

Michigan Technology Law Review

Article 4


2020

When Worlds Collide: Protecting Physical World Interests Against Virtual World Malfeasance

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Recommended Citation

Hilary Silvia & Nanci K. Carr, *When Worlds Collide: Protecting Physical World Interests Against Virtual World Malfeasance*, 26 MICH. TELECOMM. & TECH. L. REV. 279 (2020).
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WHEN WORLDS COLLIDE: PROTECTING PHYSICAL WORLD INTERESTS AGAINST VIRTUAL WORLD MALFEASANCE

Hilary Silvia, J.D. and Nanci K. Carr, J.D.***

If a virtual-world-game character is cast upon real-world property without the consent of the landowner, inducing or encouraging players to trespass, is the virtual-world creator liable for damages? The United States Supreme Court has recognized that digital technology presents novel issues, the resolution of which must anticipate its further rapid development. It is beyond dispute that protective legislation will be unable to keep up with rapidly evolving technology. The burden of anticipating and addressing issues presented by emerging technologies will ultimately fall upon the businesses responsible for generating them. This duty was most notably adopted by the creators of Pokémon Go in settlement of nuisance and trespass claims brought by a nationwide class seeking injunctive relief from the placement of virtual Pokéstops and Pokémon Gyms (“Gyms”) on real property. This article is the first to address this landmark settlement and proposes that future developers and creators seeking to avoid similar liability exposure implement self-regulatory practices, such as Value Sensitive Design, to create human values-based frameworks within which they can create and advance technologies. The societal need and social impact of such self-regulation is clearly illustrated by emerging litigation seeking to hold virtual-world actors responsible for real-world consequences utilizing common law tort theories. In the absence of legislation, as case law develops, self-regulatory frameworks like Value Sensitive Design are essential to create constructs within which creators can develop technologies that consider human values, address civic concerns, and avoid lawsuits, while still achieving commercial and technological objectives.

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INTRODUCTION

The United States Supreme Court has recognized that “seismic shifts in digital technology”¹ are presenting novel issues,² the resolution of which must anticipate its further rapid development. Digital technology now permeates the human experience, presenting an array of novel and unanticipated challenges presently unchecked in the absence of a comprehensive regulatory framework. The creation of virtual worlds that collide with the real ones we inhabit forces society to question the extent to which our identities are immutable, and the extent to which we can continue to protect our personal information and property.

While legislators scramble to enact reactive legislation in the face of scandals like Cambridge Analytica³ and foreign efforts to influence domestic elections,⁴ tech companies insist that their efforts to self-regulate will generate the necessary change. However, apology tours and references to corporate ethics as a remedy have been criticized as “an end-run strategy to avoid robust regulation.”⁵ Indeed, it is the inconsistent application of their own ethical guidelines, and the fundamentally conflicting priorities of shareholders, regulators, and consumers that perpetuate this problem.

It is beyond dispute that protective legislation will be unable to keep up, much less catch up, with technological changes. The burden of anticipating and addressing issues presented by emerging technologies will ultimately fall upon the businesses responsible for generating them. This duty was most notably adopted in response to a class action lawsuit brought against

1. *Carpenter v. United States*, 138 S. Ct. 2206, 2219 (2018).

2. *See, e.g., Shigenori Matsui, Does It Have to Be a Copyright Infringement?: Live Game Streaming and Copyright*, 24 TEX. INTELL. PROP. L.J. 215 (2016); Andrew V. Moshimia, *Giant Pink Scorpions: Fighting Piracy with Novel Digital Rights Management Technology*, 23 DEPAUL J. ART, TECH. & INTELL. PROP. L. 1 (2012).

3. *See Saro Mohammed, Why the Recent Facebook/Cambridge Analytica Data “Breach” Matters for Students*, BROOKINGS (June 6, 2018), <https://www.brookings.edu/blog/brown-center-chalkboard/2018/06/06/why-the-recent-facebook-cambridge-analytica-data-breach-matters-for-students> (noting that the Cambridge Analytica scandal had implications beyond the elections, including into the area of academics). *See generally*, Alvin Chang, *The Facebook and Cambridge Analytica Scandal, Explained with a Simple Diagram*, VOX (May 2, 2018, 3:25 PM), <https://www.vox.com/policy-and-politics/2018/3/23/17151916/facebook-cambridge-analytica-trump-diagram>.

4. *See Devin Coldewey, Russian-Backed Content May Have Reached 126 Million on Facebook*, TECHCRUNCH (Oct. 30, 2017, 7:03 AM), <https://techcrunch.com/2017/10/30/russian-backed-content-may-have-reached-126-million-on-facebook>.

5. *See Yana Welinder, A Face Tells More Than A Thousand Posts: Developing Face Recognition Privacy in Social Networks*, 26 HARV. J.L. & TECH. 165, 193-95 (2012) (“The FTC has previously found various Facebook practices to be unfair and deceptive.” However, because “unfair and deceptive” are ambiguous, narrow standards, a “race to the bottom” has been created “whereby online businesses narrowly interpret privacy laws in order to gain a competitive advantage.”); Evan Selinger, *Will Tech Companies Ever Take Ethics Seriously?*, MEDIUM (Apr. 9, 2018), <https://medium.com/s/story/will-tech-companies-ever-take-ethics-seriously-35d991f9f839>.

the creators of Pokémon Go, an augmented reality (“AR”) game where virtual characters are placed throughout the globe, including on private property, and “seen” in mobile phone screens in conjunction with geolocation technology.⁶ This landmark case was brought by a nationwide class of individuals alleging claims for trespass and nuisance, seeking injunctive relief from the placement of virtual Pokéstops and Pokémon Gyms (“Gyms”) on real property.⁷ This settlement is particularly meaningful because it required action in the absence of accountability. Although Pokémon Go’s creator, Niantic, did not admit any liability under the terms of the settlement, and thus has not taken accountability, the injunctive nature of the settlement has resulted in a requirement that Niantic take affirmative action to change policies and practices.⁸ Individuals, companies, and even government bodies can now request and be granted swift removal of virtual Pokémon characters where their placement causes nuisance and trespass issues.⁹ Consistent with this outcome, developers are encouraged to proactively employ self-regulatory frameworks, such as the rapidly evolving theory and methodology called Value Sensitive Design, hailed as “the most comprehensive approach to account for human values in technology design.”¹⁰ Engaging in Value Sensitive Design invites game designers to ask: “How can I explore the technical and design space from the perspective of human values? How can I identify stakeholders and legitimate this choice? How do I elicit stakeholder views and values? How do I resolve value tensions among stakeholders? How do I translate stakeholder values into technical design choices?”¹¹

Until the landscape changes – through high-impact litigation, robust regulation, or effective voluntary implementation of effective self-regulatory frameworks – injured parties confronting rapidly advancing technologies are left to rely, as the Pokémon plaintiffs did, on common law principles to protect their physical world interests against virtual world mal-

6. Quentin Hardy, *Pokémon Go, Millennials’ First Nostalgia Blast*, NEW YORK TIMES (July 13, 2016), <https://www.nytimes.com/2016/07/14/technology/pokemon-go-millennials-first-nostalgia-blast.html>.

7. Pls.’ Mot. Supp. Prelim. Approval Settlement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 1 (Feb. 14, 2019) (Proposed settlement class includes “all persons in the United States who own or lease property within 100 meters of any location that Niantic has designated, without prior consent of such property owner or lessee, as a Pokéstop of Poké Gym in the *Pokémon Go* mobile application.”).

8. See Order Approving Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 3-4 (Aug. 30, 2019).

9. See *id.*

10. Till Winkler and Sarah Spiekermann, *Twenty Years of Value Sensitive Design: A Review of Methodological Practices in VSD Projects*, ETHICS & INFO. TECH. (Aug. 21, 2018), <https://doi.org/10.1007/s10676-018-9476-2>.

11. Batya Friedman, David G. Hendry & Alan Borning, *A Survey of Value Sensitive Design Methods*, 11 FOUNDS. & TRENDS IN HUMAN-COMPUTER INTERACTION 63, 63, 65 (2017).

feasance. After all, “[n]ew technologies do not determine human fates; rather, they alter the spectrum of potentialities within which people act.”¹² In this article, we will begin in Section II by discussing how technology can lead to tortious conduct infringing on human values. Section III will explore the relative hardship doctrine and whether there is a viable claim for trespass to property in augmented reality. Section IV will consider whether a virtual interference with the use and enjoyment of real property rises to the level of nuisance, which will lead to the Section V discussion of the legislative approaches to combatting nuisance and trespass. Finally, we will explore the application of Value Sensitive Design as a self-regulatory framework to anticipate and preempt tortious conduct and related claims.

I. ASSERTING HUMAN VALUES AND PROTECTING HUMAN RIGHTS INJURED BY TECHNOLOGICALLY INVOLVED TORTIOUS CONDUCT

Human values and technological advancement are not always evolving in the same direction. For example, our capabilities and technological advancements involving AR,¹³ virtual reality (“VR”),¹⁴ and geofencing¹⁵ currently exceed implementation for many reasons, including legal, practical, and ethical implications. The emergence of new technology brings into question what many have historically viewed as the static, immutable nature of human values. While technology solves many human problems, it also creates opportunities and conflict never previously fathomed, challenging society to constantly reexamine, defend, and often question, the human value framework. The right to privacy has been of particular concern, having been described as a “sensitive and necessary human value[.]”¹⁶ Scholars have identified “several human values with ethical importance that are rele-

12. K. A. Taipale, *Data Mining and Domestic Security: Connecting the Dots to Make Sense of Data*, 5 COLUM. SCI. & TECH. L. REV., 1, 1, 6 (2003).

13. Augmented reality is “an enhanced image or environment as viewed on a screen or other display, produced by overlaying computer-generated images, sounds, or other data on a real-world environment.” *Augmented Reality*, DICTIONARY.COM, <https://www.dictionary.com/browse/augmented-reality?s=t> (last visited Mar. 10, 2019).

14. Virtual reality is “a realistic and immersive simulation of a three-dimensional environment, created using interactive software and hardware, and experienced or controlled by movement of the body.” *Virtual Reality*, DICTIONARY.COM, <https://www.dictionary.com/browse/virtual-reality?s=t> (last visited Mar. 10, 2019).

15. Sarah K. White, *What is Geofencing? Putting Location to Work*, CIO (Nov. 1, 2017, 12:43 PM), <https://www.cio.com/article/2383123/mobile/geofencing-explained.html> (defining geofencing as “a location-based service in which an app or other software uses GPS, RFID, Wi-Fi or cellular data to trigger a pre-programmed action when a mobile device or RFID tag enters or exits a virtual boundary set up around a geographical location, known as a geofence.”); see, e.g., ARKAIVE, <https://arkaive.com> (last visited Mar. 10, 2019) (giving teachers a geolocation technology that recognizes if students are within the range of the geo-coordinates of the classroom when they check in for attendance).

16. *Leopold v. Levin*, 259 N.E.2d 250, 254 (Ill. 1970).

vant to technologies, including property, privacy, freedom from bias, informed consent, universal usability, trust, autonomy, identity, calmness, and environmental sustainability.”¹⁷ These values are properly integrated into a self-regulatory value-sensitive analysis.

This article will focus primarily on the values of property and privacy. With regard to property rights, our emphasis will be on real property and the “bundle of rights” that may be adversely affected when confronted with technologically enabled tortious conduct, generally manifesting as trespass or nuisance issues.¹⁸ Privacy values are more dynamic, and more difficult to encapsulate in any one definition or claim.¹⁹ Scholars have suggested that privacy values may be “better conceptualized by focusing on the values of trust, obscurity, and autonomy,”²⁰ and we will venture to do so here.

As one commentator framed the issue, “while ‘conscientious capitalism’ sounds nice, anyone who takes political economy seriously knows we should be wary of civics being conflated with keeping markets going and companies appealing to ethics as an end-run strategy to avoid robust regulation.”²¹ However, conscientious capitalism created through the implementation of Value Sensitive Design creates an opportunity for creators to develop technologies that consider human values, addressing civic concerns while achieving company objectives.

Value Sensitive Design is a self-regulatory design theory and methodology pioneered by scholars including Professors Batya Friedman, Peter Kahn, and David Hendry, and is best described as “a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process.”²² The thoughtful planning required by the Value Sensitive Design methodology endeavors to address seemingly incomplete technology development, where a technology can be used to foresee and address a potential problem or burden affecting an individual or society, but was overlooked. Many such examples exist. Did Waze consider human impact when it diverted traffic-

17. Woodrow Hartzog, *On Questioning Automation*, 48 CUMB. L. REV. 1, 3 (2017); see also Mark Peterson, *Fan Fair Use: The Right to Participate in Culture*, 17 U.C. DAVIS BUS. L.J. 217, 246 (2017) (“Rather than treating fans like adversaries that need to be shut down and silenced, the concerns of the people that paid for the games, and thus contributed to the success of the company, should be taken into consideration.”).

18. See generally Ryan Abbott, *The Reasonable Computer: Disrupting the Paradigm of Tort Liability*, 86 GEO. WASH. L. REV. 1 (2018); Declan T. Conroy, *Property Rights in Augmented Reality*, 24 MICH. TELECOMM. & TECH. L. REV. 17 (2017).

19. See generally Brandon R. Teachout, *Gotta Collect It All!: Surveillance Law Lessons of Pokémon Go*, 69 STAN. L. REV. ONLINE 83 (2016).

20. Hartzog, *supra* note 17, at 4.

21. Selinger, *supra* note 5.

22. Batya Friedman et al., *Value Sensitive Design: Theory and Methods* 1 (UW CSE Technical Report 02-12-01, 2002) .

avoiding users through quiet residential neighborhoods?²³ Did Snapchat consider human impact when it created a “speed filter” allegedly encouraging excessive speed and reckless driving?²⁴

Human values were placed squarely at issue in the case of Pokémon Go. Pokémon Go has presented significant challenges to privacy and property rights, and those challenges were addressed in the recently-settled nationwide class action lawsuit, *In re Pokémon Go Nuisance Litigation*, wherein property owners nationwide sought to hold Niantic accountable for significant trespass and nuisance issues they experienced as a result of the placement of Pokémon characters and Gyms on or around their properties.²⁵

The impact of the *In re Pokémon Go Litigation* is far reaching, as it imposes policies and practices on Pokémon Go’s creators that may set the standard for what consumers can reasonably expect from AR product developers in the future. The negotiated outcome is a win for both consumers and the technology industry. Having been negotiated by experienced plaintiffs’ counsel, the settlement sets forth injunctive relief fashioned to protect property owners following extensive litigation and investigation, enabling the parties to be well-informed of risks and benefits as they weigh settlement options. Similarly, it is a win for technology companies because it was negotiated by industry leaders familiar with what companies can reasonably do to protect society. Before we explore the specific solutions proposed by the settlement, we will first explore the problem.

A. Developers Utilize Augmented Reality to Affect Human Behavior in Actual Reality

Developers of interactive games, including Pokémon Go, utilize augmented reality to create an interactive gaming experience for users. Pokémon Go is based on Ingress, Niantic’s debut reality game. Ingress is a location-based, augmented-reality mobile game released in 2013 with a science

23. Steve Lopez, *Putting Up Roadblocks When Waze and Other Apps Send Cars Down Your Little Street*, L.A. TIMES (Apr. 11, 2018), <https://www.latimes.com/local/california/lame-lopez-navigation-apps-krekorian-20180411-story.html>.

24. Katie Rogers, *Snapchat at 107 M.P.H.? Lawsuit Blames Teenager (and Snapchat)*, N.Y. TIMES (May 3, 2016), <https://www.nytimes.com/2016/05/04/us/snapchat-speeding-teenager-crash-lawsuit.html>.

25. Class Action Compl. *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300 (July 29, 2016) (Plaintiffs sued Pokémon Go creator Niantic for nuisance resulting from players participating in augmented reality mobile game app.); *see also* Pls.’ Mot. Supp. Prelim. Approval Settlement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 1 (Feb. 14, 2019) (“The proposed Settlement provides injunctive relief in the form of remedial measures designed to prevent the future placement of virtual game items on private property, and to promptly address future complaints of trespass and nuisance by Pokémon Go players when they arise.”).

fiction back story and a continuous open narrative.²⁶ It is considered an “exergame” because it includes a form of exercise while playing.²⁷ Niantic CEO John Hanke stated that the company viewed the game as its “spiritual core.”²⁸ Niantic used data from Ingress in developing Pokémon Go and determining where to locate Pokéstops and Gyms.²⁹ Pokémon Go became the fastest game to reach the top of the charts in both the App Store and Google Play and in August 2016, and received five Guinness World Records, including most revenue grossed by a mobile game in its first month, earning \$206.5 million.³⁰

Using a smartphone’s camera and GPS, Pokémon Go requires that players move around to find and catch Pokémon, tiny animated characters from the Japanese franchise, in real-world locations. Requiring almost no skill, it is instead a social game for all ages, even bringing together adults and arranging PokéDates³¹ at Pokéstops. It also connects parents and children, providing an opportunity for them to play together and explore their communities, rather than being tied to a game system in the house. In a small survey conducted in Seattle, parents praised the game. “I think it’s just helping us find a common thing we can do together as a mom and a boy, and that’s really awesome for me. . . . As a boy coming home from school, they don’t tell you what they ate or . . . what the teachers said . . . so it’s a good way to be communicating,” revealed one parent.³² Since the game attracts players to Pokéstops and Gyms to catch characters and engage in other game play, it encourages players to get outside and it makes exercise fun. The researchers found that Pokémon Go meets several conditions leading to productive joint media engagement for families, including (a) the ability for parents and children to learn and play the game together, (b) motivation for

26. Andrew Webster, *Niantic’s First AR Game Ingress Is Getting a Massive Overhaul in 2018*, VERGE (Dec. 2, 2017), <https://www.theverge.com/2017/12/2/16725884/ingress-prime-update-niantic-pokemon-go>.

27. JV Chamary, *Why “Pokémon GO” Is The World’s Most Important Game*, FORBES (Feb. 10, 2018), <https://www.forbes.com/sites/jvchamary/2018/02/10/pokemon-go-science-health-benefits/#2fedc9763ab0>.

28. *Id.*

29. *Factsheet: Why Pokemon Go Is Still So Popular*, IOL (Mar. 28, 2018, 7:30 AM), <https://www.iol.co.za/business-report/technology/factsheet-why-pokemon-go-is-still-so-popular-14112531>.

30. *Id.*

31. “PokeDates,” *The World’s First Pokemon Go Dating Service, Launches to Organize Pokemon Go Dates Nationwide*, NEWSWIRE (Jul. 20, 2016), <https://www.newswire.com/news/pokedates-the-worlds-first-pokemon-go-dating-service-launches-to-13227402>.

32. Nicole Lyn Pesce, *This Is Why Parents Are Playing Pokemon Go with Their Kids*, MARKETWATCH (Mar. 30, 2017, 8:06 AM), <https://moneyish.com/heart/this-is-why-parents-are-playing-pokemon-go-with-their-kids>.

multiple generations to engage, (c) game features that make it easy to stop and put away, (d) going outside, (e) walking, and (f) working in teams.³³

As noted above, within its first month, Pokémon Go achieved five Guinness World Records, which it still holds today, including (a) most revenue grossed by a mobile game in its first month, (b) most downloaded mobile game in its first month, (c) most international charts topped simultaneously for a mobile game in its first month (downloads), (d) most international charts topped simultaneously for a mobile game in its first month (revenue), and (e) fastest time to gross \$100 million by a mobile game.³⁴ Pokémon Go is a record-setting, highly lauded game that has inspired millions of users to get outside and interact with their environment. Therein lies the problem, as such environmental interaction presents challenges to personal privacy and property interests.

B. *Augmented Reality Games Present Significant Challenges to Human Privacy and Property Values*

The Fourth Amendment protects “persons, houses, papers, and effects” from unreasonable searches and seizures, articulating a protectable privacy interest in one’s real and personal property.³⁵ As Professor Andrew Guthrie Ferguson has observed, these protectable interests have expanded as the meaning of these terms has evolved over time.³⁶ The definition of “persons,” for example, now includes “more than just physical bodies; they now include clothing, bodily fluids, DNA and even corporations.”³⁷ Similarly, “‘Houses’ now include curtilage, barns, apartments, and commercial spaces. ‘Papers’ now include digital recordings, writings, business documents, and other communications.”³⁸ The term “effects” remains a catch-all but has expanded beyond the realm of physical objects. The smartphone is an effect, but what about the data stored on the smartphone? What about the data stored in the cloud, which is in constant communication with the

33. Jennifer Langston, *Parents Who Play “Pokémon GO” with Kids: “It Wasn’t Really About the Pokémon”*, UNIV. OF WASH.: UW NEWS (Mar. 28, 2017), <http://www.washington.edu/news/2017/03/28/parents-who-play-pokemon-go-with-kids-it-wasnt-really-about-the-pokemon>.

34. Rachel Swatman, *Pokémon Go Catches Five New World Records*, GUINNESS WORLD RECORDS (Aug. 10, 2016), <http://www.guinnessworldrecords.com/news/2016/8/pokemon-go-catches-five-world-records-439327> (noting the following records: (a) \$206.5 million of revenue in the first month, (b) 130 million downloads, (c) topped download charts in 70 different countries, (d) top-growing mobile game in 55 different countries simultaneously, and (e) 20 days to gross \$100 million).

35. U.S. CONST. amend. IV.

36. Andrew Guthrie Ferguson, *The Internet of Things and the Fourth Amendment of Effects*, 104 CAL. L. REV. 805, 808 (2016).

37. *Id.* at 808-09.

38. *Id.* at 809.

smartphone? These later questions remain unsettled.³⁹ The Supreme Court has explored on numerous occasions the privacy interests implicated when physical searches are conducted on data and digital information. We are now exploring the opposite, where privacy and property concerns are implicated by searches of physical, real property instigated by virtual actors.

Speaking of the influence AR games have on users, scholars explain how “people become so entranced with these imaginary creatures that they lose all touch with reality. They walk off of cliffs, they get swept out to sea, they join together with strangers to form packs and wander around all corners of the globe at all hours of the night, all looking to capture these imaginary creatures.”⁴⁰ Game players become so entrenched in their games that a subculture of fans, a “fandom,” is created, with players going beyond passive consumption.⁴¹ This leads us to question: will technology soon be so engulfing, deeply embedded, and autonomy-overpowering, that the legal obligations we owe to each other are diminished? If so, will technology step in to share liability with human users? Can the implementation of forward-thinking, self-regulatory design practices like Value Sensitive Design effectively mitigate these risks?

C. Niantic May Have Had Institutional Knowledge of Human Value Concerns

In July 2015, Niantic faced significant human value challenges with its first interactive augmented reality game, Ingress. Zeit, a German magazine, contacted Google, who then owned Niantic, to complain that concentration and death camps including Dachau, Buchenwald and Auschwitz-Birkenau were all set up as in-game “portals.”⁴² Some of the camps were deleted the day after Zeit’s initial contact; however, others remained, including the infamous Auschwitz “Arbeit Macht Frei” gates.⁴³ Initially, Google said that the locations were included in the game because they were of “significant historical value.”⁴⁴ Google later apologized, stating “After we were made aware that a number of historical markers on the grounds of former concentration camps in Germany had been added, we determined that they did not

39. *Id.* at 835.

40. Justin G. Mignogna, *Pokémon Go, Augmented Reality Games, and How the Insurance Industry Will Help Protect a Distracted Society from Becoming Even More Distracted*, 70 RUTGERS U. L. REV. 675, 676 (2018) (citations omitted).

41. Emily Schendl, *Japanese Anime and Manga Copyright Reform*, 15 WASH. U. GLOBAL STUD. L. REV. 631, 638 (2016).

42. Alex Hern, *Pokemon Go: Who Owns the Virtual Space Around Your Home?*, GUARDIAN (July 13, 2016, 9:46 AM), <https://www.theguardian.com/technology/2016/jul/13/pokemon-virtual-space-home>.

43. *Id.*

44. Jessica Guynn, *Google Apologizes for Putting Nazi Camps in Game*, USA TODAY (July 2, 2015, 2:49 PM), <https://www.usatoday.com/story/tech/2015/07/02/google-niantic-labs-ingress-nazi-concentration-camps/29618979>.

meet the spirit of our guidelines and began the process of removing them in Germany and elsewhere in Europe.”⁴⁵

Following extensive complaints from property owners,⁴⁶ Niantic created Ingress Game Community Guidelines that provide, in part, as follows:

- Respect the community.
- Treat other players and bystanders with respect and courtesy and conduct yourself in an appropriate manner while playing Ingress. In particular:
 - Privacy: . . . Don’t post, repost or reveal other information about another user’s identity. . .
 - Trespass: Don’t trespass while playing Ingress. . . .⁴⁷

In addition, Niantic provides several options for reporting violations of its guidelines. Those options include reporting trespassing of either the reporter’s property or someone else’s property.⁴⁸ However, as guideline violations carry little penalty, the impact of such actions are negligible.

Yet the insensitive location selection persisted with Niantic’s new Pokémon Go. Since Pokémon is a Japanese game, one might think that Niantic would have been more mindful with the location of Pokémon in Japan. However, that was not the case, as trainers captured Pokémon at the Hiroshima atomic bomb memorial site.⁴⁹ The Pokémon were removed at the request of the city prior to an annual ceremony in remembrance of the

45. *Id.*

46. *See, e.g.,* u/BobbyT852, *Removal of Portals as Landowner?*, REDDIT.COM (Feb. 10, 2015, 4:00 AM), https://www.reddit.com/r/Ingress/comments/2vegb3/removal_of_portals_as_landowner/ (“I am posting here as I am a landowner on whose land an Ingress portal is situated. I am having trouble with people trespassing in order to gain access to the portal. Not being a player myself, there doesn’t seem to be a way for me to contact Google to discuss this issue. Can anyone here point me in the right direction?”); u/mikesicle, *Dealing with a Trespasser*, REDDIT.COM (May 13, 2016, 6:04 PM), https://www.reddit.com/r/Ingress/comments/4j9czg/dealing_with_a_trespasser/ (“Just a few hours ago I had a very negative interaction with someone I later found out was playing Ingress. He was driving erratically in my offices back private parking lot (parking sideways in spots, blocking the exit then backing back into the lot). I went back to see if he was lost or needed directions since we have a couple tenants out back, but instead he reluctantly rolled his window down and just said ‘I’m playing a game.’ . . . My boss/the owner has already had trespassing issues in the past at this property, and she is completely freaked out about her and her daughters [sic] safety (previously trespassed persons were a threat to her daughter). He told me that he is ‘in and out of here all the time, this is where he drops stuff off’ like he was entitled to trespass, and then berate[d] us for asking him to leave. He showed his phone to us a few times, and after googling a bit I found this game was the exact one he was playing.”).

47. Ingress Game Community Guidelines, FANDOM, https://ingress.fandom.com/wiki/Ingress_Game_Community_Guidelines (last visited Mar. 10, 2019).

48. *Id.*

49. *Pokemon Go Removes Hiroshima Atomic Bomb Memorial Site from Game*, GLOBAL NEWS (Aug. 8, 2016, 8:54 AM), <https://globalnews.ca/news/2870350/pokemon-go-removes-hiroshima-atomic-bomb-memorial-site-from-game>.

140,000 who died there.⁵⁰ In addition, although Ingress received complaints regarding portals at Auschwitz,⁵¹ a year later, Pokémon were still being reported there.⁵²

D. As Augmented Reality Games Increase in Popularity, Society Seeks to Mitigate Their Adverse Impact on Human Values

Pokémon Go remains a popular game, and its success has encouraged the creation of more augmented reality games. When Pokémon Go was first introduced, there were crowds of trainers everywhere, heads down, focused on their phones.⁵³ Today, we don't often see those crowds, leaving some to wonder whether Pokémon Go "is still a thing."⁵⁴ As it turns out, three years after its 2016 debut, Pokémon Go continues to be popular, ranking as the second top-grossing mobile title as of January 2019.⁵⁵ It is continually updated with new features and includes daily "research" tasks and story missions to keep the game fresh.⁵⁶

Pokémon Go experienced a resurgence in the summer of 2018 following an update that introduced "friend codes" and Pokémon trading to increase the game's social components.⁵⁷ The trading requires Stardust, an in-game currency, the purchase of which drives daily revenue. In the two months leading up to the update, the game was generating about \$1.8 million in daily revenue. Since the update, Niantic has enjoyed a 39% increase as players have been spending an average of \$2.5 million per day.⁵⁸

In the wake of Pokémon Go's continued success, Niantic released additional games based on Ingress. First came Jurassic World Alive, an augmented reality game where players interact with and collect dinosaurs, released in the Spring of 2018 synchronously with the release of the film

50. *Id.*

51. Allana Akhtar, *Holocaust Museum, Auschwitz Want Pokémon Go Hunts Out*, USA TODAY, (July 13, 2016, 8:34 AM), <https://www.usatoday.com/story/tech/news/2016/07/12/holocaust-museum-auschwitz-want-pokmon-go-hunts-stop-pokmon/86991810>.

52. *Id.*

53. Gillian Paxton, *Surprisingly, Pokemon Go is Still a Thing*, ABSOLUDRICOUS, (Dec. 2, 2018) <https://absoludricousblog.wordpress.com/2018/12/02/pokemon-go-is-still-a-thing>.

54. *Id.*

55. *Worldwide Digital Games Market in January 2019*, WHOLESGAME (Feb 24, 2019, 7:29 PM), <https://wholesgame.com/news/worldwide-digital-games-market-in-january-2019> (last visited Feb. 12, 2019).

56. *See Factsheet, supra* note 29.

57. *See* Stefanie Fogel, "Pokémon Go" Earning \$2.5 Million Daily Since Trading Update (Report), VARIETY (Aug. 28, 2018, 11:01 AM), <https://variety.com/2018/gaming/news/pokemon-go-friends-trading-1202849566>; Luke Winkie, "Pokémon Go" Finally Reveals In-Game Friendships, Trading, VARIETY (June 18, 2018, 12:30 PM), <https://variety.com/2018/gaming/news/pokemon-go-friends-trading-1202849566>.

58. Fogel, *supra* note 57.

Jurassic World: Fallen Kingdom.⁵⁹ Second came *Harry Potter: Wizards Unite*, released in summer 2019,⁶⁰ which engages “state-of-the-art augmented reality technology to reveal the magic all around us. Explore real-world neighborhoods and cities to discover mysterious artifacts, learn to cast spells, and encounter legendary beasts and iconic characters along the way!”⁶¹ While it is possible that future games would benefit from the lessons learned from *Pokémon Go*, it is yet to be seen whether *Jurassic World Alive* and *Wizards Unite* have adequately addressed the privacy and property challenges raised by their predecessors.

E. *The In re Pokémon Litigation Settlement Addresses the Impact of Pokémon Go on the Real-World Community*

The *Pokémon Go* case invites us to consider how we define human values, what values are entitled to legal protection, and the extent to which we will allow technology to affect them. As noted by Justice Kennedy, “the Cyber Age has vast potential both to expand and restrict individual freedoms in dimensions not contemplated in earlier times.”⁶² Under the terms of the *Pokémon Go* settlement, when individuals feel that their freedom or their right to quiet enjoyment of their property has been negatively affected, they can seek recourse directly from Niantic.⁶³

The settlement provides strictly for injunctive relief.⁶⁴ Niantic has agreed to resolve complaints and communicate the resolution to affected persons within fifteen days of the complaint, committing to this swift action for 95% of cases every year.⁶⁵ This is meaningful given the refrain echoed by many property owners that Niantic was non-responsive to complaints.⁶⁶ If the affected person owns a single-family home, characters within forty

59. Andrew Webster, *Jurassic World Alive Looks Like Pokemon Go but with Giant Dinosaurs*, VERGE, (Mar. 7, 2018, 9:18 AM), <https://www.theverge.com/2018/3/7/17090294/jurassic-world-alive-pokemon-go-ar-augmented-reality-game>.

60. Chris Pereira, *Harry Potter: Wizards Unite Mobile Game from Pokemon Go Makers is Out Now for Free*, GAMESPOT (June 21, 2019), <https://www.gamespot.com/articles/harry-potter-wizards-unite-mobile-game-from-pokemo/1100-6467923>.

61. FAQ, HARRY POTTER WIZARDS UNITE, <https://www.harrypotterwizardsunite.com/en/faq/> (last visited Mar. 10, 2019) (showing that the game is co-developed by WB Games San Francisco and Niantic, Inc.); see also Vineeth Bajji, *Harry Potter: Wizards Unite*, DAILY UTAH CHRON. (Nov. 28, 2017), <https://dailyutahchronicle.com/2017/11/28/harry-potter-wizards-unite>.

62. *Carpenter v. United States*, 138 S. Ct. 2206, 2224 (2018) (Kennedy, J., dissenting) (citing *Packingham v. North Carolina*, 137 S. Ct. 1730, 1735–36).

63. Class Action Settlement Agreement *in re* *Pokémon Go* Nuisance Litig., No. 3:16-cv-04300, at 6 (Feb. 14, 2019).

64. *Id.*

65. *Id.*

66. Alex Ruppenthal, *New “Pokémon Go” Bill Rejected by Illinois Lawmakers*, WTTW (May 2, 2017, 2:22 PM), <https://news.wttw.com/2017/05/02/new-pok-mon-go-bill-rejected-illinois-lawmakers>.

meters of the home will be removed within five business days from the time Niantic communicated the resolution of the complaint to the affected person.⁶⁷ Niantic has agreed to maintain a database of nuisance and trespass complaints for one year and will avoid further placement of additional characters on the property. Regarding parks, Niantic has agreed to create a system that would allow parks to limit the hours during which characters could appear on the app within the park, thereby allowing the park to control the hours during which players would be incented to be on park grounds.⁶⁸ “Niantic will also add a new warning to the rotating warnings that appear at the launch of the game (which currently include “do not trespass while playing Pokémon Go” and “do not play Pokémon Go while driving”) that states, “Be courteous to members of the real-world communities as you play Pokémon Go or something similar.”⁶⁹

While the technology is new, society’s firmly rooted reliance on common law to address emerging challenges is well established. In 1890, Samuel D. Warren and Louis D. Brandeis observed, “Political, social, and economic changes entail the recognition of new rights, and the common law, in its eternal youth, grows to meet the demands of society.”⁷⁰ In Section V, we will discuss the various measures taken around the world to address the demands of society and individuals affected by interactive technologies and make recommendations for future action. Until then, and perhaps thereafter, it is essentially up to the companies to self-police.⁷¹ With legislation unable to keep up, and corporate ethics failing to yield results, consumers⁷² may find themselves asserting their rights in an ever-changing landscape of wrongs by bringing common law trespass and nuisance claims against game developers.

67. Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., at 7.

68. *Id.*

69. Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., at 5.

70. Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890).

71. Hilary M. Goldberg, Nanci K. Carr & Paul J. Silvia, *Stealing Time: The Propriety of Alleging Common Law Conversion in Modern Wage Theft Lawsuits*, 36 J.L. & COM. 1, 12 (2017) (“The government cannot possibly police every employer, nor follow up on every complaint.”).

72. The application of common law tort theory to novel technologies is well established. For example, in the autonomous vehicle space, scholars are now examining whether the owners of autonomous vehicles can be held liable under *respondent superior* for wrongful conduct of the vehicle. “Because discretionary-uncommunicative vehicles grant their users the maximum degree of control, discretion, and autonomy over their operation, a discretionary-uncommunicative vehicle should generally be considered the agent of its user, not its manufacturer.”

Jack Boeglin, *The Costs of Self-Driving Cars: Reconciling Freedom and Privacy with Tort Liability in Autonomous Vehicle Regulation*, 17 YALE J.L. & TECH. 171, 189 (2015).

1. Individuals Assert Common Law Trespass Claims Against Developers

Although technology generally operates in the virtual space,⁷³ it has affected, directly or indirectly, all dimensions of our physical space. At first glance, the tort of trespass seems like the perfect fit for a plaintiff seeking damages for the placement of a VR or AR object or character on her real property. Fundamental to trespass claims is the owner's legally recognized interest in the exclusive possession of the land.⁷⁴ That interest is harmed by either intentional⁷⁵ or negligent⁷⁶ entry, while there is no liability for accidental intrusions.⁷⁷

The rule for trespass contemplates entry by a person or object, as it may be "by personal intrusion of the wrongdoer or by his failure to leave; by throwing or placing something on the land; or by causing the entry of some other person."⁷⁸ Trespass is not limited to actually touching the surface of one's property, possibly providing the flexibility needed for VR or AR trespass claims. Indeed, a trespass may be "on the surface of the land, above it, or below it."⁷⁹ Does trespass liability extend to VR and AR? In Section III, we will explore the application of common law trespass claims to novel issues raised in connection with technology-involved property invasion.

73. See Eric. C. Chaffee, *Securities Regulation in Virtual Space*, 74 WASH. & LEE L. REV. 1387, 1395 (2017) ("Virtual space entails a wide variety of realms including video games, virtual worlds, virtual reality, and augmented reality.").

74. See Molly Shaffer Van Houweling, *Tempting Trespass or Suggesting Sociability? Augmented Reality and the Right to Include*, 51 U.C. DAVIS L. REV. 731, 736 (2017) (noting that "[t]respass to land is a famously strict liability tort—in the sense that liability typically stems from unauthorized intentional entry to land regardless of fault or harm.").

75. See RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1965) ("One is subject to liability to another for trespass, irrespective of whether he thereby causes harm to any legally protected interest of the other, if he intentionally (a) enters land in the possession of the other, or causes a thing or a third person to do so, or (b) remains on the land, or (c) fails to remove from the land a thing which he is under a duty to remove.").

76. See *id.* § 165 ("One who recklessly or negligently, or as a result of an abnormally dangerous activity, enters land in the possession of another or causes a thing or third person so to enter is subject to liability to the possessor if, but only if, his presence or the presence of the thing or the third person upon the land causes harm to the land, to the possessor, or to a thing or a third person in whose security the possessor has a legally protected interest.").

77. See *id.* § 166 ("Except where the actor is engaged in an abnormally dangerous activity, an unintentional and non-negligent entry on land in the possession of another, or causing a thing or third person to enter the land, does not subject the actor to liability to the possessor, even though the entry causes harm to the possessor or to a thing or third person in whose security the possessor has a legally protected interest.").

78. *Martin Marietta Corp. v. Ins. Co. of N. Am.*, 47 Cal. Rptr. 2d 670, 682 (Cal. Ct. App. 1995) (internal citations omitted).

79. *Id.*

2. Individuals Assert Common Law Nuisance Claims Against Developers

The doctrine of nuisance, while centuries old, remains firmly intact and has been creatively and effectively deployed in various factual settings. Fundamental to its application is the notion that an alleged nuisance must be identified as a particular condition at a particular location that a court or a jury may inspect.⁸⁰ In Section IV, we will explore the viability of a nuisance claim when the “particular condition” is a virtual object, and the “particular location” is virtual or augmented reality.

II. TRESPASS TO PHYSICAL PROPERTY IN AUGMENTED REALITY AND THE INTEGRATION OF THE RELATIVE HARDSHIP DOCTRINE

A. *The Tort of Trespass to Land Combines Human Privacy and Property Values*

Fundamental to the law of property is the right to exclude others.⁸¹ Conversely, the right to include others belongs to the property owner, whether by invitation, as in the case of a guest or customer, or in exchange for consideration, as in the case of a lease. Property owners want to control permitted uses on their property in order to reduce liability to, or based upon actions by, those on the property.⁸² Trespass-related damages will invariably differ if the trespass is limited to one isolated occurrence versus the constant hoarding of flocks of players to an AR character errantly located in someone’s front yard.

B. *Balancing the Relative Hardship of the Property Owner and Trespasser*

In the context of trespass, the remedy awarded to the property owner is largely dependent upon whether the trespass was temporary or is permanent, and the reasonableness of the parties’ behavior.⁸³ In fashioning damages, many courts invoke the relative hardship doctrine, also referred to as “bal-

80. Vill. of Euclid v. Ambler Realty Co., 272 U.S. 365, 387-88 (1926).

81. EDWARD H. RABIN, ROBERTA ROSENTHAL K WALL & JEFFREY L. K WALL, FUNDAMENTALS OF MODERN PROPERTY LAW 2 (5th ed. 2006) (“All theories of property recognize that the right to exclude others is an important attribute of property.”); see also Samuel Mallick, *Augmenting Property Law: Applying the Right to Exclude in the Augmented Reality Universe*, 19 VAND. J. ENT. & TECH. L. 1057, 1066-68 (2017).

82. See MILLER STARR REGALIA, MILLER & STARR CAL. REAL EST. § 19:74, Westlaw (database updated May 2017) (explaining the duty of care a property owner owes to trespassers).

83. See Stewart E. Sterk, *Strict Liability and Negligence in Property Theory*, 160 U. PA. L. REV. 2129, 2146 (2012).

ancing of equities,”⁸⁴ “balancing of conveniences,”⁸⁵ or “comparative injury,”⁸⁶ to “weigh the injury that may accrue to one or to the other of the parties, and to the public, by granting or refusing the injunction” to abate the trespass.⁸⁷ The doctrine is applied after a finding that a trespass has occurred to determine damages, which may vary, from requiring removal of the trespassory object and imposition of monetary damages, to requiring an actual transfer of title of the property to the defendant in exchange for payment.⁸⁸ For purposes of this paper, we will focus on California law, because many developers and possible defendants, like Niantic, are California domiciled and have faced lawsuits in California courts.

Although trespass itself is a well-recognized concept, there are many types and varieties of trespass. For example, there are over twenty different types of trespass prohibited under California Law.⁸⁹ The most common claim is a violation of California Penal Code § 602(m), which defines a trespasser as any person “entering and occupying real property or structures of any kind without the consent of the owner, the owner’s agent, or the person in lawful possession.”⁹⁰ A violation of this statute is a misdemeanor.⁹¹

In order to find a party liable for civil trespass in California, a plaintiff must prove (a) that plaintiff owned, leased, or occupied the property, (b) defendant intentionally, recklessly, or negligently entered the property, (c) defendant lacked permission to enter the property, or acted in excess of the permission, (d) plaintiff suffered actual harm, and (e) that defendant’s entry/conduct was a substantial factor in causing plaintiff’s harm.⁹²

A plaintiff must only show “annoyance and discomfort” to prove entitlement to damages for the loss of peaceful enjoyment of their property.⁹³ Applied to AR games, if a player enters the land of another to walk through an Ingress portal, catch Pokémon, catch a dinosaur, or cast a spell, and annoys the homeowners along the way, there could be liability for trespass. Clearly, there is civil and criminal liability for the AR player, and players have been personally ticketed and fined for trespassing.⁹⁴ Highlighting the

84. Scheble v. Nell, 19 Cal. Rptr. 375, 377 (Cal. Ct. App. 1962).

85. WITKIN, SUMMARY 11TH EQUITY § 192 (2018).

86. Sw. Const. Co. v. Liberto, 385 So.2d 633, 636 (Ala. 1980).

87. *Id.* (citing Pritchett v. Wade, 73 So.2d 533 (Ala. 1954)).

88. Proctor v. Huntington, 238 P.3d 1117, 1119 (Wash. 2010).

89. Cal. Penal Code § 602 (West 2016).

90. *Id.*

91. *Id.*

92. See Williams v. Santander Bank, No. CV 15-04188, 2015 WL 4484202, at *7 (C.D. Cal. July 22, 2015) (citing Food & Commercial Workers Union Local 8, 113 Cal. Rptr. 3d 88, 93 (Cal. Ct. App. 2010)).

93. Kornoff v. Kingsburg Cotton Oil Co., 45 Cal. 2d 265, 273-75 (Cal. 1955); KIMBERLY A. GAAB & SARA CHURCH REESE, CALIFORNIA PRACTICE GUIDE: CIVIL PROCEDURE BEFORE TRIAL CLAIMS & DEFENSES ¶ 11:914, Westlaw (updated Oct. 2019).

94. Beatriz Costa-Lima & Mary Hudetz, *Pokemon Go Players are Trespassing, Risking Arrest or Worse*, DENVER POST (Jul. 14, 2016, 11:14 AM), <https://www.denverpost.com/2016>

issue, the Los Angeles County Sheriff's Department issued a safety advisory to Pokémon Go players after receiving several complaints from private property owners near the famed Santa Monica pier in Santa Monica, California, after players learned that the game's key character, Pikachu, was located there.⁹⁵ It warned "[I]f you are not invited, stay out of private property. We can guarantee you won't find Pokémon in a jail."⁹⁶ Similarly, in Goochland County, Virginia, the sheriff's department admonished, "Deputies have located numerous individuals on business, church and government properties at all hours of the night, when these places are closed to the public. These actions are considered trespassing and put the individual and deputies in a position of unnecessary risk. Please refrain from going onto property without proper permission or after appropriate times."⁹⁷

California law suggests that intentionally, recklessly, or negligently causing a person to enter another's property may create liability exposure for trespass claims.⁹⁸ Could this notion of vicarious trespass subject developers to liability for a player's trespass? The application of the relative hardship doctrine informs our analysis.

1. Balancing the Hardships Where the Trespass is Permanent and Physical

Although trespass is most commonly depicted as a temporary or fleeting unauthorized entry, cases have arisen involving the tortious placement of a permanent object on the real property of another. For example, the Washington Supreme Court recently applied the relative hardship doctrine in ordering that plaintiff property owners are entitled only to compensatory damages and must allow a house mistakenly erected on their property to remain.⁹⁹ In *Proctor v. Huntington*, defendants unwittingly constructed their home on their neighbor's land.¹⁰⁰ Plaintiffs, who themselves were ignorant

/07/13/pokemon-go-players-risking-arrest-trespassing; see also *Pokemon Go App Leads to Trespassing Arrests, Criminal Charges for Players in Utah*, OVERSON LAW, PLLC, <https://www.utahcriminallaw.net/pokemon-app-trespassing-arrests-criminal-charges-players-utah> (last visited Mar. 15, 2020) ("Taryn McElfresh, 23, of Cincinnati, was arrested for trespassing after 'climbing [the] fence and entering Paul Brown Stadium to catch Pokémon for points.' David Mastrototaro-Baermude, 20, was arrested by Tampa police after he alone, among a group of 150 other trespassers, refused to leave Ballast Point Park while it was closed to the public. In a similar incident, police in Manchester Township, Pennsylvania were called in to remove about 20 players from a local park between the hours of 10:00 P.M. and 5:00 A.M.").

95. Dylan Stableford, *The "Pokémon Go" Craze is Creating a Headache for Police*, YAHOO NEWS (Jul. 13, 2016), <https://www.yahoo.com/news/pokemon-police-dead-body-robbery-000000842.html>.

96. *Id.*

97. *Id.*

98. See JUDICIAL COUNCIL OF CALIFORNIA, CIVIL JURY INSTRUCTIONS (2016).

99. *Proctor v. Huntington*, 238 P.3d 1117, 1119 (Wash. 2010).

100. *Id.*

concerning where the property boundary lines were at the time of construction, eventually discovered this mistake and sued to eject defendants from their land.¹⁰¹ The court, after analyzing the relative hardship imposed upon the parties, instead ordered that defendants were permitted to remain on the disputed property, but must compensate plaintiffs for the value of the land.¹⁰² In permitting the home to remain, the court balanced the relative hardship of the parties, noting that the defendants would incur greater hardship if forced to remove the home, which was built with a good faith, albeit incorrect, belief that it was built upon their own land.¹⁰³

2. Balancing the Hardships Where the Trespass is Temporary and Physical

Not surprisingly, courts have reached much different results where the trespass was temporary in nature. One particularly noteworthy case straddles both real and augmented reality thresholds. In *Boring v. Google*, a couple complained about the real-world intrusion on their private road by a Google vehicle that photographed their home for Google Streetview and subsequently posted the images captured online. The Borings claimed that Google's trespass over their unpaved and clearly marked "Private Road" constituted an intentional and/or grossly reckless invasion of their privacy.¹⁰⁴ After two years of protracted litigation, all the claims for invasion of privacy, conversion, negligence, and mental distress were dismissed, and the parties were left to litigate the Borings' trespass claim.¹⁰⁵ Ultimately, the Third Circuit Appellate Court held that Borings' allegation that "Google entered upon their property without permission" was sufficient to allege a viable trespass claim.¹⁰⁶ However, given the transient nature of the trespass alleged, and the lack of actual damages incurred, the court noted that the Borings might only be entitled to \$1.00 in nominal damages plus "whatever sense of vindication that might bring."¹⁰⁷ Notably, the Borings' request for punitive damages was denied, distinguishing it from the well-known Wisconsin Supreme Court case, *Jacque v. Steenberg Homes, Inc.*, wherein the Court affirmed an award of \$100,000 in punitive damages for a willful trespass,

101. *Id.*

102. *Id.*

103. *Id.* at 1123. The court noted that the mistake in locating the home was caused by a surveyor who incorrectly drew the property boundaries before defendants' erected their home. The court observed that requiring defendant to remove the home, garage, and water well that was erroneously erected on plaintiff's property "would be oppressive. . . and inequitable." The court ordered plaintiff to sell defendant the acre of land upon which their home was built for fair market value, estimated to be \$25,000 by an expert appraiser.

104. *See Boring v. Google Inc.*, 362 Fed. Appx. 273, 276 (3d Cir. 2010).

105. *Id.* at 281.

106. *Id.*

107. *Id.*

even where only \$1.00 in nominal damages were awarded.¹⁰⁸ Clearly, plaintiffs seeking to vindicate their property rights by bringing trespass claims for transient, temporary trespasses can still reign victorious in court. However, unless actual damages or bad faith are proven, their reward will be limited to nominal damages.

3. Balancing the Hardships Where the Trespass is Virtual

Establishing liability for real-world trespass against a physical person or thing is relatively straight-forward and supported by well-established legal principles. The novel issue presented by AR games is: when does the overlay of a virtual item on real property constitute a trespass? Moreover, what recourse do property owners have when their properties are inhabited by virtual creatures, visible only with the aid of a technological device, given that an intentional trespass may only result in a nominal damages award? Does the result differ if the placement of the virtual characters encourages actual trespass by players?

There are presently more questions than answers surrounding the augmented reality trespass debate. Is Niantic trespassing by placing its characters on private property without authority? Niantic did not admit liability in connection with the settlement.¹⁰⁹ If trespass is the intrusion onto another's property, then can a virtual character, unseen without the aid of technology, constitute an intrusion? Does the result change if, instead of a character, the overlay is an advertisement or other message cast onto a real physical object, such as a building, that can only be seen while playing the game? Would this advertisement be considered a trespass if the player does not actually enter onto the property? "Part of one's real property ownership package might include the use of that property in augmented space, similar to the rights to the airspace we grant owners of land."¹¹⁰ Adding virtual space ownership to the bundle of rights possessed by a real-world property owner meaningfully expands the property interests developers would be compelled to examine in a forward-thinking, self-regulatory Value Sensitive Design analysis. Indeed, if the exclusive use and possession of real property in augmented space stays with the real property owner, society now faces, quite literally, a whole new world of liability exposure.

108. *Jacque v. Steenberg Homes, Inc.*, 563 N.W.2d 154, 166 (Wis. 1997) (Mobile home seller was held liable for punitive damages where seller, over plaintiff's protest, plowed a path through plaintiff's snow-covered field and subsequently used that path to deliver a mobile home. The Wisconsin Supreme Court held that an award of nominal damages can support a punitive damages award in the case of intentional trespass.)

109. Pls.' Mot. Supp. Prelim. Approval Settlement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 13, (Feb. 14, 2019).

110. Donald J. Kochan, *Playing with Real Property Inside Augmented Reality: Pokemon Go, Trespass, and Law's Limitations*, 38 WHITTIER L. REV. 70, 87 (2018).

III. NUISANCE AND AUGMENTED REALITY: UNREASONABLE (VIRTUAL) INTERFERENCE WITH THE USE AND ENJOYMENT OF (REAL) PROPERTY

The Restatement (Second) of Torts defines a private nuisance as “a nontrespassory invasion of another’s interest in the private use and enjoyment of land.”¹¹¹ “Traditional nuisance cases involve noise, odor, traffic, vibrations, and other nearby offensive activity.”¹¹² Already a “thoroughly established” principle in 1902, the Honorable Judge V.C. Pitney explained the role of nuisance to resolve inevitable conflicts that arise at the intersection of quiet enjoyment and commotion attendant to modern life:

The reason why a certain amount of noise is or may be a nuisance is that it is not only disagreeable, but it also wears upon the nervous system, and produces that feeling which we call ‘tired.’ That the subjection of a human being to a continued hearing of loud noises tends to shorten life, I think, is beyond all doubt. Another reason is that mankind needs rest and sleep, and noise tends to prevent both. But then noise is one of the necessary accompaniments of modern civilization, and men, as social beings, must of necessity subject themselves to whatever annoyance reasonably arises out of all those necessary and useful operations of society which do necessarily produce more or less noise. The ordinary hum of machinery, the noise of vehicles propelled along the public highways, and the like, are examples of this noise. And in considering whether a noise amounts to a nuisance, the question whether or not it is made for a necessary or useful purpose is always taken into consideration.¹¹³

Judge Pitney placed great import on the purpose for which the noise was generated, stating, “a noise which, if made to answer some useful purpose, might be held to be not a nuisance, will, if used for an unlawful or unnecessary purpose, be held to be a nuisance.”¹¹⁴

To be liable for private nuisance, either one’s conduct must be the legal cause of an intentional and unreasonable invasion of another’s interest in the use and enjoyment of her land, or if unintentional, the conduct was negligent or reckless, or due to an abnormally dangerous activity.¹¹⁵ Establishing that the interference was “intentional” is a difficult threshold for property owners to surmount. Liability, if any, may extend to the players and game developers. Moreover, while property owners clearly have viable claims

111. RESTATEMENT (SECOND) OF TORTS § 821D (AM. LAW INST. 1965).

112. Hilary M. Goldberg et. al., *It’s a Nuisance: The Future of Fracking Litigation in the Wake of Parr v. Aruba Petroleum, Inc.*, 33 VA. ENVTL. L.J. 1, 10 (2015).

113. *Gilbough v. W. Side Amusement Co.*, 53 A. 289 (N.J. Ch. 1902).

114. *Id.*

115. RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1965).

against the players who are trespassing and otherwise creating a nuisance, prosecuting individual players is inefficient, ineffective, and expensive. Limiting prosecution to individual players also limits recovery possibilities, given that 32% of players are under eighteen and likely without the financial resources to support a judgment.¹¹⁶ This may explain why the plaintiffs in *In re Pokémon Go Nuisance Litigation* named only Niantic, the developer, with the power to redesign the game and abate the nuisance, and the pockets from which to pay damages if held liable.¹¹⁷

Whether game developers are liable for technology-inspired nuisance claims remains an unresolved question, given that Niantic made no admission of liability in connection with the Pokémon Go settlement. However, the settlement itself is a landmark outcome, having a far-reaching, industry-changing impact given the requirements imposed by the agreement, which include the implementation of strict deadlines for the resolution of complaints for 95% of cases each year and the maintenance of records of such requests.¹¹⁸ Having set a new standard for reasonable game developer protections, a Value Sensitive Design framework following the Pokémon Go settlement will surely integrate these policies before product release.

Plaintiffs face significant challenges when seeking to hold game developers liable for nuisance based on intentional, negligent, or even reckless behavior. To defend against claims that a nuisance was created by intentional conduct, game developers may argue that their role is limited to the mere placement of characters in an augmented reality overlay, and that they have integrated warnings into the game, advising players not to trespass or otherwise infringe upon the rights of others. To prove nuisance where the conduct was unintentional, a plaintiff must show that the conduct was negligent or reckless. Arguably, creating a game that encourages players to go out into the world to engage in active play creates a foreseeable risk of interference with the rights of others. However, to prevail on a negligence theory, a plaintiff will have to overcome the obstacles to establishing causation. Is the developer the cause-in-fact of the nuisance where the actual disruption was caused by the players? This raises many dynamic issues.

Plaintiffs also face challenges when seeking to hold other potential defendants liable for nuisance. For example, private businesses located near

116. Mansoor Iqbal, *Pokémon GO Revenue and Usage Statistics (2020)*, BUS. OF APPS (Mar. 24, 2020), <https://www.businessofapps.com/data/pokemon-go-statistics> (“60% of Pokémon Go users are aged 18-34 according to one measure; another finds 38% aged 19-34, with a further 32% aged 18 or younger”).

117. Class Action Compl. *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300 (July 29, 2016).

118. Order Approving Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 3 (Aug. 30, 2019).

Pokéstops¹¹⁹ can drop a lure to attract Pokémon for approximately thirty minutes, which will attract players to catch Pokémon on their way to a nearby Gym.¹²⁰ Is that business owner liable for nuisance for intentionally luring crowds, possibly interfering with the quiet enjoyment of neighboring properties? It is certainly foreseeable given that the purpose of dropping a lure is to draw a crowd. A plaintiff might also argue that Niantic shares liability with the business owner, because in creating the lures, they have enabled nuisance creating activities, even though the business owner has singularly chosen to employ the feature in a manner that created the nuisance.

In addition to lures, Niantic offers private businesses the opportunity to be a sponsored location, which is another intentional act to attract a crowd and create a nuisance. At the peak of the game's popularity in the summer of 2016, each sponsored McDonald's in Japan attracted 2,000 visitors a day, for which McDonald's paid up to fifty cents (\$0.50) per visit to Niantic, generating up to \$250 million for the developer.¹²¹ Imagine the crowd, congestion, and noise created by 2,000 visitors per day. While McDonald's sought that crowd, the neighboring businesses and area residents did not. They could argue that the use and enjoyment of their land were substantially and unreasonably interfered with by both McDonald's and Niantic. Whether property owners and AR game developers will be held jointly liable for public nuisance is an open issue. Developers thus far have escaped formal liability determinations, although the terms of the Pokémon Go settlement require additional accountability and remedial action.¹²²

“Unlike the private nuisance—tied to and designed to vindicate individual ownership interests in land—the ‘common’ or public nuisance emerged from distinctly different historical origins. The public nuisance doctrine¹²³ is aimed at the protection and redress of community interests and, at least in theory, embodies a kind of collective ideal of civil life which the courts have vindicated by equitable remedies since the beginning of the 16th

119. See Hern, *supra* note 40 (“A Pokéstop does not exist: it is a latitude and longitude stored on Niantic’s servers, interpreted by the Pokémon Go client which then represents it as a circle hovering over a stylized Google map of the area surrounding the player.”).

120. Joel Berg & Nicole Chynoweth, *The Reality Is Augmented, the Liability Is Real*, CENT. PA. BUS. J., (Jul. 15, 2016, 5:00 PM), <http://www.cpbj.com/article/20160715/FACEFORWARD13/160719910/the-reality-is-augmented-the-liability-is-real>.

121. Josh Constine, *Pokémon GO Reveals Sponsors Like McDonald's Pay It Up to \$0.50 Per Visitor*, TECHCRUNCH (May 31, 2017), <https://techcrunch.com/2017/05/31/pokemon-go-sponsorship-price>.

122. Cf. *Maynard v. Snapchat, Inc.*, 816 S.E.2d 77, 79 (Ga. Ct. App. 2018) (wherein Snapchat’s motion to dismiss was denied and the company was held accountable).

123. RESTATEMENT (SECOND) OF TORTS § 821B(1) (AM. LAW. INST. 1979) (defining a public nuisance as “an unreasonable interference with a right common to the public.”). Examples of public nuisances include the “obstruction of a public highway,” “maintenance of a pond breeding malarial mosquitoes,” and the “shooting of fireworks in the public streets.” *Id.* § 821B, cmt. b.

century.”¹²⁴ Traditionally, the application of the public nuisance doctrine has been limited to “conduct . . . performed in a location within the actor’s control.”¹²⁵ However, parties have made recent attempts to expand the doctrine of public nuisance to impose liability on corporate actors for public consequences, many with indirect or unestablished causal connections, such as climate change, water pollution, and opioid addiction.¹²⁶

Model jury instructions provide guidance when evaluating a defendant’s potential liability for public nuisance. To prove a case for public nuisance in California, for example, a jury must reach the following conclusions:

1. That Defendant, by acting or failing to act, created a condition that:
 - was harmful to health; or
 - was indecent or offensive to the senses; or
 - was an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; or
 - unlawfully obstructed the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway; or
 - was a fire hazard/other potentially dangerous condition to Plaintiff’s property;
2. That the condition affected a substantial number of people at the same time;
3. That an ordinary person would be reasonably annoyed or disturbed by the condition;
4. That the seriousness of the harm outweighs the social utility of [name of defendant]’s conduct;
5. That Plaintiff did not consent to Defendant’s conduct;
6. That Plaintiff suffered harm that was different from the type of harm suffered by the general public; and

124. People ex rel. Gallo v. Acuna, 929 P.2d 596 (Cal. 1997).

125. In re Lead Paint Litig., 924 A.2d 484, 499 (N.J. 2007).

126. See, e.g., City of Long Beach v. Monsanto Co., No. 2:16-cv-03493, 2018 U.S. Dist. LEXIS 220968, at *2 (C.D. Cal. Aug. 21, 2018) (public nuisance action seeking to hold manufacturers of polychlorinated biphenyls responsible for contamination of public waterways); Compl. Cty. of Mariposa v. Amerisourcebergen Drug Corp., No. 1:18-cv-00626 (E.D. Cal. May 7, 2018) (public nuisance action seeking to hold manufacturers and distributors of pain medication responsible for opioid addiction); State v. BP P.L.C., Nos. 3:17-CV-06011 & 3:17-CV-06012, 2018 WL 1064293, at *1 (N.D. Cal. Oct. 20, 2017) (public-nuisance action seeking to hold fossil-fuel companies responsible for sea-level rise associated with climate change); Compl. N.Y. v. Purdue Pharma LP et al., No. 400016/2018, at 8 (N.Y. Sup. Ct. Aug. 14, 2018) (public nuisance, unjust enrichment and deceptive advertising seeking to hold manufacturer liable for opioid crisis).

7. That Defendant's conduct was a substantial factor in causing Plaintiff's harm.¹²⁷

Recently, and controversially, some courts have extended the public nuisance doctrine to impose liability upon defendants without establishing causation. This extension serves as evidence that the well-established legal doctrine of nuisance is not immune from evolution alongside changing technology and attendant injuries. For example, in *The People of California v. ConAgra Grocery Products Company, et al.*, the State of California brought a lawsuit against five companies involved in the manufacture and sale of lead-based paint at a time when lead-based paint was legal.¹²⁸ The trial court held that three of the defendants were liable for a public nuisance, ordering them to pay \$1.15 billion in damages to an abatement fund.¹²⁹ This order was reversed on appeal on November 14, 2017, with the Appellate Court limiting the Plaintiff's recovery to "the amount necessary to cover the cost of remediating pre-1951 homes" which resulted in a severely diminished recovery for plaintiffs.¹³⁰ A divided Supreme Court of California denied the defendants' petition for review.¹³¹ Defendants then appealed to the United States Supreme Court, insisting that it is "imperative that [the United States Supreme Court] intervene now, before an extreme causation-and-reliance-free form of "public nuisance" liability becomes the weapon of choice in the ongoing tort wars."¹³² On October 15, 2018, the Supreme Court denied the petition leaving the Appellate Court's public nuisance ruling intact.

IV. LEGISLATIVE APPROACHES TO COMBATTING NUISANCE AND TRESPASS ISSUES GENERATED BY AR INTERACTIVE GAMES

The impact of AR games on the community is far-reaching, with parties on both sides presenting new and novel arguments to advance and defend against classic nuisance and trespass claims. Legislation has not evolved as quickly as technology, so communities and municipalities face extraordinary challenges when left to rely on common law tort theories and voluntary self-regulation by technology companies. For example, according to the Niantic Safety FAQs, the Pokéstops and Gyms should be "located at public-

127. JUDICIAL COUNCIL OF CALIFORNIA, CIVIL JURY INSTRUCTIONS, CACI No. 2020 (2016).

128. *People v. ConAgra Grocery Prod. Co.*, 227 Cal. Rptr. 3d 499, 598 (Ct. App. 2017), *review denied*, 2018 Cal. LEXIS 1277 (Cal. Feb. 14, 2018), *cert. denied*, 139 S. Ct. 377 (Cal. 2018), *cert. denied*, 139 S. Ct. 378 (2018).

129. *Id.*

130. *Id.*

131. *Id.*

132. *Pet. Writ Cert. ConAgra Grocery Prod. Co. & NL Indus. v. People of California*, at 3, (July 16, 2018).

ly-accessible locations, such as historical sites, public works of art, interesting architecture, and unique local businesses.”¹³³ Before the Pokémon settlement, if someone objected to the location of a Pokéstop or Gym, they had to request that Niantic modify or remove it by completing a form that requires the latitude and longitude, owner verification for removals on private property (non-residential), and images.¹³⁴ The settlement has replaced this onerous task with a less daunting procedure. Understandably, in an industry where Niantic had to face a lawsuit before implementing a logical, consumer-friendly reporting process, there is hesitance to rely on the AR game developers to self-regulate.¹³⁵ Moreover, as discussed below, where lawmakers have attempted to take the lead, they have been thwarted by constitutional challenges to proposed regulations.

Industry self-regulation has thus far proven ineffective, and the efficacy of the request for exclusion process prescribed by the Pokémon Go settlement is yet to be seen. The hope is that it addresses widespread concerns, such as those raised by the 2016 placement of Pokéstops at the Loyola Dunes on the north side of Chicago, which enjoy both state and federal protection.¹³⁶ Although the park benefitted from the increased traffic and revenue resulting from the game, it suffered from increased littering, vandalism, and even instances of wildlife destruction.¹³⁷ Several hundred requests for removal of the Pokéstops fell on deaf ears until Illinois State Representative Kelly Cassidy introduced the Video Game Protection Act, nicknamed “Pidgey’s Law” after a common Pokémon.¹³⁸ The legislation would give a game developer up to four business days to remove an unwanted location-specific game element if such removal is requested by the location owner, and failure to comply would result in a \$100 per day fine until the location is removed.¹³⁹ Consistent with the tenets of self-regulatory Value Sensitive Design, Cassidy’s bill would require “the developer of a location-based video game [to] remove . . . an ecologically sensitive site or location . . . on private property, or site or location otherwise deemed dangerous by the real property owner, manager, or custodian.”¹⁴⁰ While environmentalists supported the bill, tech companies put pressure on lawmakers to vote against it. On April 21, 2017, six organizations representing tech industries sent an opposition letter to Cassidy and the Chairman of the Illinois Judicial Civil

133. See *Pokémon Go Safety FAQs*, NIANTIC, <https://niantic.helpshift.com/a/pokemon-go/?p=web&s=safety-and-security&f=safety-faqs&l=en> (last visited Mar. 10, 2018).

134. See *Request Modification or Removal of a PokéStop or Gym*, POKÉMON GO, <https://pokemongolive.com/en/report-location> (last visited Mar. 10, 2019).

135. See Welinder, *supra* note 5, at 193-95; Selinger, *supra* note 5.

136. Ruppenthal, *supra* note 66.

137. *Id.*

138. *Id.*

139. H.B. 2459, 100th Gen. Assemb., Reg. Sess. (Ill. 2018).

140. *Id.*

Committee, arguing that the bill “would impose unnecessary, impracticable, and constitutionally suspect obligations on application developers”¹⁴¹ The authors of the opposition letter argued that the “First Amendment restricts the state’s ability to regulate artistic expression and truthful speech – both elements of any “[l]ocation-based video game”– and that “Illinois residents and visitors have a First Amendment right to obtain truthful information and entertainment relating to public places including ‘historically significant sites.’”¹⁴² Although the bill did not pass,¹⁴³ Niantic ultimately responded to the community’s concerns by removing the Pokéstops from the Loyola Dunes.¹⁴⁴

The Milwaukee County Parks Department similarly failed in its attempt to hold Niantic responsible for thousands of dollars in damages to a city park caused by Pokémon trainers, who left empty beer cans, trash piles, and overflowing toilets.¹⁴⁵ Nearby residents complained of traffic congestion, late-night noise, and unauthorized vendors.¹⁴⁶ Unable to recover damages in court, the Milwaukee County Board passed an ordinance requiring creators of location-based augmented reality games to obtain permits before using Milwaukee parks in its games.¹⁴⁷ However, Candy Lab, the maker of *Texas Rope ‘Em*,¹⁴⁸ another augmented reality game, sued the county for violation of its First Amendment rights, and successfully sought an injunction, pending trial, arguing that the required Special Event Permit was not appropriate for an augmented reality game since there are no start and end times or need for portable restrooms and garbage collection.¹⁴⁹ Milwaukee County argued “*Texas Rope ‘Em* is not entitled to First Amendment protection because it does not convey any messages or ideas. Unlike books, movies, music, plays, and video games – mediums of expression that typically enjoy First Amendment protection – *Texas Rope ‘Em* has no plot, no storylines, no characters and no dialogue.”¹⁵⁰ However, Justice Scalia declared that “video

141. State Privacy and Security Coalition, *Re: Illinois HB 2459, the Location-based Video Games Protection Act*, NETCHOICE (Apr. 21, 2017), <https://netchoice.org/wp-content/uploads/SPSC-and-Assns-Letter-Illinois-HB-2459-Location-Based-Games-Privacy-FINAL.pdf>.

142. *Id.*

143. Ruppenthal, *supra* note 66138.

144. *Id.*

145. Stefanie Fogel, *AR Games Like ‘Pokémon Go’ Need a Permit in Milwaukee*, ENGADGET (Feb. 6, 2017), <https://www.engadget.com/2017/02/06/pokemon-go-milwaukee>.

146. *Id.*

147. *Id.*

148. Defs.’ Mem. Law Supp. Its Rule 12(b)(6) Mot. Dismiss Pl.’s Compl. Candy Lab, Inc. v. Milwaukee Cty., No. 17-CV-00569, at 4 (May 31, 2017).

149. Mallory Locklear, *First Amendment Suit Halts Anti-“Pokémon Go” Law*, ENGADGET (Jul. 21, 2017), <https://www.engadget.com/2017/07/21/first-amendment-suit-halts-anti-pokemon-go-law>.

150. *Id.*

games qualify for First Amendment protection,”¹⁵¹ enhancing the critical import of the integration of socially responsible Value Sensitive Design into technology development.

In addition to municipal legislative actions, law enforcement and the military have attempted to take the bull by the horns, both domestically and internationally. For example, at the Joint Base Lewis-McChord military base near Tacoma, Washington, the military advised: “DO NOT chase Pokémon into controlled or restricted areas, office buildings, or homes on base.”¹⁵² The warning followed an incident at an Indonesian military base where a jogger unintentionally wandered onto the base while chasing Pokémon. The 27-year-old game player was briefly detained by West Java police before being released.¹⁵³ In another instance, Lindsay Houghton, staff sergeant of the Combined Forces Special Enforcement Unit of British Columbia admonished the public, stating, “We’ve heard stories of Pokémon gyms and PokéStops being inappropriate not only here in Canada but around the world.”¹⁵⁴ Houghton was referring to a Gym that was located outside a clubhouse in Coquitlam for Hells Angels, a notorious motorcycle gang, some of whose members have been or are engaged in criminal activity.¹⁵⁵ Houghton continued, “We think it’s highly inappropriate that this game would include a location that attracts all ages – including children – to the location of a gang that is not only as well known as the Hells Angels is, but includes people who are involved in the highest levels of organized crime, including violent crime.”¹⁵⁶ While even the most progressive, comprehensive Value Sensitive Design practice would be unable to identify and locate every dangerous gang’s hangout and refrain from placing a character nearby, it would ideally provide for a swift removal mechanism to cure such issues as they arise.

In the tiny village of Bressolles, France, Mayor Fabrice Beauvois sought to require technology developers to seek permission, or a permit, before geo-locating characters within village limits.¹⁵⁷ The mayor asserted that

151. *Brown v. Entm’t Merch. Ass’n.*, 564 U.S. 786, 790 (2011).

152. *Military Base Issues “Pokemon GO” Warning*, FOX NEWS (July 19, 2016), <http://www.foxnews.com/tech/2016/07/19/military-base-issues-pokemon-go-warning.html> (issuing a warning on Facebook).

153. *Id.*

154. *Pokemon Go “Gym” Outside Hells Angels Clubhouse in Coquitlam Draw Warning*, GLOBAL NEWS (July 25, 2016, 5:52 PM), <https://globalnews.ca/news/2846577/pokemon-go-gym-outside-hells-angels-clubhouse-in-coquitlam-draws-warning>.

155. *Id.*

156. Kim Bolan, *Hells Angels Clubhouse in Coquitlam a Surprise Pokemon Go Gym Location*, VANCOUVER SUN (Sept. 27, 2016), <https://vancouversun.com/news/local-news/hells-angels-clubhouse-in-coquitlam-a-surprise-pokemon-go-gym-location>.

157. David Lumb, *French Mayor Bans “Pokémon Go” in His Town*, ENGADGET (Aug. 17, 2016), <https://www.engadget.com/2016/08/17/french-mayor-bans-pokemon-go-in-his-town>.

the game's virtual world is no different than any café owner in the real world who would want to open in a French town.¹⁵⁸ Just as the café owner would first seek permission from the mayor, Niantic should have asked first before imposing its virtual world on his village.¹⁵⁹ After incidents in Bressolles, Mayor Beauvois believed that the game needed to be banned to ensure safety and order in the village.¹⁶⁰

While a common approach has been to ban, prohibit, or restrict participation in AR gaming,¹⁶¹ others have taken the opposite approach to combat issues arising from uninvited players. In 2016, the University of Nebraska invited Pokémon trainers into Memorial Stadium for an afternoon of Pokémon hunting, designing a safe opportunity for the public to play the game, while also preventing trespass issues and damage to University property.¹⁶² This event was created in direct response to “a good number” of incidents wherein people snuck into the stadium, including during a band camp.¹⁶³ The Nebraska Huskers tweeted, “Guys, you don’t need to jump the fence to catch Pokemon at the stadium. We’ll let you in on Thursday.”¹⁶⁴ While a total of 3,708 trainers accepted that invitation,¹⁶⁵ this type of solution is temporary and appropriate for only a select few property owners.

V. THE APPLICATION OF VALUE SENSITIVE DESIGN TO PREEMPT TORTIOUS CONDUCT AND CLAIMS

A. *The Role of Value Sensitive Design in AR Interactive Games*

Scholars have long argued that the Internet and technology could be designed in a way that would protect fundamental human values.¹⁶⁶ “A deep body of social science and technology research from outside the law has demonstrated the ways in which values become embedded in technology, such that the use of that technology becomes an expression of that value.”¹⁶⁷ Legal scholars such as Professors Deirdre Mulligan and Kenneth Bamberger

158. *Id.*

159. *Id.*

160. *Id.*

161. Class Action Compl. *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300 (July 29, 2016).

162. Zach Pluhacek, *Memorial Stadium Opening for Pokémon Go Players*, LINCOLN J. STAR (July 12, 2016), https://journalstar.com/news/local/memorial-stadium-opening-for-pokemon-go-players/article_82831b8b-c161-55f2-8116-40136b2ffc3c.html.

163. *Id.*

164. Nebraska Huskers (@huskers), TWITTER (July 12, 2016, 4:31 PM), <https://twitter.com/Huskers/status/752963574683742208>.

165. *Id.*

166. See LAWRENCE LESSIG, CODE: VERSION 2.0 121-25 (2006).

167. Deirdre K. Mulligan & Kenneth A. Bamberger, *Saving Governance-by-Design*, 106 CAL. L. REV. 697, 708–09 (2018).

have built upon this research, stating, “[g]overning through technology has proven irresistibly seductive. Everything from the Internet backbone to consumer devices employs technological design to regulate behavior purposefully by promoting values such as privacy, security, intellectual property protection, innovation, and freedom of expression.”¹⁶⁸ Furthermore, “recent battles over the values embedded in technology design [make] the case that we are entering an era of policymaking by ‘design war.’”¹⁶⁹

B. *Value Sensitive Design and “Reasonable” Interference -
Is “Don’t Be Evil” Enough?*

Creators of the virtual world have the ability to model and manipulate the virtual layer cast upon real property. The fact that the developers of AR games like Ingress and Pokémon Go can and have removed virtual characters from real property, albeit following vigorous protest or legal action, is evidence of that. In a time of slow-moving regulation, industry self-regulation is a seductive option. However, the efficacy of self-regulation is questionable as companies are permitted to shift their priorities and policies so long as they are within the confines of existing law, largely without government oversight.

One such example of a quiet shift is in the case of Google, which until recently defined its code of conduct with the phrase “[d]on’t be evil.”¹⁷⁰ The previous version of the Google Code of Conduct stated:

“Don’t be evil.” Googlers generally apply those words to how we serve our users. But “Don’t be evil” is much more than that. Yes, it’s about providing our users unbiased access to information, focusing on their needs and giving them the best products and services that we can. But it’s also about doing the right thing more generally – following the law, acting honorably, and treating co-workers with courtesy and respect.

The Google Code of Conduct is one of the ways we put “Don’t be evil” into practice. It’s built around the recognition that everything we do in connection with our work at Google will be, and should be, measured against the highest possible standards of ethical business conduct. We set the bar that high for practical as well as aspirational reasons: Our commitment to the highest standards helps us hire great people, build great products, and attract loyal users. Trust and mutual respect among employees and users are the foundation

168. *Id.* at 697.

169. *Id.* at 698.

170. Kate Conger, *Google Removes “Don’t Be Evil” Clause from Its Code of Conduct*, GIZMODO (May 18, 2018, 5:31 PM), <https://gizmodo.com/google-removes-nearly-all-mentions-of-dont-be-evil-from-1826153393>.

of our success, and they are something we need to earn every day.¹⁷¹

This portion of the Code of Conduct was quietly replaced with the following:

The Google Code of Conduct is one of the ways we put Google's values into practice. It's built around the recognition that everything we do in connection with our work at Google will be, and should be, measured against the highest possible standards of ethical business conduct. We set the bar that high for practical as well as aspirational reasons: Our commitment to the highest standards helps us hire great people, build great products, and attract loyal users. Respect for our users, for the opportunity, and for each other are foundational to our success, and are something we need to support every day.¹⁷²

Notably absent is the previously prominent, introductory ethos, "Don't be evil," though that phrase does appear later in the document, in commentary form.¹⁷³

From company ethos to consumer warnings, companies have numerous avenues to project goodwill while deflecting liability. For example, Niantic attempts to limit its liability with a cautionary warning in its Terms of Service, last updated May 15, 2019:

TO THE EXTENT PERMITTED UNDER APPLICABLE LAW, NEITHER NIANTIC NOR ANY OTHER PARTY INVOLVED IN CREATING, PRODUCING, OR DELIVERING THE SERVICES OR CONTENT WILL BE LIABLE TO YOU FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES, INCLUDING . . . FROM ANY COMMUNICATIONS, INTERACTIONS, OR MEETINGS WITH OTHER USERS OF THE SERVICES OR PERSONS WITH WHOM YOU COMMUNICATE OR INTERACT AS A RESULT OF YOUR USE OF THE SERVICES, WHETHER BASED ON WARRANTY, CONTRACT, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, OR ANY OTHER LEGAL THEORY, AND WHETHER OR NOT NIANTIC HAS

171. *Google Code of Conduct*, ALPHABET (Apr. 21, 2018), <https://web.archive.org/web/20180421105327/https://abc.xyz/investor/other/google-code-of-conduct.html> (last visited Mar. 10, 2019).

172. *Google Code of Conduct*, ALPHABET (July 31, 2018), <https://abc.xyz/investor/other/google-code-of-conduct>.

173. *Id.*

BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. . . .

THE EXCLUSIONS AND LIMITATIONS OF DAMAGES SET FORTH ABOVE ARE FUNDAMENTAL ELEMENTS OF THE BASIS OF THE BARGAIN BETWEEN NIANTIC AND YOU.¹⁷⁴

In addition, the following warnings appear in the game itself:

1. Do not play Pokémon Go while driving.
2. Do not enter dangerous areas while playing Pokémon Go.
3. Remember to be alert at all times. Stay aware of your surroundings.
4. Do not trespass while playing Pokémon Go.¹⁷⁵

The argument that a technology developer should not be held liable for foreseeable misuse is not novel. In the 2004 case *Williams v. Cingular Wireless*, the plaintiff sued Cingular for negligence after a Cingular customer caused a traffic accident while allegedly using his phone.¹⁷⁶ The Indiana court said that holding cell phone companies liable for such crashes “would effectively require the companies to stop selling cellular phones entirely because the companies have no way of preventing customers from using the phones while driving.”¹⁷⁷ Moreover, the cell phone functioned as intended, and the accident was not caused by any defect within the product.¹⁷⁸ Unfortunately, *Williams v. Cingular Wireless* offers little in the way of precedential value because the cellular company had no control over where customers would take and use the product, which is at the heart of AR trespass and nuisance cases. In the case of AR, developers affirmatively place characters and game elements at specific locations, so there is an increased level of control between the developer and the physical environment within which the product is used, or misused.¹⁷⁹ The Pokémon Go settlement recognizes this control and provides property owners with a remedy to remove Poké-stops and Gyms located on or near their property.¹⁸⁰

174. *Niantic Terms of Service*, NIANTIC, <https://www.nianticlabs.com/terms/en> (last visited Mar. 15, 2019).

175. Breanne L. Heldman, *Pokemon Go Adds New Safety Warnings*, ENT. WKLY. (July 31, 2016, 12:00 PM), <https://ew.com/article/2016/07/31/pokemon-go-new-safety-warnings> (noting that new warnings were included in a game update on July 31, 2016).

176. *Williams v. Cingular Wireless*, 809 N.E. 2d 473, 479 (Ind. Ct. App. 2004).

177. *Id.*

178. *Id.* at 477.

179. *See generally In re Lead Paint Litig.*, 924 A.2d 484, 499 (N.J. 2007) (public nuisance has always been limited “to conduct[] performed in a location within the actor’s control. . .”); *Vill. of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 387-88 (1926) (nuisance must be tied to a particular condition at a particular location that a court or jury can inspect).

180. Order Approving Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 7 (Aug. 30, 2019).

Underlying much of the debate concerning developer liability for player conduct is this question: at what point, if any, will VR or AR be held accountable for human behavior, and to what extent? Will technology soon be so deeply embedded that the legal obligations we owe to each other are diminished? Will this liability always be joint and several between the technology developer and the human tortfeasor? Or, at some point, will technology be so invasive, so compelling, that it achieves a level of mind control, relieving the human actor from liability? Will this new technology be treated more like a mind-altering drug, such that the supplier is also held liable? Or like a gun, which has largely held developers immune from challenge?¹⁸¹

C. *Evaluating Developer Liability Through Analogous Cases*

Technology is developing so quickly that it is difficult to foresee all of the problems that could arise. Some scholars have opined that “. . . it is not difficult to imagine circumstances in which an AR experience designer is held jointly liable for the trespass (and any resulting damage) because the AR experience led users to onto the private property.”¹⁸² Until such case law develops, it is instructive to consider analogous cases.

Tracing jurisprudence from the time of paper maps to Snapchat, we first explore the case of Captain Wahlund, an experienced international pilot who, on August 31, 1975, was flying his private plane from Charleston, West Virginia to Danbury, Connecticut using navigational charts produced and sold by Jeppesen & Co.¹⁸³ These charts indicated that the Martinsburg, West Virginia airport was equipped with an instrument landing system (“ILS”).¹⁸⁴ Despite the light rain, fog, and wind, a safe landing could be made by someone with Wahlund’s experience using an ILS. Unfortunately, the Jeppesen maps were wrong, and the airport lacked an ILS. The plane crashed, killing all three occupants.¹⁸⁵ The administratrix of Wahlund’s estate prevailed on claims for negligence, breach of implied and express warranties, and strict product liability for a \$1.5 million judgment.¹⁸⁶ On appeal, Jeppesen argued the charts were products rather than services to defeat the strict products liability claim. The court found that by “selling the charts, Jeppesen undertook a special responsibility, as seller, to ensure that consumers will not be injured by the use of the charts; Jeppesen is entitled –

181. Melissa Chan *Just About Everyone But The Gun Makers Gets Sued After a Mass Shooting*, TIME (Aug. 20, 2019), <https://time.com/5653066/mass-shooting-lawsuits>.

182. BRIAN D. WASSOM, AUGMENTED REALITY LAW, PRIVACY, AND ETHICS: LAW, SOCIETY, AND EMERGING AR Technologies 169-70 (2015).

183. *Salomey v. Jeppesen & Co.*, 707 F.2d 671 (2d Cir. 1993).

184. *Id.*

185. *Id.*

186. *Id.*

and encouraged – to treat the burden of accidental injury as a cost of production to be covered by liability insurance.”¹⁸⁷

In another Jeppesen maps case, Jeppesen created charts that synthesized graphic representations of complex data provided by the Federal Aviation Administration.¹⁸⁸ While the words and figures in the chart were correct, the scale was off, resulting in another crash that killed everyone on board.¹⁸⁹ In holding Jeppesen liable, the court noted that “it was reliance on this graphic portrayal that Jeppesen invited.”¹⁹⁰ The graphic “radically departed” from usual graphics in other Jeppesen charts and the conflict between the graphic and the words rendered the chart unreasonably dangerous and therefore defective.¹⁹¹

The Jeppesen cases were product liability cases, wherein the injured party’s conduct at a particular location was guided by the defendant’s maps and information, and the defendant was held liable for the resultant foreseeable outcome. This logic may be extended to AR gaming, wherein player conduct is guided, and indeed incited, by the developer’s geo-located game elements. Along these lines, vicarious liability for trespass and nuisance is comprehensible. Developers, however, will distinguish the Jeppesen cases because Jeppesen owed a direct duty to its customer, the injured party, as the manufacturer of the defective product that caused the injury. In the case of AR incited nuisance and trespass claims, the injured party is not in privity with the developer creating a more tenuous connection.

Injuries, lawsuits, and the resultant common law evolution have transitioned from paper maps to smartphone applications. One such lawsuit involves the popular Snapchat app, and its speed filter, which measures the speed at which the phone and its user are traveling and allows them to snap a picture to record the speed.¹⁹² A witness involved in a speed filter-related accident described her experience:

I looked up and noticed that we seemed to be accelerating. I looked in the front, and saw Christal McGee holding her phone. The screen had a speed on it, which was about 80 m.p.h. and climbing. I asked Christal if her phone was keeping up with the speed of the car. Christal said it was. I told her I was pregnant and asked her to slow down. Christal responded and said she was just trying to get the car to 100 m.p.h. to post it on Snapchat. She said “I’m about to post it.”

187. *Id.* at 677 (citing RESTATEMENT (SECOND) OF TORTS § 402A cmt. c (AM. LAW INST. 1965)).

188. *Aetna Cas. & Sur. Co. v. Jeppesen & Co.*, 642 F.2d 339 (9th Cir. 1981).

189. *Id.*

190. *Id.* at 342.

191. *Id.*

192. *Maynard v. Snapchat, Inc.*, 816 S.E. 2d 77 (Ga. Ct. App. 2018).

I began pleading with Christal to slow down. I saw the speed on the phone hit 113 m.p.h. before she let off the gas. Just after I saw the speed of 113 m.p.h., a car pulled out of an apartment complex, and I screamed.¹⁹³

The car that pulled out of the apartment complex was driven by Wentworth and Karen Maynard, who were struck by Ms. McGee's speeding car, causing Wentworth permanent brain damage.¹⁹⁴ The Maynards sued both Snapchat and McGee arguing that Snapchat knew users could "use its service in a manner that might distract them from obeying traffic or safety laws."¹⁹⁵ Still, the judge ruled that the Communications Decency Act¹⁹⁶ (the "CDA") provides Snapchat with complete immunity for its allegedly negligent actions.¹⁹⁷ Under the CDA, the trial court reasoned, service providers are immune from liability for information posted by a third-party user, like Ms. McGee.¹⁹⁸ "Ultimately, the use of the CDA is to 'protect internet service providers for the *display* of content created by someone else.'"¹⁹⁹ However, on appeal, the court distinguished this case from predecessor cases²⁰⁰ because the Maynards were not trying to hold Snapchat liable for something a third party user published on its platform, but rather for the very design of its filter.²⁰¹ As the court noted, "the Maynards seek to hold Snapchat liable for its own conduct, principally for the creation of the speed filter and its failure to warn users that the speed filter could encourage speeding and unsafe driving practices. Accordingly, we hold that CDA immunity does not apply because there was no third-party user content published."²⁰²

The Snapchat lawsuit has been widely reported as yet another example of "a growing problem largely attributed to people who can't put down their

193. *Id.* at 79.

194. *Id.*

195. *Id.*

196. Communications Decency Act, 47 U.S.C. § 230 (2018).

197. Maynard, 816 S.E. 2d at 78.

198. *Id.* at 79 ("No provider . . . of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider[.]" (quoting 47 U.S.C. § 230(c)(1)) ("The CDA was enacted by Congress to provide 'federal immunity to any cause of action that would make service providers liable for information originating with a third-party user of the service.'") (quoting *Zeran v. America Online, Inc.*, 129 F.3d 327, 330 (4th Cir. 1997)).

199. Maynard, 816 S.E. 2d at 79 (citing *Jones v. Dirty World Entm't Recordings LLC*, 755 F.3d 398, 406 (6th Cir. 2014)).

200. Maynard, 816 S.E. 2d at 80-81 (distinguishing from *Jane Doe No. 1 v. Backpage.com, LLC*, 817 F.3d 12, 19 (1st Cir. 2016), *Fields v. Twitter*, 217 F.Supp.3d 1116 (N.D. Cal. 2016), and *Barnes v. Yahoo!, Inc.*, 570 F.3d 1096, 1101 (9th Cir. 2009)).

201. Maynard, 816 S.E. 2d at 80.

202. *Id.* at 81.

electronic devices while they're behind the wheel."²⁰³ As noted by Jason Levine, executive director of the Center of Auto Safety, "It's incredibly important and instructive that we're seeing a court of appeals take seriously the impact of technology that's designed for the purpose of entertainment, and how it can have a public safety impact."²⁰⁴ Others, even in the face of foreseeable, tragic outcomes, insist that full liability remains with the user, noting that "Snapchat is a tool, and it can be used for good or for bad."²⁰⁵

The application of self-regulatory Value Sensitive Design would require developers to consider public safety and proactively integrate protective mechanisms, beyond mere warnings when their products create or encourage a foreseeable risk of harm to the user or community. For example, when designing a filter to capture high-speeds, developers would be prudent to conduct a thorough risk and liability analysis and embed features that discourage or prohibit usage while driving, such as an artificial intelligence based algorithm to determine whether or not the user is likely to be behind the wheel.²⁰⁶ Developers are enjoying massive financial success given the popularity of these products. One could argue that this success, to an extent, is at the expense of property owners and communities and that this expense should be repaid.

CONCLUSION

"Pokémon Go . . . not only takes users out into the real world, but it brings real world issues into the gaming world,"²⁰⁷ requiring that we either address or adapt to its impact. As we learned from the remedies fashioned in the *In re Pokémon Go Nuisance Litigation* settlement, Niantic can remove virtual characters from real property.²⁰⁸ As we wait for the industry to respond to the impact of the settlement, it will be interesting to note whether

203. Katie Rogers, *Snapchat at 107 M.P.H.? Lawsuit Blames Teenager (and Snapchat)*, N.Y. TIMES (May 3, 2016), <https://www.nytimes.com/2016/05/04/us/snapchat-speeding-teenager-crash-lawsuit.html>.

204. Martina Barash & Steven Sellers, *Snapchat Crash Case May Spell Liability for App Maker*, BLOOMBERG L. (June 7, 2018, 5:44 PM), <https://news.bloomberglaw.com/product-liability-and-toxics-law/snapchat-crash-case-may-spell-liability-for-app-maker-2?context=article-related>.

205. *Id.*

206. Notably, Uber has filed a patent application describing a system that will detect a user's drunken behavior by tracking "how someone typically uses the Uber app: how quickly they type (and with how many typo), how precisely they click on buttons, their walking speed, and the way their phone is typically held or dropped on any given day." Shoshana Wodinsky, *Uber Wants to Patent a System That Knows When You're Drunk*, VERGE (June 8, 2018), <https://www.theverge.com/2018/6/8/17441554/uber-drunk-passenger-ai>.

207. Adam B. Thimmesch, *Professor Thimmesch Discusses the Legal Issues Raised by Pokémon Go*, NEB. C. OF L. (July 14, 2016), <https://law.unl.edu/node/879>.

208. See Order Approving Class Action Settlement Agreement *in re* Pokémon Go Nuisance Litig., No. 3:16-cv-04300, at 7 (Aug. 30, 2019).

developers will become more mindful of virtual object placement in the first place.

Owners of real property face significant trespass and nuisance issues when virtual characters are located on or around their property, and these interests may not be adequately protected by existing common law doctrines. Existing trespass theories are difficult to extend to the virtual world, and the courts have yet to decide whether developers may be held liable for nuisance where the complained of behavior is caused not by the virtual objects cast on the property, but rather by the voluntary acts of the players. Moreover, attempts at imposing legislative control have been thwarted by First Amendment challenges. Notwithstanding, it is without question that not only *could* technology be designed in a way that would protect fundamental human values,²⁰⁹ it *should* be.

Self-regulation, such as Value Sensitive Design, may decrease technologically enabled tortious conduct by prompting virtual reality game developers to consider the stakeholders possibly affected by their game design beyond their direct consumers and program accordingly. Until then, while legislation lags behind and industry self-regulation remains ineffective, the most productive protectors of human values may be individual plaintiffs, armed with common law theories to combat modern injuries.

209. LESSIG, *supra* note 166, at 121-25.

