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Addiction and Expression

by LUKE MORGAN*

Introduction

On September 9, 2014, video game developer Bungie, Inc. released its much-anticipated game, *Destiny*.¹ Bungie was the creator of the massively popular and critically acclaimed *Halo* series, and *Destiny*'s release across four consoles was expected to be the studio's return to the pinnacle of the gaming world.² The game mixed Tolkeinesque high fantasy with futuristic science fiction, and combined elements of two of the most popular genres of video games—Massive Multiplayer Online Role Playing Games (“MMORPGs”) and First-Person Shooters (“FPS”).³ The studio even hired Peter Dinklage, a star of HBO's *Game of Thrones*, to voice a main character.⁴ The game's overall budget was more than \$500 million.⁵ Then, something strange happened.

It rapidly became apparent that, despite strong sales numbers,⁶ *Destiny* was not much fun to play. A representative review began: “It's impossible

* J.D., 2019, Duke University School of Law; B.A., 2014, Indiana University. I am grateful to Rachel Smith for her encouragement and subject-matter expertise, and to Professor Joseph Blocher for his invaluable feedback and guidance, which markedly improved this Article. I also thank the editors of the *Hastings Constitutional Law Quarterly* for their thoughtful feedback and editing.

1. Sean Hollister, *Bungie will release 'Destiny' on September 9th, 2014*, VERGE (Dec. 6, 2013), <https://www.theverge.com/2013/12/6/5183874/bungie-will-release-destiny-on-september-9th-2014>.

2. Seth G. Macy, *Activision: Destiny To Be 'Best-Selling New Video Game IP in History'*, IGN (Feb. 6, 2014), <https://www.ign.com/articles/2014/02/06/activision-blizzard-announces-better-than-expected-earnings>.

3. See Adi Robertson, *Bungie melds fantasy, Tarkovsky, and space wizards in 'Destiny' concept art*, VERGE (Mar. 28, 2013), <https://www.theverge.com/2013/3/28/4158802/bungie-shows-off-destiny-concept-art-at-gdc> (noting the combination of MMO and RPG elements and quoting Bungie as describing the game's thematic genre as “mythic science fiction”).

4. Cameron Kunzelman, *Actually, Peter Dinklage Was Good in 'Destiny'*, VICE (Sept. 5, 2017), https://www.vice.com/en_us/article/qvvqkb/actually-peter-dinklage-was-good-in-destiny.

5. Eddie Makuch, *Activision Investing \$500 Million for Bungie's Destiny*, GAME SPOT (May 6, 2014), <https://www.gamespot.com/articles/activision-investing-500-million-for-bungie-s-destiny/1100-6419444/>.

6. See Jenna Pitcher, *Destiny Sales Hit 6.3 Million Units within a Month of Release*, IGN (Sept. 8, 2015), <https://www.ign.com/articles/2015/09/08/destiny-sales-hit-63-million-units-wit>

to pinpoint an exact moment where *Destiny* broke my heart. The 30-plus hours I've spent in the game so far have been a slow rollout of small disappointments, each adding up to a growing sense of the emptiness at *Destiny's* core."⁷ An early post-mortem by the popular gaming site *Kotaku* notes: "[T]here was much to criticize . . . [P]laying *Destiny* felt like battling against the developers themselves."⁸ Bungie had internally predicted an average Metacritic score of 90; once the chips fell, *Destiny* garnered a score of 76 from the review aggregation site.⁹

Of course, reviewers are not necessarily players. But gamers were unhappy, too. The "DestinyTheGame" subreddit quickly became a major social hub for the game's players. There, posts castigating *Destiny's* fundamentals were mainstays on the front page. One popular post addressed to Bungie notes: "*Destiny* is not difficult. Its tedious."¹⁰ The poster notes trudging through the main storyline in hopes of "hit[ting] the content we both know [Bungie] can do," but, upon completing the main story, finding the "real game": an "[e]ndless fucking grind for gear that never drops."¹¹

Destiny's underperformance, and the discontent of its players, is not, by itself strange. Anyone, even an industry darling like Bungie, can flop. What was strange about *Destiny* is that, despite the shared sense that the game was fundamentally not fun, people kept playing: "I'm a bit over 600 hours in, and still can't figure out what I see in the game (at this point)," reported one player.¹² Another: "Destiny has totally consumed my life."¹³ A third: "My [girlfriend] hates this game, hates watching me play it, and I feel like its [sic] starting to affect our [r]elationship. Now the easy answer would be: 'Bro, just quit the game.' but that's NOT GUNNA HAPPEN!!"¹⁴ One popular

hin-a-month-of-release/ ("[P]re-release and first-day orders reached USD \$500 million.").

7. Philip Kollar & Arthur Gies, *Destiny Review: No Fate*, POLYGON (Sept. 12, 2014), <https://www.polygon.com/2014/9/12/6138497/destiny-review-no-fate>.

8. Jason Schreier, *The Messy, True Story Behind The Making of Destiny*, KOTAKU (Oct. 20, 2015), <https://kotaku.com/the-messy-true-story-behind-the-making-of-destiny-1737556731>.

9. *Id.*

10. /u/Tutsks, *Bungie? Destiny is not difficult. Its [sic] tedious.*, REDDIT (Oct. 29, 2014), https://www.reddit.com/r/DestinyTheGame/comments/2knqsv/bungie_destiny_is_not_difficult_its_tedious/.

11. *Id.*

12. /u/wax66, Comment to *Confessions of a Destiny Addict*, REDDIT (Jan. 16, 2015), https://www.reddit.com/r/DestinyTheGame/comments/2smo4d/confessions_of_a_destiny_addict/cnqwt70/.

13. /u/SoulRebel726, Comment to *Confessions of a Destiny Addict*, REDDIT (Jan. 16, 2015), https://www.reddit.com/r/DestinyTheGame/comments/2smo4d/confessions_of_a_destiny_addict/cnqvy16/.

14. /u/LiquidRazor, *Is This Game Ruining Your Relationships With Friends, Family, or Significant Others*, REDDIT (Dec. 30, 2014), https://www.reddit.com/r/DestinyTheGame/comments/2quhkn/is_this_game_ruining_your_relationships_with/.

discussion post, since deleted, asks: “Are we actually having fun or are we just addicted?”¹⁵ A user responded:

Honestly, im [sic] just addicted. I dont [sic] even know what im [sic] chasing any more, and I just get upset at the game, the rewards I get that are worthless . . . im [sic] never happy with my time on it but im [sic] still playing. And reading through this thread was so depressing, half of us sound like battered wives married to Bungie swearing they’ll change.¹⁶

Less anecdotal data is available thanks to “WastedOnDestiny.com,” which mines the game’s publicly available data to allow players to discover exactly how much time they have “wasted” on *Destiny*.¹⁷ As of May 26, 2019, the top *Destiny* player in terms of hours played had spent 13,423 hours on *Destiny*, and 9,033 hours on *Destiny 2*.¹⁸ The *Destiny* total alone is 559 days’ worth of playing time. There is some speculation that this player uses a bot to run the game without actually playing;¹⁹ but even the third-highest through tenth-highest players²⁰ averaged 312 days’ worth of playing time in less than five years since *Destiny*’s release.²¹ Bungie itself reported an average daily playtime of three hours.²²

15. /u/Uknowlikewhatever, *Are we actually having fun or are we just addicted?*, REDDIT (via Archive.org) (Mar. 15, 2015), https://web.archive.org/web/20150321000051/https://www.reddit.com/r/DestinyTheGame/comments/2z3w3j/discussion_are_we_actually_having_fun_or_are_we/.

16. /u/tibbers_and_annie, Comment to *Are we actually having fun or are we just addicted?*, REDDIT (via Archive.org) (Mar. 15, 2015), https://web.archive.org/web/20150321000051/https://www.reddit.com/r/DestinyTheGame/comments/2z3w3j/discussion_are_we_actually_having_fun_or_are_we/.

17. *About*, TIME WASTED ON *DESTINY*, <https://www.wastedondestiny.com/about> (last visited May 26, 2019).

18. *Leaderboard*, TIME WASTED ON *DESTINY* (last visited May 26, 2019), <https://www.wastedondestiny.com/leaderboard>.

19. /u/KissellJ, /u/Radiatin, /u/Javamellow, Comments to *Stat of the Day: G-Money876 has played 1 yr, 32 weeks, 3 days, and 6 hours worth of Destiny!*, REDDIT (Feb. 23, 2017), https://www.reddit.com/r/DestinyTheGame/comments/5vswrj/stat_of_the_day_gmoney876_has_played_1_yr_32/.

20. I have excluded the second-highest player from this calculation because, with 12,924 hours played, that user’s playing time is closer to the suspected bot-user than to the third-highest player, who has 10,418 hours played. By contrast, player number thirty, at 7,081 hours, is relatively close to player number ten, who has 8,065 hours played. *Leaderboard*, TIME WASTED ON *DESTINY*, <https://www.wastedondestiny.com/leaderboard> (last visited May 26, 2019).

21. Though, because most *Destiny* players left for *Destiny 2* in September 2017, much of those 312 days likely came in the first three years of *Destiny*’s existence.

22. Casidee Moser, *Bungie Used Behavioral Psychology to Make Destiny Appealing*, IGN (Apr. 2, 2015), <https://www.ign.com/articles/2015/04/02/bungie-used-behavioral-psychology-to-make-destiny-appealing>.

What few players realized was that—although Bungie would have of course preferred that players enjoyed the game—the compulsion they felt to play despite the frustration was an intended function.

In April 2015, John Hopson, then the “head of user research” for Bungie, and the holder of a doctorate in behavioral and brain sciences,²³ spoke to the 2015 Game Developer Conference (“GDC”).²⁴ There, he revealed how Bungie “so carefully created a game meant to hook players and keep them coming back time after time.”²⁵ He proceeded to lay out the “behavioral game design”²⁶ that guided *Destiny*’s development from the beginning.²⁷

Hopson’s work with Bungie was informed by his “highly influential article,” *Behavioral Game Design*,²⁸ and a lecture he gave on the topic at the 2012 GDC.²⁹ *Behavioral Game Design* offered its readers “recipes” for “[h]ow to make players play hard,” and “[h]ow to make players play forever.”³⁰

In his 2012 lecture, Hopson says the quiet part loud. Referencing “variable ratio contingencies”—essentially, random chances at receiving a reward upon the completion of an activity—Hopson notes that this design choice produces “a high, consistent rate of activity.”³¹ He goes on:

The classic example of this that *hopefully none of you know too well is the slot machine*. So every time you pull the handle of the slot machine, there is a chance of winning, there is a chance of getting a reward on that pull. You don’t have to pull ten times before you get something. That first pull could win you the jackpot. And that’s what produces this incredibly high, powerful rate of activity. . . . So, *this is a good thing* in that there’s a high level of activity, there’s a high level of interest, it’s very motivating, *it’s very addictive, as anyone who has played slots or gambled in any other way can tell you*.³²

23. John Hopson, ASS’N FOR BEHAVIORAL ANALYSIS INT’L., <https://www.abainternational.org/constituents/bios/johnhopson.aspx> (last visited May 26, 2019).

24. Moser, *supra* note 22.

25. *Id.*

26. *Id.*

27. Game Developers Conference, *User Research on Destiny*, YOUTUBE (Apr. 8, 2017), <https://www.youtube.com/watch?v=izZcrG4WqGI>.

28. JOEL BAKAN, CHILDHOOD UNDER SIEGE: HOW BIG BUSINESS TARGETS YOUR CHILDREN 23 (2011); John Hopson, *Behavioral Game Design*, GAMASUTRA (Apr. 27, 2001), https://www.gamasutra.com/view/feature/131494/behavioral_game_design.php.

29. John Hopson, *Behavioral Game Design*, GDCVAULT (2004), <https://www.gdcvault.com/play/1016539/Behavioral-Game>.

30. Hopson, *supra* note 28.

31. Hopson, *supra* note 29, at 10:50.

32. *Id.* at 11:00 (emphasis added).

Hopson's remarks reflect the new reality in an industry that has displayed an "increasing interest in applying insights from psychology and behavioral economics to games."³³ By highlighting the parallels to gambling, though, they also reflect the danger that developers face. Unlike video games, gambling has historically been heavily regulated.³⁴ To the extent that developers seek to use neuroscientific insights to "exploit[] players' cognitive biases and predictably irrational behavior to make more money,"³⁵ they run the risk of drawing the attention of regulators.

But, in one crucial way, video games stand apart from gambling and other well-known and heavily regulated addictive products like alcohol or tobacco.³⁶ Video games are speech protected by the First Amendment.³⁷ And the looming presence of the Free Speech Clause of the First Amendment tends to smother prospective regulation.³⁸ Unsurprisingly, video games remain largely unregulated.³⁹

But video games like *Destiny* are merely an easy entrance into the much larger phenomenon of addictive expression. From ear-wormy pop music⁴⁰ to made-for-Netflix digital television shows designed to be consumed in ten-hour-increments,⁴¹ to the growing problem of pornography addiction,⁴²

33. José P. Zagal, Staffan Björk & Chris Lewis, Conference Paper, *Dark Patterns in the Design of Games*, FOUNDS. OF DIGITAL GAMES 1, 6 (2013), <https://gup.ub.gu.se/file/101018>.

34. Pete Williams, *Supreme Court Allows Sports Betting Across the Country*, NBC NEWS (May 14, 2018), <https://www.nbcnews.com/politics/supreme-court/supreme-court-allows-sports-betting-across-country-n868956>.

35. Zagal, Björk & Lewis, *supra* note 33.

36. See *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159-60 (describing tobacco's "unique political history"); *id.* at 181-83 (Breyer, J., dissenting) (describing history of tobacco legislation); e.g., Lauren H. Greenberg, Note, *The "Deeming Rule": The FDA's Destruction of the Vaping Industry*, 83 BROOK. L. REV. 777 (2018).

37. *Brown v. Ent. Merchants Ass'n*, 564 U.S. 786, 790 (2011) ("California correctly acknowledges that video games qualify for First Amendment protection.").

38. See Leslie Kendrick, *First Amendment Expansionism*, 56 WM. & MARY L. REV. 1199, 1209 (2015) (describing the First Amendment as the frequent "designated vehicle" for "antiregulatory impulses"). This is particularly true when it comes to video game regulations. See Neils Clark, *Video Game Regulation: Where We Are Now*, GAMASUTRA (Jan. 20, 2009), https://www.gamasutra.com/view/feature/132300/video_game_regulation_where_we_php?page=2 ("The ESA has been knocking down state laws, specifically in Illinois, Michigan, and Louisiana, put in place for regulating the sale of video games to minors. The ESA has yet to lose a case . . .").

39. See generally Jeffrey O'Holleran, Note, *Blood Code: The History and Future of Video Game Censorship*, 8 J. TELECOMM. & HIGH TECH. L. 571 (2010).

40. See TEDx Talks, *Pop Music is Stuck on Repeat | Colin Morris | TEDxPenn*, YOUTUBE (June 14, 2018), https://www.youtube.com/watch?v=_tjFwcmHy5M ("Borrowing from the areas of bioinformatics and compression algorithms, he shows that the lyrics of pop songs have become substantially more repetitive over the decades.").

41. See *infra* note 267.

42. See *infra* Part I.C.2.

expressive products increasingly rely on neuroscientific insights and behavioral psychology to “hook” their users.⁴³

There is no good reason to protect addictive “speech.” It actively undermines the values that the First Amendment exists to promote and plays no essential part in the exposition of ideas. The First Amendment “was meant for better things.”⁴⁴

Part I explores the science of addiction, and the growing practice of the intentional design of expressive products to produce addiction, with a particular focus on video games and pornography. Part II argues that the First Amendment should not be interpreted to prohibit regulations narrowly aimed at the addictive properties of expressive products.⁴⁵

I. Addiction

This Part sets forth a primer on the history and science of addiction, especially behavioral addictions. It then discusses the history of the regulation of addictive products. Finally, it analyzes the early research on behavioral addictions linked to video games and pornography.

A. The Evolving Understanding of Addiction

1. A Brief History of Addiction

Addiction can be a surprisingly tricky concept to pin down. As used in antiquity, *addictus* (or *addicio*) represented a “giving over” of oneself.⁴⁶ It had both positive and negative usages. Negatively, it was the name given to the sentence levied against a debtor who was “given over to a master to repay his debts with his work,”⁴⁷ i.e., a debt slave.⁴⁸ But in the more common, positive sense, *addicio* meant something akin to devotion.⁴⁹ This definition

43. See *infra* note 233 and accompanying text.

44. See *Janus v. Am. Fed’n of State, Cty., & Mun. Emps.*, 138 S. Ct. 2448, 2502 (2018) (Kagan, J., dissenting).

45. The scope of the inquiry here is relatively narrow. I do not argue that video games and pornography should be removed from the ambit of First Amendment coverage. Rather, the narrow bits of speech that are intended to produce addiction rather than to advance ideas should not be protected speech.

46. Bruce Alexander & Anton Schweighofer, *Defining “Addiction”*, 29 CANADIAN PSYCH. 151, 151 (1988).

47. Marc-Antoine Crocq, *Historical and Cultural Aspects of Man’s Relationship with Addictive Drugs*, 9 DIALOGUES IN CLINICAL NEUROSCIENCE 355, 359 (2007).

48. Alexander & Schweighofer, *supra* note 46, at 151. The notion of addiction as slavery has carried into modern usage. See, e.g., ROBERT L. DUPONT, CHEMICAL SLAVERY: UNDERSTANDING ADDICTION AND STOPPING THE DRUG EPIDEMIC (2018).

49. Alexander & Schweighofer, *supra* note 46, at 152. The first definition for “addiction” in Noah Webster’s 1828 Dictionary reflected this usage: “The act of devoting or giving up in practice; the state of being devoted.” *Addiction*, NOAH WEBSTER, A DICTIONARY OF THE ENGLISH LANGUAGE (1828).

did not die with Rome. Indeed, “the uses of ‘addiction’ in Shakespeare, Hobbes, and Gibbon suggests that the unfavourable sense was less common than the favourable or neutral usage.”⁵⁰

This idiosyncratic historical usage reflects the fact that, while the “[u]se of alcohol and psychoactive drugs was well known throughout Western history . . . drug addiction was not a matter of sustained concern to either physicians or moralists before the 19th century.”⁵¹

That was to change. The 19th and 20th centuries “witnessed an extended moral panic” about the excessive use of alcohol and other drugs.⁵² The neutral or positive sense of “addiction” was a casualty of that panic, as the term was “gradually medicalized, moralized, and restricted to alcohol and drugs.”⁵³

Until very recently, that hegemony held: *addiction* was about substance abuse. For instance, *Merriam-Webster* defined “addiction” as a “compulsive need for and use of a habit-forming substance (such as heroin, nicotine, or alcohol) characterized by tolerance and by well-defined physiological symptoms upon withdrawal.”⁵⁴ This hegemonic definition has coalesced into “The Official View of Addiction,” which has as its foundational premise that “addiction is fundamentally a problem of drug or alcohol consumption.”⁵⁵

2. Behavioral Addictions

That definition has proven untenably narrow, thanks to growing recognition that “[s]everal behaviors, besides psychoactive substance ingestion, produce short-term reward that may engender persistent behavior despite knowledge of adverse consequences.”⁵⁶ The American Society of Addiction Medicine’s formal definition of “addiction,” as revised in 2011, reads: “Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to

50. Alexander & Schweighofer, *supra* note 46, at 152. Compare William Shakespeare, *Othello*, act 2, sc. 2 (“It is Othello’s pleasure, our noble and valiant general, that . . . every man put himself into triumph, some to dance, some to make bonfires, each man to what sport and revels his addiction leads him.”), with William Shakespeare, *Twelfth Night*, act 2, sc. 5 (“[H]e will smile upon her, which will now be so unsuitable to her disposition, being addicted to a melancholy as she is, that it cannot but turn him into a notable contempt.”).

51. Bruce K. Alexander, *The Rise and Fall of the Official View of Addiction*, BRUCE K. ALEXANDER (July 3, 2014), <http://www.brucekalexander.com/articles-speeches/277-rise-and-fall-of-the-official-view-of-addiction-6>.

52. *Id.*

53. *Id.*

54. MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 13 (10th ed. 1999).

55. Alexander, *supra* note 51.

56. Jon E. Grant et al., *Introduction to Behavioral Addictions*, 36 AM. J. DRUG & ALCOHOL ABUSE 233, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3164585/>.

characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use *and other behaviors*.”⁵⁷

Currently, most behavioral addictions are not yet classified as full-fledged addictions in the Diagnostic and Statistical Manual (“DSM”), but are instead termed “impulse control disorders.”⁵⁸ But the most recent DSM (“DSM-V”) lists one entry in a new category on behavioral addictions: gambling disorder.⁵⁹ This inclusion “reflect[s] research findings that gambling disorder is similar to substance-related disorders in clinical expression, brain origin, comorbidity, physiology, and treatment.”⁶⁰ Elsewhere, in a section designated for disorders that “require further research before their consideration as formal disorders,” DSM-V lists “Internet gaming disorder.”⁶¹

Although, as the DSM-V suggests, further research is necessary, early research reliably demonstrates that behavioral addictions substantially mirror substance-based addictions. Indeed, they share an “essential feature”: “the failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others.”⁶² Additionally, both behavioral and substance-based addictions “have onset in adolescence and young adulthood,” and “may exhibit chronic, relapsing patterns, but with many people recovering on their own without formal treatment.”⁶³

Behavioral addictions also track the lifecycle of substance-based addictions. At the onset, the addiction is “preceded by feelings of ‘tension or arousal before committing the act’ and ‘pleasure, gratification or relief at the time of committing the act.’”⁶⁴ Later, “the behavior . . . itself becomes less pleasurable and more of a habit or compulsion, or becomes motivated less by positive reinforcement and more by negative reinforcement.”⁶⁵

Like substance-based addictions, behavioral addictions inflict serious harms on their victims and on others, including financial or relationship problems and “frequent[] commi[ssion of] illegal acts, such as theft,

57. *Public Policy Statement: Definition of Addiction*, AM. SOC. OF ADDICTION MED., <http://www.asam.org/for-the-public/definition-of-addiction> (last visited May 26, 2019) (emphasis added).

58. Grant et al., *supra* note 56, at 2.

59. *Substance-Related and Addictive Disorders*, AM. PSYCH. ASS’N, https://www.psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA_DSM-5-Substance-Use-Disorder.pdf (last visited May 26, 2019).

60. *Id.*

61. *Id.*

62. Grant et al., *supra* note 56, at 2.

63. *Id.*

64. *Id.* at 3.

65. *Id.*

embezzlement, and writing bad checks, to either fund their addictive behavior or cope with the consequences of the behavior.”⁶⁶

Perhaps most importantly for present purposes, behavioral addictions and substance addictions share “[c]ommon [n]eurobiological [p]rocesses,” or “shared neurocircuitry.”⁶⁷ Particularly, in both behavior and substance addicts, “serotonin, which is involved with inhibition of behavior,” and “dopamine, involved with . . . motivation[] and the salience of stimuli, including rewards,” work in cohesion to alter addicts’ brain chemistry.⁶⁸ “Alterations in dopaminergic pathways have been proposed as underlying the seeking of rewards (e.g., gambling, drugs) that trigger the release of dopamine and produce feelings of pleasure.”⁶⁹

B. The Regulation of Addiction

1. Ancient Addiction

Humans have an extensive history with addictive substances. The earliest confirmed alcoholic drink, for instance, was consumed in the Yellow River Valley of China around 7000-6600 BCE, and alcohol consumption appears to have been widespread by the third or fourth millennium BCE.⁷⁰ As for other drugs, it is “likely that the use of psychoactive plants pre-dates the use of fermented beverages” because the production of alcohol required certain technological advances, while psychoactive plants are traditionally consumed raw.⁷¹ While it is extraordinarily difficult to determine exactly how ancient the relationship between humans and psychoactive plants is, the discovery of such substances in a burial cave in Northern Iraq dating to around 60,000 BCE provides an example of the timelines being discussed.⁷²

These were not isolated experiments by prehistoric hippies. “[A]s soon as . . . drug plants were first consumed, there is uninterrupted evidence for such use over centuries,” and, in some cases, millennia.⁷³ As humans gradually transitioned from nomadic hunter-gatherer tribes to stationary agricultural societies, and more complex social structures and governments developed, the relationship between individuals and addictive substances would become a matter of social concern.⁷⁴ In particular, “alcohol abuse was

66. Grant et al., *supra* note 56, at 2.

67. *Id.* at 5.

68. *Id.*

69. *Id.*

70. Elisa Guerra-Doce, *Psychoactive Substances in Prehistoric Times: Examining the Archaeological Evidence*, 8 *TIME & MIND* 91, 95 (2015).

71. *Id.* at 94-95.

72. *Id.* at 97.

73. *Id.* at 102.

74. Indeed, addiction could be a matter of world-historical concern. For example, some historians claim that Alexander the Great’s early death was related to his heavy alcohol

a social problem in the ancient world.”⁷⁵ The Roman physician Aulus Cornelius Celsus officially categorized alcohol addiction as a disease.⁷⁶

Going hand-in-hand with the problem of addiction were attempts to address the social ills that it engendered. For instance, since antiquity, those guilty of “antisocial or criminal acts while drunk were punished more strictly than others”—in some cases, drunkenness could double the penalty for a crime, or raise it from a misdemeanor to a felony.⁷⁷ Hashish users in 14th-century Ottoman-ruled Egypt had their teeth pulled.⁷⁸ In the 17th century, under Mikhail Fyodorovich Romanov, the first Russian Tsar, tobacco smokers risked “having their lips cut,” and the Sultan of the Ottoman Empire, Murad IV, beheaded smokers.⁷⁹

Criminal punishments also frequently targeted the producers of addictive products. The same Ottoman Emir that pulled the teeth of hashish users in 14th-century Egypt imprisoned or executed hashish farmers.⁸⁰ Another common subset of regulations restricted the classes of persons able to consume addictive substances. For instance, in many ancient Greek cities, minors were “strictly prohibited” from consuming wine.⁸¹

Humans have also encountered and dealt with *behavioral* addictions for millennia. In the ancient Hindu epic *The Mahabharata*, authored around 400 BCE, a central character gambles away his wealth and kingdom before gambling his brothers, his wife, and himself into servitude.⁸² And an archaeologist of ancient Rome, writing in 1892, notes:

So intense was the love of the Roman for games of hazard, that wherever I have excavated the pavement of a portico, of a basilica, of a bath or any flat surface accessible to the public, I have always found gaming tables engraved or scratched on the marble or stone

consumption. See, e.g., Simon Denison, *Was Alexander a Great Alcoholic?*, INDEPENDENT (Aug. 2, 1992), <https://www.independent.co.uk/news/uk/was-alexander-a-great-alcoholic-1537664.html> (describing the work of a historian showing that Alexander displayed “all the classic symptoms of alcoholism,” and noting that even critics of the theory acknowledged that “many of Alexander’s contemporaries thought he drank too much”); but see, e.g., J. A. Liappas et al., *Alexander the Great’s Relationship With Alcohol*, 98 ADDICTION 561, 567 (2003) (“[T]he existing evidence does not support convincingly the idea that Alexander would be ‘diagnosed’ *a posteriori* as suffering from either dependence on or abuse of alcohol.”).

75. Liappas et al., *supra* note 74, at 563.

76. Crocq, *supra* note 47, at 358.

77. Liappas et al., *supra* note 74, at 563.

78. Crocq, *supra* note 47, at 357.

79. *Id.*

80. *Id.*

81. Liappas et al., *supra* note 74, at 563.

82. MAHABHARATA 96-101 (William Buck trans., U.C. Press 1973).

slabs, for the amusement of idle men, always ready to cheat each other out of their money.⁸³

The historian concludes that Mercury—the god of chance—“was worshipped in [Roman taverns] more than Bacchus”—the god of wine.⁸⁴

In confronting the harms posed by behavioral addictions—gambling in particular—ancient regulators were not unaware of the common relationship to substance-based addictions. The Qur’an, for instance, “warns against both wine (*khamr*) and gambling (*maisir*) in the same” chapter.⁸⁵ Accordingly, premodern societies confronted behavioral addictions in similar ways as they did substance-based addictions.

In Rome, for instance, the “passion” for gambling was “so strong . . . and so heavy were the losses of many gamblers, that special laws were passed from time to time, by which the popular sport was declared a punishable offence” except during certain festivals, especially the Saturnalia.⁸⁶ The games “became in the progress of time a most pernicious mania. Magistrates tried to interfere, with little or no success.”⁸⁷ Gradually, games of skill were almost entirely replaced with games of chance.⁸⁸ The poet Horace lamented that “[t]he young Roman is no longer devoted to the manly habits of riding and hunting; his skill seems to develop more in the games of chance forbidden by law.”⁸⁹

Those convicted of gaming were required to pay four times the sum they had staked,⁹⁰ although the laws were loosely enforced, especially as applied to old men. After the republic had transitioned to empire, Claudius even wrote a treatise on the art of gambling and had a custom-built carriage that enabled him to gamble in transit.⁹¹ But as the empire waned, Justinian enacted a law absolutely prohibiting games of chance.⁹² Under this law, a

83. Rodolfo Lanciani, *Gambling and Cheating in Ancient Rome*, 155 N. AM. REV. 97, 97 (1892).

84. *Id.* at 98-99.

85. Crocq, *supra* note 47, at 358. Sigmund Freud similarly argued in a letter to a contemporary that “masturbation is the one major habit, the ‘primal’ addiction,” and that substance-based addictions emerge only as “a substitute and replacement” for that particular behavioral addiction. *Id.*

86. Lanciani, *supra* note 83, at 100.

87. *Id.* at 102.

88. *Id.*

89. *Id.* at 103.

90. WILLIAM SMITH, *Alea*, A DICTIONARY OF GREEK AND ROMAN ANTIQUITIES 74-75 (John Murray, London, 1875), http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/SMIGRA*/Alea.html (last visited Oct. 2, 2019).

91. *Id.*; *see also* Lanciani, *supra* note 83, at 105.

92. Lanciani, *supra* note 83, at 105.

master or father had a remedy against any person who induced his servant or son to gamble.⁹³

Elsewhere, gambling regulations flourished as well. One early American critic of gambling noted that, in early Jewish societies, “a gambler could not act as a magistrate, or occupy any high or honorable office, nor could he be a witness in any court of justice.”⁹⁴ This may even understate the severity of the Jewish gambling prohibitions. Some early Jewish scholars believed that gambling “was the main source of all calamities” befalling their communities, and thus proposed absolute bans.⁹⁵ Gambling debts could not be collected in Jewish courts.⁹⁶ Gamblers were, at times, prohibited from holding their weddings in synagogues.⁹⁷ “[E]xcommunication and flagellation were commonly meted out to” those who violated the laws against gambling.⁹⁸ All of these laws were enacted despite recognition of “the inability of the compulsive gambler to control his passion for the game.”⁹⁹

Similar stories can be drawn from independent societies across the globe. Ancient Hindu society considered gambling to essentially be theft, and property won at gambling was conferred devoid of right to ownership; it was, therefore, subject to confiscation by the state.¹⁰⁰ And “[g]ambling had been strictly prohibited throughout Chinese history,” with “severe punishments such as deportation and mutilation” imposed even into the 20th century.¹⁰¹ But, as with Rome, enforcement was weak, and “[g]ames such as dice and dominoes were popular among elites.”¹⁰² Addictive behavior, it turns out, is hard to stamp out.

2. *The American Experience*

Unsurprisingly, the American experience followed these familiar patterns. Addictive substances—particularly alcohol and other drugs—and activities—particularly gambling—have been targeted for regulation since

93. THE CIVIL LAW 83 (Samuel Parsons Scott trans., The Central Trust Company vol. 4, 2001).

94. JOHN PHILIP QUINN, FOOLS OF FORTUNE 71 (1892). Quinn colorfully added that “[s]uch disqualifications, at the present day, would largely decimate the judicial ranks and deplete the government roll.” *Id.*

95. JEWISH VIRTUAL LIBRARY, *Gambling*, <https://www.jewishvirtuallibrary.org/gambling> (last visited June 18, 2019).

96. *Id.*

97. *Id.*

98. *Id.*

99. *Id.*

100. MATTHEW STEWART, REMARKS ON THE SUBJECT OF LANGUAGE 134-35 (London, Richard and John Edward Taylor 1850).

101. Anise M. S. Wu & Joseph T. F. Lau, *Gambling in China: Socio-Historical Evolution and Current Challenges*, 110 ADDICTION 210, 211 (2014).

102. *Id.*

European countries first established colonies in North America. The descendants of those regulations remain in place today.

a. Alcohol, Tobacco, and the Game-Changing Understanding of Addiction

Two addictive substances, alcohol and tobacco, have played defining roles in American history. The different ways that regulators confronted these products' addictive qualities clarifies the role that addiction plays in public policy.

Much has been written about the central role of alcohol in early American life.¹⁰³ America was “awash in drink almost from the start.”¹⁰⁴ By 1830, the average American consumed seven gallons of pure alcohol a year—essentially three times the modern rate.¹⁰⁵ At the same time, it is a subject of open debate whether early Americans conceptualized overdrinking as related to compulsion, or even as a matter of concern.¹⁰⁶

Yet, even without the paradigm and vocabulary of compulsion and addiction, colonial and post-Revolutionary American political and religious leaders recognized the effects of alcohol abuse and sought to counteract it. Dr. Benjamin Rush, a signer of the Declaration of Independence, was obsessed with the subject, and was the first prominent American to propose that habitual drunkenness was a disease called “addiction.”¹⁰⁷ John Adams proposed limiting the number of taverns, and Benjamin Franklin—no teetotaler himself—labelled taverns “a Pest to Society.”¹⁰⁸ Puritans warned of the dangers of habitual drunkenness, including neglect of responsibilities and inclination to crime.¹⁰⁹ Governments enforced regulations “on the amount of time one could spend in a tavern,” and “how much one could drink there” with harsh penalties, “including public whippings and the stocks.”¹¹⁰ And, as in antiquity, regulations targeted supply, not just demand; those who sold liquor to known drunkards were subject to license revocation.¹¹¹

103. See, e.g., SUSAN CHEEVER, *DRINKING IN AMERICA: OUR SECRET HISTORY* (2015).

104. DANIEL OKRENT, *LAST CALL: THE RISE AND FALL OF PROHIBITION* 7 (2010).

105. *Id.* at 8.

106. See Harry G. Levine, *The Discovery of Addiction: Changing Conceptions of Habitual Drunkenness in America: Part I*, 15 *J. STUDIES ON ALCOHOL* 493 (1979) (“In colonial thought, alcohol did not permanently disable the will; it was not addicting, and habitual drunkenness was not regarded as a disease. With very few exceptions, colonial Americans did not use a vocabulary of compulsion with regard to alcoholic beverages.”).

107. See *id.* (noting that Dr. Benjamin Rush used the term “addicted” to describe the relationship between alcohol and “drunkards”); see also CHEEVER, *supra* note 103, Ch. 1 (noting that Dr. Rush classified alcoholism as a disease in 1805).

108. Levine, *supra* note 106.

109. *Id.*

110. *Id.*

111. *Id.*

While Americans' liquor consumption was astronomical in 1830, less than a century later, the country would completely ban the "manufacture, sale, or transportation of intoxicating liquors" under Prohibition.¹¹² The country's relatively rapid transition into enforced sobriety was motivated by concerns explicitly centered around a growing understanding of alcohol addiction, inspired by Dr. Rush.

Rush's theories about alcohol addiction were central to the founding of the temperance movement.¹¹³ Central to those theories were concerns about addiction's secondary effects, "particularly disease, poverty, crime, insanity, and broken homes."¹¹⁴ As Lewis Cass, Secretary of War to President Andrew Jackson, told a temperance meeting, "The pathology of the disease is sufficiently obvious. The difficulty consists in the entire mastery it attains, and in that morbid craving for the habitual excitement, which is said to be one of the most overpowering feelings that human nature is destined to encounter."¹¹⁵ In all, "the idea that habitual drunkards are alcohol addicts . . . was . . . at the heart of the temperance ideology."¹¹⁶

The regulatory battles over tobacco would be fought much later. This, in part, reflected uncertainty about tobacco's addictiveness. Indeed, in his treatise on the "Habitual use of Tobacco," Dr. Rush evinced a primary concern that tobacco use tended to promote drunkenness, rather than that it was self-evidently injurious.¹¹⁷ And early American regulations were aimed primarily at protecting others from second-hand smoke, as well as at avoiding the risk of fire.¹¹⁸

The science of nicotine addiction remained in dispute until at least the 1990s. In 1994, a panel of tobacco CEOs swore to Congress that they did not believe nicotine was addictive.¹¹⁹ They were, of course, lying; tobacco companies have known that nicotine is addictive since at least the 1960s.¹²⁰ As a senior legal executive with Brown & Williamson concluded in 1963,

112. U.S. CONST. amend. XVIII.

113. See Levine, *supra* note 106.

114. *Id.*

115. *Id.*

116. *Id.*

117. BENJAMIN RUSH, *Observations Upon the Influence of the Habitual Use of Tobacco Upon Health, Morals, and Property*, in *ESSAYS, LITERARY, MORAL AND PHILOSOPHICAL* (1806). Of course, Rush—again ahead of his time—thought that "the progress of habit in the use of Tobacco is exactly the same as in the use of spiritous liquors." *Id.* But most who read Rush identify his foremost concern as the alleged link to drunkenness. See, e.g., JAMES C. COLEMAN, *ABNORMAL PSYCHOLOGY & MODERN LIFE* (5th ed. 1976) (listing "it led to a desire for strong drink" as first among Rush's arguments against tobacco).

118. JEROME E. BROOKS, *THE MIGHTY LEAF: TOBACCO THROUGH THE CENTURIES* (1952).

119. Jack E. Henningfield, Christine A. Rose & Mitch Zeller, *Tobacco Industry Litigation Position on Addiction: Continued Dependence on Past views*, 15 *TOBACCO CONTROL* at *iv27 (2006).

120. *Id.* at *iv27.

cigarette companies do not sell tobacco, but instead are “in the business of selling nicotine, an addictive drug.”¹²¹

The obfuscation mattered, because the addition of addiction to the list of consequences of tobacco use was a game-changer. As a tobacco industry document noted, “the entire matter of addiction is *the most potent weapon* a prosecuting attorney can have in a lung cancer/cigarette case.”¹²² And the implications also mattered from a regulatory perspective. Hiding the reality of nicotine addiction was important for tobacco executives so as to avoid scrutiny from the United States Food and Drug Administration (“FDA”).¹²³ Through at least 2005, tobacco industry attorneys continued to challenge the United States Surgeon General’s conclusion that nicotine is addictive.¹²⁴

Following the full public understanding of the reality of nicotine addiction, anti-smoking regulations drastically changed. In 2009, Congress gave the FDA authority to regulate the manufacture, distribution, and marketing of tobacco products with the Family Smoking Prevention and Tobacco Control Act (“Tobacco Control Act”).¹²⁵ Amongst Congress’s findings, simply: “Nicotine is an addictive drug.”¹²⁶

Congress’s theory was that because nicotine is addictive, educational campaigns are inadequate to prevent smoking; the vast majority of new and repeat smokers understand the consequences of their actions.¹²⁷ Therefore, Congress concluded, “comprehensive restrictions on the sale, promotion, and distribution of such products are needed.”¹²⁸

b. Fighting the “Vortex of Vice” by Regulating Gambling

“At various points in history, gambling has been despised and criminalized, tolerated, and embraced—often at the same time [W]hat cannot be defeated is often assimilated. This is the case with gambling in America.”¹²⁹ In fact, in a very real sense, America was built on gambling.¹³⁰

121. John Slade et al., *Nicotine and Addiction: The Brown and Williamson Documents*, 274 J. AM. MED. ASS’N 225 (1995).

122. Henningfield, Rose & Zeller, *supra* note 119, at *iv28 (emphasis added).

123. *Id.*

124. *Id.*

125. See Family Smoking Prevention and Tobacco Control Act, Pub. L. No. 111-31, 123 Stat. 1776 (2009) (codified as amended at 21 U.S.C. § 301 (2009)).

126. *Id.* § 2(3), 123 Stat. at 1777.

127. See Comment, *Deducting the Cost of Smoking Cessation Programs Under Internal Revenue Code Section 213*, 81 MICH. L. REV. 237, 240, n.24 (1982) (discussing findings that 90% of adolescent smokers and virtually all adult smokers are aware of the dangers of smoking).

128. Tobacco Control Act, § 2(6).

129. EDWARD A. MORSE & ERNEST P. GOSS, *GOVERNING FORTUNE* 1 (2007).

130. Of course, games of chance existed in America well before any Europeans arrived. In some indigenous communities, such games—involving the wagering of symbolic beans or kernels—form an important part of traditional ritual practices. PAUL PASQUARETTA, *GAMBLING AND SURVIVAL IN NATIVE NORTH AMERICA* 121 (2003). Pasquaretta suggests that indigenous

After traditional funding fell through, the Virginia Company was able to set sail to America thanks to financing through a lottery.¹³¹ Once colonists settled in America, lotteries quickly emerged as a prime source of funding for the “construction of churches, roads and bridges, and capital products of colleges and universities, Columbia, Dartmouth, Harvard, and the University of North Carolina among them.”¹³² Indeed, “[u]ntil the early nineteenth century, when banking became an established institution, a lottery was the normal way to raise funds for all sorts of local, state, and federal products.”¹³³ As Thomas Jefferson opined, lotteries “layed taxation only on the willing.”¹³⁴

At the same time, however, *private* gambling was typically circumscribed. In its very first year, the Massachusetts Bay Colony “outlawed dice, cards, and other games thought to induce the colonists toward idle or unprofitable use of time.”¹³⁵ Later colonial governments—occasionally at the behest of the British¹³⁶—would also enact prohibitions on gambling.¹³⁷

Importantly, these early laws tended to target gambling not out of sheer moral opprobrium, but rather because of its secondary effects. The Massachusetts Bay Colony prohibition went part-and-parcel with statutes prohibiting idleness,¹³⁸ and generally reflected necessity. “Those who failed to engage in productive activities drained the resources of the larger group, which had little margin to maintain a safety net” for those who gambled instead of working.¹³⁹ Britain itself banned lotteries in 1826 because such games tended to “corrupt the morals, and encourage a spirit of Speculation and Gambling among the lower class of people.”¹⁴⁰ New York’s first anti-gambling statute, enacted in 1741, reflected similar concerns, as did those in other colonies and, later, states.¹⁴¹

Americans were so devastated by the introduction of European-style gambling in part because Native religious teachers initially encouraged their compatriots to partake. *Id.* at 119-20.

131. Raymond D. Sauer, *The Political Economy of Gambling Regulation*, 22 *MANAGERIAL & DECISION ECON.* 5, 6 (2001).

132. *Id.*

133. PASQUARETTA, *supra* note 130, at 116.

134. *Id.*

135. MORSE & GOSS, *supra* note 129, at 3.

136. PASQUARETTA, *supra* note 130, at 117.

137. Sauer, *supra* note 131.

138. MORSE & GOSS, *supra* note 129, at 3.

139. *Id.*

140. PASQUARETTA, *supra* note 130, at 117.

141. See MORSE & GOSS, *supra* note 129, at 3 (“[The New York statute] was enacted in response to the negative consequences of frequent public gambling. Similar laws arose in other states, which focused not only on disorderly conduct associated with gambling houses but also on the negative effects on family welfare from gambling losses and the perceived corruption of youth.”).

As America expanded westward, so did gambling. And so did anti-gambling legislation. In Tennessee, convicted gamblers lost the right to hold public office for five years.¹⁴² An impassioned opinion by Justice John Catron of the Tennessee Supreme Court, who would go on to serve on the United States Supreme Court, explained that gambling was regulable, essentially because it was addictive:

There is implanted in the nature of man an inclination to gamble, which of all others is most difficult to bring within the restraints of law. . . .

[I]t lies dormant until once aroused, and then, with the contagion and fury of pestilence, it sweeps morals, motives to honest pursuits, and industry into the vortex of vice; unhinges the principles of religion and common honesty; the mind becomes ungovernable, and is destroyed to all useful purposes

Where is the professional man or mechanic who will toil at his vocation and acquire by shillings when his mind is diseased by similar hopes? We know he abandons his calling and relies upon gambling chance for his own and his family's support

. . . [G]aming, as a general evil, leads to vicious inclinations, destruction of morals, abandonment of industry and honest employment, a loss of self-control and respect. . . . The American and European journals are full of cases of the most distressing nature; of bankers, merchants, clerks to banking institutions, men in almost every description of trust, public and private, becoming bankrupts and thieves, to the ruin of themselves and others. Look for the source of their misfortune; you find it in lotteries, loo, faro, thimble, dice and the like.¹⁴³

Although early regulators may not have articulated the exact words for it, nor did they possess a modern understanding of the brain's reward circuitry, they nonetheless targeted gambling *in order to prevent gambling addiction*.

* * *

As the above indicates, the regulation of addiction is a time-honored tradition, both in the United States and abroad. The American experience, in particular, demonstrates the comprehension that a substance or behavior being addictive marks an inflection point in society's relationship with that substance or behavior. The motivating factor in transforming the drunkest

142. MORSE & GOSS, *supra* note 129, at 5-6.

143. State v. Smith, 10 Tenn. 272, 273 (1829).

country on earth in the 1830s into a legally dry country in less than a century was the popular groundswell of belief in alcoholism. Gambling restrictions have, since their inception, been premised on the idea that gambling appeals to an irrepressible instinct. And it was only after tobacco companies (mostly) gave up on denying the reality of nicotine addiction that Congress granted the FDA authority to place significant restrictions on the sale of tobacco products.

These regulatory traditions reflect a rare empathetic response in a relatively libertarian society. Americans have never shied away from blaming the destitute or deviant for their circumstances. Addiction, however, represents a degradation of the fundamental assumption of free will upon which a liberal society is founded. Addicts are the exception: a subclass of the errant that Americans do not entirely blame for their ill-fortune.

This also indicates one final pattern that can be drawn from the global and American experience with addiction regulation. Regulators will place the blame for addiction at the feet of those who cause it. From the Roman law allowing a man to recover against anyone who induced his son or his slave to gamble, to the Eighteenth Amendment's prohibition of the manufacture, sale, and transportation—but not the consumption—of alcohol, those who inflict addiction have been required to bear a significant proportion of the costs of the disease.

C. Expressive Products and Addiction

The brain's reward circuitry—the production of dopamine in response to external stimuli—is responsible for behavioral addictions, which lack an external chemical “hook” like nicotine. However, the reward circuitry also explains why humans *enjoy* anything; a product that failed to generate dopamine would be an abysmal failure. So, a pivotal definitional challenge crops up: distinguishing addictive expression from enjoyable expression. For instance, while an earwormy pop song might become stuck in one's head, and indeed may have been written with the intent to remain so,¹⁴⁴ there is little indication that there are any long-term consequences to that stickiness that may correlate with problematic usage and justify regulation.

The essential regulatory issue is whether the addictive elements of expressive products can be separated from the underlying speech. Gambling, for instance, is not perceived as involving protected expression, and therefore, there is no First Amendment defense to avoiding a gambling regulation. This is not necessarily true of video games and pornography.

144. Sarah Kaplan, *Why You Can't Get That One Song Out of Your Head: The Science of Earworms*, WASH. POST (Nov. 4, 2016), <https://www.washingtonpost.com/news/speaking-of-science/wp/2016/11/04/why-you-cant-get-that-one-song-out-of-your-head-the-science-of-earworms/>.

Focusing on these two expressive products demonstrates how regulators might seek to address addiction, and why one must reckon with the First Amendment in order to do so.

1. *Video Games*

a. The Scientific Evidence

There is strong early evidence that gaming can be addictive. While the DSM-V has taken only intermediate steps to recognize gaming addiction, the World Health Organization (“WHO”) has moved more aggressively than the DSM-V by including “gaming disorder” in its diagnostic manual, the International Classification of Diseases.¹⁴⁵ The WHO’s recognition rests on a solid body of research.

First, studies have suggested that “[g]ame cue-associated brain activation in Internet gaming addicts occurs in the same brain regions . . . as with drug cue-associated brain activation in drug addicts.”¹⁴⁶ In other words, gaming addiction is an observable neurophysiological phenomenon. Studies commonly involve magnetic resonance imaging (“MRI”) or electroencephalographic (“EEG”) imaging of the brains of control groups and groups of excessive gamers. One such study showed both groups still images of a video game. The gamers showed increased neural activity in the same parts of the brain as those implicated in substance abusers.¹⁴⁷ Another study demonstrated the involvement of dopamine in video game addiction by successfully treating excessive players with a dopamine reuptake inhibitor; after six weeks on the inhibitor, “craving for online gaming, total game play time, and cue-induced brain activity in prefrontal cortex were decreased.”¹⁴⁸

Gaming, like gambling, “involve[s] a number of abstractions, such as game rules, codes, tokens, rewards in virtual worlds, etc.,” and “[t]he human mind appears sufficiently powerful to translate these abstractions into an affectively charged ‘reward’ experience.”¹⁴⁹ And gamers, like substance addicts, develop tolerance, which leads to more time, effort, and money spent on chasing the dopamine rush of a gaming reward.¹⁵⁰

145. Jordan Erica Webber, *‘Dangerous Gaming’: Is the WHO Right to Class Excessive Video Game Play as a Health Disorder?*, GUARDIAN (Feb. 5, 2018), <https://www.theguardian.com/games/2018/feb/05/video-gaming-health-disorder-world-health-organisation-addiction>.

146. Grant et al., *supra* note 56.

147. Matilda Hellman et al., *Is There Such a Thing as Online Video Game Addiction? A Cross-Disciplinary Review*, 21 ADDICTION RESEARCH & THEORY 102, 105-06 (2013).

148. *Id.* at 106.

149. *Id.* at 108-09.

150. *Id.*

The anecdotal evidence for gaming addiction is also significant, and frequently alarming. There is the mother who strangled her two-year-old child when he interrupted her gaming to ask for a meal, or the thirteen-year-old boy who beat his mother to death when she accused him of spending too much time gaming.¹⁵¹ Several people have died in marathon game sessions.¹⁵² One of the most tragic and darkly ironic examples is the Korean couple who neglected their three-month-old child *in order to raise a virtual child* in an online video game until their real child starved to death.¹⁵³ The problem of gaming addiction in South Korea is so severe that the Korean government funds treatment clinics.¹⁵⁴

Deaths remain rare. Less rare are the host of other harms inflicted by video game addiction, which “generates its own special destructive class of neurological and social burdens.”¹⁵⁵ Gaming addiction, like other recognized addictions, is “associated with dysfunction in five domains: academic, social, occupational, developmental and behavioral.”¹⁵⁶ Gaming addicts report lower grades and work performance, disruption of their daily routines, and impacts on hygiene and healthy eating and sleeping routines.¹⁵⁷

Then, there is the money. Games—especially mobile games, the largest segment of the gaming economy¹⁵⁸—have increasingly begun to rely on “microtransactions” for revenue.¹⁵⁹ Microtransactions are “a tiny purchase”

151. Daphne Bavelier et al., *Brains on Video Games*, 12 NATURE REVS. NEUROSCIENCE 763, 764 (2011) (A twenty-two-year-old man also beat and killed his mother for complaining about his gaming.); Mark Tran, *Girl Starved to Death While Parents Raised Virtual Child in Online Game*, GUARDIAN (Mar. 5, 2010), <https://www.theguardian.com/world/2010/mar/05/korean-girl-starved-online-game>.

152. See e.g., Tran, *supra* note 151; see also Ben Guarino, *Prominent Gamer Died During Live-Streamed Attempt to Play ‘World of Tanks’ for 24 Hours*, WASH. POST (Feb. 23, 2017), <https://www.washingtonpost.com/news/morning-mix/wp/2017/02/23/va-man-died-during-marathon-attempt-to-play-video-game-for-24-hours/> (listing several examples of deaths during marathon gaming sessions, including a man who died after 19 straight hours of *World of Warcraft*, a teenager who died after 40 hours of *Diablo 3*, and a man who died after 50 hours of *Starcraft*).

153. Tran, *supra* note 151.

154. Nelson Groom, *Online Gaming is South Korea’s Most Popular Drug*, VICE (Jan. 6, 2014), https://www.vice.com/en_us/article/4w7wdm/online-gaming-is-south-koreas-most-popular-drug.

155. Bavelier et al., *supra* note 151, at 765.

156. *Id.*

157. *Id.*

158. Tom Wijman, *Mobile Revenues Account for More Than 50% of the Global Games Market as It Reaches \$137.9 Billion in 2018*, NEWZOO (Apr. 30, 2018), <https://newzoo.com/insights/articles/the-global-games-market-will-generate-152-1-billion-in-2019-as-the-u-s-overtakes-china-as-the-biggest-market/>; Tom Wijman, *The Global Games Market Will Generate \$152.1 Billion in 2019 as the U.S. Overtakes China as the Biggest Market*, NEWZOO (June 18, 2019), <https://newzoo.com/insights/articles/the-global-games-market-will-generate-152-1-billion-in-2019-as-the-u-s-overtakes-china-as-the-biggest-market/>.

159. Kevin Anderton, *The Ongoing Controversy of Microtransactions in Gaming*, FORBES (Mar. 7, 2018), <https://www.forbes.com/sites/kevinanderton/2018/03/07/the-on-going-controversy>

of an item inside of a game.¹⁶⁰ A player might spend a dollar to speed up a game's enforced wait time for some construction to finish, or a few dollars on a specific cosmetic item, such as a specific coloration for a character's armor.¹⁶¹ Microtransactions are ubiquitous in free-to-play games,¹⁶² but are also rapidly becoming the norm in retail-priced AAA games.¹⁶³

Few players spend money on microtransactions, but developers are fine with that; they are hunting "whales." "Whales" is the industry-generated term (borrowed, tellingly, from casinos) for the "biggest spenders" that drive most of the revenue for a game with microtransactions.¹⁶⁴ One industry report found that *half* of free-to-play game revenue came from 0.15% of players, with only 1.5% spending any money at all.¹⁶⁵ The horror stories pile up: the teenager who worked two jobs in order to spend \$13,500 on in-game purchases over the course of three years;¹⁶⁶ a former developer who reported seeing people spending \$15,000 on microtransactions in a popular AAA game, *Mass Effect 3*;¹⁶⁷ the Japanese company that hired an employee exclusively to cater to a single person who spent \$10,000 a month on their game.¹⁶⁸ The concern, of course, is that developers are preying on addicts.

-of-microtransactions-in-gaming-infographic/#4302f62e1d9c ("The future of gaming seems to be in microtransactions.").

160. Brian Crecente, *What are DLC, Loot Boxes and Microtransactions? An Explainer*, VARIETY (2017), <https://variety.com/2017/gaming/features/what-is-a-loot-box-1203047991/>.

161. Most perniciously, as discussed *infra*, a player might spend a small sum for a *chance* to receive a certain cosmetic item in a "loot box."

162. See Crecente, *supra* note 160 (noting that an analyst group estimated that "in-game microtransactions made up 92% of all Apple Store revenue and 98% of all Google Play revenue in 2013").

163. See *id.* ("As smartphone game developers raked in the money, larger, more traditional game publishers started to take note and experiment with some of these systems on computer and console games."); *id.* ("These days, it's more unusual to see a big budget game without some form of microtransaction . . . than it is to see one with the post-release money maker."). "AAA" is an informal label denoting that a game was published by a major developer and generally implies that the game has a "considerable development and marketing budget," as opposed to "independent" or "indie" games. Samuel Stewart, *What Is A Triple-A Game (AAA)?*, GAMINGSCAN (July 8, 2019), <https://www.gamingscan.com/what-is-a-triple-a-game/>.

164. Stephanie Carmichael, *What It Means to be a 'Whale'—and Why Social Gamers are Just Gamers*, VENTUREBEAT (Mar. 14, 2013, 8:00 AM), <https://venturebeat.com/2013/03/14/whales-and-why-social-gamers-are-just-gamers/>.

165. Eric Johnson, *A Long Tail of Whales: Half of Mobile Games Money Comes From 0.15 Percent of Players*, VOX (Feb. 26, 2014, 2:37 PM), <https://www.vox.com/2014/2/26/11623998/a-long-tail-of-whales-half-of-mobile-games-money-comes-from-0-15>.

166. Ethan Gach, *Meet the 19-Year-Old Who Spent Over \$10,000 on Microtransactions*, KOTAKU (Nov. 29, 2017, 5:12 PM), <https://kotaku.com/meet-the-19-year-old-who-spent-over-10-000-on-microtra-1820854953>.

167. Robert Purchase, *"I've Seen People Literally Spend \$15,000 on Mass Effect Multiplayer Cards"*, EUROGAMER (Oct. 23, 2017), <https://www.eurogamer.net/articles/2017-10-23-manveer-heir-bioware-mass-effect-ea-monetisation>.

168. Johnson, *supra* note 165.

All of this has resulted in “an emerging scientific consensus that video-game play has the potential to become pathologically addictive.”¹⁶⁹ Of course, the scope of the problem remains difficult to ascertain; in one study, “researchers diagnosed gaming disorder using 18 different methods, producing prevalence rates between 0% and 45%.”¹⁷⁰

b. What makes games addictive?

While behavioral addictions, like substance-based addictions do have an important genetic component,¹⁷¹ the design of a game is also a causal factor.¹⁷² Several features of video games—some optional, some probably not—tend to promote addiction.

First, games can mimic gambling. In particular, those games that “reward frequently and at irregular intervals” mimic “short odds gambling with a high event frequency”—a sort of gambling that is believed to be particularly addictive.¹⁷³ To effectively mimic gambling, games do not need to literally require that the players bet anything; the salient feature is the introduction of an element of chance into the receipt of a reward for completing an in-game task. For instance, defeating a particular boss in an MMORPG might offer players a 7.5% chance of receiving a certain, unique item.¹⁷⁴

Even more pernicious, of course, is actual gambling, in which players pay real-world money (or virtual currency that can be easily purchased with real-world money), and receive in return a “loot box” containing random rewards. Loot boxes are “virtual packages . . . often adorned with enticing sounds and lights” that contain, obviously, loot—weapons, armor, or cosmetic items for your in-game character or profile.¹⁷⁵ Loot boxes have reached “epidemic” status in games.¹⁷⁶

169. Bavelier et al., *supra* note 151, at 765.

170. Cecilia D’Anastasio, *The Truth About ‘Video Game Addiction’*, KOTAKU (July 6, 2018, 11:08 AM), <https://kotaku.com/the-truth-about-video-game-addiction-1827374773>.

171. Grant et al., *supra* note 56, at 6.

172. Hellman et al., *supra* note 147 at 105. *See also* Bavelier et al., *supra* note 151, at 765 (“[S]ome game seem to have much more of an addictive potential than others.”).

173. Hellman et al., *supra* note 147, at 105.

174. Videos compiling live reactions to rare item drops are commonplace. *See, e.g.*, Mitzz, *Destiny: TOP 5 GJALLARHORN Reactions (Insane Reactions)*, YOUTUBE (Apr. 3, 2015), <https://www.youtube.com/watch?v=yorxOLgk4Rc>. Behavioral psychologists would undoubtedly have a field day with such reactions as: “Oh! He found a Gjallarhorn! He found a Gjallarhorn! Wow! Wow! I hate this game! This game is so annoying. I’m fucking done.” *See id.*

175. Drew Cartee, *The Loot Box Epidemic in Modern Video Games*, MEDIUM (Dec. 4, 2017), <https://medium.com/@dc99/the-loot-box-epidemic-in-modern-video-games-308ed8f73f38>.

176. *Id.*

Random loot drops and loot boxes are so addictive because the brain's dopamine system is "very interested in unpredictable rewards. Dopamine cells are most active when there is maximum uncertainty, and the dopamine system responds more to an uncertain reward than the same reward delivered on a predictable basis."¹⁷⁷ This psychological principle has been understood since the 1930s, when B.F. Skinner demonstrated that animals rewarded with food every time they pressed a button quickly grew bored, while those previously given random food rewards would sometimes make hundreds of attempts after Skinner stopped rewarding them.¹⁷⁸

Because of the psychological effects of "variable rate reinforcement," loot boxes are inherently, potently addictive.¹⁷⁹ But developers do not stop there. Without fail, the boxes are a visual and auditory spectacle to open. As one developer revealed: "When you start opening a loot box, we want to build anticipation We do this in a lot of ways—animations, camera work, spinning plates, and sounds. We even build a little anticipation with the glow that emits from a loot box's cracks before you open it."¹⁸⁰ Some games have potentially available loot scroll by in an explicit visual reference to a slot machine, showing the player how close they were—even though the outcome is not a matter of "close" from a programming perspective—to getting a different, no doubt rarer or more valuable, piece of loot.¹⁸¹ The design mimics "near-misses," which have been shown to encourage prolonged gambling even in those who do not gamble regularly, let alone in problem gamblers.¹⁸²

Developers can then stack additional mechanics, some of which are intended to be utterly unknown to players, on top of their random loot systems to encourage further consumption. For instance, Activision has patented a matchmaking system meant to artificially inflate players' success rates after making a microtransaction.¹⁸³ The patent reads: "For example, if the player purchased a particular weapon, the microtransaction engine may match the player in a gameplay session in which the particular weapon is

177. Alex Wiltshire, *Behind the Addictive Psychology and Seductive Art of Loot Boxes*, PC GAMER (Sept. 28, 2017), <https://www.pcgamer.com/behind-the-addictive-psychology-and-seductive-art-of-loot-boxes/>.

178. *Id.*

179. *Id.*

180. Cecelia D'Anastasio, *Why Opening Loot Boxes Feels Like Christmas, According to Game Devs*, KOTAKU (Mar. 20, 2017, 2:00 PM), <https://kotaku.com/why-opening-loot-boxes-feels-like-christmas-according-1793446800>.

181. Wiltshire, *supra* note 177.

182. *Id.*

183. Heather Alexandra, *Activision Patents Matchmaking that Encourages Players to Buy Microtransactions*, KOTAKU (Oct. 17, 2017, 6:00 PM), <https://kotaku.com/activision-patents-matchmaking-that-encourages-players-1819630937>.

highly effective.”¹⁸⁴ The system would also match players it thought were chasing a particular item with players that already had and used that item, to increase the drive to make the microtransaction.¹⁸⁵ Activision has denied that the patented system is in use in any game,¹⁸⁶ although it would be impossible for players to know.

Second, games rely on social instincts—both competitive and cooperative—to hook users. Social gameplay can be potently addictive. One study found nearly half of all MMORPG players (45%) played more than 40 hours a week; while half (49%) of all non-MMORPG players played 2 or fewer hours per week.¹⁸⁷ The authors concluded that the “social aspects” of MMORPGs make their players so prone to overuse.¹⁸⁸ Another study of several thousand MMORPG players sought to explain whether certain players were more at risk of developing an addiction. It found that “[p]layers who were attracted to the highly social and competitive aspects of the gaming environment were most likely to be in the high risk of addiction class.”¹⁸⁹

Anecdotal evidence from gamers confirms the compelling nature of some social features. Games may introduce “clans” or “guilds,” which are collectively benefitted when the player plays, creating a sense of social obligation.¹⁹⁰ Games can include activities that require several players to complete, requiring players to form social bonds with others to complete the activity.¹⁹¹ Developers may also, as contemplated in the Activision patent, rely on a player’s competitive drive to acquire loot that they see on another player’s character.¹⁹² Amongst players of free-to-play mobile games with microtransactions, use of microtransactions appears to be significantly driven by developers’ conscious choice to essentially require the purchases in order to remain competitive with others.¹⁹³

184. *Id.*

185. *Id.*

186. Alexandra, *supra* note 185.

187. Brian D. Ng & Peter Wiemer-Hastings, *Addiction to the Internet and Online Gaming*, 8 *CYBERPSYCHOLOGY & BEHAVIOR* 110, 112 (2005).

188. *But see id.* at 113 (concluding that heavy users of MMORPGs in the study’s dataset could not be categorized as addicts).

189. Zaheer Hussain, Glenn A. Williams, & Mark D. Griffiths, *An Exploratory Study of the Association Between Online Gaming Addiction and Enjoyment Motivations for Playing Massively Multiplayer Online Role-playing games*, 50 *COMPUTERS IN HUMAN BEHAVIOR* 221, 228 (2015).

190. *See* Mark Smith, *The real-life story of a computer game addict who played for up to 16 hours a day*, *WALES ONLINE* (July 30, 2018, 7:35 PM), <https://www.walesonline.co.uk/news/health/real-life-story-computer-game-14968843> (“You had clans of people, and that’s where you’d really have a ‘family’.”); Jack Flanagan, *The psychology of video game addiction*, *THE WEEK* (Feb. 6, 2014), <https://theweek.com/articles/451660/psychology-video-game-addiction>.

191. *See* Mike Rougeau, *How Destiny Players Fixed One Of The Game’s Biggest Problems*, *KOTAKU* (Jan. 10, 2015, 4:30 PM), <https://kotaku.com/how-destiny-players-fixed-one-of-the-game-s-biggest-pro-1678732125>; Flanagan, *supra* note 190.

192. *See supra* note 184 and accompanying text.

193. *See Gach, supra* note 166.

A final addictive pathway suggested by the literature is the increasing visual sophistication of video games.¹⁹⁴ Video games are capable of inducing addiction through the “supernormal stimuli” effect. The effect describes “a phenomenon wherein artificial stimuli can be created that will override an evolutionarily developed genetic response.”¹⁹⁵ Because visually spectacular games (like pornography and certain processed foods) are so highly stimulating, “[i]t recruits our natural reward system, but potentially activates it at higher levels than the levels of activation our ancestors typically encountered as our brains evolved, making it liable to switch into an addictive mode.”¹⁹⁶ The concept of supernormal stimuli has been demonstrated in animal tests: mother birds will abandon their own eggs to sit on larger, more colorful artificial eggs, and male butterflies will abandon actual female butterflies and attempt to mate with artificial females with larger, more colorful wings.

2. *Pornography*

a. The scientific evidence

Long considered immoral or a social ill,¹⁹⁷ pornography consumption has only recently been recognized by the scientific and medical communities as resulting in something like addiction. But, given the relatively recent advent of internet pornography, it is unsurprising that the authors of both the DSM-V¹⁹⁸ and the WHO’s ICD-11¹⁹⁹ concluded that inclusion of pornography addiction in the diagnostic manuals was premature.

Nonetheless, numerous studies have concluded “that Internet pornography addiction fits into the addiction framework and shares similar basic mechanisms with substance addiction.”²⁰⁰ Indeed, one review of the available studies concluded that the American Psychiatric Association’s decision not to include Internet pornography addiction in the same category as Internet gaming addiction in the DSM-V was “inconsistent with existing and emerging scientific evidence.”²⁰¹

194. See, e.g., Mark Aguiar et al., *Leisure Luxuries and the Labor Supply of Young Men*, (Nat’l Bureau of Econ. Research, Working Paper No. 23552, 2017).

195. Todd Love et al., *Neuroscience of Internet Pornography Addiction: A Review and Update*, 5 BEHAVIORAL SCI. 388, 390–91 (2015).

196. *Id.*

197. See, e.g., Obscene Publications Act 1857, 20 & 21 Vict. c.83.

198. Rubén de Alarcón et al., *Online Porn Addiction: What We Know and What We Don’t—A Systemic Review*, 8 J. CLINICAL MEDICINE 91 (2019), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6352245/>.

199. *Id.*

200. Love et al., *supra* note 195, at 389.

201. *Id.* at 390.

In particular, “there is a glut of evidence” that “natural rewards” achieved through interaction with Internet pornography are capable of producing the same neurobiological effects as addictive drugs.²⁰² This is because the neurological networks “involved in human sexual behavior are remarkably similar to the networks involved in processing other rewards.”²⁰³

To demonstrate the similarity of pornography to recognized substance-based addictions, one study showed both sexually explicit (pornographic) videos and erotic (non-pornographic) videos to a control group, and to a group of subjects exhibiting compulsive sexual behavior.²⁰⁴ The viewers were then asked two questions: how much did they like the videos, and how much did the videos increase their sexual desire.²⁰⁵ Relative to the control group, the test group *liked* the erotic videos more, but *desired* the pornographic videos more, “indicat[ing] a dissociation between liking and wanting . . . replicat[ing] the results of well-established studies . . . wherein addicts report higher levels of wanting but not of liking their salient rewards.”²⁰⁶

A final marker indicating that pornography can be addictive is that heavy porn users exhibit tolerance, a hallmark of addiction. Anecdotal data has clearly established that “over time, a damaged dopamine system makes one ‘tolerant’” which “drives a search for ramped-up stimulation, and this can drive the change in sexual tastes towards the extreme.”²⁰⁷ For instance, a member survey of a subreddit dedicated to overcoming pornography addiction indicated that, amongst 1509 responses, 56 percent reported that their taste in porn “became increasingly ‘extreme’ or ‘deviant.’”²⁰⁸ Another study found that 49 percent of men reported “at least sometimes searching for sexual content . . . that [was] not previously interesting to them or that

202. Christopher M. Olsen, *Natural Rewards, Neuroplasticity, and Non-Drug Addictions*, 61 NEUROPHARMACOLOGY 1109, at 14 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3139704/>.

203. J.R. Georgiadis, M. L. Kringelbach, *The Human Sexual Response Cycle: Brain Imaging Evidence Linking Sex to Other Pleasures*, 98 PROGRESS IN NEUROBIOLOGY 49, 74 (2012), http://www.kringelbach.org/papers/PN_Georgiadis2012.pdf.

204. Valerie Voon et al., *Neural Correlates of Sexual Cue Reactivity in Individuals With and Without Compulsive Sexual Behaviors*, 9 PLOS ONE 1 (July 2014), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4094516/>.

205. *Id.*

206. Love et al., *supra* note 195, at 408 (describing the Voon study).

207. Norman Doidge, *Brain Scans of Porn Addicts: What’s Wrong With This Picture?*, GUARDIAN (Sept. 26, 2013, 1:29 PM), <https://www.theguardian.com/commentisfree/2013/sep/26/brain-scans-porn-addicts-sexual-tastes>.

208. *The First Semi-Irregular /r/NoFap Sex Survey (April 2012)*, GOOGLE DOCS, <https://docs.google.com/file/d/0B7q3tr4EV02weTFmV0oySnpJZjA/> (last visited May 26, 2019).

they considered disgusting.”²⁰⁹ More colorfully, in 2018, Pornhub’s top 20 search terms included two popular video games, several categories of animated or cartoon pornography, and both “step mom” and “mom.”²¹⁰ The issue has even become *meta*; there is a subgenre of pornography about pornography addiction.²¹¹

Much like substance addictions and gaming addiction, pornography addiction can have serious consequences. Subjects with compulsive sexual behavior (“CSB”) reported that,

As a result of excessive use of sexually explicit materials, they had lost jobs due to use at work . . . damaged intimate relationships or negatively influenced other social activities . . . experienced diminished libido or erectile function specifically in physical relationships with women (although not in relationship to the sexually explicit material) . . . used escorts excessively . . . experienced suicidal ideation . . . and us[ed] large amounts of money. . . . CSB subjects compared to healthy volunteers had significantly more difficulty with sexual arousal and experienced more erectile difficulties in intimate sexual relationships

Importantly, CSB subjects reported using the Internet for viewing online sexually explicit material for 25.49% of total online use . . . compared to 4.49% in healthy volunteers.²¹²

The same study reported that CSB subjects viewed online pornography for 13.21 hours per week,²¹³ which is the annual equivalent of spending the entire month February watching porn.

As with video game addiction, the prevalence of pornography addiction is not yet known. Only one study with a representative sample has been conducted; in it, 1.2% of adult Australian women and 4.4% of adult

209. Aline Wéry & J. Billieux, *Online Sexual Activities: An Exploratory Study of Problematic and Non-Problematic Usage Patterns in a Sample of Men*, 56 *COMPUTERS IN HUMAN BEHAV.* 257, 260 (2016).

210. *2018 Year in Review*, PORNHUB (Dec. 11, 2018), <https://www.pornhub.com/insights/2018-year-in-review>.

211. See /u/NoFaTC, *We Need to Take a Look at Sissy Porn*, REDDIT (Dec. 27, 2017), https://www.reddit.com/r/NoFap/comments/7mh1wc/we_need_to_take_a_look_at_sissy_porn/ (“[T]hat shit is the most addicting porn i’ve ever seen. everyone in this comments section says it’s just like any other porn, just as bad. this shit is way worse. it makes you addicted really fast, teases you about the fact that you’re addicted . . .”).

212. Voon, *supra* note 204. See also Sandra Song, *Kanye West Opens Up About His Porn Addiction*, PAPER MAG. (Oct. 24, 2019), <https://www.papermag.com/kanye-west-porn-addiction-2641095612.html> (discussing artist Kanye West’s statement that porn addiction “has impacted every choice I have made in my life from age five to now”).

213. Voon, *supra* note 204.

Australian men considered themselves addicted to pornography.²¹⁴ Another smaller study among a different population reported similar rates,²¹⁵ while others have found rates as low as 0.7% (among Spanish college students, although the study found that 8.6% were at risk of developing pathological use)²¹⁶ or as high as 9.8% (among substance users).²¹⁷

b. Why is porn addictive?

The commonly accepted causal mechanism for pornography addiction is the “supernormal stimuli” phenomenon.²¹⁸ Indeed, in most definitions, the functional equivalent of “supernormal stimuli” is the feature that distinguishes pornography from erotica.²¹⁹ Porn is by definition, extreme; it features actions and sounds and camera shots and a treatment of women that differs greatly from most sexual encounters.²²⁰ Unfortunately, outside of reference to supernormal stimuli, qualitative analyses that would reveal whether certain kinds of pornography or features of pornography are more likely to generate problematic usage appear to be nonexistent in scientific literature. Feminist critiques of porn, and anecdotal evidence from users, though, are lush with examples. Naomi Wolf sums them up:

Here is what young women tell me on college campuses when the subject comes up: They can’t compete, and they know it. For how can a real woman—with pores and her own breasts and even sexual needs of her own (let alone with speech that goes beyond “More, more, you big stud!”)—possibly compete with a *cybervision*

214. See de Alarcón et al., *supra* note 198.

215. See, e.g., Michael W. Ross, Sven-Axel Månsson & Kristian Daneback, *Prevalence, Severity, and Correlates of Problematic Sexual Internet Use in Swedish Men and Women*, 41 ARCHS. SEX. BEHAV. 459, 459 (2012) (reporting that, among a sample of 1,913 younger Swedish men and women, 2% of women and 5% of men indicated serious problems correlating with addiction or problematic use of pornography).

216. Rafael Ballester-Arnal et al., *Cybersex Addiction: A Study on Spanish College Students*, 43 J. SEX & MARITAL THERAPY 567 (2017).

217. Lisa Najavits et al., *A Study of Multiple Behavioral Addictions in a Substance Abuse Sample*, 49 SUBSTANCE USE & MISUSE 479 (2013).

218. See *supra* notes 195-96 and accompanying text; see also Donald L. Hilton, Jr., *Pornography Addiction—A Supranormal Stimulus Considered in the Context of Neuroplasticity*, 3 SOCIOAFFECTIVE NEUROSCIENCE & PSYCH. 1, 5 (2013).

219. Berta Davis, *Erotica vs. Pornography*, INTERN. ENCYC. OF HUMAN SEXUALITY (Apr. 20, 2015), <https://doi.org/10.1002/9781118896877.wbiehs133> (“Eroticism is seen as an artful expression of sexuality; it is considered ‘vanilla,’ nonviolent, and sensual. Pornography, on the other hand, seems to correlate sexuality with some form of aggression and/or imbalance of male-female power relationships.”).

220. But see Jay Clarkson & Shana Kopaczewski, *Pornography Addiction and the Medicalization of Free Speech*, 37 J. COMM. INQUIRY 128, 137–38 (2013) (suggesting that the concept of “pornography addiction” is an effort by moralist crusaders against porn to censor sex other than heterosexual intercourse with one’s spouse).

of perfection, downloadable and extinguishable at will, who comes, so to speak, utterly submissive and tailored to the consumer's least specification?

For most of human history, erotic images have been reflections of, or celebrations of, or substitutes for, real naked women. For the first time in human history, the images' power and allure have supplanted that of real naked women. Today, *real naked women are just bad porn.*²²¹

The feature of pornography that functions as a key driver for addiction is novelty.²²² Essentially, viewing porn "has the same effect" on the regions of the brain's reward circuitry as does "viewing actual sexual partners."²²³ "What is different is that the Internet provides access to a vast surplus of erotic imagery, and the novelty of this imagery is practically unending," which appeals to the "well documented" preference for novelty in sexual partners among humans.²²⁴ With respect to novelty, in other words, no particular features of the pornography are responsible for producing problematic overuse; the addictiveness comes from the fact that there is so much of it.

* * *

The foregoing information lays bare the primary challenge of addressing the problems generated by addiction to expressive products: much of what makes them addictive also makes them worth consuming.

This is the fundamental difficulty in addressing addiction from a regulatory perspective, or even from the perspective of a conscientious developer. An overzealous attempt to eliminate what psychologists have identified as pathways of addiction in video games would result in the prohibition of: gaining experience and leveling up; bright colors, attractive sounds and explosions; competitive and cooperative multiplayer functionality; missions and quests; powerful characters; and environments to explore. Like an old joke about products in the Soviet Union, gamers would be left playing a particularly boring version of *Pong*. As a practical matter, this is undesirable; as a legal matter, this seems inconsistent with the idea of the First Amendment.

Porn, meanwhile, demonstrates even more vividly the dilemma faced by regulators. It is functionally defined by its addictive properties, and the product has survived a decades-long legal and political assault thanks, in

221. Naomi Wolf, *The Porn Myth*, NEW YORK MAG. (Oct. 9, 2003), http://nymag.com/nymetro/news/trends/n_9437/ (emphasis added).

222. Cody Harper & David C. Hodgins, *Examining Correlates of Problematic Internet Pornography Use Among University Students*, 5 J. BEHAVIORAL ADDICTIONS 178, 180 (2016).

223. *Id.*

224. *Id.*

large part, to the First Amendment. The next Part will consider whether limited regulatory interventions can be made consistent with the First Amendment.

II. Expression

There are legitimate reasons to explore greater regulatory intervention to address addictive expression. Game developers openly boast about addictiveness, comparing their products to slot machines, and their addicted customers to casino “whales,” and show little intent of implementing greater self-regulation. They appear, in other words, to be “exploit[ing] players’ cognitive biases and predictably irrational behavior to make more money.”²²⁵ Bad behavior on the developers’ part may justify regulation consistent with longstanding legal tradition targeting those who induce addiction.

Alternatively, the negative effects of addiction on the individual, as aggregated into meaningful, large-scale social consequences, may independently justify regulation, regardless of speakers’ bad faith or lack thereof. For instance, as pornography addiction becomes increasingly recognized, regulators may, for instance, seek to regulate pornography not because of moral objections to its content, but in order to prevent addiction and its consequences.²²⁶

Regardless of the impetus for regulation, the speakers in this scenario are likely to mount a formidable First Amendment defense. Both video games²²⁷ and pornography are presumptively protected by the First Amendment.²²⁸ Of course, this does not mean that all regulations targeting video game developers or pornography producers implicate the First

225. Zagal, Björk & Lewis, *supra* note 33, at 6.

226. See Lihi Yona, *Politicizing Health, Medicalizing Porn: Rethinking Modern Pornography*, 16 MARQ. ELDER’S ADVISOR 113, 125-26 170-71 (2014) (arguing that “medicalizing” the question of pornography by making the question one of addiction rather than equality of the sexes provides a potential path to regulation); *but see* Clarkson & Kopaczewski, *supra* note 220 (concluding that this represents a cynical attempt to restrict free speech by those who actually object on moral grounds).

227. See *Brown v. Ent. Merchants Ass’n*, 564 U.S. 786, 790 (2011) (“California correctly acknowledges that video games qualify for First Amendment protection [V]ideo games communicate ideas—and even social messages—through many familiar literary devices . . . and through features distinctive to the medium That suffices to confer First Amendment protection.”).

228. See *Miller v. California*, 413 U.S. 15, 23–25 (1983) (holding that only “obscene” material is unprotected and providing a definition of obscenity that does not include all pornography). See also SCOTT ON INFO. TECH. § 17.11 (2015) (“Obscenity is not synonymous with pornography, as most pornography is not legally obscene, i.e., most pornography is protected by the First Amendment.”).

Amendment. Governments may (and should²²⁹) enforce labor laws against developers, and the First Amendment will not stand in the way.

But many regulations *will* implicate speech rights.²³⁰ Laws directly targeting the inclusion of addictive content in games or pornography would almost certainly be content-based regulations of protected speech, subject to strict scrutiny under the First Amendment. Similarly, laws requiring speakers to warn that the speech at issue contains properties known to facilitate compulsive consumption, like warnings on cigarette cartons, are instances of compelled speech, which typically must also survive strict scrutiny. Finally, laws regulating the advertising or addictive expression would implicate the Amendment's protection of commercial speech, requiring that the laws satisfy the *Central Hudson* test by being the least-restrictive method of directly advancing a substantial state interest.²³¹ But if the government seeks to mandate the inclusion of warnings about addiction in advertisements, the Court's recent jurisprudence suggests that a more stringent test may govern.²³²

The question of who wins the legal battle over attempted regulation is of tremendous import. To quote the title of David Courtwright's work on "limbic capitalism," we live in the "Age of Addiction."²³³ While rates of addiction to expressive products remain disputed, the size of these industries means that even a low occurrence of problematic use may have a significant impact. Nearly 70% of Americans play video games,²³⁴ while studies "have

229. The video game industry is infamous for "crunch" culture, in which, during the weeks leading up to a game's release, employees are often forced to work in excess of 80 or 100 hours per week. See, e.g., Ian Williams, "You Can Sleep Here All Night": *Video Games and Labor*, JACOBIN (Nov. 8, 2013), <https://www.jacobinmag.com/2013/11/video-game-industry/>.

230. This is true regardless of whether regulation occurs at the federal or state level. The First Amendment was incorporated against the states in *Gitlow v. New York*, 268 U.S. 652, 666 (1925).

231. See *Central Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n of N.Y.*, 447 U.S. 557, 566 (1980) (requiring that a regulation of commercial speech directly advance a substantial state interest).

232. See *Nat'l Inst. Of Family and Life Advocates v. Becerra* ("NIFLA"), 138 S. Ct. 2361, 2371 (2018) (holding that certain compelled speech in the form of notice was to be analyzed as a content-based regulation of speech because it "alter[ed] the content" of speech).

233. See generally DAVID COURTWRIGHT, *THE AGE OF ADDICTION* (2019). Courtwright's book "chronicles the triumph of what Courtwright calls 'limbic capitalism,' the growing network of competitive businesses targeting the brain pathways responsible for feeling, motivation, and long-term memory." *Age of Addiction*, HARV. UNIV. PRESS, <http://www.hup.harvard.edu/catalog.php?isbn=9780674737372> (last visited June 25, 2019).

234. Brian Cerecente, *Nearly 70% of Americans Play Video Games, Mostly on Smartphones* (Study), VARIETY (Sept. 11, 2018, 6:30 AM), <https://variety.com/2018/gaming/news/how-many-people-play-games-in-the-u-s-1202936332/>. As discussed, the fact that 90% of respondents played games on their phones is especially concerning, given the ultra-addictive properties of free-to-play mobile games. See *supra* notes 158-68 and accompanying text.

put porn consumption rates at 50% to 99% among men, and 30% to 86% among women.”²³⁵

Make no mistake—the legal fights are on the horizon.²³⁶ Indeed, they have already begun.²³⁷ This Part seeks to preview, analyze, and provide guidance on the coming fights.

For now, I set aside the question of regulations targeting only advertising for two reasons. First, advertising regulations are of dubious value to regulators in addressing expressive addiction. In the age of Twitch streaming²³⁸ and pervasive social media use, restrictions on advertising targeting children, for example, may be entirely ineffective. *Fortnite* does not need to advertise to children to attract them to play; it needs only to make features children find attractive—say, inserting into the game silly “skins”²³⁹ or references to their favorite superheroes²⁴⁰—and then allow YouTube videos and Twitch streamers to simply record themselves playing the game. Pornography, on the other hand, is not widely advertised to general audiences. Even if regulators choose to target them, this inefficacy might

235. Kirsten Weir, *Is Pornography Addictive?*, 45 *MONITOR ON PSYCH.* 46 (2014).

236. See, e.g., Matthew McCaffrey, *Microtransactions and Loot Boxes: Can the Video Game Industry Regulate Itself?*, *MISES INST.* (Jan. 4, 2019), <https://mises.org/wire/microtransactions-and-loot-boxes-can-video-game-industry-regulate-itself> (noting that “governments around the world are increasingly interested in regulating the use of loot boxes and other microtransactions,” with several U.S. states considering regulations). See also *infra* Part II.A.1 (describing proposed federal legislation prohibiting loot boxes in video games targeted to children).

237. See Edward C. Baig, *Epic Games sued for not warning parents ‘Fortnite’ is allegedly as addictive as cocaine*, *USA TODAY* (Oct. 7, 2019), <https://www.usatoday.com/story/tech/talkin-tech/2019/10/07/fortnite-producer-epic-games-lawsuit-says-addictive-as-cocaine/3900236002/> (describing lawsuit filed in Canada).

238. Twitch is a platform that allows players to live-stream themselves playing games. It is the 13th most popular website in the United States, and has at least 15 million daily users, who average 95 minutes of viewing per day. See Blog, *2019’s 36 Most Incredible Twitch Stats*, 99 *FIRMS* (Apr. 23, 2019), <https://99firms.com/blog/twitch-stats/>.

239. “Skins,” in video game parlance, are costumes worn by characters. *Fortnite*, already known for its cartoonish style, see Brandon Alimanestiano, ‘Fortnite Battle Royale’: *The Cartoon Game You Will Never Want to Stop Playing*, *COLLEGIATE TIMES* (Apr. 2, 2018), http://www.collegiatetimes.com/lifestyles/fortnite-battle-royale-the-cartoon-game-you-will-never-want/article_044aa620-35d0-11e8-b64c-ab0d0253f50b.html, includes a huge variety of skins. *Fortnite* players can dress as elves, hippies, 80s-style fitness instructors, giant cheeseburgers, gingerbread men, leprechauns, scarecrows, clowns, nutcracker soldiers, Easter bunnies, sharks, dinosaurs, scuba divers, noir-style gumshoes, witch doctors, Dia de los Muertos celebrants, Vikings, Oktoberfest celebrants, Jack-o-lanterns, samurai, skeletons, robots, sushi chefs, giant ice cream cones, and more. See *FORTNITE SKINS*, <https://fortniteskins.net/sets/> (last visited May 27, 2019).

240. See Nick Statt, *Fortnite’s Avengers: Endgame Crossover is One of the Best Superhero Games I’ve Ever Played*, *THE VERGE* (Apr. 25, 2019, 4:04 PM), <https://www.theverge.com/2019/4/25/18516452/fortnite-avengers-end-game-marvel-superheroes-crossover-event-infinity-war> (describing an in-game event that allows players to use “Iron Man’s gloves, Hawkeye’s explosive bow, and Captain America’s shield”).

make advertising regulations unconstitutional simply because they fail entirely to advance a government interest.²⁴¹

Second, even if advertising regulations were effective, they would only be required to survive the *Central Hudson* test or some slightly more rigorous modification post-*NIFLA*.²⁴² The more interesting questions are whether a direct regulation of addictive speech can survive strict scrutiny, or whether regulators can directly regulate addictive content in speech while entirely avoiding the First Amendment. Because I conclude that a direct regulation of speech would satisfy strict scrutiny, it is likely that an advertising restriction would satisfy the more lenient tests.

The second set-aside for now is pornography. The regulation of pornography is an important constitutional question, and the recognition of pornography addiction may be a path around the equality-free speech impasse that constitutes current pornography jurisprudence. But, for now, I am trying to isolate variables. Unlike pornography, video games allow for some manner of identifying discrete bits of speech included in a product *solely* to addict consumers. Pornography does not allow for such pristine, laboratory conditions; the medium is defined by its addictive features. So, I leave for another day the question of what an addictive speech doctrine might mean for the regulation of pornography.

Accordingly, this Part advances two arguments. First, a direct regulation of addictive expression ought to satisfy strict scrutiny. Second, and more fundamentally, regulators ought not need to contend with the First Amendment in order to regulate addictive speech; addictive “speech” should not be considered speech at all.

A. The Regulation of Addictive Expression Satisfies Strict Scrutiny

Content-based regulations of speech are highly disfavored. Indeed, they “are presumptively unconstitutional and may be justified only if the government proves that they are narrowly tailored to serve compelling state interests.”²⁴³ The regulation of intentionally addictive expression nonetheless can meet this high burden.

241. See *Central Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n of N.Y.*, 447 U.S. 557, 566 (1980) (requiring that a regulation of commercial speech directly advance a substantial state interest); see also *Tschida v. Motl*, 924 F.3d 1297, 1305 (9th Cir. 2019) (“The confidentiality provision is so weak that we have difficulty seeing that it serves any state interest at all. Severe under inclusiveness renders the confidentiality provision unconstitutional.”).

242. See *supra* note 232 and accompanying text.

243. *Reed v. Town of Gilbert*, 135 S. Ct. 2218, 2226 (2015).

1. *Test Case: The Protecting Children from Abusive Games Act*

In May 2019, a bipartisan group of United States senators fired an opening salvo against developers with the introduction of the aggressive Protecting Children from Abusive Games Act (“PCAGA”).²⁴⁴

The PCAGA, as drafted, makes it “unlawful . . . to publish” or distribute a “minor-oriented game that includes pay-to-win microtransactions or loot boxes.”²⁴⁵ The act defines a “pay-to-win microtransaction” very broadly, as one that “eases a user’s progression through content otherwise available within the game” or “assists a user in accomplishing an achievement within the game.”²⁴⁶ It provides for enforcement via the Federal Trade Commission and by *parens patriae* suits by state attorneys general,²⁴⁷ and anticipates and counters a number of potential loopholes.²⁴⁸ *Ars Technica* subtly announced that the bill’s “expansive prohibitions could heavily impact large swathes of the game industry.”²⁴⁹ *Forbes* predicted that the bill “could devastate” publishers if passed.²⁵⁰

The PCAGA’s target is, unmistakably, the intentional affliction of addiction. In a press release, Senator Josh Hawley, who describes himself as a critic of “practices that prey on the addiction of users,” said the bill was about the “exploitation of children,” and targeted those developers who “prey on user addiction.”²⁵¹ Hawley concluded: “When a game is designed for kids, game developers shouldn’t be allowed to monetize addiction.”²⁵²

The legislation met swift opposition from the gaming industry and libertarians, but few noted what would surely be the industry’s strongest line of defense: that the law would violate the First Amendment by restricting the speech rights of developers.²⁵³ This section confronts that question in order

244. Kyle Orland, *GOP, Dem Senators Officially Introduce Loot Box, “Pay-to-Win” Legislation*, ARS TECHNICA (May 23, 2019, 1:50 PM), <https://arstechnica.com/gaming/2019/05/gop-dem-senators-officially-introduce-loot-box-pay-to-win-legislation/>.

245. Sen. Josh Hawley, Draft Legislation, available at <https://www.hawley.senate.gov/sites/default/files/2019-05/Loot-Box-Bill-Text.pdf>.

246. *Id.*

247. Sen. Josh Hawley, Draft Legislation, available at <https://www.hawley.senate.gov/sites/default/files/2019-05/Loot-Box-Bill-Text.pdf>.

248. *Id.*

249. Orland, *supra* note 244.

250. Dave Thier, *New Microtransaction/Loot Box Bill Could Devastate Video Game Publishers If It Passes*, FORBES (May 8, 2019, 2:17 PM), <https://www.forbes.com/sites/davidthier/2019/05/08/new-microtransactionloot-box-bill-could-devastate-video-game-publishers-if-it-passes/#17d534d4676f>.

251. Press Release, Sen. Josh Hawley, *Senator Hawley to Introduce Legislation banning Manipulative Video Game Features Aimed at Children* (May 8, 2019), <https://www.hawley.senate.gov/senator-hawley-introduce-legislation-banning-manipulative-video-game-features-aimed-children>.

252. *Id.*

253. One industry analyst apparently noted the connection to Free Speech Rights, but suggested that this was a political hurdle rather than a legal one. Eddie Makuch, *Loot Boxes Could*

to demonstrate that regulations targeted at addictive expression satisfy strict scrutiny.

2. *Strict Scrutiny Analysis*

For the purposes of this analysis, assume one major amendment to the PCAGA prior to passage: all references to children are removed, and the act simply bans loot boxes in all video games.²⁵⁴ A developer whose games include loot boxes sues to prevent enforcement of the act. How might a court analyze whether the Act violates the First Amendment?

a. What does it mean to be content-based?

The first path for regulators is likely to reject the premise entirely, and argue that the PCAGA is not a content-based regulation of speech. In one interview, for instance, Hawley was asked whether the next logical step after the PCAGA would be legislation protecting minors from exposure to pornography. He deferred, citing the First Amendment protection of pornography.²⁵⁵ Hawley apparently does not consider the First Amendment to be a similar obstacle to the PCAGA.

There is some legal precedent supporting this position. In *Reed v. Town of Gilbert*, for instance, the Supreme Court outlined two categories of regulation that count as content-based: those that “appl[y] to particular speech because of the topic discussed or the idea or message expressed,” and those that “cannot be justified without reference to the content of the regulated speech or that were adopted . . . because of disagreement with the message the speech conveys.”²⁵⁶

Be Made Illegal: New Bill Officially Introduced With Bipartisan Support, GAMESPOT (May 23, 2019, 9:30 PM), <https://www.gamespot.com/articles/loot-boxes-could-be-made-illegal-new-bill-official/1100-6467138>. Somehow, the most straightforward statement of the First Amendment issue has come from the prominent absurdist Twitter account dril, who tweeted: “Downloadable [sic] Content (DLC) and Microtransactions is [sic] Protected Free Speech. (USER HAS BEEN BANNED FOR THIS POST).” wint (@dril), TWITTER (Aug. 15, 2019 3:59 PM), <https://twitter.com/dril/status/1162091367792697344>.

254. The PCAGA’s regulation of games targeted at children presumably eases the government’s justificatory burden because the government has a greater interest in protecting children from most harms than adults. *See* *Brown v. Ent. Merchants Ass’n*, 564 U.S. 786, 841–42 (2011) (Breyer, J., dissenting) (“[T]he regulation of communication addressed to children need not conform to the requirements of the First Amendment in the same way as those applicable to adults.”) (internal quotation marks omitted). For the purposes of this analysis, relying on the special constitutional status of children would be—to use a video game term—a “cheese,” a purposeful exploitation of a mechanic that makes an encounter significantly easier than intended. *See* *Cheesing*, KNOW YOUR MEME (last visited Oct. 23, 2019), <https://knowyourmeme.com/memes/cheesing>.

255. John McCormack, *Josh Hawley’s Virtue Politics*, NAT’L REV. (June 20, 2019, 10:38 AM), <https://www.nationalreview.com/magazine/2019/07/08/josh-hawleys-virtue-politics/>.

256. *Reed v. Town of Gilbert*, 135 S. Ct. 2218, 2227 (2015) (internal quotation marks and alterations omitted).

At first glance, a prohibition on loot boxes appears not to fall in either category. Loot boxes do not discuss any topics or express any message. In one sense, as contrasted with a game's message, level design, and dialogue, a loot box system is more like a kernel of purely economic activity contained within the confines of a broader collection of "speech." This may have been Hawley's implicit argument when he said that loot boxes "are casinos essentially getting inserted into kids' games."²⁵⁷

This argument has some legal force behind it. In an early skirmish in the coming regulatory battle, in 2017, the County of Milwaukee enacted an ordinance requiring developers of augmented reality ("AR") games with location-based features to apply for and receive a permit before users could play the games in Milwaukee County parks.²⁵⁸ After swiftly dispatching the county's argument that the game at issue—which, for some reason, used location-based AR to facilitate a game of Texas Hold 'Em poker—was not speech at all,²⁵⁹ the Eastern District of Wisconsin then rejected the developer's argument that the ordinance was content-based. It noted that the regulation "imposes restrictions on functionalities . . . regardless of their content."²⁶⁰ The regulation applied whether the game was about "poker, zombie-killing, or Pokémon catching."²⁶¹ Therefore, because "the distinction is the mode or channel of speech, not its content," the court concluded the regulation was content-neutral.²⁶² Theoretically, a regulation targeting loot-boxes is no different than one targeting location-based AR features—both are functions rather than messages.

But this argument proves too much. *Reed* itself broadens its initial category of content-based regulations by noting that some of these regulations "are more subtle, defining regulated speech by its function or purpose."²⁶³ A law targeting loot boxes probably fits into this broader definition because it targets a particular subset of protected code that has the function or purpose of implementing and executing a loot box system.

Furthermore, as the court in *Candy Lab* acknowledged, *Brown* "seems to treat the literary *and* interactive aspects (physical or virtual) of video gaming as an undivided, expressive whole."²⁶⁴ From this, the court concluded, *Brown* might imply that a regulation that targeted "the physical

257. McCormack, *supra* note 255.

258. *Candy Lab v. Milwaukee Cty.*, 266 F. Supp. 3d 1139, 1142–43 (E.D. Wis. 2017). A location-based AR game is one in which "players interact with digital content in designated geolocations." *Id.* at 1142. Apparently, players of the hit *Pokémon Go* did significant damage to Milwaukee County parks, prompting the ordinance. *Id.* at 1141.

259. *Id.* at 1146.

260. *Id.* at 1149.

261. *Id.*

262. *Id.*

263. *Reed v. Town of Gilbert*, 135 S. Ct. 2218, 2227 (2015).

264. *Candy Lab*, 266 F. Supp. 3d at 1150.

act of game-playing, which is itself a part of the expression” was content-based.²⁶⁵ Unwilling to go so far as to declare gaming to be inherently expressive, the court retreated to its finding of content neutrality.

This is the wrong lesson from *Brown*’s holistic approach. Because a game is an undivided whole, prohibiting a function within the game is a content-based regulation of the game. In real-world terms, this is literally censorship—developers are not allowed to publish certain lines of code. A prohibition on code that executes a loot box system is just as content based as a prohibition on code that causes a character to talk about the legitimacy of violent revolution against the capitalist class.

The unworkability of the argument for content neutrality can be easily demonstrated by imagining similar regulations targeted at meta-features of other expressive products, such as a law prohibiting the release of any movie featuring the use of extended tracking shots. Tracking shots do not inherently convey a message.²⁶⁶ But of course, that regulation would be content-based, as would be one that strictly delineates the lengths of book chapters, or one that bans plot twists in early episodes of made-for-streaming television shows, given that early plot twists intentionally induce compulsive viewing.²⁶⁷

Like novels, movies, and television shows, video games are unified works of expression. When the government tells developers that they can or cannot include certain functions in a game, it regulates on the basis of the game’s content.

b. Anti-loot box regulations survive strict scrutiny

Content-based laws are “presumptively unconstitutional,”²⁶⁸ and their survival requires the government to show that its restrictions are “narrowly tailored to serve a compelling interest.”²⁶⁹ Unfortunately, the Supreme Court itself is constantly roiling with internal debate about whether majorities or dissents are actually applying the tests they purport to apply.²⁷⁰

265. *Id.*

266. See Jessica Kiang, *Ranking the 20 Greatest, Most Celebrated Long Takes*, INDIEWIRE (Mar. 27, 2014, 2:39 PM), <https://www.indiewire.com/2014/03/ranking-the-20-greatest-most-celebrated-long-takes-87699/> (arguing that celebration of tracking shots amounts to a “fetishization of form over content,” and arguing that some uses of tracking shots amount to “look at me! I haven’t used a cut in *minutes!*” rather than serving “a definite narrative purpose”).

267. See Jason Lynch, *Here’s the Recipe Netflix Uses to Make Binge-Worthy TV*, QUARTZ (Mar. 20, 2015), <https://qz.com/367117/heres-the-recipe-netflix-uses-to-make-binge-worthy-tv/>.

268. *Reed*, 135 S. Ct. at 2226.

269. See *Williams-Yulee v. Fla. Bar*, 135 S. Ct. 1656, 1665–66 (2015).

270. See Joseph Blocher & Luke Morgan, *Doctrinal Dynamism, Borrowing, and the Relationship Between Rules and Rights*, 28 WM. & MARY BILL OF RIGHTS J. (forthcoming 2019) (noting that merely evoking a doctrinal test does not necessarily ensure that the test is being consistently or properly applied).

Williams-Yulee v. Florida Bar is a good example. The Majority Opinion, authored by Chief Justice Roberts, purported to apply strict scrutiny, and upheld a ban on candidate solicitations in judicial elections.²⁷¹ Justice Stephen Breyer concurred, but argued that the tiers of scrutiny should not be mechanical tests at all.²⁷² Justice Ruth Bader Ginsburg concurred, but argued that regulations of judicial elections should not be subject to strict scrutiny.²⁷³ Justice Antonin Scalia dissented, stating that the regulation “straightforward[ly]” failed strict scrutiny.²⁷⁴ Justice Anthony Kennedy, also dissenting, castigated the Majority’s “error in the application of strict scrutiny,” writing that its “evisceration of that judicial standard now risks long-term harm” to the test.²⁷⁵ Justice Samuel Alito added: “[T]his rule is about as narrowly tailored as a burlap bag.”²⁷⁶

With this caveat in mind, there is no reason that a prohibition on loot boxes should fail strict scrutiny.

i. Compelling Interest

The strict scrutiny test is best run in reverse; only after identifying the compelling governmental interest served by a regulation can you determine whether the regulation is narrowly tailored to serve that interest.

A compelling interest is one in which “the factual situation demonstrates a real need for the government to act to protect its interests.”²⁷⁷ A compelling interest need not necessarily be a matter of life and death.²⁷⁸ But aesthetic concerns, for instance, “have never been held to be compelling” enough to support a speech regulation.²⁷⁹ The state must “specifically identify an actual problem in need of solving.”²⁸⁰

The Court extensively analyzed the question of compelling interest when adjudicating California’s prohibition of the sale of violent video games

271. *Williams-Yulee*, 135 S. Ct. at 1672.

272. *Williams-Yulee*, 135 S. Ct. at 1673.

273. *Id.*

274. *Id.* at 1677 (Scalia, J., dissenting).

275. *Williams-Yulee*, 135 S. Ct. at 1685 (Kennedy, J., dissenting).

276. *Id.* at 1687 (Alito, J., dissenting).

277. *Wilson v. City of Bel-Nor*, 924 F.3d 995, 1001 (8th Cir. 2019).

278. *See, e.g., Tschida v. Motl*, 924 F.3d 1297, 1304 (9th Cir. 2019) (“We agree that the State has a compelling interest in protecting certain kinds of private information about unelected officials.”). It is not clear whether the difference is necessarily reflected in doctrine, but in religious liberty cases, courts often use more stark language about the level of government interest required to justify regulation. *See, e.g., Sherbert v. Verner*, 374 U.S. 398, 406 (1963) (“[I]n this highly sensitive constitutional area, only the gravest abuses, endangering paramount interest, give occasion for permissible limitation.”).

279. *Wilson*, 924 F.3d at 1001.

280. *Brown v. Ent. Merchants Ass’n*, 564 U.S. 786, 799 (2011) (internal quotation marks omitted).

to minors in *Brown v. Entertainment Merchants Association*.²⁸¹ Justice Breyer concluded that the statute furthered two compelling interests: protecting the “physical and psychological well-being of minors,”²⁸² and assisting parents in discharging parental responsibilities.²⁸³ The Majority Opinion at times appears to agree that those interests are compelling,²⁸⁴ and at times calls into question the seriousness of the interests.²⁸⁵

Ultimately—perhaps ironically—Justice Scalia’s Majority Opinion is best understood as utilizing the nonmechanical approach to strict scrutiny endorsed by Justice Breyer, by evaluating “the degree to which the statute injures speech-related interests, the nature of the potentially-justifying ‘compelling interests,’ the degree to which the statute furthers that interest, [and] the nature and effectiveness of possible alternatives,” and then deciding whether, overall, the statute’s speech harms are out of proportion to its benefits.²⁸⁶ There is no other way to read Justice Scalia’s statement that “the government does not have a compelling interest in each marginal percentage point by which its goals are advanced.”²⁸⁷ Under the traditional approach to strict scrutiny, the “compelling interest” inquiry is restricted to the *nature* of the interest, with the concern Justice Scalia raises being more a question of narrow tailoring—does the statute restrict too much speech relative to its benefits? In *Brown*, Justice Scalia blends those inquiries, limiting its usefulness as guidance about what *kinds* of compelling interests will suffice to justify video game regulations.

At least rhetorically, *Brown* is an obstacle in the PCAGA’s path. The *Brown* Court held that a prohibition on the sale of violent video games to minors did not satisfy strict scrutiny.²⁸⁸ As a matter of intuition, it would seem more difficult to justify a total prohibition²⁸⁹ on loot boxes in video

281. *See id.* at 799-805 (majority opinion); 849-51 (Breyer, J., dissenting).

282. *Id.* at 850.

283. *Brown*, 564 U.S. at 849.

284. *See id.*, 564 U.S. at 805 (“California’s legislation straddles the fence between (1) addressing a serious social problem and (2) helping concerned parents control their children. Both ends are legitimate, but when they affect First Amendment rights they must be pursued by means that are neither seriously underinclusive nor seriously overinclusive.”).

285. *See id.* at 803 (“This [voluntary game rating] system does much to ensure that minors cannot purchase seriously violent games on their own, and that parents who care about the matter can readily evaluate the games their children bring home. Filling the remaining modest gap in concerned-parents’ control can hardly be a compelling state interest.”), 803 n.9 (“Even if the sale of violent video games to minors could be deterred further by increasing regulation, the government does not have a compelling interest in each marginal percentage point by which its goals are advanced.”).

286. *See id.* at 847 (Breyer, J., dissenting) (describing this approach to strict scrutiny).

287. *Id.* at 803 n.9.

288. *Id.* at 805.

289. *See* Joseph Blocher, *Bans*, 129 YALE L.J. (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3353911, at 13-19 (discussing the significance and difficulty in First

games, including those in games targeted at adults. The California legislation, by contrast, “impose[d] no more than a modest restriction on expression”—no violent video games were banned; the legislation only affected who could purchase them.²⁹⁰

But nothing from *Brown* can be read to cast doubt on the seriousness of the government’s interest in passing the PCAGA. First, the PCAGA advances the compelling interest of protecting the physical and psychological well-being of children and adolescents.²⁹¹ A total prohibition on loot boxes in video games ensures that minors cannot fall prey to a loot box system, and in fact, more thoroughly advances this interest than a prohibition on loot boxes in games targeting minors, because it is common knowledge that minors play video games targeting adults.²⁹² Second, a prohibition on loot boxes serves the government’s compelling interest in preventing the development of video game addictions. Preventing addiction has been a legitimate regulatory goal since the founding of the United States,²⁹³ and thousands of years prior.²⁹⁴ The aggregate impacts of addiction on society can be serious²⁹⁵ and justify regulatory intervention.

The largest threat *Brown* poses to the PCAGA in the context of the government’s compelling interest is the Court’s willingness to view the psychological evidence linking video games and violence with extreme skepticism.²⁹⁶ The Court rejected the state’s contention that its legislature was entitled “to make a predictive judgment that such a link exists, based on competing psychological studies.”²⁹⁷ The Court castigated the evidence upon which California relied as “not compelling,” “based on correlation, not evidence of causation,” and suggested that the effects shown to be produced by exposure to violent games was “indistinguishable from effects produced by other media.”²⁹⁸ Only Justice Alito, joined by Chief Justice Roberts, appeared to take seriously the proposition that violent video games were different in kind from depictions of violence in other media.²⁹⁹

Amendment law in distinguishing between an unconstitutional “ban” and a constitutional regulation, mirroring the denominator problem in takings cases).

290. *Brown*, 564 U.S. at 848-49 (Breyer, J., dissenting).

291. *See id.* at 850.

292. *See id.* at 803 n.9 (describing FTC report detailing minors’ access to video games rated “M” for Mature).

293. *See supra* Part I.B.2.

294. *See supra* Part I.B.1.

295. *See supra* notes 66, 151-68, 212, and accompanying text.

296. *See Brown*, 564 U.S. at 799-801 (questioning evidence of link between video games and violence).

297. *Id.* at 800.

298. *Id.* at 800-01.

299. *See id.* at 816-21 (Alito, J., concurring) (discussing violence in video games).

Subsequent research continues to provide conflicting results as to the causal link between violent video games and real-world violence.³⁰⁰ And, as discussed, research into video game addiction is still in its early stages,³⁰¹ but the DSM-V's call for further research into "Internet gaming disorder"³⁰² is a significant step that will result in further research. Ultimately, there is no easy solution to this particular obstacle,³⁰³ except to argue that the evidence of video game addiction seems compelling, and that loot boxes, in particular, effectively mimic gambling, and that the existence of gambling addiction is almost universally acknowledged.³⁰⁴

Setting aside the morass of the sufficiency of the scientific evidence, the PCAGA should advance at least two³⁰⁵ interests important enough to consider "compelling." The analysis moves on to whether the law is narrowly tailored in pursuing those interests.

ii. Narrow Tailoring

Narrow tailoring requires, in the first instance, "a genuine nexus" between a regulation and the interest that it seeks to serve.³⁰⁶ If such a nexus exists, the government must then show that there is no "less restrictive alternative that would be at least as effective"³⁰⁷—when subject to strict scrutiny, the government can regulate no more speech than is necessary. Far more so than the compelling interest requirement, the narrow tailoring requirement poses a serious threat to a loot box prohibition.

300. Compare Andrew K. Przybylski & Netta Weinstein, *Violent Video Game Engagement is Not Associated with Adolescents' Aggressive Behavior: Evidence From a Registered Report*, 6 ROYAL SOCIETY OPEN SCI. (2019) (finding no causal relationship between violent game exposure and caretaker assessments of aggressive behavior in adolescents), with Sandra L. Calvert et al., *The American Psychological Association Task Force Assessment of Violent Video Games*, 72 AM. PSYCHOLOGIST 126 (2017) (conducting a meta-review of studies published between 2009 and 2013, and concluding that violent video game exposure was associated with a range of aggressive and antisocial behavior).

301. See *supra* Part I.C.1.a.

302. See *supra* note 61 and accompanying text.

303. See generally Ben K. Grunwald, Comment, *Suboptimal Social Science and Judicial Precedent*, 161 U. PENN. L. REV. 1409 (2013); William D. Araiza, *Deference to Congressional Fact-Finding in Rights-Enforcing and Rights-Limiting Legislation*, 88 N.Y.U. L. REV. 878 (2013). For a more focused discussion on the problem of uncertain social science and *Brown* in particular, see generally William K. Ford, *The Law and Science of Video Game Violence: What Was Lost in Translation*, 31 CARDOZO ARTS & ENT. L.J. 297 (2013).

304. See *supra* notes 59-60 and accompanying text.

305. The PCAGA may advance other compelling interests. For example, it would presumably aid in the discharge of parental responsibilities. See *Brown v. Ent. Merchants Ass'n*, 564 U.S. 786, 849 (Breyer, J., dissenting). For the sake of avoiding diminishing marginal returns by running down a list of progressively weaker interests, I focus on the two mentioned.

306. *Wilson v. City of Bel-Nor*, 924 F.3d 995, 1002 (8th Cir. 2019).

307. *Brown*, 564 U.S. at 847 (Breyer, J., dissenting) (internal quotation marks omitted).

The doctrine of underinclusivity fits between the questions of compelling interest and narrow tailoring, because it “raises serious doubts about whether the government is in fact pursuing the interest it invokes.”³⁰⁸ A statute raises an underinclusivity concern when “the State regulates one aspect of a problem while declining to regulate a different aspect of the problem that affects its stated interest in a comparable way.”³⁰⁹ In practice, this “requires lawmakers to thread a very fine needle’s eye between too little and too much regulation.”³¹⁰

The Court in *Brown* found underinclusivity “alone enough” to defeat the California statute, because “California has singled out the purveyors of video games for disfavored treatment—at least when compared to booksellers, cartoonists, and movie producers—and has given no persuasive reason why.”³¹¹ This would seem to cast doubt on a prohibition on loot boxes because they are merely one vector of addiction contained solely in one medium of communication. Even, or especially, if the PCAGA were considered to be a version of a gambling regulation, a reviewing court might legitimately wonder how a government allows some legal gambling and not loot boxes.

The Court’s underinclusivity analysis in *Brown* has been subject to criticism.³¹² The doctrine is “extremely malleable,” and can be used to kill a statute or can be ignored as a court defers to the legislature’s political and policy choices to regulate one area and not another.³¹³ And the Court has since appeared to dial the doctrine back—over Justice Scalia’s objections³¹⁴—with Chief Justice Roberts writing that the First Amendment “does not put a State to [an] all-or-nothing choice,” and that the Court should not punish the state for “leaving open more, rather than fewer, avenues of expression, especially when there is no indication that the selective restriction of speech reflects a pretextual motive.”³¹⁵ A majority of justices agreed that “the First Amendment imposes no freestanding ‘underinclusiveness limitation,’” and noted that the Court has upheld laws that “conceivably could have restricted even greater amounts of speech in service of their stated interests.”³¹⁶

Is the PCAGA fatally underinclusive? Because of the malleability of the doctrine, it is difficult to definitively answer this question. One might

308. *Id.* at 802.

309. *Williams-Yulee v. Fla. Bar*, 135 S. Ct. 1656, 1670 (2015).

310. Clay Calvert, *Underinclusivity and the First Amendment: The Legislative Right to Nibble at Problems After Williams-Yulee*, 48 ARIZ. ST. L.J. 525, 525 (2016).

311. *Brown*, 564 U.S. at 802.

312. *E.g.*, Michael Coenen, *More Restrictive Alternatives*, 96 N.C. L. REV. 1, 73–75 (2017).

313. Calvert, *supra* note 310, at 574.

314. *Williams-Yulee*, 135 S. Ct. at 1681.

315. *Id.* at 1670.

316. *Id.* at 1668.

argue against the PCAGA that, by targeting only loot boxes, the legislation in fact leaves in place any number of addictive elements in video games, such as social interaction, levelling up, vibrant graphics, or repetitive mechanics that generate a feeling of competence. On the other hand, a legislature might conclude that loot boxes are different because they serve no valuable gameplay interest to the player; they exist only to generate revenue, and induce compulsive playing. This, in turn, also rebuts the concern about pretext, ensuring to a court that the legislature is not simply singling out video games.³¹⁷

As for the decision to only target video games, the application of the underinclusivity doctrine in this context would amount to a declaration that a legislature could not address the problem of video game addiction at all, and must address addiction in a more comprehensive piece of legislation. This generates perverse incentives; a court should generally want to encourage legislatures to regulate with precision and care around social problems, especially when they interact with constitutional rights.³¹⁸

And with respect to the protection of children, the only argument for underinclusivity is the one made by Justice Scalia in *Brown*; that legislators should be targeting other vectors of addiction for children.³¹⁹ Of course, legislatures *do* attempt protect children from cigarette addiction, gambling addiction, alcohol addiction, and the like.³²⁰ And unlike another feature of the California law that the Majority found problematic in *Brown*, the PCAGA contains no “parental veto” that would allow children to access problematic games anyway.³²¹ The PCAGA completely prohibits games with loot boxes.

That fact, in turn, leads to the question of overinclusiveness. Unlike underinclusiveness, overinclusiveness—the core of the narrow tailoring inquiry—is always fatal.³²² Strict scrutiny requires lawmakers to use “the least restrictive means” to meaningfully serve their compelling interest.³²³ The only reprieve is that alternative means have to be at least as effective in advancing the government’s interest.³²⁴ This aspect is perhaps more accurately defined as requiring an efficiency calculation: units of speech

317. See *supra* note 315 and accompanying text.

318. See Coenen, *supra* note 312, at 73-75 (arguing that Scalia’s invocation of the underinclusivity doctrine in *Brown* was inappropriate, in part because Scalia rightly concluded that California was “wise” in not attempting to regulate minors’ access to other forms of communication that had potential correlative relationships with violent behavior, suggesting that the California legislation’s limited scope was an attempt to comply with the First Amendment’s mandates).

319. See *Brown v. Ent. Merchants Ass’n*, 564 U.S. 786, 801-02 (2011).

320. See, e.g., *supra* note 125 and accompanying text.

321. See *Brown*, 564 U.S. at 805 (2011).

322. Calvert, *supra* note 310, at 573-74.

323. *McCullen v. Coakley*, 573 U.S. 464, 478 (2014).

324. *Brown*, 564 U.S. at 847 (Breyer, J., dissenting).

restricted per unit of social good from regulation. Regulators are not required to choose a less *efficient* alternative simply because it also restricts less speech.³²⁵

As to the compelling interest in protecting children's well-being, the PCAGA would likely be considered overinclusive, because it completely restricts the ability of consenting adults to access and play games with loot box systems. While a total prohibition *also* serves the well-being of minors, by eliminating a way for adults to give games with loot boxes to children, it does so in a manner that restricts more speech than is necessary. The law could, for example, prohibit the sale of games with loot boxes to minors, and contain legal mechanisms to stop adults from transferring such games to children. It would likely be somewhat less effective, but it would be far more efficient.³²⁶

But the PCAGA is saved from flunking strict scrutiny because it is not overinclusive in addressing the goal of preventing video game addiction. Indeed, a prohibition on loot boxes is a relatively narrow regulatory intervention into a particularly troublesome feature in modern video games. That feature is one that expresses no meaningful message; it exists solely to induce problematic consumption and the resulting monetary gain for developers. Accordingly, the PCAGA restricts relatively little speech—and even less of what one could call “valuable” speech³²⁷—and leaves video game developers free to pursue games with any ideological, political, or social message. It should survive strict scrutiny.

B. Addictive Expression Should Not Be Covered Speech

Although regulations targeted at addictive expression have a strong argument for surviving strict scrutiny, the test is nonetheless an extraordinarily difficult one. Laws subject to a free speech strict scrutiny analysis are struck down roughly 80% of the time,³²⁸ and the Court has repeatedly emphasized that laws that survive strict scrutiny will be “rare.”³²⁹ Regulators stand a much better chance of meaningfully addressing the

325. Cf. Alan O. Sykes, *The Least Restrictive Means*, 70 U. CHI. L. REV. 403, 403-04 (2003) (questioning whether a least restrictive means analysis is meaningfully different in practice from a cost-benefit analysis).

326. See *Brown*, 564 U.S. at 803 n.9 (noting that even if regulation were constitutional, increased regulation that restricted more speech in order to achieve marginal increases in effectiveness were not necessarily constitutional), 847 (Breyer, J., dissenting) (describing a similar non-mechanical approach to strict scrutiny that involves weighing whether the amount of speech restricted is outweighed by the benefits of regulation).

327. See *infra* Part II.B.

328. See Adam Winkler, *Fatal in Theory and Strict in Fact: An Empirical Analysis of Strict Scrutiny in the Federal Courts*, 59 VAND. L. REV. 793, 815 (2006). Video game regulations have, if anything, fared even worse. See Clark, *supra* note 38, and O'Holleran, *supra* note 39.

329. *United States v. Playboy Ent. Grp., Inc.*, 529 U.S. 803, 818 (2000).

problems associated with expressive addiction if they can convince a reviewing court that their regulations do not restrict “speech” at all.

For First Amendment purposes, most speech (and some non-speech) is “speech.” But several genres of actual communication are not “speech” within the meaning of the First Amendment.³³⁰ The generally accepted list of these unprotected categories of speech includes: incitement, true threats, fighting words, speech incident to criminal conduct (including, for example, fraud, blackmail, perjury, etc.), and obscenity.³³¹

Speech intended solely to induce pathological addiction should be included on that list. There are a number of reasons why. First, addictive expression is not communicative. It does not aim to provoke cognition in its listeners; indeed, it hopes to bypass cognition and exploit “predictably irrational” chemical reactions in the brain to induce consumption. Second, addictive expression actively does damage to the core interests at the heart of the free speech guarantee—the protection of autonomy, the promotion of truth, and the fostering of democratic self-governance. Finally, it can be analogized to the existing exceptions, and the longstanding acceptance of regulations targeting addiction provide the historical pedigree to justify its exclusion from the First Amendment’s coverage.

1. Intentionally Addictive Expression is Low-Value Speech

a. Noncognitive and Noncommunicative

The First Amendment’s guarantee of the right to free speech exists to protect the communication of ideas. Addictive expression does not communicate a message. It has no ideas. And it is certainly the case that there is no *need* for addictive expression in order for ideas to be expressed. Indeed, addictive expression tends to degrade the communication of ideas by appealing to noncognitive, automatic processes in the brain. There is no reason to treat it as speech.

Despite near-universal agreement with the proposition that the Free Speech Clause “was fashioned to assure unfettered exchange of ideas to bring about political and social change desired by the people,”³³² there is also near-universal agreement with the Court’s “reassuring[] declar[ation]” that

330. Luke Morgan, Note, *Leave Your Guns at Home: The Constitutionality of a Prohibition on Carrying Firearms At Political Demonstrations*, 68 DUKE L.J. 175, 185-86 (2018).

331. *United States v. Alvarez*, 567 U.S. 709, 717-18 (2012).

332. *Roth v. United States*, 354 U.S. 476, 484 (1957).

speech with no clear message such as nonrepresentational art or nonsense verse is protected.³³³ Reconciling these two ideas has proven difficult.³³⁴

But it need not be. The way to reconcile an Amendment intended to protect meaningful speech but needed to protect some meaningless speech is to discover which meaningless speech merits protection, and which does not. The existing categorical exceptions—obscenity, incitement, and the like—provide us with several outputs of that equation. The rest is just filling in variables.

Scholars like Cass Sunstein and Geoffrey Stone have convincingly argued that the cognitive/noncognitive³³⁵ distinction is at least one workable way to do so.³³⁶ The relationship between speech and cognition exists in two dimensions. First, speech might be expressed in a *manner* that either encourages or discourages cognition.³³⁷ Second, a speaker may subjectively *intend* for her speech to encourage or discourage cognition.³³⁸ The speaker's intent can also be divined, in some cases, from the manner in which she has chosen to speak.³³⁹

The cognitive/noncognitive distinction goes a long way to explaining the current categorical exceptions from free speech coverage. Obscenity, for example, is constitutionally defined as those materials that “appeal to the prurient interest in sex” without containing “serious literary, artistic,

333. Joseph Blocher, *Nonsense and the Freedom of Speech: What Meaning Means for the First Amendment*, 63 DUKE L.J. 1423, 1425-26 (2014).

334. See Mark Tushnet, *Art and the First Amendment*, 35 COLUM. J.L. & ARTS 169, 170 (2012).

335. The definitional problems in this inquiry are, obviously, fraught. Sunstein defines speech as cognitive if it “is intended to or does in fact impart knowledge in any sense.” Cass R. Sunstein, Essay, *Pornography and the First Amendment*, 1986 DUKE L.J. 589, 603. Like Sunstein, I rely on Frederick Schauer's earlier wrestling with the idea. Whether speech is cognitive should not be limited by the term's “technical sense. To react cognitively is to react mentally, or intellectually . . .” Frederick Schauer, *Speech and “Speech”—Obscenity and “Obscenity”: An Exercise in the Interpretation of Constitutional Language*, 67 GEO. L.J. 899, 922 n.137 (1979). See also *id.* at 922 (referring to “the idea of cognitive content, of mental effect, of a communication designed to appeal to the intellectual process” and disclaiming the “unwieldy philosophical baggage” associated with the term). The best definition is probably that offered offhand by Stone. Cognitive speech “engages the thought process and attempts to reinforce or alter opinions and attitudes by rational persuasion.” Geoffrey R. Stone, Essay, *Sex, Violence, and the First Amendment*, 74 U. CHI. L. REV. 1857, 1864 (2007).

336. See Stone, *supra* note 335, at 1863-1865; Sunstein, *supra* note 335, at 603. See generally Cass R. Sunstein, Essay, *The First Amendment and Cognition: A Response*, 1989 DUKE L.J. 433. See also LAWRENCE TRIBE, *AMERICAN CONSTITUTIONAL LAW* 837 (2d ed. 1988) (“It is not plausible to uphold the right to use words as projectiles where no exchange of views is involved.”).

337. Sunstein, *supra* note 335, at 603; Stone, *supra* note 335, at 1864-65.

338. Sunstein, *supra* note 335, at 603-04 (“Third, the purpose of the speaker is relevant: if the speaker is seeking to communicate a message, he will be treated more favorably than if he is not.”).

339. *Id.* at 607-08 (“The pornographer's purpose in disseminating pornographic materials—to produce sexual arousal—can be determined by the nature of the material.”).

political, or scientific value.”³⁴⁰ To “appeal to the prurient interest in sex” is to have “a tendency to excite lustful thoughts.”³⁴¹ Obscenity, then, is defined by the Court as that speech that arouses without encouraging any intellectual activity.³⁴² Likewise, the exception for incitement is aimed at those rabble-rousers whose “[e]loquence may set fire to reason.”³⁴³ Threats are made through speech but their “primary effect is analogous to twisting someone’s arm”—they “affect people’s behavior not by persuasion but by coercion.”³⁴⁴

Going down the list of exceptions one-by-one reveals that each can be explained, at least in part, by the cognitive/non-cognitive distinction. The possible exception is speech incident to criminal conduct—fraud, for example, is certainly cognitive (although blackmail is closer to a threat in terms of its intellectual force). But the logic is much the same. Speech incident to criminal conduct is not uttered in order to convey a message, but rather to further a crime. In that sense, it is noncognitive: the speaker is not seeking to “engage the thought process” or to “reinforce or alter opinions and attitudes by rational persuasion.”³⁴⁵

Of course, the cognitive/noncognitive distinction has been subject to fierce criticism.³⁴⁶ The response, at its core, is that that the distinction is illusory, and that all “speech” is processed intellectually. “Expression always reaches us through some imaginative pattern or patterns that we already understand.”³⁴⁷ For instance, upon viewing the same pornography, some will be aroused, others repulsed, others enraged; this variance alone is said to disprove a theory of automatic, instinctual noncognition.³⁴⁸ Music, similarly, is nothing but a series of sounds, which the human brain has to interpret for any “instinctual” emotive effect to take place.³⁴⁹ And of course it is obviously true that “much speech with noncognitive components is entitled to the highest degree of constitutional protection.”³⁵⁰

But the critics of the distinction overstate the case against it. The cognitive/noncognitive distinction need not be totally explanatory of the

340. *Miller v. California*, 413 U.S. 15, 24 (1973).

341. *Roth v. United States*, 354 U.S. 476, 487 n.20 (1957).

342. *See* Sunstein, *supra* note 335, at 603 n.88; Schauer, *supra* note 335, at 918 (“The purpose of the legal or constitutional definition of obscenity is to isolate that which lacks cognitive or intellectual content Material which appeals to the prurient interest is intended to, and does in fact, produce a physical or quasi-physical stimulus rather than a mental effect.”).

343. *See* *Gitlow v. New York*, 268 U.S. 652, 673 (1925) (Holmes, J., dissenting).

344. *Stone*, *supra* note 335, at 1864.

345. *Id.*

346. *See, e.g.*, Paul Chevigny, *Pornography and Cognition: A Reply to Cass Sunstein*, 1989 DUKE L.J. 420, 422.

347. *Id.* at 429.

348. *See id.* at 429-30.

349. Emily Campbell, *Obscenity, Music and the First Amendment: Was The Crew 2 Lively?*, 15 NOVA L. REV. 159, 219-20 (1991).

350. Sunstein, *supra* note 336, at 433.

categorical exceptions, and need not be a perfect dichotomy, in order to add value to First Amendment analysis. On the other hand, though, to argue that there is no such distinction would entirely wipe out core assumptions about the First Amendment and democratic society in general.³⁵¹ For instance, although First Amendment doctrine does not *necessarily* reflect preferential treatment for political speech over any other kind of protected speech, there is no doubt that there is—almost unanimously among jurists and academics—at least a rhetorical preference for political speech.³⁵² Such a preference would be impossible to justify without a cognitive/noncognitive distinction. That the distinction is not as crisp as one would prefer in one’s constitutional doctrine does not obviate that it is—it must be—relevant as a tool to decide which “meaningless” (or message-less) speech merits protection. Music, nonrepresentational art, and erotica all *invite* cognition; threats, incitement, and obscenity all seek to foreclose it.

So, while it may be wrong to think of the cognitive/noncognitive distinction as a dichotomy, a gradient or spectrum can nonetheless be generated. Locating speech along that spectrum is an important initial guide for how the First Amendment ought to treat that speech. Intentionally addictive speech, on the whole, fares poorly.³⁵³ Addiction is a dysfunction in the brain’s reward and motivation circuitry.³⁵⁴ An addict’s brain is literally and physically altered, rewired to pathologically pursue dopamine and serotonin rewards,³⁵⁵ even at extreme costs to the individual.³⁵⁶ Addicts do not even *like* the subject of their addiction; they need it.³⁵⁷ Freedom of speech should not include the freedom to inflict a disease.

There is another way of getting at the same argument. One might imagine the kind of pluralistic society the First Amendment is intended to foster, raucous with rational debate on important public issues, brimming

351. *See id.* at 434 (describing the erasure of the cognitive/noncognitive distinction as “antithetical to the basic logic of a system of free expression, which places a high premium on the process of discussion and deliberation among people with different views”).

352. *See*, *Citizens United v. FEC*, 558 U.S. 310, 339–40 (2010) (“Speech is an essential mechanism of democracy, for it is the means to hold officials accountable to the people. . . . The First Amendment ‘has its fullest and most urgent application to speech uttered during a campaign for political office.’”) (internal quotation marks omitted).

353. Unintentionally addictive, or inherently addictive speech, may fare less poorly. For instance, to the extent that the speaker’s intent matters, the intent of the pornographer is apparently less to addict than to arouse (or at least, there’s no evidence, unlike with video games, that porn producers are intentionally exploiting addiction). From Sunstein’s perspective, this is essentially an intent to not convey a message, and is a relevant factor against protecting speech. From my perspective, an intent to arouse is significantly less problematic than an intent to addict, and I would treat intentionally addictive speech more unfavorably than unintentionally addictive speech.

354. *See supra* note 57 and accompanying text.

355. *See supra* notes 67–69 and accompanying text.

356. *See supra* note 66 and accompanying text.

357. *See supra* notes 204–06 and accompanying text.

with art and music, bursting with dissent, humming with democratic energy. And then, simply, work backwards from there. What sort of speech protections are necessary to make that society happen?

Any constitutional speech protections not *necessary* to generate that society would, in most other constitutional contexts, be viewed with some suspicion. The Constitution's constraints on government action are, for the most part, strictly construed in order to preserve wide latitude for lawmakers.³⁵⁸ The default test for the constitutionality of government action, after all, is mere rational basis review, which protects even in-fact irrational actions if any set of facts exist that could justify the action.³⁵⁹ And the general presumption of constitutionality is part of why courts prefer as-applied challenges over facial challenges to a law's constitutionality,³⁶⁰ and why constitutional decisions are avoided, if possible.³⁶¹

The First Amendment is somewhat of an exception to this rule. First Amendment claimants, for example, can press an overbreadth claim even if their speech could have been constitutionally prohibited under a narrower statute.³⁶² But the exception is not limitless. If speech does not advance First Amendment interests; indeed, if it does not even involve the communication of ideas or emotions at all, there is little reason to shield such speech from democratic lawmaking.

Intentionally addictive expression, in the end, "is not needed to express any idea."³⁶³ It plays "no essential part in any expression of ideas."³⁶⁴ As such, "[i]n order to have a society in which public issues can be openly and vigorously debated, it is not necessary to allow" intentionally addictive expression to wreak havoc.³⁶⁵ Ideas are debated and accepted every day without reliance on addictive speech. Regulators can, for example, safely

358. Or, put another way, statutes are strictly construed to avoid bumping into the constitutional guarantee. *See infra* note 361. There are some instances of strict constructions of constitutional language—the exact timing of when a criminal suspect is entitled to a lawyer being one example—but whether the statute or the Constitution is being narrowly construed is irrelevant; the point is that courts purport to bend over backwards to avoid finding a government action of questionable constitutionality to be unconstitutional.

359. *See* *USDA v. Moreno*, 413 U.S. 528, 533 (1973) (defining the rational basis test as whether challenged action "is rationally related to a legitimate governmental interest").

360. *See* *Gonzales v. Carhart*, 550 U.S. 124, 168 (2007) ("[A]s applied challenges are the basic building blocks of constitutional adjudication.") (quoting Richard H. Fallon, Jr., *As-Applied and Facial Challenges and Third-Party Standing*, 113 HARV. L. REV. 1321, 1328 (2000)).

361. *See* *Clark v. Martinez*, 543 U.S. 371, 380-81 (2005) ("If one of [two statutory constructions] would raise a multitude of constitutional problems, the other should prevail—whether or not those constitutional problems pertain to the particular litigant before the court.").

362. *United States v. Stevens*, 559 U.S. 460, 473 (2010).

363. *See* *Iancu v. Brunetti* 139 S. Ct., 2294, 2318 at 2303 (June 24, 2019) (Alito, J., concurring).

364. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 572 (1942).

365. *See* *Snyder v. Phelps*, 562 U.S. 443, 475 (2011) (Alito, J., dissenting).

ban loot boxes without fear of censoring an iota of content with serious ideological, political, social, literary, scientific, or artistic merit. Addictive expression “has no value,” and proscribing it would “not chill any valuable speech.”³⁶⁶

Accordingly, regulators may do so without violating the First Amendment.

b. Actively Harms First Amendment Interests

It is also possible to disaggregate the specific interests that the First Amendment serves, and then to measure a genre of speech against those interests. While a minority view speech itself as a fundamental good, for the most part there exists unanimity in the idea that speech, and therefore also its protection, is only instrumental.³⁶⁷ Accordingly, constitutional protection for speech is “normatively defensible only if [it] serves relevant constitutional values.”³⁶⁸

There is also widespread agreement on the three such values that the First Amendment serves: autonomy, the discovery of truth in the marketplace of ideas, and democracy.³⁶⁹ Each purposive theory of the Amendment has its adherents and critics, and many argue that the Amendment advances all three interests,³⁷⁰ or that the search for a “free speech principle” is a fool’s errand.³⁷¹ But even those critics acknowledge that First Amendment scholarship has generated “a more or less standard list of such candidates.”³⁷² These values animate First Amendment law:

Commentators and jurists have long searched for an explanation of the true value served by the first amendment’s protection of free speech. This issue certainly has considerable intellectual appeal, and the practical stakes are also high. For the answer we give to the question what value does free speech serve may well determine the

366. See *United States v. Alvarez*, 567 U.S. 709, 739 (2012) (Alito, J., dissenting).

367. See, e.g., Mark G. Yudof, Review, *In Search of a Free Speech Principle*, 82 MICH. L. REV. 680, 683 (1984) (quoting Michael Sokolow as proposing the following comprehensive free speech principle: “If speech . . . is more likely than not to lead to democracy, truth, and individual fulfillment . . . then government cannot prohibit the utterance of that speech”).

368. Blocher, *supra* note 333, at 1441.

369. See, e.g., *id.* (listing autonomy, the marketplace of ideas, and democracy as the “relevant constitutional values”); Yudof, *supra* note 367, at 682 (same).

370. See, e.g., Yudof, *supra* note 367, at 682 (“[O]ne may not believe that free expression invariably advances the truth, strengthens individual autonomy, or is a necessary condition for democracy. But the three arguments *together* might well support a free speech principle.”).

371. See Robert Post, *Recuperating First Amendment Doctrine*, 47 STAN. L. REV. 1249, 1271 (1995) (“There is in fact no general free speech principle . . . Each of these values seems pressing when applied to speech in some situations, but not when applied to speech in other situations.”).

372. *Id.*

extent of constitutional protection to be given to such forms of expression as literature, art, science, commercial speech, and speech related to the political process.³⁷³

This Part marshals each purposive theory of the First Amendment in turn to show that addictive expression does not advance, but instead actively hinders, human autonomy, the promotion of truth through the marketplace of ideas, and the fostering of democracy. Accordingly, addictive expression is exceptionally low-value speech, not deserving of protection.

i. Compulsion and Autonomy

The most fundamental and far-reaching³⁷⁴ of the purposive models of the First Amendment is the proposition that the Constitution protects expression because to censor speech is a powerful violation of a fundamental human right to think and behave as she sees fit, so long as she does not harm another.³⁷⁵ The importance in protecting speech does not necessarily lie in the fact that protecting speech generates more of it; rather, protection serves to guarantee individuals the ability to choose whether to speak, and about what to speak, and what to say about those topics. If, at the end of that decisional process, the individual decides not to say anything, or decides to say something about a banal topic, or decides to say something hideous about an important topic, so be it. The good that the First Amendment has wrought is in the cognitive activity in which the individual engaged.³⁷⁶ If the government lurked ready and able to punish speech, that cognition would be strangled in its crib; to prevent that, speech is protected.

The autonomy theory, taken to its logical extreme, utterly rejects the very idea of “low-value speech,” and veers toward considering speech itself a fundamental good.³⁷⁷ If it does not matter what one says or what one talks

373. Martin H. Redish, *The Value of Free Speech*, 130 U. PENN. L. REV. 591, 591 (1982).

374. See Blocher, *supra* note 333, at 1499 (referring to the autonomy theory as “[t]he most potentially expansive theory of the First Amendment”).

375. See JOHN STUART MILL, ON LIBERTY 9 (1978).

376. It is for this reason that Professor C. Edwin Baker has argued that “a complete denial of first amendment protection for commercial speech is not only consistent with, but is required by, first amendment theory.” C. Edwin Baker, *Commercial Speech: A Problem in the Theory of Freedom*, 62 IOWA L. REV. 1, 3 (1976). Baker argues that speech is protected because it exists as “a manifestation of the self, and the self’s choices and commitments.” *Id.* at 7. “[H]ow ‘profit’ wants the world to be bears no necessary relation to how any individual wants it to be. To allow ‘profit’ to vote is to depreciate human freedom.” *Id.* at 15-16.

377. Again, though, the point is not protecting “speech” as much as it is protecting the ability to speak if one so chooses. Some have persuasively argued that, because of this, the autonomy model cannot alone support a free speech principle: if “choice” is ultimately the fundamental good, then the object of that choice can be speech or any other conduct. Nothing sets speech apart. See Robert Post, *Participatory Democracy and Free Speech*, 97 VA. L. REV. 477, 479-80 (2011) (“From this perspective, the First Amendment ought to be interpreted as merely one instance of a

about, then “all forms of expression are equally valuable for constitutional purposes,”³⁷⁸ because “the final end of the State [is] to make men free to develop their faculties.”³⁷⁹ Accordingly, some autonomy theorists have mounted attacks on the existing categorical exceptions.³⁸⁰

But unlike the existing categorical exceptions, addictive expression literally corrodes self-realization³⁸¹ and autonomy. Indeed, this is its defining trait. Speakers can rely on relatively simple and well-understood formulas to overbear, eventually, the will of some listeners, with assistance in most cases from a genetic predisposition for which the individual is undeniably not responsible.³⁸²

Consider, briefly, an *ad absurdum* example borrowed from the pages of science fiction: a film that destroys its viewers’ interest in doing anything other than watching the film. This is the titular plot device of David Foster Wallace’s *Infinite Jest*.³⁸³ But one need not delve into the world of science fiction to find such an example; this is also a description of the mechanisms of pornography addiction.³⁸⁴

more general libertarian constitutional commitment.”). Cf. Blocher, *supra* note 333, at 1449 (“[N]early any act can be described as a manifestation of individual autonomy.”).

378. Redish, *supra* note 373, at 595.

379. *Whitney v. California*, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring).

380. See, e.g., Redish, *supra* note 373, at 626 (arguing that “fighting words should not be deemed constitutionally regulable per se”), 636-37 (suggesting that the obscenity exception is inappropriate because “it is not for external forces . . . to determine what communications or forms of expression are of value to the individual”), 644 (“[T]he self-realization principle allows us to fashion an arguable rationale for providing at least a certain level of first amendment protection even to wholly private defamations.”).

381. See, Redish, *supra* note 373, at 593 (discussing what Redish sees as the difference between “self-realization” and “autonomy”). For present purposes, what I have labeled “autonomy” encompasses both. Cf. Blocher, *supra* note 333, at 1499 n.122 (noting distinctions within “autonomy” theory but collapsing them for sake of analysis).

382. See Grant et al., *supra* note 56, at 6.

383. DAVID FOSTER WALLACE, *INFINITE JEST* (1996). See also *Star Trek: The Next Generation, The Game* (broadcast Oct. 28, 1991) (featuring an addictive video game that operated through stimulation of its users’ brains’ rewards circuitry and that quickly spread throughout the entire population of the USS *Enterprise*).

384. See Love et al., *supra* note 195, at 412 (“[F]requent viewers of internet pornography require greater visual stimulation to evoke brain responses comparable to healthy controls or moderate porn users.”); Simone Kühn & Jürgen Gallinat, *Brain Structure and Functional Connectivity Associated With Pornography Consumption*, 71 *JAMA Psychiatry* 827, 828 (2017) (“The frequency of pornography consumption has been shown to predict various negative outcome measures in humans [B]oys with daily consumption showed more interest in deviant and illegal types of pornography [A]ccessing pornography online was predictive of compulsive computer use after 1 year.”).

Science fiction authors have dealt for years (centuries, even³⁸⁵) with the possibility of speech that overrules free will,³⁸⁶ like visual or aural viruses that hijack a person's brain.³⁸⁷ Legal scholarship, unfortunately, has not.

For instance, Martin Redish, "the most prominent defender" of the autonomy theory,³⁸⁸ does not grapple with the possibility of speech that inherently precludes self-realization. In the only exception he makes to the maxim that "all forms of expression are equally valuable for constitutional purposes,"³⁸⁹ Redish recognizes the possibility that perhaps a "primal scream" would be unprotected because it does not "develop human faculties."³⁹⁰ But he quickly dismisses the question as "purely academic" because "it is difficult to conceive of a reason why the state would have an interest in regulating a primal scream."³⁹¹

Others have noted, typically in a very cursory or preliminary manner, that there is little reason to protect involuntary hypnosis or subliminal advertising under the First Amendment.³⁹² But courts have rarely had

385. See generally MARK TWAIN, A LITERARY NIGHTMARE (THE ATLANTIC MONTHLY 1857-1932) (1876) (featuring a memetic jingle (or an "earworm") that infects its listeners).

386. See *Meme*, ENCYC. OF SCIENCE FICTION (Aug. 12, 2018), <http://www.sf-encyclopedia.com/entry/meme> ("Sf [science fiction] and fantasy treatments generally amplify this propagational tendency into a compulsion, perhaps irresistible, which is experienced by the meme-infected mind [C]omplex sf memes behave like mind viruses or trojan programs.").

387. This is not so *absurdum* after all; code can already be visually stored in a QR code and executed through a smartphone's camera. "[E]xperts believe it's just a matter of time before hackers are able to hijack" QR codes, causing them to run "a nasty virus, botnet, or malicious code that records your personal information, your location, even your bank account numbers." Staff, *The Dark Side of QR Codes*, CNET (July 3, 2012), <https://www.cnet.com/news/the-dark-side-of-qr-codes/>. As for now, the amount of code able to be visually stored in a QR code is too small to contain a virus, but QR codes can (and have been used to) automatically load a website which then downloads a malicious file onto a phone. Denis Maslennikov, *Malicious QR Codes Pushing Android Malware*, KAPERSKY LAB (Sept. 30, 2011), <https://securelist.com/malicious-qr-codes-pushing-android-malware/31386/>. The idea of such a visual virus is explored in, among others, Hannu Rajaniemi's excellent *Quantum Thief* trilogy, although what that virus did is too complicated to explain in a footnote.

388. Blocher, *supra* note 333, at 1499.

389. Redish, *supra* note 373, at 595.

390. *Id.* at 629.

391. *Id.* at 629, n.131.

392. See, e.g., Seana Valentine Shiffrin, *Reply to Critics*, 27 CONST. COMMENT. 417, 437-38 (2011) (suggesting that, under a thinker-based approach to the First Amendment, if evidence bore out that "popular conceptions" of brainwashing techniques "significantly obstruct or impair" rational decision-making, such speech would be more susceptible to regulation); Sunstein, *supra* note 335, at 606 ("Subliminal advertising and hypnosis, for example, are entitled to less than full first amendment protection."), 608 ("Hypnosis, whether or not voluntary, does not amount to constitutionally protected speech, or to speech that is entitled to the highest level of first amendment concern; this conclusion holds even if the hypnotist's message has some ideological dimension."); but see Cass R. Sunstein, *The Ethics of Nudging*, 32 YALE J. REG. 413, 442-49 (2015) (defending the ethical use of some forms of subconscious manipulation, although not hypnosis or subliminal advertising).

occasion to address these topics.³⁹³ The objections to addictive speech are simply stronger versions of the objections to hypnosis and subliminal advertising. Like those forms of psychological manipulation, addictive speech “influences a person to belief or behavior by causing changes in mental processes other than those involved in understanding.”³⁹⁴ It “perverts the way that [a] person reaches decisions, forms preferences or adopts goals,”³⁹⁵ and, in so doing, “infringes upon the autonomy of the victim by subverting and insulting their decision-making powers.”³⁹⁶

Perhaps, more starkly, addictive expression can be expressed as not unlike a tort: it literally reaches into the brains of its consumers and rewrites neural pathways.³⁹⁷ Indeed, compulsive pornography use is negatively associated with gray matter volume, functional activity, and connectivity in various parts of the brain, reflecting a “change in neural plasticity as a consequence of an intense stimulation of the reward system.”³⁹⁸

It is not an answer to compare addictive expression merely to persuasion, which, can also influence its listeners’ activities. “Every idea is an incitement,” and “[e]loquence may set fire to reason.”³⁹⁹ But the modern understanding of neurobiology means we do not need to be willfully blind to scientifically obvious differences. Even in First Amendment scholarship, there has been a tendency to equate appeals to emotion as irrational, or somehow requiring a concession on the part of those who would restrict noncognitive speech.⁴⁰⁰ But this is an unnecessary concession for two reasons.

First, the dichotomy between emotion and cognitive decision-making is nonexistent, i.e., emotional appeals *are* cognitive appeals. We feel sadness and anger when we see children locked in cages at the border because we

393. *E.g.*, *Vance v. Judas Priest*, 1990 WL 130920, at *22–32 (D. Ct. Nev. Aug. 24, 1990) (finding no direct precedent on the question of whether subliminal messages were protected by the First Amendment, and concluding that they were not because they did not advance a purpose of protecting free speech, and because the individual’s speech and privacy interests in avoiding unwanted speech outweighed the interest in subliminal messaging); *but see* *Waller v. Osbourne*, 763 F. Supp. 1144, 1150 (M.D. Ga. 1991) (implying that hidden messages are only unprotected to the extent the messages fit into a traditional categorical speech exception), *aff’d* 958 F.2d 1084 (11th Cir. 1992).

394. *See* RUTH FADEN & TOM BEAUCHAMP, *A HISTORY AND THEORY OF INFORMED CONSENT* 354–68 (1986) (defining psychological manipulation).

395. *See* JOSEPH RAZ, *THE MORALITY OF FREEDOM* 377 (1985) (referring to manipulation).

396. *See* T. M. Wilkinson, *Nudging and Manipulation*, 61 *POL. STUDIES* 341, 351 (2013) (referring to manipulation).

397. Grant et al., *supra* note 56, at 5–6.

398. Kühn & Gallinat, *supra* note 384, at 827.

399. *Gitlow v. New York*, 268 U.S. 652, 673 (1925) (Holmes, J., dissenting).

400. *See* Sunstein, *supra* note 336, at 433 (“Moreover, much speech with noncognitive components is entitled to the highest degree of constitutional protection. Political speech, for example, frequently appeals to the heart as well as to the head.”).

understand the implications of those images. We feel hope when a presidential candidate announces, “Yes, we can!” because we can hypothesize and imagine a world in which we, in fact, can. Emotion is a central component of rationality;⁴⁰¹ studies of patients who have had access to emotions inadvertently cut off have “demonstrated the integral role emotion plays in decision-making.”⁴⁰² It is simply “not debatable” that “the dichotomous folk knowledge conception of emotion and cognition is inaccurate.”⁴⁰³

Addictive speech, on the other hand, operates on the brain in virtually the same manner as addictive substances do.⁴⁰⁴ That is, it actively impedes decision-making. Speech addicts, like substance addicts, “pathologically pursu[e] reward and/or relief,”⁴⁰⁵ resulting in “habit or compulsion . . . motivated less by positive reinforcement and more by negative reinforcement.”⁴⁰⁶ The defining feature of these addictions is that the manipulation of “the reward circuitry in human brains lead[s] to a *loss of control*.”⁴⁰⁷ Deleterious consequences to the addict follow.⁴⁰⁸

Second, addictive expression is distinct from emotional appeals because of the intent of the speaker and listener. As to the former, a person does not attend a political rally expecting a formal proof of the superiority of the politician’s platform, nor do they attend a showing of *Moonlight* expecting a dry lecture on the experience of gay Black adolescents. One comes to experience the emotion; even when unexpected, it’s an understood feature of communication. On the other hand, there is no meaningful way to consent to addiction, which by its nature obviates the concept of consent.

And from the perspective of the speaker, emotional appeals can hardly be considered normatively illegitimate given the connection between emotion and rationality,⁴⁰⁹ not to mention the listeners’ assumed consent. And, critically, emotional appeals are, at least, an appeal to *do something* or to think or feel some way. They are, at least, potentially transmissions of messages and ideology. Addictive expression, on the other hand, is the

401. See Susan A. Bandes & Jessica M. Salerno, *Emotion, Proof and Prejudice: The Cognitive Science of Gruesome Photos and Victim Impact Statements*, 46 ARIZ. ST. L.J. 1003, 1010-11 (2014) (“[T]here is widespread agreement that emotion and cognition are intertwined. Emotion helps us screen, organize and prioritize the information that bombards us. It helps us decide whether we care about what we are hearing, and it motivates us to act or refrain from acting. It helps us understand and evaluate the intentions and motives of others and predict their future behavior.”).

402. *Id.* at 1011.

403. *Id.*

404. See *supra* Part I.A.2.

405. *Public Policy Statement: Definition of Addiction*, *supra* note 57.

406. Grant et al., *supra* note 56, at 3.

407. Love et al., *supra* note 195, at 388.

408. Grant et al., *supra* note 56, at 3.

409. See *supra* notes 401-03 and accompanying text.

intentional manipulation of neurological pathways (again, with a reliance on genetic predisposition) solely for the purpose of increasing consumption. Ideology or messaging, to the extent it exists in addictive speech, is transmitted through another feature of that speech; addicting speech is solely addicting.

Accordingly, addictive expression not only fails to advance individual autonomy; it actively hinders self-realization, opening its “listeners” to manipulation, compelled by neurochemistry over which they have no conscious control. Addictive expression is *negative-value* speech from the perspective of autonomy.

ii. The Dysfunctional Marketplace of Ideas

The second purposive theory of the First Amendment asserts that the Free Speech Clause exists to promote the discovery of “truth” through competition in the marketplace of ideas.⁴¹⁰ The fundamental premise of the marketplace theory is that:

[C]ompetition among ideas strengthens the truth and roots out error; the repeated effort to defend one’s convictions serves to keep their justification alive in our minds and guards against the twin dangers of falsehood and fanaticism; to stifle a voice is to deprive mankind of its message, which, we must acknowledge, might possibly be more true than our own deeply held convictions Just as an unfettered competition among commodities guarantees that the good products sell while the bad gather dust on the shelf, so in the intellectual marketplace the several competing ideas will be tested by us, the consumers, and the best of them will be purchased.⁴¹¹

The flaws in the metaphor are obvious—the idea that consumers always demand the “best” available speech is utterly without historical support,⁴¹² and many other market-like factors further complicate the perfect neoclassical marketplace in the metaphor⁴¹³—but so is its undeniable basic truth: public debate can and does frequently lead to social good.

410. See *Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 390 (1969) (“It is the purpose of the First Amendment to preserve an uninhibited marketplace of ideas in which truth will ultimately prevail, rather than to countenance monopolization of that market, whether it be by the Government itself or a private licensee.”).

411. ROBERT PAUL WOLFF, *THE POVERTY OF LIBERALISM* 11-12 (1968).

412. Harry H. Wellington, *On Freedom of Expression*, 88 *YALE L.J.* 1105, 1130 (1979) (“It is naïve to think that truth will *always* prevail over falsehood in a free and open encounter, for too many false ideas have captured the imagination of man. The zealot and the ideologue too often have overwhelmed the truth-teller.”).

413. See, e.g., Joseph Blocher, *Institutions in the Marketplace of Ideas*, 57 *DUKE L.J.* 821 (2008) (noting the role that “speech institutions” play in reducing transaction costs in the

Unsurprisingly, commitment to the marketplace theory can lead to different doctrinal outcomes than the autonomy theory.⁴¹⁴ For instance, the search for truth is only facilitated through debate if the truth itself is uncertain.⁴¹⁵ Accordingly, the marketplace theory might lead to the development of doctrine especially protective of political, moral, or religious speech; scientific and mathematical problems being less prone to resolution through debate.⁴¹⁶ It is one thing for authorities “to embrace established scientific truths,” and quite another “to espouse political truths to the exclusion of alternative visions of politics.”⁴¹⁷

The most significant difference between the two theories is that the ultimate goal of the marketplace theory is not to protect a cognitive process, and instead to protect the outcome of that process.⁴¹⁸ But, in that difference lies a similarity: the marketplace theory does not care if the outcome of the cognitive process is objectively “good” or “bad.” Human diversity guarantees that some people will come to good opinions and others bad (and protecting speech, in turn, helps ensure that diversity). As long as that mix of good and bad ideas exists, the marketplace theory posits that good ideas win out, and, in fact, will be strengthened through the legitimizing effects of surviving the crucible of public debate.⁴¹⁹

If even “bad” speech has its value in the marketplace of ideas, it might seem counterintuitive to argue that addictive speech undermines the search for truth. But addictive speech is less like “good” or “bad” speech in the context of the marketplace of ideas than it is like the absence of speech. It is an all-consuming noise, or a complete silence. By virtue of the self-reinforcing trait of tolerance,⁴²⁰ addictive speech crowds out both “good” speech and the valuable “bad” speech.

marketplace of ideas); Darren Bush, *The “Marketplace of Ideas”: Is Judge Posner Chasing Don Quixote’s Windmills?*, 32 ARIZ. ST. L.J. 1107, 1114–16 (discussing possibility of monopolies in the marketplace of ideas).

414. See Blocher & Morgan, *supra* note 270 (discussing the impact that the understanding of a constitutional right’s purpose can have on the doctrine that develops to enforce that right).

415. FREDERICK SCHAUER, *FREE SPEECH: A PHILOSOPHICAL INQUIRY* 30-31 (1982).

416. *Id.*; cf. Madison Malone Kircher, *Can You Believe YouTube Caused the Rise in Flat-Earthers?*, N.Y. MAG (Feb. 19, 2019), <http://nymag.com/intelligencer/2019/02/can-you-believe-youtube-caused-the-rise-in-flat-earthers.html> (noting the recent rise in people professing to believe that the Earth is flat).

417. Yudof, *supra* note 367, at 690.

418. *But see id.* at 689-90 (recounting Frederick Schauer’s argument suggesting that the progress or truth theory “reduces itself to a preference for ‘a process of open discussion’ over other methods of decisionmaking” in the absence of independent criteria, which means that the truth theory is actually about valuing “democratic norms over other forms of governance, not objective truth over falsity”).

419. See *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting); see also Redish, *supra* note 373, at 617 (noting the marketplace theory’s assumption that the expression of bad ideas “makes the truth appear even stronger by contrast”).

420. See, e.g., Hellman et al., *supra* note 147, at 105.

In its place, addictive expression leaves a void. Addictive expression does not even offer the benefit of making good speech look good by comparison. Addictive speech *beats* good speech, and it does so by cheating: not through competing in the marketplace of ideas, but by operating outside of the marketplace, by bribing the brain with dopamine until the brain chooses the addictive expression.⁴²¹ Addictive expression is message-less, yet voracious in demanding attention; a black hole into which intellectual bandwidth disappears.

And because addictive expression avoids cognition, there is no argument against it. To the extent that addictive expression is used to advance an agenda, perhaps surreptitiously, or perhaps overtly, it does not do so by insisting on the agenda's merit or truth value. The agenda is shielded from cross-examination. Addictive expression circumvents debate; it does not play by the agreed-upon rules.

As a result, addictive expression stifles innovation and the search for truth in the marketplace of ideas. There is little reason to innovate beyond an intentionally addictive design, and all the motivation in the world to innovate *to* an intentionally addictive design.

This effect can be empirically observed, as the Romans discovered millennia ago when games of chance crowded out games of skill in spite of the legal prohibitions against gambling.⁴²² Today, in the form of the "loot box epidemic," the video game industry's marketplace of ideas is experiencing an updated version of the same dysfunction.⁴²³ The mechanics of loot boxes are inherently and intentionally addictive.⁴²⁴ And, as a theory of addictive speech might predict, despite nearly universal loathing by gamers, loot boxes are now ubiquitous. The remainder of this part briefly recounts that history.

Though they have their roots in the random-drop systems developed in MMORPGs⁴²⁵ the first true loot boxes emerged in the mid-to-late aughts in Asia.⁴²⁶ They migrated to American games in 2010.⁴²⁷ Today, they are unavoidable, and if they have missed anywhere, the Chief Operating Officer

421. Hellman et al., *supra* note 147, at 106.

422. *See supra* notes 88-89 and accompanying text.

423. Drew Cartee, *The Loot Box Epidemic in Modern Video Games*, MEDIUM (Dec. 4, 2017), <https://medium.com/@dc99/the-loot-box-epidemic-in-modern-video-games-308ed8f73f38>.

424. *See supra* notes 175-86 and accompanying text.

425. Nathan Lawrence, *The Troubling Psychology of Pay-to-Loot Systems*, IGN (Apr. 23, 2017, 11:08 PM), <https://www.ign.com/articles/2017/04/24/the-troubling-psychology-of-pay-to-loot-systems>. One historical account of loot boxes traces them back to images in cigarette boxes, baseball card packs, and trading card games. Steven T. Wright, *The Evolution of Loot Boxes*, PC GAMER (Dec. 8, 2017), <https://www.pcgamer.com/the-evolution-of-loot-boxes/>. For a description of the random-drop system in MMORPGs, *see supra* note 174 and accompanying text.

426. Wright, *supra* note 425.

427. *Id.*

of Electronic Arts (“EA”), a gaming behemoth, has predicted that “ultimately, those microtransactions will be in every game.”⁴²⁸

The story of microtransactions is a story of red lines repeatedly drawn and crossed, of gamers demanding that developers go no further, and developers ceaselessly pushing the limits of “acceptable” behavior. It is the story of what happens when addiction corrodes a marketplace.

Originally, and in the form considered by most gamers to be most “ethical,”⁴²⁹ microtransactions and loot boxes only were in free-to-play games, i.e., those that the consumer can download and play at no initial price, often released by independent studios.⁴³⁰ The microtransactions and loot boxes at first seemed like a win-win: a tax only on the willing,⁴³¹ and free games for everyone else.

But, soon, that line was crossed, and AAA games developed by the most commercially successful and critically acclaimed studios had microtransactions and loot box systems, frequently stacked on top of a full retail price (usually at least \$60 in 2019).⁴³² One analyst suggested that a *third* of EA’s annual sales—about \$5 billion in 2018⁴³³—were from microtransactions.⁴³⁴

Today, consumers attempt to enforce a new red line: items available for purchase with real money, either directly or through loot boxes and virtual currency, cannot provide a competitive advantage against other players in multiplayer, player-vs-player (PVP) games, i.e., there can be no “pay-to-win.”⁴³⁵

But this line, too, is a retreat from an earlier one that included as “pay-to-win” items—like “experience boosters”—that reduced “grind” in cooperative or single-player games.⁴³⁶ Today, such “XP Boosters” are

428. Stephen Totilo, *The Strange, Scary, Fascinating, Exciting Future of Video Games, According to A Giant*, KOTAKU (June 20, 2012, 9:00 AM), <https://kotaku.com/the-strange-scary-fascinating-exciting-future-of-vid-5919847>.

429. Wright, *supra* note 425.

430. Wright, *supra* note 425.

431. See *supra* note 134 and accompanying text.

432. *Ex-Bioware Dev Traces Loot Boxes Back to Mass Effect 3 and FIFA*, GAMASUTRA (Nov. 14, 2017), https://www.gamasutra.com/view/news/309644/ExBioWare_dev_traces_loot_boxes_back_to_Mass_Effect_3_and_FIFA.php.

433. *Electronic Arts Inc.*, MARKETWATCH (last visited May 26, 2019), <https://www.marketwatch.com/investing/stock/ea/financials>.

434. Tae Kim, ‘Loot Boxes’ Could Be Trouble for the Videogame Industry. Here’s What You Need to Know, BARRON’S (Apr. 15, 2019), <https://www.barrons.com/articles/videogame-publishers-face-scrutiny-over-the-use-of-lock-boxes-51555120828>.

435. There are extensive debates about this definition. See, e.g., /u/CherryDashZero, *What is your definition for “pay to win”?*, REDDIT (July 4, 2018), https://www.reddit.com/r/truegaming/comments/8w417u/what_is_your_definition_for_pay_to_win/.

436. See, e.g., /u/Redhavok, *Comment to What is your definition for “pay to win”?*, REDDIT (July 4, 2018), https://www.reddit.com/r/truegaming/comments/8w417u/what_is_your_definition_for_pay_to_win/.

common in mobile games,⁴³⁷ and are beginning to appear in AAA single-player or cooperative games, including bestsellers like *Assassin's Creed Odyssey*,⁴³⁸ and, again, *Destiny*.⁴³⁹ The recently released *Borderlands 3* featured optional purchases for “mods”—modifications—that increase the rate of loot drops and experience gained.⁴⁴⁰ It should be no surprise that developers have made this choice; given the psychological effects of great loot drops and huge experience games, the effect of these boosts is to supercharge the game's dopamine delivery systems. Limbic capitalism, indeed.⁴⁴¹

The point here is not necessarily where the line is today, so much as it is to acknowledge that the red line is under continuous assault from developers seeking to create as many “recurrent consumer spending opportunities,”⁴⁴² in industry-speak, as possible.

The marketplace of ideas is the motivating mythology of the First Amendment, and elocutions of the marketplace sit atop the pantheon of constitutional jurisprudence. Addictive speech consumes the market from the inside, and, accordingly, merits no First Amendment protection.

iii. Addiction and Democracy

The last of the standard explanations for the First Amendment is that it exists to enable and promote democratic self-governance through the Constitution's representative system.⁴⁴³ The Free Speech Clause does so

437. Andrei Klubnikin, *Microtransactions In Games: The Good, The Bad, And The Ugly*, GAME ANALYTICS (Feb. 14, 2018), <https://gameanalytics.com/blog/microtransactions-games-good-bad-ugly.html>.

438. Chris Plante, *Assassin's Creed Odyssey's Best Feature Costs an Extra 10 Bucks*, POLYGON (Oct. 5, 2018, 8:18 PM), <https://www.polygon.com/2018/10/4/17936292/assassins-creed-odyssey-xp-boost-price>. *But see* Jason Schreier (@jasonscreier), TWITTER (Oct. 8, 2018, 1:36 PM), <https://twitter.com/jasonscreier/status/1049398247033372677?lang=en> (“Assassin's Creed Odyssey's microtransactions are, at worst, annoying. They're not A CANCER ON THE VIDEO GAME INDUSTRY.”).

439. Jamieson Cox, *You Can Now Pay an Exorbitant Fee to Boost Your Level in Destiny*, VERGE (Dec. 15, 2015, 9:40 AM), <https://www.theverge.com/2015/12/15/10205490/destiny-the-taken-king-level-boost-packs-microtransactions-bungie>.

440. Samuel Roberts, *Here's How Borderlands 3's XP and Loot Drop Boost Mods Actually Work*, PC GAMER, <https://www.pcgamer.com/borderlands-3-loot-xp-boosts-explained/> (last visited Apr. 11, 2019).

441. *See supra* note 233 and accompanying text.

442. Alex Wawro, *Take-Two Plans to Only Release Games With 'Recurrent Consumer Spending' Hooks*, GAMASUTRA (Nov. 7, 2017), https://www.gamasutra.com/view/news/309190/TakeTwo_plans_to_only_release_games_with_recurrent_consumer_spending_hooks.php.

443. *See* Lillian R. BeVier, *The First Amendment and Political Speech: An Inquiry Into the Substance and Limits of Principle*, 30 STAN. L. REV. 299, 300 (“[T]he amendment in principle protects only ‘political’ speech—speech that participates in the processes of representative democracy”); *see generally* Robert H. Bork, *Neutral Principles and Some First Amendment Problems*, 47 IND. L.J. 1, 22 (1971); ALEXANDER MEIKLEJOHN, *POLITICAL FREEDOM* (1960).

directly—by literally enabling the debates necessary to provide voters with a meaningful choice in policies and candidates—and indirectly, by training citizens to be active participants in those debates, and to distinguish truth from fiction, and instill a sense of the value of debate.⁴⁴⁴

The democracy theory cares both about the process and outcomes of cognition. But, unlike the marketplace theory, it is not value-neutral. Instead, it posits that the First Amendment itself reflects an ideological preference for democratic self-governance, and that speech in furtherance of that ideology is more valuable than speech that denigrates it. Thus, according to some, antidemocratic speech does not merit First Amendment coverage.⁴⁴⁵ Antidemocratic speech “is not aimed at a new definition of truth by a legislative majority,” and, therefore, “breaks the premises of our system concerning the way truth is defined.”⁴⁴⁶ Because those very premises are the reason for protecting speech, antidemocratic speech cannot merit protection.⁴⁴⁷ Other democratic theorists may recognize a preference for political speech,⁴⁴⁸ but nonetheless protect antidemocratic speech, relying on the marketplace of ideas to show the value of democracy over the long term.⁴⁴⁹

In addition, there is also a split among democracy theorists regarding the legitimacy of the protection of non-political speech. Bork argues that “[t]here is no basis for judicial intervention to protect any other form of expression” than “speech that is explicitly political.”⁴⁵⁰ On the other hand, Micklejohn would extend coverage to those “forms of thought and expression . . . from which the voter derives the knowledge, intelligence, sensitivity to human values . . . which, so far as possible, a ballot should express,” including literature, the arts, the sciences, and philosophy.⁴⁵¹

444. See *supra* note 418 (recounting Frederick Schauer’s argument about the marketplace theory’s relationship to a preference for the “process” of debate and deliberation).

445. Bork, *supra* note 443, at 29-30, 31; BeVier, *supra* note 443, at 309-11.

446. Bork, *supra* note 443, at 31.

447. *Id.*

448. The rhetorical—and perhaps doctrinal—preference for political speech in First Amendment jurisprudence is the democracy theory’s most enduring impact. See, e.g., *Citizens United v. FEC*, 558 U.S. 310, 339-40 (2010) (“Speech is an essential mechanism of democracy, for it is the means to hold officials accountable to the people The First Amendment ‘has its fullest and most urgent application to speech uttered during a campaign for political office.’”) (internal quotation marks omitted).

449. See *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting) (“If, in the long run, the beliefs expressed in proletarian dictatorship are destined to be captured by the dominant forces of the community, the only meaning of free speech is that they should be given their chance and have their way.”).

450. Bork, *supra* note 443, at 20.

451. Alexander Meiklejohn, *The First Amendment Is an Absolute*, 1961 SUP. CT. REV. 245, 255-57.

Under either school of thought, the provision and consumption of addictive expression has added little, if any, value to democracy. Of course, pornography and video games may contain political speech. In fact, a great deal of criticism has been leveraged against each medium based on what is perceived as the medium's dominant social or political messaging.⁴⁵² But the question is not whether video games or porn should be protected at all, but whether a certain genre of speech sometimes contained within these mediums—addictive speech—is of value to democracy. It is not.

Focusing for now on expressly political speech—“speech about how we are governed”⁴⁵³—it is possible for speech to be both addictive and expressly political. It would be a bizarre game, but one could imagine loot boxes that award campaign t-shirts for a virtual avatar or political bumper stickers for a virtual car. Porn could feature actors portraying political figures, and making political jokes at their expense.⁴⁵⁴

But addictive expression—even if nominally pro-democratic—is antidemocratic, because it is atomizing. Addictive speech generates social isolation, while democracy requires a vibrant civil society.⁴⁵⁵ Already, sociologists frequently and increasingly assail the deterioration of American civil society at the hands of isolating vectors of addictive speech.

Although pronouncements about the negative effects of entertainment mediums are as old as the mediums themselves, empirical research does provide some for concern. One study found a “significant difference between the social skills of students addicted to computer games and normal

452. See, e.g., Alfie Bown, *Video Games are Political. Here's How They Can Be Progressive*, GUARDIAN (Aug. 13, 2018, 5:00 AM), <https://www.theguardian.com/games/2018/aug/13/video-games-are-political-heres-how-they-can-be-progressive> (“[L]ike all art that arises from culture, games are deeply political. They are also often biased . . . towards conservative, patriarchal and imperialist values such as empire, dominion, and conquering by force.”); see generally Catharine A. MacKinnon, Lecture, *Pornography, Civil Rights, and Speech*, 20 HARV. C.R.-C.L. L. REV. 1 (1985).

453. Bork, *supra* note 4443, at 27-8.

454. See, e.g., *Hustler Mag. v. Falwell*, 485 U.S. 46 (1988).

455. See, e.g., *Young African Leaders Initiative*, U.S. State Dep't, *Civil Society: At the Core of Democracy and Human Nature*, <https://yali.state.gov/civil-society-at-the-core-of-democracy-and-human-nature/> (“Civil society contributions to well-functioning governments are widely recognized among those who study those issues.”) (last visited May 27, 2019); *Supporting Vibrant Civil Society & Independent Media*, <https://www.usaid.gov/what-we-do/democracy-human-rights-and-governance/supporting-vibrant-civil-society-independent-media> (“A democratic political culture requires a vibrant civil-society sector”) (last visited May 27, 2019); MISSION OF NORWAY TO THE EU, *Civil Society is Essential for Democracy*, (Oct. 12, 2017), <https://www.norway.no/en/missions/eu/about-the-mission/news-events-statements/news2/-civil-society-is-essential-for-democracy/> (“We cannot have a resilient democracy unless we can safeguard civil society in all countries, stated Ingrid Schulerud, deputy head of the Norwegian Mission to the EU, in her introduction.”).

students.”⁴⁵⁶ Video game addicts “displayed increased emotional difficulties including increased depression and anxiety, felt more socially isolated, and were more likely to display internet pornography pathological use symptoms.”⁴⁵⁷ A rash of commentary⁴⁵⁸ accompanied another study explaining that the “unusually large percentage of able-bodied men, particularly the young and less-educated” who were either not working or not working full-time⁴⁵⁹ could be explained: they were living with their parents and playing video games.⁴⁶⁰

The study’s numbers are worth considering. Employment rates for young men in their twenties, even after other groups rebounded from the Great Recession, remained about ten percentage points lower than they were in 2000.⁴⁶¹ There was not a corresponding increase in school attendance.⁴⁶² Instead, the men were gaming. Men in 2015 worked on average 132 hours less than men their age in 2007 worked, and reallocated almost the entire difference to leisure time.⁴⁶³ Three-quarters of the increase in leisure time went to gaming.⁴⁶⁴ Gaming alone, the study concluded, could be “responsible for about 23% to 46% of the decline in work hours for young men during the 2000s.”⁴⁶⁵

Of course, over the same period, the nature of what it meant to “game” also changed. The authors of the study noted that “improvements” in gaming over the same period included the “online video gaming, enhanced graphics,

456. Eshrat Zamani et al., *Comparing the Social Skills of Students Addicted to Computer Games with Normal Students*, 2 J. ADDICTION & HEALTH 59, 62 (2010).

457. Laura Stockdale & Sarah M. Coyne, *VideoGame Addiction in Emerging Adulthood: Cross-Sectional Evidence of Pathology in Video Game Addicts as Compared to Matched Healthy Controls*, 225 J. AFFECTIVE DISORDERS 265 (2018).

458. See, e.g., Peter Suderman, *Young Men Are Playing Video Games Instead of Getting Jobs. That’s OK. (For Now.)*, REASON (June 13, 2017), <https://reason.com/2017/06/13/young-men-are-playing-video-ga/>; R.A., *The Link Between Video Games and Unemployment*, (Mar. 30, 2017), <https://www.economist.com/the-economist-explains/2017/03/30/the-link-between-video-games-and-unemployment>; Alexia Fernández Campbell, *The Unexpected Economic Consequences of Video Games*, VOX (July 7, 2017, 2:50 PM) <https://www.vox.com/policy-and-politics/2017/7/7/15933674/video-games-job-supply>.

459. Ana Swanson, *Study Finds Young Men Are Playing Video Games Instead of Getting Jobs*, CHICAGO TRIBUNE (Sept. 23, 2016, 1:45 PM) <https://www.chicagotribune.com/business/ct-video-games-jobs-emploment-20160923-story.html>.

460. Erik Hurst, *Video Killed The Radio Star*, (Sept. 1, 2016) <http://review.chicagobooth.edu/economics/2016/article/video-killed-radio-star>.

461. *Id.*

462. *Id.*

463. Brian Wallheimer, *As Video Games Get Better, Young Men Work Less and Play More*, CHICAGO BOOTH REVIEW (Dec. 20, 2017), <http://review.chicagobooth.edu/economics/2017/article/video-games-get-better-young-men-work-less-and-play-more>.

464. Hurst, *supra* note 460.

465. Fernández Campbell, *supra* note 458.

and the introduction of massive multiplayer games.”⁴⁶⁶ In other words, the games were becoming more addictive.⁴⁶⁷

If young men today—increasingly unemployed, single, living with their parents, and spending increasing amounts of time on leisure—follow historical patterns, tremendous social consequences could follow, including higher rates of welfare use, substance abuse, and suicide.⁴⁶⁸

It remains unclear whether a First Amendment jurisprudence fully devoted to the democracy theory would even cover most vectors of addictive expression to begin with. But, to the extent it would, the intentional infliction of addiction promotes antisocial and therefore antidemocratic behavior. Combined with its self-replicating quality, it can, and has, had significant antidemocratic impacts.⁴⁶⁹ The promotion of democracy does not require the protection of addictive expression.

2. *Intentionally Addictive Expression is Similar to Other Categorical First Amendment Exceptions*

The preceding analysis relies on the assumption that regulators and courts can distinguish between categories of speech based on their First Amendment “value.” That is, to say the least, a contested position, albeit one with a long history in First Amendment jurisprudence. Beginning with *Chaplinsky v. New Hampshire*, the Court has said that some categories of speech are both: (a) “no[t] [an] essential part of any exposition of ideas,” and (b) “are of such slight social value as a step to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality.”⁴⁷⁰ After *Chaplinsky*, the Court relied on this theory of low-

466. Mark Aguiar et al., *Leisure Luxuries and the Labor Supply of Young Men*, (June 21, 2017) <https://scholar.princeton.edu/sites/default/files/maguiar/files/leisure-luxuries-labor-June-2017.pdf>.

467. See *supra* notes 154, 187-89, and accompanying text (describing addictive properties of online gaming); *supra* notes 174, 187-89, and accompanying text (describing addictive properties of MMOs in particular); *supra* notes 194-96 (discussing addictive “supernormal stimuli” effect of video game graphics). Over the same time period, loot boxes were also introduced, and mobile games took off (the first iPhone was released in 2007). See *supra* notes 425-28 (discussing spread of loot boxes in American games).

468. Hurst, *supra* note 460.

469. *Id.*

470. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 571-72 (1942).

value speech to uphold restrictions on obscenity,⁴⁷¹ child pornography,⁴⁷² libel,⁴⁷³ and commercial speech.⁴⁷⁴

At the same time, the use of the theory has always “been marked by vacillation and uncertainty,”⁴⁷⁵ no doubt in part due to the serious objection of academics, who have called it “an embarrassment,”⁴⁷⁶ a “parody of free speech theory,”⁴⁷⁷ and “completely wrongheaded, if not incoherent.”⁴⁷⁸

The Court’s response was, in *United States v. Stevens*, to reject the low-value theory in favor of a “history and traditions” approach.⁴⁷⁹ Echoing a line from Justice Scalia’s opinion in *District of Columbia v. Heller*, the Court concluded that a cost-benefit analysis of categories of speech is foreclosed because such an analysis was already completed at the time of ratification.⁴⁸⁰ Under the traditional approach, for a category of speech to be excluded from First Amendment coverage, it must have a “long history in American law” of being unprotected.⁴⁸¹ New exceptions can only emerge in one of two ways: they can either be uncovered in the historical record or be drawn by analogies from existing exceptions.⁴⁸²

471. *Miller v. California*, 413 U.S. 15, 24-5 (1973) (defining obscenity as speech “lack[ing] serious literary, artistic, political, or scientific value”); *Roth v. United States*, 354 U.S. 476, 484 (1957) (defining obscenity as speech “utterly without redeeming social importance”).

472. *New York v. Ferber*, 458 U.S. 747, 762 (1981) (stating that child pornography has “exceedingly modest, if not de minimis” value). *But see infra* note 486 (discussing the Court’s revisionist history of *Ferber* in *Stevens*).

473. *Gertz v. Robert Welch*, 418 U.S. 323, 340 (1974) (“[T]here is no constitutional value in false statements of fact.”).

474. *Ohralik v. Ohio State Bar Ass’n*, 436 U.S. 447, 455–56 (1978) (stating that commercial speech stands in a “subordinate position in the scale of First Amendment values”).

475. Jeffrey M. Shaman, *The Theory of Low-Value Speech*, 48 S.M.U. L. REV. 297, 298 (1995).

476. STEVEN H. SHIFFRIN, *THE FIRST AMENDMENT, DEMOCRACY, AND ROMANCE* (Princeton Univ. Press 1990).

477. *Id.*

478. Larry Alexander, *Low Value Speech*, 83 NW. U. L. REV. 547, 552 (1989).

479. *United States v. Stevens*, 559 U.S. 460, 469 (2010).

480. *Stevens*, 559 U.S. at 470. *Cf.* *District of Columbia v. Heller*, 554 U.S. 570, 634-35 (2008) (rejecting an “interest-balancing” test for the Second Amendment because the Second Amendment, “[l]ike the First, . . . is the very product of an interest balancing by the people”).

481. *Stevens*, 559 U.S. at 469.

482. *See id.* at 471 (suggesting that *Ferber*’s decision rejecting constitutional protection for child pornography was generated by analogy from the “speech incident to criminal conduct” exception).

There are serious objections to the *Stevens* approach.⁴⁸³ Most significantly, “reasonable people disagree . . . about what traditions exist.”⁴⁸⁴ And, of course, the Court has left some longstanding regulatory traditions, such as the doctrine of seditious libel, in the dustbin of history, which strongly indicates that something other than tradition is at play. Therefore, given that the Court has conceded that its categorical coverage exceptions can be *described* as low-value speech,⁴⁸⁵ one may legitimately wonder whether the historical approach adopted in *Stevens* is revisionist,⁴⁸⁶ and whether some value-based distinctions are inevitable.⁴⁸⁷

Despite the persuasive arguments against the historical approach adopted in *Stevens*, only Justice Alito has shown any interest in reviving the low-value theory.⁴⁸⁸ Accordingly, this section seeks to justify categorical exclusion for addictive expression by analogizing to the existing categorical exclusions, as *Stevens* suggests is required.

In *Stevens*, the Court justified its child pornography jurisprudence by situating it as a permutation of the coverage exception for speech incident to criminal conduct.⁴⁸⁹ The Court noted that the market for child pornography was “intrinsically related” to the underlying child abuse; you could not have child pornography without sexual abuse of children, and child pornography could therefore be regulated without even implicating First Amendment

483. Wayne Batchis, *On the Categorical Approach to Free Speech—And the Protracted Failure to Delimit the True Threats Exception to the First Amendment*, 37 PACE L. REV. 1, 23 (2016) (“[H]istory and tradition are hallmarks of conservative constitutional analysis, . . . [t]hus, some of the same criticisms that might apply to the use of history and tradition more broadly may apply with equal vigor to the First Amendment.”).

484. Gregory P. Magarian, Symposium, *The Marrow of Tradition: The Roberts Court and Categorical First Amendment Speech Exclusions*, 56 WM. & MARY L. REV. 1339, 1356 (2015).

485. *Stevens*, 559 U.S. at 470–71.

486. See Magarian, *supra* note 484, at 1356–57 (“Chief Justice Roberts in *Stevens* tied himself in knots explaining how tradition caused the *Ferber* Court to exclude child pornography from free speech protection, when *Ferber* really focused on the substantive harm of exploiting children.”).

487. A value-based approach is also preferable. The Court mostly subscribes to the agreed-upon view that the First Amendment is instrumental, and exists to promote autonomy, truth, and/or democracy. The traditional approach makes that principle irrelevant; it obviates doctrine that might seek to draw connections between categories of speech and the ends that the First Amendment serves. This leaves First Amendment jurisprudence rudderless, with the Free Speech Clause unable to meaningfully adapt to serve its core interests in new contexts. The values become mere background noise without any meaningful impact on doctrine. See BeVier, *supra* note 443, at 300 (“Recent commentators have begun to recognize explicitly that so long as first amendment values remain obscure, clarity will never emerge from first amendment analysis.”); Benjamin S. DuVal, Jr., *Free Communication of Ideas and the Quest for Truth: Toward a Teleological Approach to First Amendment Adjudication*, 41 GEO. WASH. L. REV. 161, 164 (1972) (arguing that the First Amendment demands “a purpose-oriented rather than a rule-oriented approach”).

488. See *supra* notes 363, 365 and 366 (quoting Justice Alito’s recent uses of the low-value approach); see also *Stevens*, 559 U.S. at 482 (Alito, J., dissenting).

489. *Stevens*, 559 U.S. at 471.

rights.⁴⁹⁰ An exception for addictive speech can emerge from the same sort of analogical process applied to the incitement exception.

Speech is unprotected as incitement if it is “directed to inciting or producing imminent lawless action and is likely to incite or produce such action.”⁴⁹¹ The incitement exception is premised on the idea that individual free will can be overborne; “[e]loquence may set fire to reason.”⁴⁹² Speech is regulable, then, when it has a “chance of starting a present conflagration.”⁴⁹³ In less florid terms, the Court essentially examines three subjects: the speaker (whether the speech directed at inciting imminent lawless action); the message (whether the speech directed at inciting imminent lawless action); and the effect on the listener (whether the speech likely to produce imminent lawless action). Taking each in turn, addictive expression presents a similar, strong case for noncoverage.

As to the speaker, the incitement exception is targeted at the “wily agitator,” who induces “simple-minded” law-abiding persons into illegal action.⁴⁹⁴ The purveyor of addiction⁴⁹⁵ is not unlike the inciter. This “addicter” seeks to set fire to reason, not through eloquence, but through manipulation of neurological phenomena over which his listeners have no active control. Indeed, a great deal of addicts’ successes will rely on genetic factors in addition to the design of their products.

Both the addicter and the inciter aim to overrule their listeners’ better judgments. The difference between the two goes to the second factor—the message. The inciter’s speech is directed at producing imminent lawless action, while the addicter’s speech is typically directed towards encouraging a lawful activity. But all analogies have their natural limits,⁴⁹⁶ if the addicter sought to produce lawless action, he would by definition be an inciter. It is enough that the addicter seeks to encourage problematic consumption, which the government may legitimately aim to discourage. Because there is not a meaningful difference between the government discouraging illegal activity

490. *Id.*

491. *Brandenburg v. Ohio*, 395 U.S. 444, 447 (1969).

492. *Gitlow v. New York*, 268 U.S. 652, 673 (1925) (Holmes, J., dissenting).

493. *Id.*

494. See Frederick Schauer, *The Wily Agitator and the American Free Speech Tradition* (2005) (reviewing GEOFFREY R. STONE, *PERILOUS TIMES: FREE SPEECH IN WARTIME: FROM THE SEDITION ACT OF 1798 TO THE WAR ON TERRORISM*), 57 *STAN. L. REV.* 2157, 2157 (2005).

495. Let’s stipulate to the use of the term “addicter.”

496. See Blocher & Morgan, *supra* note 270 (discussing the question of “what counts” in an analogy in the context of shifting constitutional doctrine); Frederick Schauer, *Precedent*, 39 *STAN. L. REV.* 571, (1987) (“Think about why power tools are sold in hardware stores rather than in electrical appliance shops. And think about why we most often group red bicycles with bicycles of other colors rather than with red ties and red meat.”).

and the government discouraging legal but socially undesirable activity,⁴⁹⁷ addictive expression is relevantly analogous to the incitement exception in terms of the message expressed.

The final factor used to analyze incitement is the effect on the listener. Only that speech likely to produce imminent lawlessness is uncovered as incitement. Most troublesome for the analogy is incitement's limiting principle of imminence. In *Hess v. Indiana*,⁴⁹⁸ the Court held that no liability could attach to the phrase, "We'll take the fucking street later."⁴⁹⁹ Who could know what is meant by "later"? The imminence limitation is powerful, protecting intentional advocacy of deeply evil acts.

An imminence requirement could never apply to addictive speech. Addictions—in particular, behavioral addictions—develop over time, through repeat exposure. But this difference should not defeat the analogy. The imminence requirement is related to the nature of the harm of incitement—discrete incidents of usually violent lawbreaking. A delay between the incitement and activity gives the inciter's audience time to come to its senses or to be persuaded out of action.⁵⁰⁰ Indeed, if illegal action does not immediately follow the incitement, it is difficult to conclude that the audience has been "incited."

The opposite is true of addiction. Imminence is not a concern; rather, the harm of addiction is the long-lasting impact of addiction on the individual and society.⁵⁰¹ And there is no value in a cooling-off period. One cannot be persuaded out of addiction. Accordingly, the imminence requirement is best understood as inherently connected to the harm of incitement, and not a necessary feature of a successful analogy to an exception aimed at a different kind of harm. Accordingly, a categorical exception for intentionally addictive speech can be drawn by analogy from the exception for incitement.

Undoubtedly, there is no longstanding tradition of regulating addictive expression. But there is a longstanding tradition of regulating addictive products, in ways that reflect the options that regulators today may consider to address this modern problem: laws that punish those who intentionally induce addiction, laws that prohibit minors from engaging in addictive activities or using addictive substances, or laws that ban the addictive activity or substance altogether. These historical traditions were already old when

497. Cf. *Greater New Orleans Broad. Ass'n v. United States*, 527 U.S. 173, 193 (1999) ("[T]he power to prohibit or to regulate particular conduct does not necessarily include the power to prohibit or regulate speech about that conduct.").

498. *Hess v. Indiana*, 414 U.S. 105 (1973).

499. *Id.* at 107.

500. See *Whitney v. California*, 274 U.S. 357, 377 (1927) (Brandeis, J., concurring) ("If there be time to expose through discussion the falsehood and fallacies, to avert the evil by the processes of education, the remedy to be applied is more speech, not enforced silence. Only an emergency can justify repression.").

501. See *supra* Part I.

the Constitution was ratified. Today, addiction comes in new packaging, and may otherwise be entitled to constitutional protection as speech. The question is whether that should meaningfully change the government's relationship to addiction, or whether First Amendment jurisprudence is truly flexible enough to handle the social problems posed by advancing technology.

Conclusion

Advances in our understanding of the brain have opened the door for predatory actors to take advantage of the brain's more "hackable" systems—especially its reward circuitry. Today, professionals in a number of industries explicitly attempt to induce consumer addiction to their products and discuss publicly the best ways to do so.

While scientists and medical professionals have begun to recognize the possibility of, and dangers posed by, behavioral addictions, constitutional scholars have not. This may not seem strange at first—after all, the Constitution has little to do with neuroscience. But vectors of addiction run the gamut from drugs and alcohol to gambling to video games and pornography. In these latter vectors, constitutional questions emerge.

Our First Amendment asks that we sacrifice—occasionally, a great deal—so that our collective speech can help individuals achieve self-realization, so that we can progress towards truth through debate, and so that we can maintain a healthy system of democratic self-governance. Addictive speech actively impedes each of these important goals. There is no reason why it should receive First Amendment coverage.
