, 2013, 6:55 PM), http://rt.com/usa/printed-3d-
Unsurprisingly, Defense Distributed complied with the State Department’s request to remove the files from public access. Cody Wilson noted that while doing so might be “an impossible standard,” the group would do its part to comply.\textsuperscript{45} For what it was worth, Wilson had managed to secure a Bureau of Alcohol, Tobacco, Firearms, and Explosives (“ATF”) license to manufacture the Liberator,\textsuperscript{46} but his reference to an impossible standard spoke to the reality that while Wilson could remove the files from public access via his website per the letter’s instructions, the plans themselves were no longer under his sole control. The Liberator files were downloaded extensively before they were removed from the Defense Distributed website, with Wilson himself estimating the number of downloads to be around 100,000.\textsuperscript{47} The files continue to be available on websites like The Pirate Bay, a controversial site that provides access to torrents of movie, music, and video game files,\textsuperscript{48} and it does not appear that the plans will be removed from those sites in the near future.\textsuperscript{49}

\begin{footnotesize}
\begin{enumerate}
\item guns-ban-017/ (detailing early efforts by lawmakers in California, New York, and Washington, D.C., to enact legislation addressing 3D-printed guns).
\item Defiant Pirate Bay to Continue Hosting Banned 3D Printer Gun Designs, RT (May 12, 2013, 3:38 PM), http://rt.com/news/liberator-gun-defcad-pirate-bay-122/. The plans remain posted because The Pirate Bay has refused to remove the plans from its website, despite government pressure to do so. \textit{See id.}
\end{enumerate}
\end{footnotesize}
II. THE THRESHOLD QUESTION: ARE CAD FILES SPEECH?

The protection provided by the First Amendment in this context is limited to activities that are considered speech.\(^{50}\) This threshold question concerning whether an activity is speech is not one the Supreme Court explicitly answers in every First Amendment case.\(^{51}\) However, when one side raises the question,\(^{52}\) or when an activity is involved that is something other than written or spoken words, a court is more likely to decide whether an activity is in fact speech.\(^{53}\) Given Wilson’s strong convictions—he feels others have tried to “mortal wound” the Liberator project\(^{54}\)—it seems likely the speech question would be raised. In conjunction with this likelihood, CAD files like those of the Liberator are neither written nor spoken words, meaning a speech determination is especially likely here.\(^{55}\) This Recent Development argues these files should be considered speech because they contain all the elements of communication and are “sufficiently imbued” with those elements to warrant First Amendment protection.

A. The Speech Test

The First Amendment extends to “all ideas having even the slightest redeeming social importance, including those concerning the advancement of truth, science, morality, and arts.”\(^{56}\) This expansive understanding does not mean that every action or activity that conveys an idea will receive—or even deserves—First Amendment protection.\(^{57}\) Instead, the determinative question is whether the

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50. See, e.g., United States v. O'Brien, 391 U.S. 367, 376 (1968) (rejecting the view that an “apparently limitless variety of conduct” can be considered speech involving the First Amendment whenever the speaker “intends thereby to express an idea”).

51. See, e.g., R. Polk Wagner, Note, The Medium is the Mistake: The Law of Software for the First Amendment, 51 STAN. L. REV. 387, 392–93 (1999) (noting that while the issue of whether an activity is speech “is not always explicitly answered by the Court,” this “does not mean that [the issue] does not exist”).

52. Id. at 393 (“Plainly, it is only where the threshold question matters—where one side or the other chooses to make it an issue—that the analysis is undertaken.”).

53. See id. at 393 & n.36 (using New York Times Co. v. Sullivan, 376 U.S. 254 (1964), as an example of how an issue that directly involves the press or spoken word does not need a speech determination).

54. Silverman, supra note 31 (discussing Wilson’s comments at SXSW, where he stated that he felt persecuted: “‘They tried to mentally wound my project.’”).

55. Such a determination would be, as of publication, one of first impression.


57. See, e.g., United States v. O’Brien, 391 U.S. 367, 376–77 (1968) (holding symbolic speech as protected under the First Amendment, but ultimately holding that burning one’s draft card is not protected speech).
“activity was sufficiently imbued with *elements of communication* to fall within the scope of the First ... Amendment[.].”\(^{58}\) Far from narrow in its scope, this inquiry considers “the nature of [the] activity, combined with the factual context and environment in which it was undertaken.”\(^{59}\)

As for what was meant by “elements of communication,”\(^{60}\) in *Spence v. Washington*,\(^{61}\) the Court provided the answer when it noted the importance of finding within the activity’s nature and context “[a]n intent to convey a particularized message” and a “likelihood ... that the message would be understood by those who viewed it.”\(^{62}\)

Breaking this answer down into its parts, the elements of communication include (1) a speaker; (2) an intent to convey; (3) a “particularized message”; (4) an audience, i.e. “those who viewed it”; and (5) a likelihood that the message will be understood.\(^{63}\)

Despite the importance of these elements, the presence or lack thereof of any one of the five is not determinative. The Supreme Court made this clear in *Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston, Inc.*,\(^{64}\) when it stated that the “painting of Jackson Pollock, music of Arnold Schoenberg, or Jabberwocky verse of Lewis Carroll”\(^{65}\) would be “unquestionably shielded,” despite being works that by their very nature are deficient in one or more of these elements.\(^{66}\) Similarly, the sufficiently imbued language of the *Spence* test supports the contention that speech possesses some combination of the elements and not necessarily all of them.\(^{67}\) As a result, the test for speech that emerges from the case law is highly dependent on the nature and context of the activity at issue.

**B. The Tech Speech Test**

The activity at issue here, CAD files like those of the Liberator, would not be the first emergent technology to undergo this analysis. Indeed, computer source and object code\(^{68}\) serve as a point of

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59. Id. at 409–10.
60. Id. at 409.
62. Id. at 410–11.
63. See id.
65. Id. at 569.
66. Id.
68. For an explanation of the differences in object and source code, as well as some of the complexities surrounding its development, see Ed Felten, *Source Code and Object
comparison for CAD files. The issue of how to treat computer code under the First Amendment first appeared in the district courts in 1996, with cases reaching the circuit courts as early as 1999. For the most part, and at both levels, computer code has emerged under the protection of the speech clause.

Code, Freedom to Tinker (Sept. 4, 2002), https://freedom-to-tinker.com/blog/felten/source-code-and-object-code/. One court provided a clear explanation of the difference between the two, and how they interact, noting:

[S]ource code . . . is meant to be read and understood by humans, and . . . it cannot be used to control directly the functioning of a computer. While source code, when properly prepared, can be easily compiled into object code by a user, ignoring the distinction between source and object code obscures the important fact that source code is not meant solely for the computer, but is rather written in a language intended also for human analysis and understanding.

Bernstein v. U.S. Dep't of Justice, 176 F.3d 1132, 1142, reh'g en banc granted and opinion withdrawn, 192 F.3d 1308 (9th Cir. 1999).

69. See Bernstein v. U.S. Dep't of State, 922 F. Supp. 1426, 1435-36 (N.D. Cal. 1996) (addressing the issue of whether source code should fall under the protection of the First Amendment, and holding that “source code is speech”). Other district courts would soon address the issue. See Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 326-27 (S.D.N.Y. 2000) (“[C]omputer code is covered or, as sometimes is said, ‘protected’ by the First Amendment.” (citations omitted)), aff'd sub nom. Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001); Karn v. U.S. Dep't of State, 925 F. Supp. 1, 9 (D.D.C. 1996) (“[T]he Court will assume that the protection of the First Amendment extends to the source code and the comments on the plaintiff's diskette.”). The Northern District of California has since held firm on its stance. See United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1126 (N.D. Cal. 2002) (“While there is some disagreement over whether object code, as opposed to source code, is deserving of First Amendment protection, the better reasoned approach is that it is protected. Object code is merely one additional translation of speech into a new, and different, language.”). Note in Elcom, the court expressed its willingness to extend the First Amendment to object code rather than solely to source code, a stance echoed by the Second Circuit: “But each form expresses the same idea, albeit in different ways.” Reimerdes, 111 F. Supp. 2d at 326.

70. See Bernstein, 176 F.3d at 1141 (“[W]e conclude that encryption software, in its source code form and as employed by those in the field of cryptography, must be viewed as expressive for First Amendment purposes.”). Other circuits would soon follow the Ninth, despite the withdrawal of the opinion. See Universal City Studios, Inc. v. Corley, 273 F.3d 429, 449 (2d Cir. 2001) (“For all of these reasons, we join the other courts that have concluded that computer code, and computer programs constructed from code can merit First Amendment protection . . . .” (citations omitted)); Junger v. Daley, 209 F.3d 481, 484-85 (6th Cir. 2000) (“Because computer source code is an expressive means for the exchange of information and ideas about computer programming, we hold that it is protected by the First Amendment.”).

71. See Corley, 273 F.3d at 449; Junger, 209 F.3d at 484-85; Bernstein, 176 F.3d at 1141; Reimerdes, 111 F. Supp. 2d at 326-27; Bernstein, 922 F. Supp. at 1435-36; Karn, 925 F. Supp. at 9 (assuming, without deciding, that “First Amendment protection” extends to the computer code). One district court did hold computer code as unprotected but was ultimately reversed by the Sixth Circuit in Junger. See Junger v. Daley, 8 F. Supp. 2d 708, 715 (N.D. Ohio 1998), rev'd, 209 F.3d 481 (6th Cir. 2000).
These decisions, in their analysis of the nature and context of computer code, highlight two important points of comparison between code and CAD files, the first being the expressive nature of the code itself, particularly in its source form. For example, in Bernstein v. U.S. Department of State,72 the district court compared code to recipes and instruction manuals,73 while also analogizing it to music and other languages, all of which "participate in a complex system of understood meanings within specific communities."74 The Southern District of New York, later affirmed by the Second Circuit, recognized that "computer code—whether source or object—is a means of expressing ideas" such that "the First Amendment must be considered before its dissemination may be prohibited or regulated."75 The Sixth Circuit went a step further in highlighting this expressive nature and held that "[b]ecause computer source code is an expressive means for the exchange of information and ideas about computer programming, we hold that it is protected by the First Amendment."76

The second point of comparison between computer code and CAD files highlighted by these decisions is the functionality of the code—specifically, the ability of the code to "control directly the operation of a computer without conveying information to the user"77—and how it affects the speech determination. For example, in Bernstein, the district court held that "the functionality of a language does not make it any less like speech,"78 a sentiment the Ninth Circuit echoed when it rejected the idea that "functionality necessarily puts expression beyond the protections of the Constitution."79 In Junger v. Daley,80 the Sixth Circuit made this same point,81 and in Universal

73. Id. at 1435 ("Instructions, do-it-yourself manuals, recipes, even technical information about hydrogen bomb construction are often purely functional; they are also speech." (citation omitted)).
74. Id. ("Nor does the particular language one chooses change the nature of language for First Amendment purposes."). The court also noted that code can be copyrighted because it is expressive, lending support to the contention that it should be considered speech. See id. at 1436.
75. Reimerdes, 111 F. Supp. 2d at 327.
76. Junger, 209 F.3d at 485.
77. Bernstein v. U.S. Dep't of Justice, 176 F.3d 1132, 1142 (9th Cir. 1999), reh'g en banc granted and opinion withdrawn, 192 F.3d 1308 (9th Cir. 1999).
79. Bernstein, 176 F.3d at 1142.
80. 209 F.3d 481 (6th Cir. 2000).
81. Id. at 484 ("The fact that a medium of expression has a functional capacity should not preclude constitutional protection.").
City Studios, Inc. v. Corley, the Second Circuit followed suit. The functionality of an activity, then, does not remove it from the First Amendment's protections.

However, functionality is not to be entirely ignored, but rather considered as part of the scope of protection the speech ultimately receives. The Corley court, addressing that very issue, noted that unlike blueprints or recipes, which need human understanding and action to reach an intended result, computer code requires only a minimal effort. As a result, the court sought to apply a First Amendment standard that incorporated both the "functional and expressive elements." Similarly, the Junger court seized on the functionality of code not as a limitation on whether it is treated as speech, but rather as a factor to be considered in deciding if it can be regulated. The mixed identity of code, often highlighted by those who would argue code should not be treated as speech, effectively

82. 273 F.3d 429 (2d Cir. 2001).
83. Id. at 447 ("Computer programs are not exempted from the category of First Amendment speech simply because their instructions require use of a computer. A recipe is no less 'speech' because it calls for the use of an oven, and a musical score is no less 'speech' because it specifies performance on an electric guitar."); see also id. at 448 ("Instructions that communicate information comprehensible to a human qualify as speech whether the instructions are designed for execution by a computer or a human (or both).")
84. See, e.g., id. at 452 ("The functionality of computer code properly affects the scope of its First Amendment protection."); see also Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 331 (S.D.N.Y. 2000) (disagreeing with "the assumption that the chain of causation is too attenuated to justify the use of functionality to determine the level of scrutiny, at least in this context")
85. Corley, 273 F.3d at 451 ("Unlike a blueprint or a recipe, which cannot yield any functional result without human comprehension of its content, human decision-making, and human action, computer code can instantly cause a computer to accomplish tasks and instantly render the results of those tasks available throughout the world via the Internet.")
86. Id. Interestingly, the court cited Red Lion Broadcasting Co. v. FCC, 395 U.S. 367 (1969), which speaks to new forms of media requiring different standards. Red Lion, 395 U.S. at 386.
87. See Junger v. Daley, 209 F.3d 481, 485 (6th Cir. 2000) ("The functional capabilities of source code, and particularly those of encryption source code, should be considered when analyzing the governmental interest in regulating the exchange of this form of speech.")
functions as a limitation on the extent of First Amendment protection by classifying it as something less than pure expression. In this sense, it is not guaranteed full protection under the First Amendment.

C. Application to the Liberator

The body of relevant law that colors the analysis of whether CAD files should be considered speech examines the nature of the activity and the context in which it occurs. A closer look at the nature of the CAD files shows them to be a fully expressive activity—like blueprints—even more so than computer code. An analysis of their context—using the Liberator's CAD files as an example—reveals that the files possess all the elements of communication under the Spence test. Thus, this Section contends that CAD files like those of the Liberator should be considered speech under the First Amendment, deserving of protection that is not limited by the files' functionality.

In order to fully understand the nature of CAD files, one must first understand computer code. Computer code uses a programming language to achieve its end product, which, depending on the type of code, can result in software, a function, or even communication with another programmer. Similar to a foreign language, this communication is limited to those who can understand it. Thus, the code itself, while somewhat expressive in its ability to create and be appreciated on its own, is inherently functional as a means to an end and is limited to an informed audience.

89. See, e.g., Junger, 209 F.3d at 485 ("The functional capabilities of source code, and particularly those of encryption source code, should be considered when analyzing the governmental interest in regulating the exchange of this form of speech.").

90. See, e.g., id. (finding that despite the speech interest, encryption code could still be regulated).

91. See, e.g., Diomidis Spinellis, Code Reading: The Open Source Perspective 1 (Scott Meyers ed., 2003) ("You can compile source code into an executable program, you can read it to understand what a program does and how it works, and you can modify it to change the program's function.").

92. See Junger, 209 F.3d at 484 ("Likewise, computer source code, though unintelligible to many, is the preferred method of communication among computer programmers."); see also Bernstein v. U.S. Dep't of State, 922 F. Supp. 1426, 1435 (N.D. Cal. 1996) ("This court can find no meaningful difference between computer language, particularly high-level languages as defined above, and German or French. All participate in a complex system of understood meanings within specific communities.").

93. See Bernstein v. U.S. Dep't of Justice, 176 F.3d 1132, 1141–42 (9th Cir. 1999) ("While source code, when properly prepared, can be easily compiled into object code by a user, ignoring the distinction between source and object code obscures the important fact that source code is not meant solely for the computer, but is rather written in a language intended also for human analysis and understanding."), reh'g en banc granted and opinion withdrawn, 192 F.3d 1308 (9th Cir. 1999).
CAD files are very different from computer code, both in their content and function. CAD files, unlike computer code and its programming language, contain a 3D image of an object. And unlike computer code, this image is instantly recognizable to a worldwide audience. In this way, CAD files appear to transcend even the "specific communities" of language and music discussed by the Bernstein court, meaning these files have a wider audience and a more readily identifiable message.

The limited functionality of CAD files further distances them from computer code and strengthens the argument that courts should treat the files as speech under the First Amendment. Computer code is a means to an end, with a limited audience capable of appreciating it for its own sake, separated from the end result. But CAD files on their own are functionless and stand alone as a creation of their designer for unlike code, CAD files require software to create and translate the contained object; that is, software is needed to design and break down the files into layers to be printed. In effect, then, CAD files are the expressive middle element to the 3D printing process. Absent these bookending programs, the functionality limitation applied to computer code in Corley and Junger would not apply as cleanly to CAD files. Instead, as stated above, CAD files more closely resemble manifestos typed in Microsoft Word or masterpieces created in Microsoft Paint, which strengthens the argument for First Amendment protection.

In addition to the nature of the CAD files, an analysis of their context—using the Liberator's CAD files as an example—also supports granting the files First Amendment protection as all the "elements of communication" are present. First, the Liberator files have a clear and unabashed speaker in Defense Distributed, or more
specifically, Cody Wilson. The State Department's letter is addressed directly to Wilson, and he has not shied away from taking responsibility for his group's creation. Additionally, Defense Distributed released the files exclusively via DEFCAD.org, a 3D printing search engine operated by Defense Distributed, ensuring the group's identification as speaker.

Intent to convey a message, the second element, is readily evident as well. Indeed, by all accounts, Wilson and Defense Distributed have gotten exactly what they wanted: a "conversation" about "a workable regulatory regime" in the "era of the Internet and 3D printing." That they intended to start this "conversation" is also evident from Defense Distributed's website, which highlights the media attention the Liberator and its creators have received. Furthermore, the files were released to great fanfare, designed to facilitate the "Dawn of the Wiki Weapons." That Defense Distributed intended to convey their message seems clear.

Also present is a particularized message, even though, as the Hurley Court suggested, a specified one is not entirely necessary. The files were made available exclusively through Defense Distributed's associated website, which in turn makes clear that the Liberator is in furtherance of a larger goal of providing public access to arms through 3D printing. Even the name and material of the Liberator communicate a message: the name signifies freedom from what its creators view as the oppression of the regulatory system surrounding firearms, while the gun's primary material, plastic, is

101. See Silverman, supra note 31 (explaining that Cody Wilson is the creator of the Liberator).
102. See State Dep't Letter, supra note 4.
103. See Silverman, supra note 31 (stating that Wilson is "eager to speak to journalists" about his project).
104. See Greenberg, supra note 45 (mentioning DEFCAD.org's connection to the organization).
106. See Greenberg, supra note 45.
108. See Defense Distributed, supra note 1.
110. See DD History, supra note 30.
111. See About Defense Distributed, supra note 28 ("DD works to subvert the physical and digital architecture of oppression on behalf of the general public.").
associated with mass production and even evading security. These characteristics only further and reinforce Defense Distributed's stated goal of public access to firearms.

The files also had an audience, as evidenced by the large number of downloads in the days before the State Department took action. That the design has proliferated—leading the way for similar weapons like the Grizzly Gun—is a further sign that the Liberator had an eager audience. Admittedly, speaking to everyone is arguably equivalent to speaking to no one, and Defense Distributed remains largely out of touch within its own industry; however, the fact remains that an audience, however flawed, received the Liberator CAD files in the days before the State Department took action.

Lastly, the likelihood element is also present, although it is more difficult to demonstrate. On the one hand, the files' exclusive release on DEFACAD.org made it likely that Defense Distributed's pro-Second Amendment message was heard. Furthermore, the Liberator's release engendered a media frenzy, and given the relative anonymity of Defense Distributed before the Liberator, the files were arguably downloaded because Defense Distributed's message had been received. Then again, proof that the files were received in conjunction with any message at all is lacking, particularly since the notoriety of the gun was such that it was not long before the design had spread to sites like The Pirate Bay, which provides access to the files divorced from any Defense Distributed-related content. All things considered, likelihood is difficult to prove here, but even if...

112. See, e.g., Jill Lawless, UK Police Cast Doubt on 3D-Printed 'Gun Parts,' PHYS.ORG (Oct. 25, 2013), http://phys.org/news/2013-10-uk-police-seize-3d-printed-gun.html. The plastic makeup of the gun, however, is not necessarily indicative of the group's desire to break the law and foment mass detectability issues. While its makeup presents other problems, like altering the design to be entirely undetectable, the Liberator itself is compliant with detectability laws. See Silverman, supra note 31.

113. See Greenberg, supra note 47 (stating that the Liberator files were downloaded approximately 100,000 times in two days).

114. See Hess v. Indiana, 414 U.S. 105, 108–09 (1973) (per curiam) (stating that the defendant's words—spoken in a crowd—were "not directed to any person or group of persons").

115. See Silverman, supra note 31 (mentioning that Wilson spoke recently to an empty ballroom during a 3D printing conference).

116. For a selection of some of the media stories concerning the Liberator, see Greenberg, supra note 45; Greenberg, supra note 47; Silverman, supra note 31.

117. The Liberator was posted to The Pirate Bay almost as soon as it was released. See DefDist Liberator Pistol, PIRATE BAY (May 6, 2013, 3:22 PM), http://thepiratebay.se/torrent/8444391/DefDist_Liberator_Pistol.
it could not be demonstrated, the Hurley decision leaves room for deficiencies in the elements of communication.118

An analysis of the nature and context of the Liberator files reveals them to be significantly more expressive than computer code and arguably endowed with all the elements of communication. Even the functionality limitation that would limit the scope of the protection provided by the First Amendment can be distinguished, as CAD files are inherently less functional than computer code. Moreover, Hurley and Spence suggest that not every element is required to treat an activity as speech. As a result, this Recent Development contends that CAD files like those of the Liberator have significant artistic and scientific value beyond computer code such that these files should be treated as speech under the First Amendment.

III. THEORIES OF REGULATION: BRANDENBURG AND CRIME-FACILITATING SPEECH

Having established that CAD files like those of the Liberator should be considered speech, the analysis now shifts to how, if at all, the government could regulate these specific files. As the letter to Cody Wilson indicates, the State Department certainly feels that it can regulate the files. Yet the question remains as to what theories of regulation—or exceptions to the First Amendment—could justify an action that could fairly be classified as infringing on constitutionally protected speech.

The First Amendment, despite mandating that “Congress shall make no law . . . abridging the freedom of speech,”119 has long been held not to mean what it says.120 As a result, there are certain circumstances—like fighting words,121 threats,122 or commercial

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119. U.S. CONST. amend. I.

120. See Geoffrey R. Stone, Free Speech in the Twenty-First Century: Ten Lessons from the Twentieth Century, 36 PEPP. L. REV. 273, 274 (2009) (“The first fundamental judgment we made in the twentieth century is that the First Amendment does not mean what it says.”).


122. See Watts v. United States, 394 U.S. 705, 707 (1969) (per curiam) (“What is a threat must be distinguished from what is constitutionally protected speech.”).
speech\textsuperscript{123}—in which speech can be regulated.\textsuperscript{124} The theories of regulation discussed here treat the CAD files as speech potentially subject to a government interest and ask separately whether the files are either likely to incite imminent lawless action or to directly facilitate crime.\textsuperscript{125} This Recent Development argues first that the State Department would not be able to regulate the Liberator—or 3D printing files generally—under the \textit{Brandenburg} standard given the difficulty of applying its test to these facts. Second, this Recent Development argues that regulation under a crime-facilitating speech theory is a more viable—but still flawed—approach, a reality that suggests the need for congressional regulation.

\section{The Brandenburg Test}

The United States Supreme Court has long recognized that freedom of speech is not absolute,\textsuperscript{126} and in particular the Court has struggled with how to treat speech that could result in some sort of harm. Evolving from a "clear and present danger" test,\textsuperscript{127} the Court adopted a firm standard in 1969 with \textit{Brandenburg v. Ohio}.\textsuperscript{128} Under \textit{Brandenburg}, government regulation of otherwise protected speech is prohibited "except where such advocacy is directed to inciting or producing imminent lawless action and is likely to incite or produce such action."\textsuperscript{129} The test allows regulation then, if the speech is (1) intended\textsuperscript{130} to incite (2) imminent lawless action, and (3) that action is likely to occur.

The first element has two parts, intent and incitement, which functionally go hand in hand. For intent, the Court in \textit{Brandenburg} was clear that only speech that was "\textit{directed} to inciting or producing...\textsuperscript{131}
imminent lawless action” could be proscribed.131 Thus, Brandenburg protected those speakers whose words, while incendiary, were not intended to cause harm,132 and a later decision, Hess v. Indiana,133 would protect speakers who were not directing their words to a specific audience.134 In the same vein, the Court was careful to separate mere advocacy, or “abstract teaching,” from incitement—the latter akin to “preparing a group for violent action and steeling it to such action.”135 The first element of the Brandenburg test, then, requires purposeful delivery to a specific audience of “speech . . . brigated with action”136 such that the speech transcends mere advocacy.

The second element, imminency, is arguably the most important element,137 in part because it extends First Amendment protection to the vast majority of speech, no matter how controversial.138 It does so by requiring that the advocated action occur within a specified amount of time; that is, sooner than “some indefinite future time.”139 Some scholars argue that the time limit employed in Brandenburg is only a few hours,140 while others argue it could be a few days.141 One explanation for this discrepancy is that imminency depends on the nature of the activity at issue. As one California court opined in People v. Rubin,142 “time is a relative dimension and imminence a

132. See Healy, supra note 130, at 701.
133. 414 U.S. 105 (1973) (per curiam).
134. Id. at 108-09.
136. Id. at 456 (Douglas, J., concurring). The Court in Brandenburg echoed Masses Publishing Co. v. Patten, 244 F. 335 (S.D.N.Y. 1917), rev’d, 246 F. 24 (2d Cir. 1917), in which Judge Learned Hand held that “[i]f one stops short of urging upon others that it is their duty or their interest to resist the law,” a speaker should not be convicted. Masses Publ’g Co., 244 F. at 540.
137. See S. Elizabeth Wilborn Malloy & Ronald J. Krotoszynski, Jr., Recalibrating the Cost of Harm Advocacy: Getting Beyond Brandenburg, 41 WM. & MARY L. REV. 1159, 1194 (2000) (“Since Brandenburg, the imminence requirement has become the central focus of the test.”).
138. See Hess, 414 U.S. at 108 (noting that with an imminence requirement, the only speech subject to regulation is that which threatens to result in imminent action, not that which is “nothing more than advocacy of illegal action at some indefinite future time”).
139. Id.
141. See Healy, supra note 130, at 718.
142. 158 Cal. Rptr. 488 (Cal. Ct. App. 1979)
relative term, and the imminence of an event is related to its nature. A total eclipse of the sun next year is said to be imminent. An April shower 30 minutes away is not. Thus, the imminency prong is relative, and while the standard usually contemplates a short time period, ultimately whether speech is imminent depends on the nature of the speech at issue.

The final element of the Brandenburg test is likelihood of harm. The Brandenburg Court noted the difference between mere advocacy and "preparing ... and steeling" a group for action—suggesting that likelihood requires some positive step or evidence of probability. Additionally, the Court cited Dennis v. United States in support of this element, a case that in turn cited Judge Learned Hand's opinion from the Dennis lower court proceedings. Judge Hand advocated determining likelihood by weighing "the gravity of the 'evil,' discounted by its improbability." The end goal of this prong of the test, of course, is to prevent only that speech which presents an actual threat to society; but as for what constitutes an actual threat, it seems to fall somewhere between a "fair probability" and "more likely than not."

When applied to the Liberator, the Brandenburg exception is an inexact fit. Part of the problem is determining how "lawless action" applies in the context of CAD files for 3D printed guns. The illegal action could be at the outset, in manufacturing the gun in violation of gun laws (gun control crimes), or somewhere down the line, in the form of an attack or assassination (gun usage crimes). However, even if the lawless action is identified as one or the other, applying the rest of the test remains a challenge because it is difficult to ascribe a particular intent to Cody Wilson and Defense Distributed for the purpose of finding an intent to incite, and the nature of 3D printing—both in its current state and rapid development—complicates both the imminency and likelihood analysis.

The first element, intent to incite, hinges on whether one can take what Defense Distributed says or does at face value. On the one

143. Id. at 492.
146. See Brandenburg, 395 U.S. at 447 & n.2 (citing Dennis, 341 U.S. at 510).
147. See Dennis, 341 U.S. at 510 (citing United States v. Dennis, 183 F.2d 201, 212 (2d Cir. 1950)).
148. United States v. Dennis, 183 F.2d 201, 212 (2d Cir. 1950).
149. See Healy, supra note 130, at 714-15.
150. See Brandenburg, 395 U.S. at 447.
hand, Cody Wilson and Defense Distributed have been entirely compliant with the law. The group obtained an ATF license to manufacture the gun \(^{151}\) and took steps to ensure the gun would comply with detectability requirements by leaving space in the design for the insertion of a steel cube. \(^{152}\) As Wilson noted, the group’s “strategy [was] overcompliance.” \(^{153}\) Indeed, it could be argued that the Liberator as released was intended to be a form of symbolic advocacy, or in other words, a starting point for Wilson’s desired “conversation” about a “workable regulatory regime” for 3D-printed weapons. \(^{154}\) Thus, at first glance, the intent element of *Brandenburg* would seem inapplicable.

Yet this intentional overcompliance contrasts sharply with Defense Distributed’s stated opposition to the current regulatory regime and in particular Wilson’s own desire for the abrogation of government. \(^{155}\) Additionally, the lone detectability mechanism designed into the gun—the steel cube—is easily removable and functionally non-essential, indicating the cube is more of a measure of token compliance than of actual concern. \(^{156}\) Further still, there hardly seems a better example of *Brandenburg*’s “speech . . . brigaded with action” \(^{157}\) or “preparing a group for violent action” \(^{158}\) than providing a means to manufacture a working gun. Lastly, Defense Distributed was not ignorant of what it did; to be sure, it hailed the release of the Liberator as the “Dawn of the Wiki Weapon.” \(^{159}\) It can be argued Defense Distributed had readily apparent knowledge of the potential to skirt gun control laws or something more harmful that could support a finding of an intention to incite here. \(^{160}\)

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152. See Greenberg, *supra* note 22.
153. *Id.*
156. Even the only essential metal component, the firing pin, was inserted out of necessity and not out of a desire for compliance. See Kelsey D. Atherton, *How the World’s First 3-D Printed Gun Works*, POPULAR SCI. (May 6, 2013, 3:00 PM), http://www.popsci.com/technology/article/2013-05/worlds-first-fully-3-d-printed-gun-here (“Defense Distributed tried to make a hardened plastic firing pin, but they were unable to do so with the commercial printer that they used to make the rest of the Liberator, and so rather than use an industrial printer they went with a cheap, everyday component.”).
158. *Id.* at 448 (majority opinion) (quoting Noto v. United States, 367 U.S. 290, 297–98 (1961)).
159. See Defense Distributed, *supra* note 1.
160. See discussion infra Part III.B.
It is similarly unclear whether posting the plans online constituted an incitement under Brandenburg. Wilson posted the plans online, addressed to no one in particular, which seems to correspond with Hess, which suggested that an indefinite audience cuts against a finding of incitement.\footnote{Hess involved a protestor facing a dissipating crowd, who said in a loud voice—but not any louder than others present—to "take the fucking street again."\footnote{Applying the facts in Hess to those here, Defense Distributed posted the Liberator files with great fanfare, but it is not at all clear whether the files had a defined audience. The files were extensively downloaded, but the reason behind those downloads is unknowable, and the motivation could just as easily have been one of curiosity rather than agreement—interest rather than incitement. In this sense, Defense Distributed and Hess share some characteristics: protestors facing a crowd that may or may not be listening and delivering a message that may or may not be falling on deaf ears. Then again, the extensive downloading of the files\footnote{Not to mention the swift action of the State Department\footnote{Suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—to "take the fucking street again."\footnote{Applying the facts in Hess to those here, Defense Distributed posted the Liberator files with great fanfare, but it is not at all clear whether the files had a defined audience. The files were extensively downloaded, but the reason behind those downloads is unknowable, and the motivation could just as easily have been one of curiosity rather than agreement—interest rather than incitement. In this sense, Defense Distributed and Hess share some characteristics: protestors facing a crowd that may or may not be listening and delivering a message that may or may not be falling on deaf ears. Then again, the extensive downloading of the files\footnote{Not to mention the swift action of the State Department\footnote{Suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}} Applying the facts in Hess to those here, Defense Distributed posted the Liberator files with great fanfare, but it is not at all clear whether the files had a defined audience. The files were extensively downloaded, but the reason behind those downloads is unknowable, and the motivation could just as easily have been one of curiosity rather than agreement—interest rather than incitement. In this sense, Defense Distributed and Hess share some characteristics: protestors facing a crowd that may or may not be listening and delivering a message that may or may not be falling on deaf ears. Then again, the extensive downloading of the files\footnote{Not to mention the swift action of the State Department\footnote{Suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—not to mention the swift action of the State Department\footnote{Suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.

The imminency prong is likewise fraught with difficulty in its application. On the one hand, in light of the realities of 3D printing and the gun itself, the imminency prong can be seen as inapplicable. Printing the gun is not as easy as it may first appear, as many printers—both print-for-hire companies and manufacturers—are hesitant to even allow their users to print the Liberator.\footnote{Even if one could print the gun, the Liberator requires an especially tough plastic, and the 3D printer used by Wilson, a Stratasys printer, costs upwards of $8,000.\footnote{Additionally, 3D printers take time to print, and making}—not to mention the swift action of the State Department\footnote{Suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}—suggests there was a defined—perhaps even enumerated—audience, albeit one different from that in Hess. Arguably then, Defense Distributed had an audience and could therefore satisfy the first element of intent to incite.}}
something as sturdy as the Liberator could take a few days—likely outside the imminency period.

Returning to the relative imminency analysis of the Rubin court, these price and time hurdles make the Liberator less than imminent when compared to obtaining a real gun. For example, in North Carolina, a state without a mandatory waiting period, so long as one has a permit to purchase a firearm, they can do so immediately—all for $5, significantly less than the cost of a 3D printer. As a result, the Liberator is less imminent in terms of availability than a regular handgun. All told, for an average person, acquiring a Liberator pistol would represent a considerable investment in both time and money—factors that could render the imminence prong of the Brandenburg test inapplicable here.

On the other hand, 3D printing is evolving rapidly, and many of the issues that could render the imminency prong inapplicable are quickly being resolved. For example, an engineer from Wisconsin known only as “Joe” successfully printed and fired a Liberator pistol made with a $1,725 printer and about $25 worth of plastic—a significant reduction in costs with an added increase in performance. His story is indicative of just how quickly this technology can improve, as is the unveiling of a metal 3D-printed gun in November 2013. If imminence is considered relatively, like it was in Rubin, then the speed of this evolution and the threat it poses cannot be seen as anything other than imminent. Furthermore, in states where gun control laws are stricter or in a situation where one already has a 3D printer and materials, one could easily imagine a scenario in which it would be faster for a prospective gun owner to print a handgun than purchase one legally. Thus, the imminency prong, under certain circumstances, could be satisfied here.

Likelihood of harm, the final Brandenburg element, also presents a problem when applied to the Liberator, as many of the same issues impacting the imminency analysis influence the likelihood prong. The

168. See N.C. GEN. STAT. § 14-404(f) (2013) (stating that if the application for a firearm permit is granted, the “permit shall be immediately issued to the applicant”).
169. See id. (“Each applicant for a license or permit shall be informed by the sheriff within 14 days of the date of the application whether the license or permit will be granted or denied.”).
170. Id. § 14-404(e).
171. See Greenberg, supra note 23.
limited availability and high cost of printers capable of making a working gun\textsuperscript{174} lowers the likelihood of their usage, as does the existence of cheaper and easier to obtain alternatives—including a regular handgun.\textsuperscript{175} These alternatives are also safer and more effective, as the Liberator is limited to a few shots and is potentially dangerous for the user.\textsuperscript{176} Collectively, the immense cost, established alternatives, limited usage, and inconsistent performance all diminish the likelihood of any harm here.

However, the issues of cost, established alternatives, limited usage, and inconsistent performance are all problems the industry is seeing diminish quickly—as evidenced once more by “Joe”\textsuperscript{177} and Solid Concepts’ 3D-printed metal gun.\textsuperscript{178} Indeed, lower costs make the advantages gained from a gun like the Liberator—private manufacturing, for example—more worthwhile, while safer usage and more consistent performance enhance its viability as a firearm option. Thus, as the technology behind these printers improves over time, the likelihood of the guns being used in a crime—whether in violation of gun control laws or otherwise—increases, meaning this final prong of the \textit{Brandenburg} test could be applicable.

In short, the Liberator as viewed under the \textit{Brandenburg} test is an inexact fit at best. For one side, the files represent a greater threat than they really are, and as the months have gone by, Defense Distributed and its Liberator pistol remain something closer to “miserable merchants of unwanted ideas”\textsuperscript{179} than true worldwide revolutionaries. But for those on the other side, the Liberator is only the beginning, and represents—in conjunction with a rapidly evolving industry—a threat deserving of further monitoring and regulation. Given this theory’s inexact fit, regulation under \textit{Brandenburg} remains unlikely.

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174. See Bump, \textit{supra} note 34.
175. See Sellars, \textit{supra} note 140 (citing This American Life: Harper High School, Part Two (Public Radio International Feb. 22, 2013) (discussing the price of guns on the black market, which can be as low as $25)).
176. Greenberg, \textit{supra} note 23 (“[Joe] loaded the weapon . . . and fired it nine times, using a string to pull its trigger for safety.”).
177. \textit{Id.}
179. Dennis v. United States, 341 U.S. 494, 588–89 (1951) (Douglas, J., dissenting) (arguing that advocates of Communism and their ideas did not present “a clear and present danger” of overthrowing the United States government).
\end{flushright}
B. Crime-Facilitating Speech

While Brandenburg applies to speech that seeks to persuade its audience to act unlawfully, it does not apply to "speech designed to facilitate the commission of an unlawful act by a person who has already decided to act." It is from this void that courts have crafted another First Amendment theory of regulation: speech that facilitates crime. This doctrine is much less defined than Brandenburg, thanks in large part to the Supreme Court not having taken up the issue. In the absence of such guidance, the available cases often consider the speaker's intent behind the speech, the nature of the speech itself, and the government interest at issue. Like the Brandenburg analysis, application of this theory to these facts results in the crime-facilitating exception being an inexact fit, as it is unclear what crime the Liberator facilitates, the intent of Wilson and Defense Distributed is difficult to decipher, the value of the Liberator depends on one's perspective, and the government interest is tempered by First Amendment history.

One major consideration in determining whether crime-facilitating speech can be regulated is the intent behind the speech. Indeed, speech that intentionally facilitates crimes—including tax

180. Malloy & Krotoszynski, supra note 137, at 1169. Brandenburg protects speech that would traditionally be considered "discourse" and not the type of speech that would lead to criminal activity—thus the need for a different theory of regulation. See Rice v. Paladin Enters. Inc., 128 F.3d 233, 249 (4th Cir. 1997); see also Volokh, supra note 10, at 1102 ("These are not incitement cases: The speech isn't persuading or inspiring some readers to commit bad acts. Rather, the speech is giving people information that helps them commit bad acts—acts that they likely already want to commit.").

181. See Volokh, supra note 10, at 1128 ("No Supreme Court case squarely deals with crime-facilitating speech.").

182. See, e.g., Paladin, 128 F.3d at 248 ("[W]e are confident that the First Amendment poses no bar to the imposition of civil (or criminal) liability for speech acts which the plaintiff (or the prosecution) can establish were undertaken with specific, if not criminal, intent."); United States v. Mendelsohn, 896 F.2d 1183, 1188 (9th Cir. 1990) (holding that the First Amendment did not require a heightened specific intent requirement in the convictions of defendants for conspiring to transport and aiding and abetting the interstate transportation of illegal betting software).

183. See, e.g., Paladin, 128 F.3d at 255 ("If there is a publication that could be found to have no other use than to facilitate unlawful conduct, then this would be it, so devoid is the book of any political, social, entertainment, or other legitimate discourse.").

184. See, e.g., id. at 247 (noting that the First Amendment is not a bar to regulation "at least where the government's interest in preventing the particular conduct at issue is incontrovertibly compelling"); see also Volokh, supra note 10, at 1132 ("[P]reventing crime does seem like a compelling interest.").

185. See supra note 182 and accompanying text.
evasion, drug manufacture, and contract killing—has been held to be unprotected by the First Amendment and thus subject to regulation. Furthermore, speech that knowingly facilitates crimes—like bomb-making, illegal betting, or copyright infringement—is also unprotected. The intent element is not designed to function as a catch-all for every kind of speech that results in a crime; on the contrary, it serves to protect those speakers who could not foresee a harmful result. Clearly, then, the intent of the speaker is one consideration in determining whether regulation of speech under this theory is justified.

Another useful factor in determining whether speech that facilitates crime deserves First Amendment protection is the nature of the speech at issue. The goal of such analysis is to find some
redeeming aspect to the speech, some "serious literary, artistic, political, or scientific value." Indeed, this is precisely the methodology the Fourth Circuit used in determining that a book detailing how to successfully carry out a contract killing was not protected under the First Amendment. In *Rice v. Paladin,* the Fourth Circuit considered the literary value of the work, but nevertheless dismissed it: "If there is a publication that could be found to have no other use than to facilitate unlawful conduct, then this would be it, so devoid is the book of any political, social, entertainment, or other legitimate discourse." A consideration of the speech's content and value is important under this theory of regulation.

Lastly, the weight of the government's interest in regulation is similarly important under this theory, particularly if the interest is as compelling as preventing crime. The potential range of compelling interests is broad, undoubtedly including instances where "methods of terror" are involved or when nuclear annihilation is at stake. The interest need not be quite so extreme and can include concerns about preventing the illegal distribution of copyrighted material or controlling immigration. Each of these examples demonstrates the importance of weighing the government interest under this theory.

As for how the crime-facilitating speech exception applies to the Liberator, the first problem with the exception is identifying what crime the Liberator could facilitate. With the Liberator and other 3D-printed firearms, there are two distinct options. First, it facilitates crimes involving access to firearms (gun control crimes). The original Liberator as printed by Cody Wilson was compliant with gun control

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195. Miller v. California, 413 U.S. 15, 24 (1973) (outlining the test for when obscene speech, another First Amendment exception, can be regulated).
196. *See Paladin*, 128 F.3d at 255.
197. 128 F.3d 233 (4th Cir. 1997).
198. *Id.* at 255.
199. *See supra* note 184 and accompanying text.
202. Universal City Studios, Inc. v. Corley, 273 F.3d 429, 453, 458 (2d Cir. 2001) (noting that the ability of decryption software "to accomplish unauthorized—indeed, unlawful—access to materials in which the Plaintiffs have intellectual property rights must inform and limit the scope of its First Amendment protection").
laws, but the concern the gun raises going forward is the potential manufacture by unlicensed or unapproved individuals. Second, it can facilitate crimes involving the use of a gun (gun usage crimes). These sorts of crimes and the national security issues they raise are of the kind likely contemplated by the State Department through ITAR. In this sense, the Liberator is not like the book in Paladin, which contemplated committing a readily apparent crime: murder. Instead, the crime-facilitation exception here is complicated in that it could apply to either or both gun control and gun usage crimes.

Regardless of what crime the Liberator facilitates, the intent consideration here is difficult to pinpoint, given the contradiction in the statements and actions of Cody Wilson and Defense Distributed. For example, it would be difficult to argue that the Liberator intentionally facilitated violations of gun control laws, as the Liberator as originally designed called for “overcompliance” in particular, securing an ATF license and providing for the insertion of a steel cube. Then again, these compliance attempts contrast sharply with the public sentiments of Wilson and Defense Distributed, advocates of the abrogation of government. Additionally, the compliance attempts—particularly the steel cube—are easily removed, and placing the plans online does little to suggest a desire for control over the design. In this sense, Wilson is similar to the defendant in United States v. Aguilar, with both men intentionally facilitating—or even encouraging—the later exploitation.

204. See Silverman, supra note 31.


207. See Rice v. Paladin Enters., Inc., 128 F.3d 233, 239 (4th Cir. 1997) (“In soliciting, preparing for, and committing these murders, Perry meticulously followed countless of Hit Man’s 130 pages of detailed factual instructions on how to murder and to become a professional killer.”).

208. Greenberg, supra note 22 (quoting Cody Wilson) (detailing the steps Wilson took to comply with gun control laws).

209. Choney, supra note 46.

210. Greenberg, supra note 22 (describing the six-ounce steel cube inserted into the Liberator).

211. It is worth noting that Defense Distributed has not asked sites like The Pirate Bay to remove the files.

by others of holes in the system. Collectively, these contradictions suggest that Wilson and Defense Distributed could, at the very least, knowingly facilitate the skirting of gun control laws. Yet without more evidence, pinning intentional or knowing facilitation of gun control crimes on Wilson and Defense Distributed is difficult.

The same issue arises if the crime being facilitated is of the gun usage variety. On the one hand, Wilson has stated his purpose in creating the Liberator was to start a “conversation,” not facilitate a violent uprising. Yet even this argument has flaws, as it would be naïve to ignore the realities of a self-proclaimed “crypto-anarchist” providing access to a gun and to suggest that Defense Distributed acted without direct understanding of exactly what they were doing; in short, providing access to weapons outside of the government regulatory scheme. Indeed, it is difficult to believe Wilson and Defense Distributed could not at least foresee the Liberator being used to harm someone. Again, however, without more evidence as to what was truly intended here, it is difficult to ascertain whether Wilson and Defense Distributed intentionally or knowingly facilitated gun usage crimes.

Turning to the nature of the speech at issue, from a value perspective, it is difficult to quantify. On the one hand, the files represent an invention that is pushing the limits of an already emerging technology, and regulating the Liberator could lead to negative perceptions of the 3D printing industry, which in turn could yield the type of self-censorship generally abhorred by the First Amendment after New York Times Co. v. Sullivan. Self-censorship in this industry could take the form of less collaboration, undermining one of the driving forces behind its rapid evolution. This is not to say that the Liberator is singularly vital to the success or advancement of the 3D printing industry—it is making waves without it—but the

213. Id. at 685. It is not difficult to see the Liberator’s plans being altered to not require a steel cube.
214. Greenberg, supra note 45.
216. 376 U.S. 254 (1964) (“Whether or not a newspaper can survive a succession of such judgments, the pall of fear and timidity imposed upon those who would give voice to public criticism is an atmosphere in which the First Amendment freedoms cannot survive.”). The concern in Sullivan was the use of libel cases as a means of preventing papers from criticizing public officials. See id. at 277–78. The fear these cases caused resulted in self-censorship, i.e. a decision to avoid criticizing officials in order to avoid libel suits. See id.
217. See About Thingiverse, supra note 17.
218. See, e.g., Dara, supra note 14 (discussing the use of 3D printers to make affordable umbilical cord clamps in Haiti).
potential chilling effect of regulation, however small, should not be ignored. Additionally, it seems the Liberator has established some political value, as several states are moving forward with discussions on banning 3D-printed weapons.\textsuperscript{219} That said, not regulating 3D-printed weapons could lead to negative perceptions of the industry anyway, and much of what the Liberator might be said to have in value—both scientific and political—can be gained from other 3D-printable items.\textsuperscript{220} Clearly, whether the Liberator has any value at all is debatable. Nevertheless, the speech value of the Liberator, while difficult to determine, remains an important consideration in determining whether the crime-facilitation exception applies.

Lastly, an analysis of the government interests here reveals them to be compelling, yet somewhat tempered by First Amendment history. To be sure, the Liberator has potential to harm citizens—a compelling and justifiable interest.\textsuperscript{221} And the concerns over preventing an altered Liberator—an undetectable gun—from entering the marketplace are similarly strong, arguably even more so than the concerns raised by drug manufacturing and illegal immigration.\textsuperscript{222} Countering these compelling interests is the Liberator’s potential to be expensive, time-consuming, limited, and unreliable—factors that cut against regulation at this particular time.\textsuperscript{223} Yet as has also been noted, many of these issues that would otherwise mitigate the reasons for concern are quickly changing—especially as it relates to price and performance\textsuperscript{224}—thus strengthening the argument for regulation.

Standing as a further counter to this argument are two chief examples from First Amendment history. The first case involved The Anarchist Cookbook, a “compendium of bomb and explosive

\textsuperscript{219} See California, New York and DC Look to Ban 3D-Printed Guns, supra note 44.

\textsuperscript{220} The medical clamps being used in Haiti again come to mind. See Dara, supra note 14.

\textsuperscript{221} See, e.g., United States v. Progressive, Inc., 467 F. Supp. 990, 997 (W.D. Wisc. 1979) (issuing a preliminary injunction preventing the publication of information that would aid in the construction of a hydrogen bomb).


\textsuperscript{223} See supra Part III.A.

\textsuperscript{224} See, e.g., Bilton, supra note 20 (“The price of 3-D printers has also dropped sharply over the last two years, with machines that once cost $20,000, now at $1,000 or less.”); Greenberg, supra note 23 (noting that a man in Wisconsin printed a version of the Liberator on a cheaper printer and that this version “survived all nine shots” it fired).
recipes.” The second case involved an injunction preventing the publication of plans to construct a hydrogen bomb—an issue mooted when another media outlet published the same information anyway. Making the comparison, the Liberator is less of a concern than a hydrogen bomb but also more likely to be used. Furthermore, the Liberator is similar to the *Cookbook* in that both require user action to achieve its ends, but the Liberator is more than just a how-to guide. Regardless, as Andy Sellars points out, despite minimal regulation of both the book and the hydrogen bomb plans, society has avoided a “pandemic of murder”—a fact that suggests taking a wait-and-see approach here.

Attempting to regulate the Liberator’s CAD files using a crime-facilitating speech theory hinges on what crime is being facilitated, what intent is behind the facilitation, the value of the speech at issue, and the government interests at stake. What emerges from the analysis is a test that is inexact in its application; indeed, one could easily make arguments justifying and opposing the theory’s application. Given this imperfect fit, regulation under this theory, while more likely to prevail than regulation under *Brandenburg*, remains difficult to forecast.

**CONCLUSION**

In December 2013, both the House and the Senate voted to extend a ban on undetectable firearms without adding an extension to include 3D-printed guns. If the *Brandenburg* and crime-facilitating speech analysis surrounding regulation of the Liberator made anything clear, it is that neither is precise enough to handle the issue without some further government action. The incredible speed with which the industry has evolved suggests something needs to be done, and the existing framework under ITAR and the First Amendment is not enough on its own.

If, as Defense Distributed would have you believe, the Liberator is merely the dawn of the “Age of Wiki Weapons,” May 8, 2013, will

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226. See Progressive, 467 F. Supp. at 996, 1000.

227. See Sellars, supra note 140 (“And we can take some comfort in knowing that the *Anarchist Cookbook’s* instructions for making a zip gun and the *Hit Man’s* instructions on how to use it have not combined to form a pandemic of murder.”).

not be the last time the State Department takes action to regulate a 3D-printed weapon. And when it does, the First Amendment and the Constitution will be only the tip of the legal iceberg. For example, at the rate this technology is advancing, a Second Amendment challenge is likely, and the focus will then turn to whether the right to bear arms includes the right to print arms. Also at issue will be copyright and patent law, for as the accessibility of 3D printers increases, issues involving access to what can be printed, who can print it, and how often it can be printed will inevitably arise. Clearly, as this industry continues to emerge and grow, so too will the contours of its legal issues. Consider this a call to Congress to have it govern—sooner rather than later—society’s foray into the “Dawn of the Wiki Weapons.”

BARTON LEE**

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