

VIRTUAL GAMING, ACTUAL DAMAGE: VIDEO GAME DESIGN THAT INTENTIONALLY AND SUCCESSFULLY ADDICTS USERS CONSTITUTES CIVIL BATTERY

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ABSTRACT

In recent years, there has been increased academic interest in both the neurological effects of compulsive gaming and the potential tort liability of game developers who scientifically engineer games in order to addict users. Scholars from various disciplines are currently debating the scope and potential solutions to the problems associated with Gaming Disorder, now a globally recognized illness. This article contributes to this discussion by offering a multidisciplinary analysis of the scope of video game addiction, its neurological bases, and its relation to the legal rights and responsibilities of victims and game developers. In addition, this article explores the practical significance of, as well as normative and moral foundations for, holding video game developers accountable. It argues the novel theory that video game developers who succeed in their expressed intention to rewrite the neural pathways of gamers should be held liable for the intentional tort of battery.

It further contends that private redress based on an intentional battery cause of action is preferable to actions grounded in negligence or failure to warn because in a battery suit, there is no need to prove that the plaintiff was harmed—offensive contact suffices. Moreover, battery claims may be

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preferable as a matter of public policy. Game developers will be more inclined to reconsider their actions if they are unable to pass off costs of improprieties to their insurers. Such deterrence is particularly desirable where defendants are committing intentional wrongs for financial gain.

Game developers will not stop preying on the weaknesses of their users without financial motivation. Recognizing their behavior as tortious is necessary both to motivate them to behave as upstanding corporate citizens and to allow the victims their day in court. To the extent that such suits do not halt game developers' manipulative behavior, they have the potential to lead to the use of warning labels and the adoption of educational initiatives to inform gamers (and to the extent they are minors, their parents or legal guardians) of the risks associated with these predatory games.

INTRODUCTION

Social media and video game addiction are public health crises.¹ Like other addiction-based public health crises, such as tobacco and opioids, they have spawned global litigation.² In October 2022, the Judicial Panel on Multidistrict Litigation (the “JPML”) consolidated over 80 lawsuits against Instagram, Facebook, TikTok, Snapchat, YouTube, and others, “arising from allegations that defendants’ social media platforms are defective because they are designed to maximize screen time, which can encourage addictive behavior in adolescents.”³ And in December 2022, a Canadian court authorized a class action suit against Epic Games, Inc. (“Epic”), creator of the immensely popular video game Fortnite Battle Royal (“Fortnite”), based on allegations that Epic deliberately designed Fortnite to be addictive and neglected to inform players of the associated risks.⁴

¹ Thomas Chung et al., *Time to Call for a Global Public Health Approach in Prevention of the Onset and Progression of Problematic Gaming*, 7 J. BEHAV. ADDICTIONS 548, 548–52 (2018).

² This article does not argue that the actions of social media platforms constitute civil battery. As of the date of publication, social media and internet addiction are not recognized by the World Health Organization (“WHO”) or the American Psychiatric Association (“APA”) as disorders. Any analysis of social media or internet addiction is beyond the scope of this article.

³ *In re Soc. Media Adolescent Addiction/Pers. Inj. Prods. Liab. Litig.*, MDL No. 3047, 2022 WL 5409144 (J.P.M.L. Oct. 6, 2022).

⁴ *F.N. v. Epic Games Canada*, 2022 QCCS 4551 (Can. Que.) (WL) (alleging violations of Québec’s Consumer Protection Act and the Charter of Human Rights and Freedoms). The lawsuit was brought by three parents who allege that their

The tobacco⁵ and opioid⁶ litigations help clarify why recent lawsuits against social media platforms and video game developers allege defective design and failure to warn causes of action, rather than intentional battery. Both suggest that tort law has valued addiction as a harm “only for the purposes of warning obligations,” rather than as “a harm in itself.”⁷ This article contends that addiction is a harm in itself and suggests that addressing video game addiction by pursuing private battery suits may be strategically superior.

Combining the concepts of tort law with principles of neuroscience, this article argues a novel theory of battery: in certain circumstances, the intentional manipulation or rewiring of neural pathways in the brain using an electronic device constitutes “contact” within the context of civil battery. This argument is premised on the *Eichenwald v. Rivello* case.⁸

During the 2016 U.S. presidential election, Kurt Eichenwald, a successful journalist⁹ and known epileptic often tweeted his negative and critical views of then-presidential candidate Donald Trump. In response, he was sent numerous online death threats.¹⁰ In December 2016, Eichenwald received a tweet with an epileptogenic GIF containing rapidly flashing strobe lights and the message “you deserve a seizure for your posts.”¹¹ When Eichenwald viewed the strobe light, it triggered a

children forwent sleeping, eating, and showering because they were addicted to Fortnite. *Id.* at ¶ 11. After hearing arguments in July, the court authorized the lawsuit for any players residing in Quebec since Sept. 1, 2017, who have exhibited signs of addiction after playing the game. *Id.* at ¶ 100.

⁵ Tobacco-related litigation has included claims of negligent failure to warn, breach of the implied warranty of merchantability, fraud, violations of state consumer protection statutes and antitrust laws. See Nora F. Engstrom & Robert L. Rabin, *Pursuing Public Health Through Litigation: Lessons from Tobacco and Opioids*, 73 STAN. L. REV. 285, 292-95 (2021) [hereinafter *Lessons from Tobacco and Opioids*].

⁶ Opioid-related litigation has included claims of public nuisance, RICO, negligence, fraudulent misrepresentation, fraudulent concealment, state statutory violations, and unjust enrichment. See *id.* at 307-16.

⁷ Gregory Keating, *Accountability and Addictive Wrongs*, JOTWELL (Oct. 26, 2021), <https://torts.jotwell.com/accountability-and-addictive-wrongs> (reviewing *Lessons From Tobacco and Opioids*).

⁸ *Eichenwald v. Rivello*, 318 F. Supp. 3d 766, 769 (D. Md. 2018).

⁹ Eichenwald has written for *Newsweek*, *Vanity Fair*, and *The New York Times*. See Kurt Eichenwald, *Bio*, KURT EICHENWALD, <https://kurteichenwald.com/bio> (last visited Feb. 4, 2023); see also Eichenwald, 318 F. Supp. 3d at 769 (discussing Eichenwald’s publications).

¹⁰ *Cf. Eichenwald*, 318 F. Supp. 3d at 769.

¹¹ *Id.*

seizure.¹²

Eichenwald sued the GIF's sender, John Rivello, for battery. Rivello moved to dismiss the complaint, arguing that the battery claim must fail because Eichenwald had not alleged any physical contact.¹³ The court disagreed.¹⁴ Applying Texas common law, the court held that because "contact can often be of an amorphous nature," the defendant's activation of "certain harmful capabilities of the transmitting computer, converted the computer into a weapon to inflict physical injury" ... and caused "offensive contact."¹⁵

This article suggests using a similar analysis for certain video games. This article further argues that because video game designers are creating games with the express intention of addicting their consumers, and because addiction is harmful and offensive, courts should recognize their actions as intentional batteries. It is an "open secret" in the gaming industry that video game developers are hiring scientists and behavioral psychologists to engineer games that trigger physiological changes in the brain (a concept known as neuroplasticity¹⁶) with the purpose of addicting the games' users.¹⁷ Psychologist and game developer, John Hopson, termed this phenomenon "engagement engineering."¹⁸ In Hopson's own words, the idea is to use behavioral psychology techniques to "make

¹² *Id.* at 770.

¹³ *Id.* at 771.

¹⁴ *Id.* at 773 ("Plaintiff has alleged that light waves emitted from the GIF touched Plaintiff's retina, generated an electric signal, and caused a seizure. Taking, as the Court must, Plaintiff's allegations as true, including his characterization of the science and Plaintiff's physical condition, there was physical contact.").

¹⁵ *Id.* at 774.

¹⁶ Maria Mavrikaki, *Brain Plasticity in Drug Addiction: Burden and Benefit*, HARV. HEALTH PUBL'G (Jun. 26, 2020), <https://www.health.harvard.edu/blog/brain-plasticity-in-drug-addiction-burden-and-benefit-2020062620479>. The author describes neuroplasticity as "our brain's ability to change and adapt in its structural and functional levels in response to experience." *Id.* Thus, neuroplasticity allows us to accomplish tasks such as learning new languages, acquiring technical skills, and performing challenging athletic skills. *Id.* In this sense, neuroplasticity is advantageous. *Id.* However, "neuroplasticity is not beneficial if we develop non-advantageous learned behaviors." *Id.* An example of "non-advantageous learning" is "habitual drug use that can lead to addiction." *Id.*

¹⁷ See Ferris Jabr, *Can You Really Be Addicted to Video Games*, N.Y. TIMES MAG. (Oct. 23, 2019), <https://www.nytimes.com/2019/10/22/magazine/can-you-really-be-addicted-to-video-games.html>.

¹⁸ Lisa Poisso, *15 Minutes of Fame: Psychologist and Games Researcher John Hopson*, ENGADGET (July 27, 2010), <https://www.engadget.com/2010-07-27-15-minutes-of-fame-psychologist-and-games-researcher-john-hopso.html>.

players play forever.”¹⁹ Most of these techniques center around “reward mechanisms” that overstimulate the production of certain neurotransmitters in the brain, particularly dopamine.²⁰ According to researchers, the amount of dopamine released while playing video games can rival “what is seen after intravenous injection of the stimulant drugs amphetamine or methylphenidate”²¹ and is powerful enough to “nearly shut down the prefrontal regions.”²² The article then contends that arguments by game designers that gamers consented to these personal invasions must fail because the designers’ actions extend well beyond the scope of any expressed or implied consent. Last, it argues that intentional battery is a preferable cause of action to negligence or product design.

This article proceeds in four parts. Part II provides a primer on the common law tort of battery. It analyzes the meaning of intent, harmful or offensive contact, and consent. Part III explores addiction from a neuroscientific perspective and specifically addresses the addictive nature of video games. It begins by setting forth the principles of neuroscience and neuroplasticity that allow us to become addicted to substances. Next it explains how the same neuroadaptations occur with behavioral addictions, specifically with videogame addiction. Part IV sets forth the thesis of this article, arguing that when video game developers design and produce games with the express intention of causing users to become addicted they commit battery. It contends that designers’ acts are volitional and intentional, and that manipulation of gamers’ brains via electronic device constitutes contact within the meaning of battery. It further argues that while video game addiction causes harm—in extreme cases death²³—addiction is in itself harmful and offensive. The article then addresses and refutes potential arguments against labeling these actions batteries. The article concludes by setting forth the benefits of addressing the problem through private battery suits.

¹⁹ John Hopson, *Behavioral Game Design*, INFORMA: GAME DEV. (Apr. 27, 2001), <https://www.gamedeveloper.com/design/behavioral-game-design>.

²⁰ *Id.*

²¹ M.J. Koeppe et al., *Evidence for Striatal Dopamine Release During a Video Game*, 393 NATURE 266, 266–68 (1998).

²² Amy Paturel, *Game Theory: How Do Video Games Affect the Developing Brains of Children and Teens?*, BRAIN & LIFE, <https://www.brainandlife.org/articles/how-do-video-games-affect-the-developing-brains-of-children> (last visited Feb. 8, 2023).

²³ Mark Tran, *Girl Starved to Death While Parents Raised Virtual Child in Online Game*, THE GUARDIAN (Mar. 5, 2010), <https://www.theguardian.com/world/2010/mar/05/korean-girl-starved-online-game>.

I. THE COMMON LAW TORT OF BATTERY

Civil battery is a common law cause of action governed by the principles of tort law. At its core, battery violates the most basic of personal rights, namely bodily integrity and dignity and the right to be free from unwanted bodily contact.²⁴ There is no federal tort of battery. Instead, as with most torts, civil battery is governed by state law. While there are some differences amongst the states' treatment of battery, some of which are borne out below, the majority of jurisdictions define battery as the intentional infliction of a harmful or offensive contact with the plaintiff's person.²⁵ This definition is aligned with the Restatement (Second) of Torts, which provides that an actor is subject to liability to another for battery if "(a) he acts intending to cause a harmful or offensive contact with the person ... and (b) [a harmful or] offensive contact with the person of the other directly or indirectly results."²⁶ To succeed on a civil battery claim, a plaintiff must prove each element by a preponderance of the evidence.

A. Battery Requires a Volitional and Intentional Act

"Act" within the meaning of civil battery is a legal term of art. While the common definition of act is "to do something,"²⁷ in tort law, "act" means to do something *voluntarily*.²⁸ Within the concept of civil battery, "act" "denote[s] an external manifestation of the actor's will."²⁹ Thus, if A accidentally falls off a sidewalk curb and bumps into B, neither

²⁴ See, e.g., RESTATEMENT (SECOND) OF TORTS § 18 cmt. c (AM. L. INST. 1965) ("[T]he essence of the plaintiff's grievance consists in the offense to the dignity involved in the unpermitted and intentional invasion of the inviolability of his person . . .").

²⁵ E.g., *Notti v. Hoffman*, 513 P.3d 245, 249 (Alaska 2022); *Maselli v. Reg'l Sch. Dist. No. 10*, 198 Conn. App. 643, 660 (2020); *Obermeier v. Nw. Mem'l Hosp.*, 134 N.E.3d 316, 333–34 (Ill. App. Ct. 1st Dist. 2019); *Carter v. Carter*, 957 N.W.2d 623, 635 (Iowa 2021).

²⁶ See *id.* § 18. The Restatement (Third) provides the following definition for battery:

An actor is subject to liability to another for battery if: (a) the actor intends to cause a contact with the person of the other, as provided in § 2, or the actor's intent is sufficient under § 11 (transferred intent); (b) the actor's affirmative conduct causes such a contact; and (c) the contact (i) causes bodily harm to the other or (ii) is offensive, as provided in § 3. RESTATEMENT (THIRD) OF TORTS: INTENTIONAL TORTS TO PERSONS § 1 (AM. L. INST., Tentative Draft No. 4, 2019).

²⁷ *Act*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/act> (last visited Feb. 4, 2023).

²⁸ See, e.g., RESTATEMENT (SECOND) OF TORTS § 2 cmt. a ("There cannot be an act without volition.").

²⁹ See *id.* § 2 cmt. c. ("The word 'act' is used throughout the Restatement of this Subject to denote an external manifestation of the actor's will . . .").

A's falling off the curb nor bumping into B constitutes an act, because neither action was a voluntary external manifestation of either actor's will.

Yet not all volitional acts of contact are intentional acts of contact. There are two separate but sufficient meanings of "intent" in civil battery. First, intent can mean to act with the purpose of producing a particular result.³⁰ Under this test, if A throws a stone at B with the purpose of striking B, A has the intent to contact B. The inquiry is not limited, however, to the particular results the actor sought to produce. An individual with knowledge that a consequence is "substantially certain" to result from their actions is likewise said to act intentionally with respect to that outcome.³¹ Under this test, if A throws a stone at B, even without the purpose of striking B, A will still be deemed to have intended contact if it can be shown that A knew with substantial certainty that the stone would hit B. For intent to be found in such a scenario, A needs to understand there is more than a mere risk that contact will occur.³² Both tests are subjective, meaning the law looks to discern what a specific defendant thought, as opposed to what a reasonable person would have thought.³³

While there is little debate that both "purpose" and "knowledge with substantial certainty" suffice as intent, courts are split as to whether battery requires single intent or dual intent. Single intent requires merely that the defendant intend to contact with no regard as to whether the defendant intended the contact to be harmful or offensive.³⁴ Whereas dual intent requires the defendant both intend to contact and intend the contact to be harmful or offensive.³⁵ Consequently, it is easier for a plaintiff to show intent in single intent jurisdictions, where the focus and weight of the inquiry appears to be more on the violation of the victim's dignity and bodily integrity than on the defendant's fault.³⁶

³⁰ *See id.* § 8A.

³¹ *Id.*

³² *Id.*

³³ DAN B. DOBBS ET AL., *THE LAW OF TORTS* § 29 (2d ed. 2022) ("Since intent is a state of mind, it is necessarily subjective. That is, the relevant state of mind is that of the person whose intent is in question.").

³⁴ *E.g.*, *Wagner v. State*, 122 P.3d 599, 603–04 (Utah 2005) ("We hold that the actor need not intend that his contact be harmful or offensive in order to commit a battery so long as he deliberately made the contact and so long as that contact satisfies our legal test for what is harmful or offensive.").

³⁵ *E.g.*, *White v. Muniz*, 999 P.2d 814 (Colo. 2000) (holding that a patient suffering from Alzheimer's who struck her caregiver was not liable for battery because she did not appreciate the offensiveness of her conduct).

³⁶ "Faulty conduct that is legally important can be described in many ways, but legal fault in the law of torts is usually sorted into two main categories: (1)

B. Contact Includes Indirect, Amorphous Touchings

Contact can be direct or indirect. Direct contact involves contact between the defendant's person and the plaintiff's person, such as where A punches B. Such direct contact is not required, however.³⁷ There are myriad ways to cause indirect contact with another. Indirect contact may include an intermediary like a foreign object. For example, if A fires a gun at B and the bullet hits B, A is said to have contacted B even though A touched neither the bullet nor B. Indirect contact may also involve amorphous substances. For example, if A blows smoke in B's face, A may be said to have contacted B.³⁸

Because "the essence of the plaintiff's grievance consists in the offense to the dignity involved in the unpermitted and intentional invasion of the inviolability of his person and not in any physical harm done to his body, it is not necessary that the plaintiff's actual body be disturbed."³⁹ Thus, contact may also include a person or object touching something connected to the victim's person. For example, if A knocks a plate out of B's hand, A may be said to have contacted B.⁴⁰ Contact can be established, therefore, when there is "some physical contact between something and the plaintiff or something attached to the plaintiff."⁴¹

In *Eichenwald*, the plaintiff alleged that the defendant sent him an image over a computer with the intent to cause him to have a seizure.⁴² There were no allegations that the defendant, nor a physical object used

intentional wrongs or (2) negligent wrongs." DAN B. DOBBS ET AL., *THE LAW OF TORTS* § 2 (2d ed. 2022).

³⁷ RESTATEMENT (SECOND) OF TORTS § 18 cmt. c ("Unpermitted and intentional contacts with anything so connected with the body as to be customarily regarded as part of the other's person and therefore as partaking of its inviolability is actionable as an offensive contact with his person.").

³⁸ See, e.g., *Leichtman v. WLW Jacor Commc'ns, Inc.*, 634 N.E.2d 697 (Ohio Ct. App. 1994) (holding antismoking advocate sufficiently alleged that radio talk show host committed "battery" by intentionally blowing cigar smoke in advocate's face when advocate was in studio to discuss harmful effects of smoking and breathing secondary smoke).

³⁹ RESTATEMENT (SECOND) OF TORTS § 18 cmt. c.

⁴⁰ *Fisher v. Carrousel Motor Hotel, Inc.*, 424 S.W.2d 627 (Tex. 1967) (holding the intentional grabbing of plaintiff's plate from his hand in loud and offensive manner constituted contact); see also *Reynolds v. MacFarlane*, 322 P.3d 755 (Utah Ct. App. 2014) (intentional act of taking money out of plaintiff's hand met elements for battery claim); *City of Fort Worth v. Deal*, 552 S.W.3d 366 (Tex. App. 2018) (holding that driver's connection to his car was sufficiently close so that contact between the car and an object used by defendant constituted contact with driver's person as required to support a claim for battery).

⁴¹ *Eichenwald v. Rivello*, 318 F. Supp. 3d 766, 774 (D. Md. 2018).

⁴² *Id.* at 772.

by the defendant, touched the plaintiff or an object connected to the plaintiff.⁴³ Rather, the plaintiff alleged that the light waves emitted from the GIF he viewed touched his retina and were converted by the retina's neurons into electric signals which were in turn sent over the optic nerve to the visual cortex of plaintiff's brain, a process known as phototransduction.⁴⁴ This was "contact," according to the court, and the computer was merely the mechanism used to make that contact⁴⁵ in much the same way a gun is the mechanism used to contact a person with a bullet. The court explained, "The novelty of the mechanism by which the harm was achieved does not make those actions any less a tort."⁴⁶

C. The Resulting Contact May Be Harmful or Offensive

The law does not seek to deter actors nor compensate individuals for all intentional contacts. Tort law is concerned with only those intentional contacts that are "outside the bounds of a civil society."⁴⁷ Thus, to be actionable as a battery, the resulting contact must be either harmful or offensive. Harmful contacts are defined as contacts resulting in "any physical impairment of the condition of another's body, or physical pain or illness."⁴⁸ Offensive contacts are those which "offend a reasonable sense of personal dignity," meaning it would be offensive to a reasonable person under the circumstances.⁴⁹

⁴³ *Id.* at 774.

⁴⁴ *Id.*

⁴⁵ *Id.* at 775 ("The strobe GIF was a physical tool, one that would have the same impact on any person with Plaintiff's condition. . . . The light, and not the emotional or intellectual impact of any accompanying message, caused a seizure, and it would not have caused a seizure if viewed by a person without epilepsy. . .").

⁴⁶ *Id.* at 774.

⁴⁷ *Id.* at 773.

⁴⁸ The Restatement (Second) provides:

There is an impairment of the physical condition of another's body if the structure or function of any part of the other's body is altered to any extent even though the alteration causes no other harm. A contact which causes no bodily harm may be actionable as a violation of the right to freedom from the intentional infliction of offensive bodily contacts.

RESTATEMENT (SECOND) OF TORTS § 15 cmt. a (AM. L. INST. 1965).

⁴⁹ *Id.* § 19; *see also* Snyder v. Turk, 627 N.E.2d 1053, 1057 (Ohio Ct. App. 1993) (holding that a jury could conclude that the doctor intended to commit an offensive contact, when he allegedly grabbed scrub nurse and pulled her face down within twelve inches of surgical wound); Fisher v. Carrousel Motor Hotel, Inc., 424 S.W.2d 627 (Tex. 1967). The Restatement (Third) also provides that a contact may be "offensive" even if a reasonable person in the victim's circumstances would not have been offended, provided the defendant knew of the victim's unusually sensitive sense of personal dignity at the time of the contact.

In establishing that an offensive contact occurred, no *physical* injury is necessary for the claim to be actionable. Unlike negligence claims, which require personal injury or property damage, civil battery claims may proceed even when no physical harm has occurred.

D. There Can Be No Battery Where the Victim Consents

Intentional harmful and offensive contacts do not constitute battery unless those contacts are unwanted. As with all intentional torts, if the plaintiff consented, there is no intentional battery. Consent can be either express or implied. Express consent exists when the plaintiff's willingness is explicitly demonstrated orally or in writing.⁵⁰ Implied consent is inferred by the plaintiff's actions. Thus, if a plaintiff's actions reasonably manifest consent, consent will exist even if the plaintiff did not actually consent. For example, implied consent exists when one subjectively does not consent to being given a vaccine yet holds out their arm in a manner consistent with accepting a shot.⁵¹

A plaintiff's consent to one contact by the defendant does not translate to consent to all contacts by the defendant. Consent extends only to "conduct that is not substantially different in nature from the contact that the person is willing to permit."⁵² For example, if plaintiff consents to being kissed by the defendant, that does not mean that the plaintiff consented to having intercourse with the defendant. Determining the "particular conduct" consented to is a question for the jury.⁵³

RESTATEMENT (THIRD) OF TORTS: INTENTIONAL TORTS TO PERSONS § 103 cmt. c (AM. L. INST., Tentative Draft No. 1, 2015).

⁵⁰ RESTATEMENT (THIRD) OF TORTS: INTENTIONAL TORTS TO PERSONS § 13.

⁵¹ See *O'Brien v. Cunard S.S. Co.*, 28 N.E. 266, 273–75 (Mass. 1891).

⁵² RESTATEMENT (THIRD) OF TORTS: INTENTIONAL TORTS TO PERSONS § 14 (AM. L. INST., Tentative Draft No. 4, 2019). The Restatement (Third) provides the following examples to explain the concept: First, in a friendly test of strength, B consents to A punching him hard in the stomach with his bare hand. If A punches B in this manner and B suffers a serious bruise, A is not liable. But if A punches B without disclosing that he is wearing brass knuckles and causes the same bruise, now, A is subject to liability. Although B consented to the invasion (an intentional punch in the stomach), B did not consent to the type of conduct that A engaged in (use of brass knuckles). *Id.* § 13 cmt. d.

⁵³ *Duncan v. Scottsdale Med. Imaging, Ltd.*, 70 P.3d 435, 439–40 (Ariz. 2003) (en banc) (holding that a patient's general authorization of an injection does not defeat her battery claim where evidence supports her contention that she consented to the use of morphine or meperidine (Demerol) but was instead administered fentanyl).

Moreover, consent does not exist when it is induced by a fundamental misunderstanding of fact.⁵⁴ For example, if E and F have consensual sexual intercourse and E knows that he is infected with a sexually transmitted disease and knows that F does not know this, E is subject to liability to F for battery.⁵⁵

II. THE NEUROSCIENCE UNDERLYING BEHAVIORAL ADDICTIONS— INCLUDING VIDEO GAME ADDICTION

The work of doctors Ivan Pavlov, B.F. Skinner, and Robert Sapolsky inform our understanding of the brain chemistry underlying addiction. In 1927, while studying digestion in dogs, Russian physiologist Ivan Pavlov noticed that dogs would salivate when fed.⁵⁶ He also observed that after being fed a few times by someone who opened and entered through a specific door, the dogs started to salivate upon the mere opening of that door.⁵⁷ After observing that the dogs had been conditioned to associate the opening of the door with food, Pavlov ran a series of experiments in which he exposed the dogs to a variety of other stimuli before feeding them.⁵⁸ After repeated trials, the dogs began to associate the different stimuli, such as the ringing of a buzzer or the sounding of a metronome, with food and would salivate upon exposure of the stimuli even when no food was present.⁵⁹ This process of associating a stimulus that did not previously elicit a response with one that naturally elicited the response is known as classical conditioning.⁶⁰

⁵⁴ The Restatement (Second) states: If the person consenting to the conduct of another is induced to consent by a substantial mistake concerning the nature of the invasion of his interests or the extent of the harm to be expected from it and the mistake is known to the other or is induced by the other's misrepresentation, the consent is not effective for the unexpected invasion or harm. RESTATEMENT (SECOND) OF TORTS § 892B(2) (AM. L. INST. 1979); *see also* Neal v. Neal, 873 P.2d 871, 877 (Idaho 1994) (holding wife's affidavit raised genuine issue of fact as to whether she consented to intercourse with husband when she was unaware that her husband was having an affair and alleged consent may have based upon a substantial mistake).

⁵⁵ RESTATEMENT (SECOND) OF TORTS § 892B(2); *see also* Doe v. Johnson, 817 F. Supp. 1382, 1396–98 (W.D. Mich. 1993) (holding that one who knows he has a venereal disease and knows that his sexual partner does not know of his infection, commits a battery by having sexual intercourse).

⁵⁶ Michael B. VanElzakker et al., *From Pavlov to PTSD: The Extinction of Conditioned Fear in Rodents, Humans, and Anxiety Disorders*, 113 NEUROBIOLOGY LEARNING & MEMORY 3, 3–18 (2014).

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

Approximately 25 years later, Harvard psychology professor, B.F. Skinner, ran a series of experiments in which he placed pigeons and rats in boxes with reward mechanisms that would release food when pressed (discs for pigeons, levers for rats).⁶¹ Initially the animals pressed the lever only by accident, but over time they learned to press the lever immediately when placed in the box.⁶² Similarly to how Pavlov's dogs were conditioned to salivate, the animals in the Skinner box were conditioned to press the reward mechanism. But rather than learning to associate a stimulus that did not previously elicit a response with one that naturally elicited the response, Skinner's animals learned to associate voluntary action with a consequence, a process known as operant conditioning.⁶³

While studying operant conditioning, Skinner discovered that the rate at which behaviors are reinforced by reward ("reinforcement schedules") significantly affects "the strength and consistency of those behaviors."⁶⁴ When reinforcement is provided after every instance of the desired behavior ("continuous reinforcement"), subjects easily associate action with a consequence and learning occurs quickly.⁶⁵ The downside, however, is that continuous reinforcement also means that once reinforcement is no longer provided, the conditioned behavior quickly stops (a process known as "extinction").⁶⁶ Comparatively, when reinforcement is provided only occasionally ("partial reinforcement"), subjects have a harder time associating the behavior with the consequence, thus the learning process is slower.⁶⁷ Once learned, however, the "behavior . . . is more resistant to extinction" because the subject hopes that if the behavior continues, it will eventually be rewarded.⁶⁸

One type of partial reinforcement schedule is called the "variable ratio schedule," during which a "behavior is reinforced after a random number of responses."⁶⁹ The unpredictability of the "schedule results in high, steady rates of responding."⁷⁰ When subjects are rewarded on a

⁶¹ Annabelle G. Y. Lim, *Schedules of Reinforcement*, SIMPLY PSYCH. (July 2, 2020), <https://www.simplypsychology.org/schedules-of-reinforcement.html>.

⁶² Saul McLeod, *What Is Operant Conditioning and How Does It Work?*, SIMPLY PSYCH., <https://www.simplypsychology.org/operant-conditioning.html> (last visited Feb. 8, 2023).

⁶³ *Id.*

⁶⁴ Lim, *supra* note 58.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

variable ratio schedule, they persistently engage in the desired behavior in the hope that their next response will result in receipt of the reward.⁷¹

Skinner was conducting his experiments in the late 1930s through the 1950s and did not have access to sophisticated neuroimaging techniques. He and the rest of the scientific community, therefore, were unaware at the time of the underlying brain chemistry responsible for operant conditioning. Today, though, thanks to fMRI and other brain imaging technology, we now understand that the release of dopamine is key to understanding operant conditioning and addiction.

A. Neuroplasticity, Addiction and Dopamine

Our brains are comprised of billions of cells, called *neurons*, that travel along neural pathways and communicate with one another using chemicals called neurotransmitters.⁷² This process of transferring information between neurons via neurotransmitters on neural pathways (“neurotransmission”) is responsible for human functionality.⁷³

Understanding neurotransmission requires a basic understanding about the structure of both neurons and neural pathways. Neurons have three distinct parts: the cell body, which controls the cell’s activities; the axon, which transmits messages from the cell; and the dendrites, which contain receptors that receive messages.⁷⁴ When one neuron wants to share a message with another, it sends an electrical impulse (“action potential”) down its axon,⁷⁵ which acts like a cable transporting electricity. When the action potential reaches the axon terminal, or the end of the axon, neurotransmitters are released into a tiny gap (a “synapse”) between the terminal and another neuron.⁷⁶ The neurotransmitter then crosses the synapse and binds to a receptor on the dendrite of a neuron on the other side of the synapse.⁷⁷

Neurons do not function in isolation.⁷⁸ Rather, they are organized into neural circuits or networks that process specific kinds of information and are responsible for coordinating and performing specific functions.⁷⁹ One such circuit is the brain’s “reward circuit,” or limbic circuit. This

⁷¹ *Id.*

⁷² *See generally* PER BRODAL, *THE CENTRAL NERVOUS SYSTEM: STRUCTURE AND FUNCTION* (Oxford University Press, 3d ed. 2004).

⁷³ *See generally id.*

⁷⁴ *Id.* at 3-4.

⁷⁵ *Id.* at 26, 36.

⁷⁶ *Id.* at 4, 35-36, 47

⁷⁷ *Id.* at 36.

⁷⁸ SINAUER ASSOCS., *NEUROSCIENCE*, 10 (Dale Purves et al. eds., 5th ed. 2012).

⁷⁹ *Id.* at 10.

circuit is made up of four neural pathways, known as “dopamine pathways,” because they are responsible for the release and transmission of dopamine, the main neurotransmitter associated with rewards and pleasure.⁸⁰ One of the pathways, “[t]he mesolimbic pathway, in particular,” is known to be “the key component in reward assessment”⁸¹ and has also “been shown to be dysfunctional in most cases of addiction.”⁸²

Within the mesolimbic pathway and in the midbrain is the ventral tegmental area (VTA).⁸³ The VTA produces dopamine and stimulates other brain regions involved in executive, affective, and motivational functions.⁸⁴ Specifically, the VTA serves as the source of dopamine for the nucleus accumbens (NAc).⁸⁵

The release of dopamine in the brain is what allows us to feel pleasure, satisfaction, and motivation.⁸⁶ Engaging in sex, shopping, and smelling cookies in the oven, all result in the release of dopamine.⁸⁷ Having a healthy level of dopamine is important. When levels are healthy, “[o]ur motivation increases. We’re productive. We plan well. We learn quickly. We’re driven, excited about life, focused, and attentive. Healthy levels of dopamine can also make us more social and extroverted.”⁸⁸

When our levels are unhealthy, however, we suffer from various health issues. For example, dopamine deficiency has been linked to major

⁸⁰ Olivia Guy-Evans, *Brain Reward System*, SIMPLY PSYCH. (July 8, 2021), <https://www.simplypsychology.org/brain-reward-system.html>.

⁸¹ Bryon Adinoff, *Neurobiologic Processes in Drug Reward and Addiction*, 12 HARV. REV. PSYCHIATRY 305, 306 (2004).

⁸² Trevor Haynes, *Dopamine, Smartphones & You: A Battle for Your Time*, HARV. UNIV. SCI. IN THE NEWS BLOG (May 1, 2018), <https://sitn.hms.harvard.edu/flash/2018/dopamine-smartphones-battle-time>.

⁸³ SINAUER ASSOCS., NEUROSCIENCE, 664-65 (Dale Purves et al. eds., 5th ed. 2012).

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ SINAUER ASSOCS., NEUROSCIENCE, 665 (Dale Purves et al. eds., 5th ed. 2012) (“Activation of these complex circuits is believed to instantiate the rewarding effects of natural agents and experiences such as food, water, micturition, and sex, as well more complex social rewards.”); See Katherine H. Taber et al., *Neuroanatomy of Dopamine: Reward and Addiction*, 24 J. NEUROPSYCHIATRY & CLINICAL NEUROSCIENCES 1, 1-4 (2012).

⁸⁷ Stephanie Watson, *Dopamine: The Pathway to Pleasure*, HARV. HEALTH PUBL’G (July 20, 2021), <https://www.health.harvard.edu/mind-and-mood/dopamine-the-pathway-to-pleasure>.

⁸⁸ Mohammed Saeed, *How Does Dopamine Drive Our Behavior?*, INTO ACTION RECOVERY CTRS., <https://www.intoactionrecovery.com/how-dopamine-drives-our-behavior> (last visited Feb. 6, 2023).

depression and Parkinson's disease.⁸⁹ Conversely, having too much dopamine—or too much dopamine concentrated in some parts of the brain and not enough in other parts—is linked to being more competitive, aggressive, and having poor impulse control.⁹⁰ It can lead to conditions including ADHD, binge eating, gambling and addiction.⁹¹

Addiction is only possible because the human brain is able to form new physical pathways and change how its circuits are wired,⁹² a phenomenon known as neuroplasticity.⁹³ It is now well accepted that “repeated exposure to addictive substances” leads to “adaptive changes . . . at the molecular and cellular level in the . . . mesolimbic pathway.”⁹⁴ Specifically, addictive substances, interact with the VTA and NAc by either prolonging the action of the dopamine in the NAc or by increasing the production and activation of dopamine in the VTA.⁹⁵ The effect of which is a chronic decrease in dopamine when drugs are absent and an increase in phasic activity during the substance use.⁹⁶

In other words, “When a person develops an addiction to a substance, it's because the brain has started to change. This happens because addictive substances trigger an outsized response in the brain. Instead of a simple, pleasurable surge of dopamine, many drugs of abuse—such as opioids, cocaine, or nicotine—cause dopamine to flood the reward

⁸⁹ Taber et. al., *supra* note 79, at 1.

⁹⁰ See Rodrigo Narvaes et al., *Aggressive Behavior and Three Neurotransmitters: Dopamine, GABA, and Serotonin—a Review of the Last 10 Years*, 7 PSYCH. & NEUROSCIENCE 601, 604 (2014) (noting one study that concluded lower dopamine levels resulted in “increase[s] in the number of risky decisions made by the” participant).

⁹¹ See D. E. Comings et al., *Studies of the Potential Role of the Dopamine D₁ Receptor Gene in Addictive Behaviors*, 2 MOLECULAR PSYCHIATRY 44, 44 (1997) (noting studies implicating the role of “dopamine D2 receptor . . . in a wide range of addictive, impulsive, compulsive disorders including” gambling, eating, and ADHD).

⁹² See CP O'Brien, *Neuroplasticity in Addictive Disorders*, 11 DIALOGUES CLINICAL NEUROSCIENCE. 350, 352 (2009) (“[L]earned addictive behavior is thought to result from neuroplasticity . . .”).

⁹³ Pedro Mateos-Aparicio & Antonio Rodriguez-Moreno, *The Impact of Studying Brain Plasticity*, FRONTIERS IN CELLULAR NEUROSCIENCE (Feb. 27, 2019), <https://www.frontiersin.org/articles/10.3389/fncel.2019.00066/full>.

⁹⁴ Ja-Hyun Baik, *Dopamine Signaling in Reward-Related Behaviors*, 7 FRONTIERS NEURAL CIRCUITS art. 152, at (2013); Daria J. Kuss and Mark D. Griffiths, *Internet and Gaming Addiction: A Systematic Literature Review of Neuroimaging Studies*, 2012 BRAIN SCIS. 347, 348.

⁹⁵ SINAUER ASSOCS., NEUROSCIENCE, 664-65 (Dale Purves et al. eds., 5th ed. 2012).

⁹⁶ *Id.*

pathway, 10 times more than a natural reward.”⁹⁷ This overactivation can initially result in feelings of euphoria,⁹⁸ but with repeated exposure, the reward circuit adapts by diminishing its sensitivity to the stimulant and making it hard to feel pleasure from anything else.⁹⁹

The scientific community’s understanding of dopamine is evolving. Originally, dopamine was labeled the “pleasure molecule” because, as explained above, dopamine is released when the brain receives a reward.¹⁰⁰ Cocaine use, for example, releases significant amounts of dopamine.¹⁰¹ But scientists are now also referring to dopamine as “the anticipation molecule” because dopamine is likewise released in large—sometimes excessively large—amounts when people anticipate a pleasurable experience.¹⁰²

B. The Anticipation of Pleasure

Building off Skinner’s work a half a century earlier and with the addition of advanced neuroimaging technology, Robert Sapolsky, a professor of biology and neurology at Stanford University, performed a study in which he trained a monkey to understand that pulling a lever ten times after a light turned on would produce food.¹⁰³ There were three distinct stages involved in the monkey’s task.¹⁰⁴ First, the signal stage, during which the illumination of a light would alert the monkey that a new

⁹⁷ *How an Addicted Brain Works*, YALE MED. BLOG (May 25, 2022), <https://ym.care/5y4>.

⁹⁸ Satoshi Ikemoto et al., *Basal Ganglia Circuit Loops, Dopamine and Motivation: A Review and Enquiry*, 290 BEHAV. BRAIN RSCH. 17, 18 (2015).

⁹⁹ *Drugs and the Brain*, NAT’L INST. ON DRUG ABUSE (July 2020), <https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/drugs-brain>.

¹⁰⁰ See Kenneth Blum et al., *The Addictive Brain: All Roads Lead to Dopamine*, 44 J. PSYCHOACTIVE DRUGS 134, 135–41 (2012) (discussing dopamine as the brain’s major reward neurotransmitter pathway).

¹⁰¹ See generally Lynette C. Daws et al., *Cocaine Increases Dopamine Uptake and Cell Surface Expression of Dopamine Transporters*, 290 BIOCHEM. & BIOPHYSICAL RSCH. COMM’NS. 1545, 1545–50 (2002) (showing how cocaine inducement results in signs of increased dopamine expression).

¹⁰² Orsolya Király et al., *Gaming Disorder: A summary of Its Characteristics and Aetiologyaetiology*, 122 COMPREHENSIVE PSYCHIATRY 1, 3 (2023) (“Moreover, research shows that dopamine is released when anticipating a reward, not only when actually getting it.”); *What Is Dopamine & How Does It Keep Me Using Opioids?*, COLEMAN INST. FOR ADDICTION MED. (Jan. 14, 2022), <https://thecolemaninstitute.com/tci-blog/72-dopamine-the-anticipation-molecule>.

¹⁰³ Cal. Acad. of Scis., *Dopamine Jackpot! Sapolsky on the Science of Pleasure*, DAILYMOTION (Feb. 15, 2011), <https://www.dailymotion.com/video/xh6ceu>.

¹⁰⁴ *Id.*

session was beginning.¹⁰⁵ Next, the work stage, during which the monkey would pull the lever.¹⁰⁶ And finally, the reward stage, during which the monkey would receive the food.¹⁰⁷

Sapolsky tracked the amount of dopamine released in the monkey's brain at the three different stages of the task and discovered that the monkey's dopamine levels spiked in response to the light turning on.¹⁰⁸ In other words, the signal that the task was about to begin triggered a greater dopamine release than the reward of food.¹⁰⁹ Sapolsky explained that dopamine "is about the anticipation of pleasure. It's about the pursuit of happiness, rather than about happiness itself."¹¹⁰

In a second phase of the experiment, Sapolsky changed one variable.¹¹¹ He now provided the monkey with a food reward only half of the time.¹¹² During this phase of the experiment, the amount of dopamine released when the light turned on soared, doubling what it was when the monkey received the reward one hundred percent of the time.¹¹³ Speaking at the California Academy of Sciences, Sapolsky explained: "Why is this? You've just introduced a key word into this neurochemistry, namely 'maybe.' Simply the possibility of a reward fuels goal-directed behavior like mad, showing the power of intermittent reinforcement. Press that lever some more, and maybe this time you'll be rewarded."¹¹⁴

Sapolsky conducted third and fourth experiments, during which he provided the monkey with the reward 25 and 75 percent of the time, respectively.¹¹⁵ In both experiments, the dopamine released remained at a constant level, about halfway between the amount released when the reward was given 100 percent of the time and 50 percent of the time.¹¹⁶ At first blush, this appears to be a somewhat confusing and counterintuitive result.¹¹⁷ But the results showed that the amount of dopamine released reached an all-time high when the predictability of results was at its lowest.¹¹⁸ On the one hand, if the monkey received the reward only 25

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

percent of the time, it was predictable that it would go unrewarded most of the time.¹¹⁹ On the other hand, if it received food 75 percent of the time, it was predictable that it would be rewarded most of the time.¹²⁰ Thus, receiving the food 50 percent of the time was the least predictable situation and resulted in “dopamine . . . pouring out like mad.”¹²¹

C. Gaming is a Behavioral Addiction

The scientific evidence supporting gaming addiction is compelling and abundant. In 2018, compulsive video game playing became an internationally recognized behavioral addiction when the World Health Organization (the “WHO”) included “Gaming Disorder” as a disease in the *International Classification of Disease (ICD-11)*.¹²² The evidence relied upon by WHO in classifying gaming addiction as a disease includes traditional survey and behavioral research, but also empirical studies that used neuroimaging techniques to study the phenomenon from a neuroscientific perspective.¹²³

Neuroimaging studies are advantageous to traditional methods because they allow researchers to distinguish the particular brain areas that are involved in the development and maintenance of addiction.¹²⁴ These studies provide compelling evidence that substance-related addictions and gaming addictions are similarly associated with changes in “function and structure of the brain.”¹²⁵ In other words, gaming addiction “increases the activity in brain regions commonly associated with substance-related addictions, and lead[s] to neuroadaptation in such a way that the brain itself actually changes as a consequence of excessive engagement with the Internet and gaming.”¹²⁶

Researchers have noted that the dopamine release that comes from gaming is so powerful it can nearly “shut the prefrontal regions [of the brain] down.”¹²⁷ As far back as 1998, research showed that the amount of

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Addictive Behaviours: Gaming Disorder*, WORLD HEALTH ORG. (Oct. 22, 2020), <https://www.who.int/news-room/questions-and-answers/item/addictive-behaviours-gaming-disorder> [<https://perma.cc/434Y-BVEK>]; *but see* AM. PSYCHIATRIC ASS’N, *DIAGNOSTIC & STAT. MANUAL OF MENTAL DISORDERS* (5th ed. 2022) (identifying “Internet Gaming Disorder” as a condition warranting more clinical research before it may be considered a formal disorder).

¹²³ Kuss, *supra* note 89.

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Paturel, *supra* note 22.

“dopamine released while playing video games was similar to what is seen after intravenous injection of the stimulant drugs amphetamine or methylphenidate.”¹²⁸ Of course, not all video game play—not even all excessive video game play—is classified as a disease.¹²⁹ But it becomes a disorder, according to WHO, when game play results in significant impairment to the gamer’s ability to function for at least a year.¹³⁰

Gaming addiction does not materialize the first time an individual plays a video game. Addiction is learned. The voluntary and controlled decisions to initially engage in a specific behavior are made by specific brain regions, namely the prefrontal cortex and ventral striatum.¹³¹ The same is true for the first time an individual smokes a cigarette. But overtime, as compulsion develops, brain activity changes. Specifically, brain activity in the dorsal regions of the striatum increase and as explained above, lead to changes in the dopamine pathways, namely the VTA and the NAc. The more one engages in the behavior, the more often the behavior is needed to produce the desired effect.¹³²

III. VIDEO GAME DESIGNERS WHO INTENTIONALLY AND SUCCESSFULLY ADDICT GAMERS SHOULD BE HELD LIABLE FOR THE

¹²⁸ *Id.*; see also Christopher M. Olsen, *Natural Rewards, Neuroplasticity, and Non-Drug Addictions*, 61 NEUROPHARMACOLOGY 1109, 1109–22 (2011). Similarly, Kuss *supra* note 89 has stated:

On the molecular level, Internet addiction is characterized by an overall reward deficiency that entails decreased dopaminergic activity. On the level of neural circuitry, Internet and gaming addiction led to neuroadaptation and structural changes that occur as a consequence of prolonged increased activity in brain areas associated with addiction. On a behavioral level, Internet and gaming addicts appear to be constricted with regards to their cognitive functioning in various domains.

Kuss, *supra* note 89.

¹²⁹ Anya Kamenetz, *Is ‘Gaming Disorder’ an Illness? WHO Says Yes, Adding it to its List of Diseases*, NPR (May 28, 2019), <https://www.npr.org/2019/05/28/727585904/is-gaming-disorder-an-illness-the-who-says-yes-adding-it-to-its-list-of-diseases> [<https://perma.cc/JR9Y-SSZA>].

¹³⁰ Alice Park, *‘Gaming Disorder’ is Now an Official Medical Condition, According to the WHO*, TIME (May 29, 2019), <https://time.com/5597258/gaming-disorder-icd-11-who> [<https://perma.cc/HZ3R-QKUJ>].

¹³¹ Kuss, *supra* note 89.

¹³² *Id.* (“As a result, the reward system becomes deficient. This leads to the activation of the antireward system that decreases the addict’s capacity for experiencing biological reinforcers as pleasurable. Instead, he requires stronger reinforcers, i.e., their drug or behavior of choice, in larger amounts (i.e., tolerance develops) to experience reward.”).

INTENTIONAL TORT OF BATTERY

Video game developers who succeed in their expressed intention to rewrite the neural pathways of gamers should be held liable for the intentional tort of battery. As explained in Part II, an actor is subject to liability for battery if he intends a harmful or offensive contact and a harmful or offensive contact occurs.¹³³

A. Game Developers are Acting Intentionally

In 2022, in *FN v. Epic Games*, a Quebec court authorized a class action suit against the creators of the immensely popular video game, *Fortnite*.¹³⁴ In their request for class certification, the plaintiffs alleged that “human psychology and manipulation of the human brain has been the epicenter of the development process of FORTNITE which was specifically designed to be a highly addictive game.”¹³⁵ Celia Hodent, PhD in Psychology, led a development team of eight people who worked for nearly four years tracking the slightest drops in attention by gamer users to optimize the addicting qualities of the game, according to allegations.¹³⁶ Plaintiffs claimed that the developers “used the same tactics as the creators of slot machines, namely variable reward programs, to ensure the dependence of its users, and manipulate the brain to always desire more.”¹³⁷

In deciding whether to authorize the class action suit, the Quebec court did not validate the accuracy of the allegations, but the evidence supporting the allegations that video game designers are intentionally creating addictive games is overwhelming. Video game designers have repeatedly and publicly expressed their intention to create video games that are as addictive as possible.¹³⁸ Gaming giants—such as Blizzard, Epic, Microsoft, Sony, UbiSoft, and Valve, to name a few—employ psychologists and neurologists to engineer games capable of shaping human behavior.¹³⁹

¹³³ See *supra* Part II.

¹³⁴ *FN v. Epic Games Canada*, 2022 Carswell Que 19608 (Can. Que.).

¹³⁵ *Id.* at ¶ 26.

¹³⁶ *Id.* at ¶ 27.

¹³⁷ *Id.* at ¶ 30.

¹³⁸ See *infra*, note 136.

¹³⁹ See, e.g., Rebecca A. Clay, *Hot Careers: Video Game Design and Development*, GRADPSYCH, Jan. 2012, at 14 (interviewing psychologists working for video game developers Microsoft, Steam, and Valve about career opportunities for psychology graduates); Oliver Vandervoort, *EA Hiring Experimental Psychology Major to Help Shape the Future of the Sims*, GAMERANT, (July 1, 2022), <https://gamerant.com/the-sims-psychology-major> (discussing EA’s effort to

In 2001, John Hopson, gaming industry veteran who holds a PhD in Behavioral and Brain Science wrote an article entitled “Behavioral Game Design.” In the article, he provided game designers with “recipes” to create addictive video games,¹⁴⁰ a process he refers to as “engagement engineering.”¹⁴¹ In Hopson’s own words, the idea is to use techniques derived from behavioral psychology to “make players play forever,” even when they are not enjoying themselves, and to “avoid conditions under which players will stop playing.”¹⁴²

Hopson’s “recipes” for addiction are based on Skinner’s operant conditioning discovery that the rate at which behaviors are reinforced by reward significantly affects the strength and consistency of those behaviors.¹⁴³ Hopson explained that while most video games existing at the time of his article employed fixed ratio schedules of rewards, for example, by rewarding a player with an extra life after killing 20 opponents, such schedules can lead to players stopping play.¹⁴⁴ Thus, he advised that if designers wanted to avoid users ever stopping or taking a break from game play, they should avoid using fixed ratio schedules of reward in their games.¹⁴⁵ Rather, he advised, the “simple, reliable, and very effective” way to “make players play forever” is to use variable ratio schedules.¹⁴⁶ As an example, Hopson explained that a game might use a variable ratio schedule to provide power-ups.¹⁴⁷ Under such a schedule, a power-up “could reappear immediately after being collected or an hour later.”¹⁴⁸ The unpredictability of the reward provides that there is “always, always a reason for the player to be playing.”¹⁴⁹

The gaming industry heeded Hopson’s advice. Creating addictive games that exploit human weakness has become the norm, according to some game designers.¹⁵⁰ Speaking at a Free Play conference in Melbourne in 2007, video game creator Jonathan Blow noted that

recruit individuals with “an advanced degree in experimental psychology (experimental, social, cognitive)” to “conduct user research activities”). Prior to becoming the Director of User Experience (UX) at Epic Games, Celia Hodent, *supra* note 133, was conducting user research for Ubisoft Montreal. *See About*, Celia Hodent, <https://celiahodent.com/about> (last visited Feb. 8, 2023).

¹⁴⁰ Hopson, *supra* note 19.

¹⁴¹ Poisso, *supra* note 18.

¹⁴² Hopson, *supra* note 19.

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *See infra* notes 148 and 149.

employing “Pavlovian or Skinnerian scheme[s]” is considered a “best practice” of the gaming industry.¹⁵¹ In a frank discussion at the 2010 Game Developers Conference Europe, game designer Teut Weidemann announced that the key to creating successful free-to-play games was to exploit and monetize human weakness and to “bring [users] in and keep them addicted.”¹⁵²

Video games were not always engineered to be addictive. Traditionally, consumers of video games would go to a brick-and-mortar store to buy a complete game, providing a one-time revenue to the game’s publisher.¹⁵³ The developer made the same amount of money whether the gamer played for five minutes, five hours, or five hundred hours. The digital age, however, transformed both the way gamers purchase games and how game developers make money. Today, gamers can make in-game purchases and download additional content through a digital marketplace, without ever leaving the house or stopping game play.¹⁵⁴

These technological advances allow companies to monetize players beyond the initial game sale through different forms of

¹⁵¹ Jason Hill, *Ethical Dilemmas*, SYDNEY MORNING HERALD (Sept. 20, 2007, 10:00 AM), <https://www.smh.com.au/technology/ethical-dilemmas-20070920-gdr5a0.html> [<https://perma.cc/2YZL-TYEV>].

¹⁵² Brandon Sheffield, *GDC Europe: To Succeed in Free-To-Play, ‘Exploit Human Weaknesses’*, INFORMA: PC (Aug. 18, 2010), <https://www.gamedeveloper.com/pc/gdc-europe-to-succeed-in-free-to-play-exploit-human-weaknesses-> [<https://perma.cc/5GWM-RZYC>].

¹⁵³ Matthew Perrotta, *Business Models of Video Games: Past, Present, and Future*, MEDIUM (Apr. 6, 2020), <https://medium.com/@mjperrotta46/business-models-of-video-games-past-present-and-future-2b2aafe8ade1> [<https://perma.cc/3EA8-WE6B>].

¹⁵⁴ *Methods to Implement Microtransactions in F2P Video Games*, STARLOOP, <https://starloopstudios.com/methods-to-implement-microtransactions-in-f2p-video-games> [<https://perma.cc/TUP3-M6WR>] (“Players do not have to pay for all games to download them. A popular revenue model for publishers is selling in-game content. Video games are designed to motivate players to purchase various items, pay to pass a more challenging level, change the look of their character, etc.”) (last visited Feb. 6, 2023).

microtransactions,¹⁵⁵ including downloadable content.¹⁵⁶ Whereas in the past, the only opportunity to monetize the player was through the initial purchase, with modern games, developers have more opportunities to make money the longer the user plays. This has led to the use of the “free to play” business model¹⁵⁷ and certain gaming mechanisms meant to

¹⁵⁵ See Karim Ahmad, *7 Examples of Gaming Microtransactions—From Acceptable to Evil*, MUO (Feb. 1, 2022), <https://www.makeuseof.com/examples-of-gaming-microtransactions/> (“A microtransaction is a digital purchase that users can make within a game, unlocking specific features or providing unique cosmetic, and sometimes game-changing, enhancements.”); *Methods to Implement Microtransactions in F2P Video Games*, *supra* note 151 (providing to industry insiders that

“Microtransactions are how publishers monetize their video games by purchasing low-value virtual items that players make into the game. Most of the time, the games with microtransactions are free to download, and players have to pay with real money if they want various virtual items in the game. Microtransactions can be found both in computer games or mobile games but also in console games.

...

... In 2019, Fortnite players spending on gaming DLC in the United States reached an average of 82 U.S. dollars. The most popular in-game acquisitions in Fortnite included upgrades to characters and outfits and the gliders that transport the players into the battleground. This model for generating income appears to have been a victory for Epic Games as a player spending on the Fortnite mobile app consistently reaches millions of U.S. dollars each month”).

¹⁵⁶ See Perrotta, *supra* note 150 (explaining that DLC refers to additional content that can be downloaded within a video game. DLCs allow game publishers to monetize their audience after the initial release of a game by offering additional content distributed over the internet. DLC content can range from cosmetic updates to expansion-like content. By 2017, revenue from DLC was greater than box sales of games; this gap is expected to widen).

¹⁵⁷ See *What Does Free To Play (F2P) Mean?*, TECHOPEDIA, [https://www.techopedia.com/definition/27039/free-to-play-f2p#:~:text=Free%20to%20play%20\(F2P\)%20refers,order%20to%20join%20the%20game](https://www.techopedia.com/definition/27039/free-to-play-f2p#:~:text=Free%20to%20play%20(F2P)%20refers,order%20to%20join%20the%20game) [<https://perma.cc/5333-24J5>] (last visited Feb. 7, 2023) (defining Free To Play as “a business model for online games in which the game designers do not charge the user or player in order to join the game”); see also Robert Flunger, et al., *The Free-to-Play Business Model*, THE 19TH INT’L CONF. ON INFO. INTEGRATION & WEB-BASED APPLICATIONS & SERVS. (IIWAS). (Dec. 4, 2017) <https://dl.acm.org/doi/10.1145/3151759.3151802> (explaining “[t]he free-to-play model in the online gaming industry is based on providing an online game at no charge on either mobile devices or on a PC,” and creates monetization through “virtual items which players may purchase during the game.”).

“hook” the user, such as compulsion loops,¹⁵⁸ loot boxes,¹⁵⁹ and games with no endings¹⁶⁰. Policy makers refer to these design features, intended to influence users into engaging in specific behaviors without the user’s explicit knowledge or consent, as “dark patterns.”¹⁶¹

Video game designers that engineer their games to be addictive by using these mechanisms are acting of their own volition. Their actions are neither accidental nor involuntary. Therefore, they are “acting” within the meaning of battery. Moreover, they are acting intentionally. Their

¹⁵⁸ See Amanda Farough, *Video Game Definition of the Week: Compulsion Loop*, ENGAGED FAM. GAMING, <https://engagedfamilygaming.com/parent-resources/video-game-definition-of-the-week-compulsion-loop> [https://perma.cc/8PGQ-YGK2] (last visited Feb. 7, 2023) (explaining that compulsion loop “describes a series of gameplay actions designed to be repeated multiple times, offering feedback in such a way as to encourage constant, continued play and discouraging or penalizing shorter play sessions”).

¹⁵⁹ See Caterina Primi, et al., *Loot Boxes Use, Video Gaming, and Gambling in Adolescents: Results from a Path Analysis Before and During COVID-19-Pandemic-Related Lockdown in Italy*, FRONTIERS IN PSYCH. (Sept. 27, 2022), <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.1009129/full> (defining loot boxes as “virtual items embedded within video games that players can open with real-world money to get the chance of obtaining one or more virtual rewards” and noting their main characteristic “that the reward is subjected to chance; therefore, players do not know which virtual reward they will get from their purchases.”).

¹⁶⁰ See Sally Hopkins, *Gaming Addiction Report 2022*, DELAMERE (Apr. 18, 2022), <https://delamere.com/blog/gaming-addiction-report-2022> [https://perma.cc/EYV6-9M9K]. (Quoting Martin Preston, Founder of Delamere rehabilitation facility, suggesting that this is intentional because

“One of the most addictive features of games is that many do not have pre-defined ends – this is most common in MMORPG games. What this means, is that the player does not get to a point where they have ‘completed’ every challenge or task, which brings the game to a natural end and allows them to move on. Instead, they are presented with continual challenges and tasks to overcome that keep them coming back again and again.”).

¹⁶¹ Emily Birnbaum, *GOP Senator Introduces Bill Banning ‘Addictive’ Social Media Features*, THE HILL (July 30, 2019, 5:40 AM), <https://thehill.com/policy/technology/455235-gop-senator-introduces-bill-banning-addictive-social-media-features> [https://perma.cc/9ZKP-4SW9]; see also Brent Bihr, *Dark Patterns, Warcraft, and Cybersex: The Addictive Face of Predatory Online Platforms and Pioneering Policies to Protect Consumers*, 60 JURIMETRICS J. 431, 451 (2020); see also Protecting Children from Abusive Games Act, S. 1629, 116th Cong. (2019) (proposing the Protecting Children from Abusive Games Act banning manipulative online game features).

expressed purpose is to create a game that addicts users,¹⁶² one that leads to neuroadaptation and structural brain changes. As such, they satisfy the “purpose” test used to determine intent. They are also acting with “substantial knowledge” that the games they design will result in a dysfunctional mesolimbic pathway, as evidenced by Dr. John Hopson’s “Behavioral Game Design” paper which is widely known and relied on within the industry. Indeed, Hopson’s paper has led to game developers hiring scientists and behavioral psychologists to do exactly what Dr. Hopson proposed.

Whether in a single or dual intent jurisdiction, intent is judged subjectively, meaning the law looks to discern what the defendants themselves actually intended.¹⁶³ Of course, plaintiffs’ burden is less in a single intent jurisdiction where the intent requirement is merely an intent to contact. So long as the gamer can show that the defendant video game developer intended to cause the contact, it’s irrelevant whether the developer intended that contact to be harmful or offensive.

Proving intent in a dual intent jurisdiction will be more burdensome because the plaintiff must show that the defendant intended to cause a harmful or offensive contact.¹⁶⁴ But even in a dual intent jurisdiction, the intent requirement is still likely met. Dual intent jurisdictions do not require the video game developer to testify, “I intended to harm or offend the plaintiff,” in order to find intent. Nor is the plaintiff’s case over if the developer says, “I did not mean to harm or offend the plaintiff.” In *White v. Muniz*, the Supreme Court of Colorado explained,

Juries may find it difficult to determine the mental state of an actor, but they may rely on circumstantial evidence in reaching their conclusion. . . . For example, a person of reasonable intelligence knows with substantial certainty that a stone thrown into a crowd will strike someone and result in an offensive or harmful contact to that person. Hence, if an actor of average intelligence performs such an act, the jury can determine that the actor had the

¹⁶² See Hill, *supra* note 148 (Game developer Jonathan Blow states that employing “Pavlovian or Skinnerian scheme[s]” is considered a “best practice” of the gaming industry;) see also Sheffield, *supra* note 149 (Game designer Teut Weidemann states “we have to bring them in and keep them addicted and make them keep playing.”).

¹⁶³ DAN B. DOBBS ET AL., THE LAW OF TORTS § 29 (2d ed. 2022) (“Since intent is a state of mind, it is necessarily subjective. That is, the relevant state of mind is that of the person whose intent is in question.”).

¹⁶⁴ *Id.* at § 35. (“This latter is sometimes called the dual intent rule because it limits liability to cases in which the defendant intends both touching *and* harm or offense.”)

requisite intent to cause a harmful or offensive contact, even though the actor denies having such thoughts.¹⁶⁵

Likewise, when taken as a whole, circumstantial evidence can be considered,¹⁶⁶ such as developers' public statements indicating their intent to make addictive games; the myriad published papers and studies regarding videogame addiction; the public accounts of the gaming industry's "best practice" of creating addictive games; and the fact that gaming companies are hiring psychologists to work as game developers. This evidence could provide juries with sufficient bases to find that such developers had the intent to cause their players to become addicted (and as explained *infra* at Part IV C, addiction is both harmful and offensive).

B. Physically Changing the Structure of a Brain Constitutes "Contact"

In *Eichenwald*, the court held that using a computer to send a GIF with strobing lights to an epileptic over a computer constituted "contact" within the meaning of battery.¹⁶⁷ Flashing lights can cause seizures because they can cause the brain's neurons to overreact, fire excessively, and generate uncontrolled electrical signals (axon potentials) that spread through the brain's neural pathways.¹⁶⁸ Usually, these signals lead to reactions such as "squinting in the bright sun or recalling a memory at the sight of something," but when too many neurons fire, it can cause dysfunction and lead the body to seize.¹⁶⁹

In much the same way that seeing flashing lights may trigger certain neurons to overreact and send excessive active potentials, exposure to certain elements of video games—such as loot boxes¹⁷⁰ and compulsion loops¹⁷¹—may likewise trigger neurons to overreact. Exposure to these

¹⁶⁵ *White v. Muniz*, 999 P.2d 814, 817 (Colo. 2000).

¹⁶⁶ *Kohler v. Van Peteghem*, 330 Ga. App. 230, 235, 767 S.E.2d 775, 779 (2014) ("Intent is a question of fact for jury resolution and may be proven by circumstantial evidence, by conduct, demeanor, motive, and all other circumstances.").

¹⁶⁷ *Eichenwald v. Rivello*, 318 F. Supp. 3d 766, 774 (D. Md. 2018).

¹⁶⁸ *Why Do Flashing Lights Cause Seizures?*, PRAC. PSYCH. (May 5, 2022), <https://practicalpie.com/why-do-flashing-lights-cause-seizures>; Hannah Thomasy, *How Do Flashing Lights Trigger Epileptic Seizures?*, BRAINFACETS.ORG (Jan. 28, 2021), <https://www.brainfacts.org/diseases-and-disorders/epilepsy/2021/how-do-flashing-lights-trigger-epileptic-seizures-012821#:~:text=Certain%20patterns%20of%20light%20%E2%80%94%20flashing,the%20brain%20during%20a%20seizure> [<https://perma.cc/EPE2-T9SP>].

¹⁶⁹ *Why Do Flashing Lights Cause Seizures?*, *supra* note 168.

¹⁷⁰ *See Primi et al.*, *supra* note 156.

¹⁷¹ *Id.*

video game mechanisms may “trigger an outsized response” by dopaminergic neurons.¹⁷² These neurons fire excessive action potentials and cause dopamine “to pour[] out like mad.”¹⁷³ Whereas the result from excessive neuron firing in the brains of some epileptics when exposed to certain images and light is to alter the body’s usual response of say, squinting in the sun, into the dangerous response of seizing, the result of excessive dopaminergic neuron firing in the brain of some gamers is to alter the usual healthy response of pleasurable sensation into dangerous addictive responses.

Although not all gamers will respond to these programs by becoming addicted to video games, neither will all epileptics seize when exposed to strobe lights. Indeed, not even most epileptics will have a seizure. In only “about 3% of people with epilepsy, exposure to flashing lights at certain intensities or to certain visual patterns . . . trigger seizures.”¹⁷⁴

For these reasons, just as the flashing lights resulting in neuroadaptation viewed over Eichenwald’s computer was held to constitute contact, so should the neuroadaptation from videogames viewed over a computing device.

C. Addiction Itself is Both Harmful and Offensive

A brain rewired in such a way that diminishes a person’s capacity to feel joy or pleasure from natural and healthy stimulants is a physically impaired brain.¹⁷⁵ Moreover, gaming addiction is a globally recognized disease.¹⁷⁶ Because harm means “any physical impairment of the condition of another’s body, or physical pain or illness,” and impairment includes any alteration to “the structure or function of any part of the other’s body . . . to any extent even though the alteration causes no other harm,”¹⁷⁷ a jury may reasonably find that video game designers’

¹⁷² See *How an Addicted Brain Works*, *supra* note 91.

¹⁷³ See CAL. ACAD. OF SCIS., *Dopamine Jackpot! Sapolsky on the Science of Pleasure*, *supra* note 100.

¹⁷⁴ Elaine Wirrell, *Photosensitivity and Seizures*, EPILEPSY FOUND., <https://www.epilepsy.com/what-is-epilepsy/seizure-triggers/photosensitivity> [<https://perma.cc/Q9F9-6PAT>] (last visited Feb. 7, 2023).

¹⁷⁵ See *Drug Misuse and Addiction*, NAT’L INST. ON DRUG ABUSE (July 13, 2020), <https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction> (“Addiction is a lot like other diseases, such as heart disease. Both disrupt the normal, healthy functioning of an organ in the body, both have serious harmful effects... [A] person’s ability to exert self-control can become seriously impaired. This impairment in self-control is the hallmark of addiction.”).

¹⁷⁶ See *Addictive Behaviours: Gaming Disorder*, *supra* note 119.

¹⁷⁷ RESTATEMENT (SECOND) OF TORTS § 15 cmt. a (AM. L. INST. 1965).

manipulation of brains resulting in gaming addiction constitutes harmful contact.

Moreover, even if the aforementioned brain adaptation is not harmful, a jury could find that a reasonable person would consider such unwanted neuroadaptation to be offensive. Addiction is a brain disorder characterized by compulsive engagement in rewarding stimuli despite adverse consequences.¹⁷⁸ Addiction is offensive because it “robs people of their normal power of control over what they consume [and what they do]; it defeats the normal capacity to avoid using products that you know to be dangerous to your health.”¹⁷⁹

The gaming industry as a whole understands that addiction is harmful and offensive, as evidenced by its continual denials to the public that any gaming disorders exists,¹⁸⁰ notwithstanding their continual internal acknowledgments that implementing addictive tools in games is a “best practice.”¹⁸¹ If the industry was truly *unaware* that addiction is harmful and offensive to reasonable people, it would publicly admit to what it internally acknowledges.¹⁸²

D. Gamers Have Not Consented to Designers’ Manipulative Conduct

It is more likely than not that gamers who develop gaming addictions have not consented to having their brains trained to require the game to experience pleasure. Undoubtedly, gamers have consented to playing video games. And, surely, they have consented to seeing the images and elements embedded in the game. But that’s where their consent ends. They have not knowingly consented to having the neuropathways of their brains manipulated such that they become addicted.

Even if gamers understand that dopamine is released in their

¹⁷⁸ See ERIC NESTLER ET AL., MOLECULAR NEUROPHARMACOLOGY: A FOUNDATION FOR CLINICAL NEUROSCIENCE, 364–65, 375 (McGraw-Hill, 2d ed. 2008).

¹⁷⁹ Keating, *supra* note 7.

¹⁸⁰ See, e.g., IGDA Exec. Director (@IGDA_ED), TWITTER (June 18, 2018, 2:16 PM), https://twitter.com/IGDA_ED/status/1008775492382666752 [<https://perma.cc/2JDM-373T>] (arguing that recognition of the problem is “misguided,” “premature,” and has the potential to be “deeply harmful”).

¹⁸¹ Hill, *supra* note 148.

¹⁸² Public statements contradicting internal statements are reminiscent of tobacco companies’ public denials of internally acknowledged facts and data. Regulation of Tobacco Products: Hearing before the Subcomm. on Health and the Environment of the Committee on Energy and Commerce, 103 Cong. (April 14, 1994).

brains while playing—a doubtful proposition—they most likely do not know that the level of dopamine that is released matches that which is released when using cocaine and other addictive substances.¹⁸³ They likely do not understand that their brains are being desensitized such that healthy pleasurable experiences like listening to music or smelling cookies in the oven will no longer produce the same level of pleasure.¹⁸⁴

Surely gamers have not offered express consent to become addicted to video games. Gamers are not consenting to have their neural pathways altered upon buying or before playing the games. They also cannot impliedly consent to the contact because they do not appreciate the true nature of the intended contact.¹⁸⁵ The contact intended by designers goes well beyond those that may be impliedly consented to by engaging in the game.

Consenting to playing the game is akin to the Restatement of Torts' example of a person consenting to being punched.¹⁸⁶ The individual who consented to being punched was consenting to the risks a reasonable person would associate with being punched. But just as the punchee in the Restatement did not consent to the unreasonable, additional conduct that the puncher engaged in (use of brass knuckles),¹⁸⁷ the gamer arguably does not consent to the video game designers' use of mechanisms meant to addict.

There are no warnings on games informing users of their addictive nature. In much the same way that one who has intercourse with a “willing” partner without disclosing their sexually transmitted disease has been held to exceed the scope of consent,¹⁸⁸ so should a video game designer who does not disclose the addictive nature of the game to its users.

E. Courts Should Not be Dissuaded by the Slipper Slope Objection to Labeling This Behavior Tortious

A potential concern to labeling game designers' behavior as battery is that it would open the floodgates of litigation and the underlying principles of tort law would be stretched beyond reason. After all, an entertainment product that does not release dopamine would likely be a dreadful failure. But for the following reasons, such arguments should not dissuade courts from recognizing video game designers' offensive and

¹⁸³ See Daws et al., *supra* note 97.

¹⁸⁴ *Supra* note 97.

¹⁸⁵ Neal v. Neal, 873 P.2d 871, 877 (Idaho 1994).

¹⁸⁶ See RESTATEMENT (THIRD) OF TORTS: INTENTIONAL TORTS TO PERSONS § 14 (AM. L. INST., Tentative Draft No. 4, 2019).

¹⁸⁷ *Id.*

¹⁸⁸ Doe v. Johnson, 817 F. Supp. 1382, 1396 (W.D. Mich. 1993).

harmful manipulation of gamers as battery.

First, the offensive and harmful nature of the video games at issue is the intentionally addictive quality built into the games, rather than the fact that they produce pleasure or release dopamine in the brain. As explained in Part III, the release of a healthy level of dopamine is good for us. The creation and sale of products that are intended to provide pleasure is inherently different than the creation and sale of products intended to addict, particularly when the addictive products are targeted and marketed to children. The first is a practice that is deeply imbedded in a capitalist society, whereas the second may reasonably be deemed “outside the bounds of a civil society.”¹⁸⁹ Fortnite, for example, is both scientifically designed to addict and is specifically targeted towards children.¹⁹⁰

Second, there can be no battery where the plaintiff knowingly consents to the otherwise harmful or offensive contact. Thus, courts need not be concerned that recognizing game designers’ conduct as battery will open the door to similar claims based on the use of nicotine, alcohol, caffeine, sugar, or engagement in gambling. Such actions must fail if the plaintiff was aware of the inherent risks involved with the substance or behavior—as is generally the case with regulated substances and behaviors where the risks associated with their use are well-known.

Sellers of nicotine are prohibited from selling¹⁹¹ and marketing¹⁹² such products to minors. And in 1984, Congress passed the National Minimum Drinking Age Act requiring all states to raise the minimum age to purchase and possess alcohol in public to 21.¹⁹³ Moreover, food and drink products containing added caffeine are required under federal law to

¹⁸⁹ Eichenwald v. Rivello, 318 F. Supp. 3d 766, 773 (D. Md. 2018).

¹⁹⁰ See Chloe Woitier, *Fortnite, The Secrets of a Video Game Phenomenon*, LE FIGARO (May 1, 2018), <https://www.lefigaro.fr/secteur/high-tech/2018/05/01/32001-20180501ARTFIG00164--fortnite-les-secrets-d-un-jeu-video-phenomene.php> (explaining in an interview that the development team designed the game with kids in mind when they “opted for a very cartoonish and humorous artistic direction, reminiscent of Ghostbusters, Back to the Future or The Goonies... In Fortnite, there is no blood... And when you lose, your character doesn’t really die”).

¹⁹¹ N.Y. PUB. HEALTH L§ 1399-CC (2019) (prohibiting retailers from selling cigarettes, cigars, chewing tobacco, powdered tobacco, shisha or other tobacco products, herbal cigarettes, liquid nicotine, electronic cigarettes, rolling papers, or smoking paraphernalia to people under 21 years of age).

¹⁹² N.Y. PUB. HEALTH L§ 1399-DD-1 (2019) (restricting the public display of tobacco and vaping product advertisements and the display of smoking paraphernalia within 500 feet of a school in New York City and within 1,500 feet of a school in the rest of the state).

¹⁹³ 23 U.S.C. § 158.

be labeled as such and carbonated sodas have limits on the amount of caffeine they can contain.¹⁹⁴ The FDA also requires certain food and beverages to disclose “added sugars” on their Nutrition Facts labels.¹⁹⁵ Federal law also requires chain restaurants to disclose calories on menus and menu boards, and to disclose fat, saturated fat, cholesterol, sodium, carbohydrates, total sugars, dietary fiber, and protein levels upon request.¹⁹⁶

Gambling is similarly regulated, and the risks of gambling are widely known to the public and *acknowledged by the gambling industry*, including the risk of developing a gambling addiction.¹⁹⁷ Nineteen out of the twenty states with land-based commercial casinos provide funding to support treatment for problem gamblers, education services concerning disordered or problem gambling, and research related to problem gambling.¹⁹⁸ Additionally, several states “require that casino advertising (in print, on billboards, or on electronic media) include a responsible gaming message, including a toll-free helpline number” and require that casinos post signs and offer brochures identifying the risks of gambling and disclosing resources for counseling and assistance.¹⁹⁹

The aforementioned regulations help both to preclude minors from using addictive substances or engaging in addictive behaviors and to inform the public of the risks associated with such use or engagement. People who choose to ingest or engage in substances or behaviors that are widely known to the general population to be addictive can be presumed to understand those risks. Thus, they can be said to have consented to the neurological adaptations that come along with such use and behavior. In cases involving those substances or behaviors, there is no lack of consent.

In contrast, the creation and sale of video games is not regulated, and the gaming industry refuses to acknowledge that there are any risks

¹⁹⁴ Jon Kole, et al., *Caffeine Content Labeling: A Missed Opportunity for Promoting Personal and Public Health*, 3 J. CAFFEINE RES. 108, 109 (2013).

¹⁹⁵ *Added Sugars Listed on the Nutrition Facts Label*, U.S. FOOD & DRUG ADMIN., (Feb. 25, 2022). <https://www.fda.gov/food/new-nutrition-facts-label/added-sugars-new-nutrition-facts-label>.

¹⁹⁶ Patient Protection and Affordable Care Act of 2010, Pub. L. No. 111–48, 124 Stat. 119 (2010) (codified as amended at 21 U.S.C. § 343(q)(5)).

¹⁹⁷ Addictive Gambling: Hearing Before the Subcomm. on Appropriations, 106 Cong. 4 (1999) (Statement of Frank Wolf).

¹⁹⁸ AGA RESPONSIBLE GAMING CODE OF CONDUCT, AM. GAMING ASS’N. (Nov. 2021) (pledging “to prioritize responsible gaming as an integral part of our industry’s daily operations” and “to continue support for research initiatives and public awareness surrounding responsible gaming and underage gambling.”).

¹⁹⁹ RESPONSIBLE GAMING: REGULATIONS AND STATUTE, AM. GAMING ASS’N. (Aug. 2016).

associated with gaming. Battery claims based on game developers' design and sale of addictive games are, therefore, distinguishable from other addictive substances or activities. As such, courts need not worry that opening the door for gamers to recover for the damages suffered by addiction will open the floodgates for all.

IV. CONCLUSION

Stories of gamers' addictions are increasing; in some cases, the addictions are fatal. One viral example is the couple who allowed their three-month old baby to starve to death while they compulsively played video games for over ten-hour stretches.²⁰⁰ While this example is extreme, stories of harmful consequences suffered by addicted gamers are plentiful.

The WHO's classification of "Gaming Disorder" as an illness²⁰¹ gives courts a strong basis to find that video game addiction is harmful and offensive. And *Eichenwald*²⁰² provides precedent for holding that images viewed over electronic devices can constitute contact for the purposes of battery. Taken together, these principles provide a strong basis for arguing that video game designers who intentionally act to addict gamers by subjecting them to manipulative video game designs are committing battery.

While this article contends that addiction is a legally cognizable harm and should be recognized by courts as such, plaintiffs can successfully assert battery claims without alleging harm. Thus, battery claims may provide a preferable route for plaintiffs seeking redress than suits grounded on negligence or failure to warn claims, both of which require harm to be proven by the plaintiff.

Moreover, battery claims may be preferable as a matter of public policy. On the one hand, claims alleging negligence or failure to warn do not implicate the maximum deterrent effect of the law because defendants can be indemnified for associated costs.²⁰³ On the other hand, many states

²⁰⁰ Andrew Salmon, *Couple: Internet Gaming Addiction Led to Baby's Death*, CNN (Apr. 2, 2010), <http://www.cnn.com/2010/WORLD/asiapcf/04/01/korea.parents.starved.baby/index.html>.

²⁰¹ *Addictive Behaviours: Gaming Disorder*, *supra* note 119.

²⁰² *Eichenwald*, 318 F. Supp. 3d at 773.

²⁰³ Stephen J. Shapiro, *Overcoming Under-Compensation and Under-Deterrence in Intentional Tort Cases: Are Statutory Multiple Damages the Best Remedy?*, 62 MERCER L. REV. 450 (2011) ("A party will be less willing to engage in intentional tortious conduct if he knows he will have to pay for the harm; therefore, to the extent that a defendant can engage in tortious conduct and not be held fully accountable financially, the maximum deterrent effect of the law is not being realized.").

specifically prohibit indemnity or insurance coverage for intentional conduct as a violation of public policy.²⁰⁴ Game developers will be more inclined to reconsider their manipulative actions if they are unable to pass off costs of improprieties to their insurers. Such deterrence is particularly desirable where defendants are committing intentional wrongs for financial gain.²⁰⁵

Some of the largest video game developers have shown that they will not behave as responsible corporate citizens without intervention from the courts or government.²⁰⁶ And while this is unfortunate, it is not surprising; nor is it confined to the video game industry. The desire to drive profits often supplants a corporation's obligation to behave ethically.²⁰⁷ Industries and corporations that produce addictive products, including for example, tobacco and opioids, have historically denied publicly the harmful or addictive effects of their products while acknowledging those effects internally.²⁰⁸ The video game industry has proven to be no different in this respect.

There is nothing inherently wrong with creating or playing a video game. Nor is there anything inherent in video games that makes them addictive. Designers must work to create addictive games. When they do so successfully, while at the same time refusing to acknowledge the

²⁰⁴ See e.g., *Pub. Serv. Mut. Ins. Co. v. Goldfarb*, 53 N.Y.2d 392, 399 (1981) (“One who intentionally injures another may not be indemnified for any civil liability thus incurred.”).

²⁰⁵ See Shapiro, *supra* note 198, at 457 (“While actors can be encouraged to be more careful through the imposition of damages, deterrence should be much stronger in cases when the tortfeasor is making a conscious decision whether to act. This deterrent effect is especially true in the case of intentional torts undertaken for financial gain. A defendant company contemplating fraud, an unfair business practice, or leaving a harmful product on the market in order to increase profits, may be encouraged to do so if the defendant believes that the economic gain will exceed any damages it might have to pay. As the number of damages increases, the incentive to perform the conduct decreases.”).

²⁰⁶ In 2022, the Federal Trade Commission (“FTC”) announced that Fortnite creator Epic Games, Inc. agreed to pay \$520 million in relief in connection with allegations it violated the Children’s Online Privacy Protection Act by farming player data without consent and “deploy[ing] design tricks . . . to dupe millions of players into making unintentional purchases.” *Fortnite Video Game Maker Epic Games to Pay More Than Half a Billion Dollars over FTC Allegations of Privacy Violations and Unwanted Charges*, FED. TRADE. COMM’N (Dec. 19, 2022), <https://www.ftc.gov/news-events/news/press-releases/2022/12/fortnite-video-game-maker-epic-games-pay-more-half-billion-dollars-over-ftc-allegations>.

²⁰⁷ See Shapiro, *supra* note 198, at 451 (“In those cases when tortfeasors hope to gain more than they expect to pay in damages, the deterrent effect may fail.”).

²⁰⁸ Engstrom & Rabin, *supra* note 5 at 304, 315.

addictive nature of the games, their actions should be recognized by the tort system as an intentional wrong. This is particularly important when the game is designed and marketed towards children.

Where plaintiffs can provide evidence of game designers' manipulative behavior as set forth in this article, as well as a resulting addiction, their battery claims should be permitted to go to juries. Litigating these tort claims will motivate the game designers to behave as upstanding corporate citizens and to allow the victims their day in court. Allowing these claims to proceed might not result in financial payouts to the victims. Even so, judicial acceptance that such allegations are sufficient to support claims of battery has the potential to lead to more standardized regulation, such as the use of warning labels and the adoption of educational initiatives to inform the public of the risks associated with predatory games.