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Playing with Real Property Inside Augmented Reality: Pokemon Go, Trespass, and Law's Limitations

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**PLAYING WITH REAL PROPERTY
INSIDE AUGMENTED REALITY:
POKÉMON GO, TRESPASS, AND LAW’S LIMITATIONS**

*Donald J. Kochan**

ABSTRACT

This symposium essay uses the popular game Pokémon Go as a case study for evaluating conflicts that arise when augmented reality is layered over the real property of non-consenting owners. It focuses on the challenges augmented reality technologies pose to the meaning and enforcement of formal and informal trespass norms, first examining physical trespass issues (and enforcement difficulties) associated with game players who sometimes break physical property boundaries.

The essay then undertakes a thought experiment regarding possible recognition of a new, different type of trespass—one to augmented space. Pollock and Maitland called trespass the “fertile mother of all actions,” often breeding new or enlarged doctrines across the common law. Perhaps trespass has new breeding to do, providing the genetic material upon which the common law can birth new doctrines that preserve our private property values while adapting to technological advances. We could imagine allocating rights such that owners of physical real property are empowered to exclude others from augmented layering of their property. Only if

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property owners have “opted in” would any gaming company be permitted to make another’s property an integral part of its augmented reality game. Financial incentives could emerge to make it beneficial for many property owners to choose inclusion of augmented layering. The number of willing properties opting-in might then make the game manageable without the need for layering over the properties of non-consenting owners.

Experimental legal innovations aside, the essay concludes with a focus on the evolution of informal norms furthering trespass avoidance. Trespass is an ideal case study of a type of action that already is more often deterred by informal social norms than by law. This the essay concludes by explaining why these informal norms and an appeal to civility may be the best ways to control unwanted augmented reality interference with property owners in the real, physical world.

I. INTRODUCTION

Headlines abound with words like “phenomenon”¹ and “global craze”² to describe Pokémon Go, the augmented-reality game that is “[Taking] Over the World”³—as *Time* magazine put it

¹ See, e.g., Ryan Mac, *The Inside Story of ‘Pokémon GO’s’ Evolution from Google Castoff to Global Phenomenon*, FORBES, July 26, 2016, <http://www.forbes.com/sites/ryanmac/2016/07/26/monster-game/#59a0294c22c0>; Katherine Isbister, *Why Pokémon GO became an Instant Phenomenon*, HUFFINGTON POST, July 19, 2016, http://www.huffingtonpost.com/the-conversation-us/why-pokemon-go-became-an_b_11073174.html.

² Alex Hern, *Pokémon Go becomes global craze as game overtakes Twitter for US users*, THE GUARDIAN, July 12, 2016, <https://www.theguardian.com/technology/2016/jul/12/pokemon-go-becomes-global-phenomenon-as-number-of-us-users-overtakes-twitter>; Haley Tsukayama & Ben Guarino, *What is Really Behind the Pokémon Go Craze*, WASH. POST, July 12, 2016, <https://www.washingtonpost.com/news/the-switch/wp/2016/07/12/what-is-really-behind-the-pokemon-go-craze/>.

³ Alex Fitzpatrick, *How ‘Pokémon Go’ Took Over the World*, TIME, July 11, 2016, <http://time.com/4400791/pokemon-go-iphone-android-nintendo/>. An excellent short video describes the scope of the Pokémon Go phenomenon, its popularity, its profits, and the speed within which it all of this happened. See *Pokémon Go: How Popular Is It?*, https://www.youtube.com/watch?v=H_z9PyZ5m8M.

metaphorically in a July 2016 headline. What to many people is an exciting new platform for entertainment to others has become a property law nightmare.⁴ When it comes down to it, this virtual-gaming blends realities and blurs “reality” when essentially using other people’s physical, real property (often without their consent) as the playing board for its game. Pokémon Go is not the first technology to raise these kinds of property law-related dilemmas,⁵ but it is certainly the one that has shined the greatest light so far on possible gaps in the law for dealing with an increasingly complex, “mixed reality” world.⁶

This brief symposium essay identifies some of the property-related issues associated with Pokémon Go and similar augmented reality platforms. Although there are a wide variety of property laws and norms implicated by the game and its play (including nuisance issues) that must be part of the broader discussion on the relationship between real property and augmented reality, this essay will focus primarily on the challenges that games like Pokémon Go and augmented reality pose to the meaning and enforcement of formal and informal trespass norms.

In particular, this essay’s exploration of trespass law reveals that augmented reality not only tests the law but also helps us recognize the limitations of the law. Conflicts between augmented reality and real property remind us that society is often dependent on informal norms for peaceful and cooperative coexistence. Furthermore, especially when the law is incapable of adapting itself to provide solutions to behavioral conflicts, we may need to rely on rules of civility and other private ordering solutions to move us forward.

⁴ Jeff John Roberts, *Pokémon Craze Leads to Trespassing Epidemic*, FORTUNE, July 14, 2016, <http://fortune.com/2016/07/14/pokemon-trespass/>.

⁵ See, e.g., *10 Best Augmented Reality Games Like Pokémon Go*, available at <http://www.mobipicker.com/games-like-pokemon-go/>.

⁶ See Joshua A.T. Fairfield, *Mixed Reality: How the Laws of Virtual Worlds Govern Everyday Life*, 27 BERKELEY TECH. L.J. 55, 73 (2012) (describing the meaning of mixed reality which the author states “is sometimes called ‘Augmented Reality’”), available at http://btlj.org/data/articles2015/vol27/27_1/27-berkeley-tech-l-j-0055-0116.pdf.

Games like Pokémon Go are putting “things” into an augmented world that incorporates the physical space of the real world, including real property. As an aside, the word “real” as a modifier to property probably deserves some explaining, especially for those readers not familiar with legal property terms.⁷ “Real” here has the meaning used in property nomenclature as connoting principally land (as compared with chattel (i.e., personal property) or intellectual property, for example). In this essay, “real” also has the benefit of helping contrast the augmented from the physical, but that is not the primary reason for the choice of the modifier.

Part II will briefly introduce augmented reality and its application in Pokémon Go. Included in Part II will be an explanation of some of the real property conflicts associated with the game. Part III will examine the physical trespass issues associated with Pokémon Go play. Part IV will provide a thought experiment—what if we allowed the owners of physical space to exclude gamemakers from incorporating other people’s properties into their digital game? Beyond a right to exclude physical trespass, we could also allocate rights so that the “augmented space” is also owned by the physical real property owner. This Part IV concludes with some implications this thought experiment has for policies that might require gamemakers to ask property owners to opt in before the gamemakers may incorporate other people’s property into their augmented reality games. Because that thought experiment is unlikely to become reality, pun intended, Part V focuses on the limitations of the law that present obstacles to resolving disputes between players of Pokémon Go and the physical owners whose properties are getting incorporated into the augmented world. It further examines the role that informal norms play in coordinating behaviors in society, with trespass as an ideal case study of a type of action that is more often deterred by informal social norms than by law. This means that the informal norms of trespass and an

⁷ BRIAN D. WASSOM, AUGMENTED REALITY LAW, PRIVACY, AND ETHICS: LAW, SOCIETY, AND EMERGING AR TECHNOLOGIES 153 (2015) (similarly recognizing the potentially confusing use of “real” when discussing relationships between “real property” and “augmented reality”).

appeal to civility may be the best way to regulate the augmented reality activities that we see beginning to complicate the use and enjoyment of property owners in the real, physical world.

II. BACKGROUND ON AUGMENTED REALITY AND POKÉMON GO

Pokémon Go is an example of emerging technologies creating immersive “augmented realities” that interact virtually with real world property. These technologies create a new, mixed reality that “blends the digital and the real world together.”⁸ Pokémon Go is not the only augmented reality game, but its popularity and record at “bringing augmented reality mainstream” makes it a good case study.⁹ Other examples of augmented reality games similar to Pokémon Go (and that preceded it) include: Ingress; Real Strike; Life is Crime; Zombies, Run!; Parallel Kingdom MMO; The Walk; Zombies Everywhere; Geocaching; Clandestine Anomaly; and SpecTrek, to name a few.

“Augmented reality” is defined by *Merriam Webster’s* online dictionary as “an enhanced version of reality created by the use of technology to overlay digital information on an image of something being viewed through a device (such as a smartphone camera).”¹⁰ Brian Wassom, an attorney and leading authority on augmented reality-law, explains that augmented reality is a “medium that has existed for decades and that is beginning to manifest itself with increasing speed as we finally see the development of the technology that can make it happen.”¹¹ With

⁸ Tsukayama & Guarino, *supra* note 2.

⁹ Nick Wingfield & Matt Isaac, *Pokémon Go Brings Augmented Reality to a Mass Audience*, N.Y. TIMES, July 11, 2016, https://www.nytimes.com/2016/07/12/technology/pokemon-go-brings-augmented-reality-to-a-mass-audience.html?_r=0; Kurt Wagner, *What is Pokémon Go and why is everybody talking about it? This new Pokémon game is bringing augmented reality mainstream*, RECODE.NET, July 9, 2016, <http://www.recode.net/2016/7/9/12132748/what-is-pokemon-go-game>.

¹⁰ <https://www.merriam-webster.com/dictionary/augmented%20reality>.

¹¹ WASSOM, *supra* note 7, at 6.

this forward trajectory of augmented reality technology, the legal issues surrounding it are certain to become more prevalent and complex.

In the augmented-reality game Pokémon Go, “players” are engaged in the use of their smartphones to hunt and find digital creatures and objects that are “placed” virtually—by the game’s creators Niantic Labs using GPS and an algorithm—into the gaming board (e.g., the smartphone screen).¹² The images of these game elements emerge in connection with the player’s physical presence in a physical space.¹³ At real physical places, players see the creatures, objects, and prizes on their smartphone overlaid on the physical space around them.¹⁴ Once you are at the physical location where these creatures and objects “exist” virtually or where certain key locations for gaming activities have been “placed,” the integration and mixing of realities is evident.¹⁵ While the mixing occurs onscreen, the augmented reality gaming portions are not visible in the physical space because they do not actually exist in physical form attached to the physical place, despite being blended

¹² Vangie Beal, *Pokémon Go Explained*, WEBOPEDIA.COM, <http://www.webopedia.com/TERM/P/pokemon-go.html>.

¹³ *Id.*; *see also* *Pokémon Go*, WIKIPEDIA, https://en.wikipedia.org/wiki/Pok%C3%A9mon_Go.

¹⁴ Brandon R. Teachout, *Gotta Collect It All: Surveillance Law Lessons of Pokémon Go*, 69 STAN. L. REV. ONLINE 83, 86 (2016) (“Pokémon Go is an ‘augmented reality’ mobile game that uses smartphone features like cameras and location tracking to allow users to find and “catch” digital cartoons called Pokémon in the real world.”), available at <https://review.law.stanford.edu/wp-content/uploads/sites/3/2016/12/69-Stan.-L.-Rev.-Online-83-BRTeachout.pdf>. John Davison, *WTF is ‘Pokémon Go,’ Explained: Everything you need to know about app that’s taking gaming outside*, ROLLING STONE, July 11, 2016, <http://www.rollingstone.com/culture/features/wtf-is-pokemon-go-explained-20160711>.

¹⁵ German Lopez, *Pokémon Go, explained: Everyone is suddenly catching Pokémon fever again. Here’s what’s going on*, VOX, Aug. 5, 2016, <http://www.vox.com/2016/7/11/12129162/pokemon-go-android-ios-game>.

with the physical form when that physical form is viewed through this virtual lens and this digital technology.¹⁶

Some of the basics of the game are available at the corporate homepage for the product.¹⁷ One particularly useful tool is the glossary.¹⁸ In the game, several categories of virtual places get positioned within real world locations. For example, “Pokéstops” are places where tools can be acquired that aid play in the game. “Eggs” and other prizes are interspersed in the augmented reality world for collecting, and items to aid in play are located in areas for in-app purchase. Pokémon “Gyms” are locations for training and battling; and, dominion over these gyms can be claimed upon winning battles. There are geo-tagged locations where Pokémon can be “caught” with a Poké ball.

Using Google Maps, GPS, and the smartphone camera as instruments of play, the real world gets engrafted onto the virtual playing board in a blending of these mixed realities. Rather than go into any great detail here on how to play the game or the specifics of the interactions with real property, I suggest that readers use internet search engines to explore the countless webpages offering “how to” text and video resources that explain the game.¹⁹

The idea of taking another person’s property or an image of it and incorporating it into one’s own product is not new. Certainly cartography serves as one example where such incorporation has substantial history. Mapmaking undoubtedly has great social

¹⁶ For more on the mechanics of augmented reality and how the technology itself works in conjunction with physical spaces, see generally Fairfield, *supra* note 6.

¹⁷ See <http://www.pokemongo.com/>; see also <http://www.pokemon.com/us/pokemon-video-games/pokemon-go/>. A promotional video depicting individuals playing the game is useful to get an idea of the process. See, e.g., <https://www.youtube.com/watch?v=SWtDeeXtMzM>.

¹⁸ See <https://support.pokemongo.nianticlabs.com/hc/en-us/articles/222049307-Glossary>.

¹⁹ See, e.g., Rene Ritchie, *Pokémon Go Ultimate Guide [Updated!]*, iMORE, Jan. 12, 2017, <http://www.imore.com/pokemon-go>; Chaim Gartenberg, *How to Play Pokémon Go*, THE VERGE, July 13, 2016, <http://www.theverge.com/2016/7/11/12149424/pokemon-go-tips-tricks-explainer-nintendo>.

utility—a metric that might be taken into consideration as legal decisionmakers evaluate how to treat mapmaking and like-activities that depict properties owned by others. How then, should law or policy draw distinctions from mapmaking to the existence of Google Maps as an example of an expansion through technology of the scope of the depiction activity? What about when Google Maps goes further to add “street view” with real images of the properties depicted on the map? Depending on how one feels about those activities, how should we then feel about extending the map-plus-street view realistic depictions to next-level uses where smartphone cameras make that enhanced mapping technology an instrument of a gaming experience that activates upon specific, proximate interaction with physical, real property?

Pokémon Go’s use of mapping technology seems distinct from the rather static, observational use of the traditional map drawn by hand and designed as a directional tool. Augmented reality-gaming takes the use of maps to a new level—property is not just mapped, it is mapped and then used as part of the game board. It is not just viewed statically, it becomes a resource for play and a valuable component of the game. More in-depth analysis than this brief essay permits should be done to examine how the Google Maps precedents might prove useful to understanding how the law should treat augmented reality.²⁰ Needless to say, there is much new about augmented reality gaming and its layered combinations with the real world, but whether it is without precedent is a question the law will be increasingly asked to resolve.

III. POKÉMON PLAY AND PHYSICAL TRESPASS

This Part examines the Pokémon game in relation to actual, physical trespass—where players, in order to interact in augmented reality, must place themselves in proximity to the physical space that triggers and makes possible the immersive experience on their

²⁰ See, e.g., *Boring v. Google Inc.*, 362 Fed.Appx. 273 (3d Cir. 2010) (discussing mainly privacy torts all failing to state a claim, with actual trespass claims associated with physical actions taken while capturing images stated a claim).

device. Such movement in the physical world to activate the characteristics of the digital experience can, at times, make the players go too far to the point of intruding upon the physical space owned by another without the owner's consent.

One may question whether Pokémon Go is causing a “trespassing epidemic,”²¹ but it is certainly true that the playing of the Pokémon Go game is intended to include physical interaction with other people's property. The game board itself creates a mixed reality—part real world, part an augmented digital world.

The idea of augmented reality is that we are, in fact, immersing the real world players into a game space with imaginary or invisible objects that are digitally placed (or overlaid) on an image of the real world. These images appear in the game space when the real world players are in proximate physical connection with that actual real world space connected to the augmented characteristics of the game. In other words, these augmented characteristics of the game are triggered to appear in connection with a player's physical location—yet these augmented parts of the games are nonetheless visible only on the gaming platform (the smartphone, tablet, or other technology that displays the playing board).

The right to exclude—epitomized in the trespass cause of action—is fundamental to the law of property.²² Trespass is grounded on these exclusion rights held by property owners²³ because it is a doctrine that defines the wrongs committed when “one person physically invades the land of another.”²⁴ The Supreme Court has repeatedly given the “right to exclude”

²¹ Roberts, *supra* note 4.

²² 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.”).

²³ F. Cohen, *Dialogue on Private Property*, 9 *RUTGERS L. REV.* 357, 374 (1954) (“That is property to which the following label can be attached. To the world: Keep off unless you have my permission, which I may grant or withhold. Signed: Private citizen. Endorsed: The state.”).

²⁴ JOSEPH WILLIAM SINGER, *PROPERTY LAW: RULES, POLICIES, AND PRACTICES* 99 (5th ed. 2010).

recognition as fundamental to property, a regard also evident in academic analysis of the concept.²⁵

A trespass is defined generally as “[a]n unlawful act committed against the person or property of another; esp., wrongful entry on another’s real property”²⁶ and more specifically, a “trespass *quare clausum fregit*” is defined as “A person’s unlawful entry on another’s land that is visibly enclosed.”²⁷ Moreover, “This tort consists of doing any of the following without lawful justification: (1) entering on to land in the possession of another, (2) remaining on the land, or (3) placing or projecting any object on it.”²⁸

One of the primary features of “real property” is that owners have a “right to exclude” others as the default, with an ability to exercise a “right to include” when they so wish (oftentimes with financial payments made in exchange for such authorization).²⁹ Daniel Kelly explains the importance and ubiquity of the right to include, positing that “the ability of owners to ‘include’ others in their property is a central attribute of ownership and fundamental to any system of private property.”³⁰

²⁵ H. WILSON FREYERMUTH, JEROME M. ORGAN, ALICE M. NOBLE-ALLGIRE, & JAMES L. WINOKUR, *PROPERTY & LAWYERING* 7 (2d ed. 2006) (explaining that the right to exclude is a “unifying or necessary characteristic” of the “concept of property”); SINGER, *supra* note 24, at xxxix (“most scholars agree that the right to exclude is either the most important, or one of the most important, rights associated with ownership.”); Thomas W. Merrill, *Property and the Right to Exclude*, 77 *Neb. L. Rev.* 730, 734 (1998).

²⁶ BLACK’S LAW DICTIONARY (10th ed. 2014)

²⁷ *Id.*

²⁸ *Id.* For a discussion of trespass’s role in our land use control system, see Donald J. Kochan, [*A Framework for Understanding Property Regulation and Land Use Control from a Dynamic Perspective*](#), 4 *MICH. J. ENVTL. & ADMIN. L.* 303, 306, 322-24 (2015), available at https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2617386.

²⁹ DUKEMINIER ET AL., *PROPERTY* 104 (8th ed. 2014) (explaining Felix Cohen’s conception of property as “a relationship among people that entitles so-called owners to include (that is, permit) or exclude (that is, deny) use or possession of the owned property by other people; . . . The two rights are the necessary and sufficient conditions of transferability.”).

³⁰ Daniel B. Kelly, *The Right to Include*, 63 *EMORY L.J.* 857, 859 (2014); see also Donald Kochan, *Property as a Vehicle of Inclusion to Promote Human*

Legal doctrines regularly recognize the right to exclude so that property owners can choose who, when, and under what conditions to include. Such conditions might include payment for access. When we fail to recognize the right to exclude, property owners lose the ability to profit from such selling of access rights. Furthermore, property owners may especially want to control stranger access because those owners can sometimes be liable for actions taken by individuals on their property or even liable to trespassers (here, players) that get injured while on their property.

Pokémon players often are enticed to enter the physical space of un-consenting property owners if their mission to capture the creatures, tools, or prizes available in the virtual space is to be accomplished. It is noteworthy that Niantic, for example, attempts to limit its liability by incorporating language in a player's user agreement that warns against trespass.³¹ Under a clause labelled "Safe Play," the terms begin by placing responsibilities upon the game players, stating in part:

During game play, please be aware of your surroundings and play safely. You agree that your use of the App and play of the game is at your own risk, and it is your responsibility to maintain such health, liability, hazard, personal injury, medical, life, and other insurance policies as you deem

Sociability, JOTWELL (January 22, 2016) (reviewing Kelly, *supra*), <http://property.jotwell.com/property-as-a-vehicle-of-inclusion-to-promote-human-sociability/>.

³¹ Beatriz Costa-Lima & Mary Hudetz, *Pokémon players are trespassing, risking arrest or worse*, ASSOC. PRESS, July 13, 2016, <http://bigstory.ap.org/article/117e3da0e73e4dd6a2092c5e2fbbba18/pokemon-players-are-trespassing-risking-arrest-or-worse> ("Every time the app is opened, a warning from game maker Niantic pops up, telling players to be aware of their surroundings. Players must also agree to fine print saying they cannot enter private property without permission. There's also a disclaimer that says Niantic is not liable for any property damage, injuries or deaths that result while playing.")

reasonably necessary for any injuries that you may incur while using the Services.³²

The Terms then proceed to discuss trespass expressly:

*You also agree not to use the App to violate any applicable law, rule, or regulation (including but not limited to the laws of trespass) or the Trainer Guidelines, and you agree not to encourage or enable any other individual to violate any applicable law, rule, or regulation or the Trainer Guidelines.*³³

The Terms continue that:

*Without limiting the foregoing, you agree that in conjunction with your use of the App you will not inflict emotional distress on other people, will not humiliate other people (publicly or otherwise), will not assault or threaten other people, will not enter onto private property without permission, will not impersonate any other person or misrepresent your affiliation, title, or authority, and will not otherwise engage in any activity that may result in injury, death, property damage, and/or liability of any kind.*³⁴

After making acknowledgement of these terms mandatory for players, Niantic then disclaims its own liability for harms to players or others.³⁵

There are even internet guides developed by private individuals on “how to avoid trespass” while playing Pokémon

³² Niantic Labs, Inc., *Pokémon GO Terms of Service*, <https://www.nianticlabs.com/terms/pokemongo/en> (emphasis added).

³³ *Id.* (emphasis added).

³⁴ *Id.* (emphasis added).

³⁵ *Id.* (“To the extent permitted by applicable law, Niantic, The Pokémon Company (“TPC”), and TPCI disclaim all liability related to any property damage, personal injury, or death that may occur during your use of our Services, including any claims based on the violation of any applicable law, rule, or regulation or your alleged negligence or other tort liability. . . .”)

Go.³⁶ Nonetheless, reports abound of trespasses associated with playing that game.³⁷

Pokémon gamers may sometimes find themselves going on to other people's real property, physically stepping on space the gamer does not own and thus, trespassing as the law defines it. At least anecdotally, this seems to be a problem.³⁸ One *Associated Press* story reported that, "The 'Pokémon Go' craze across the U.S. has people wandering into yards, driveways, cemeteries and even an off-limits police parking lot in search of cartoon monsters;"³⁹ and that within just a week of the release of the game that "police [had already] gotten a flurry of calls from residents about possible burglars or other strangers prowling the neighborhood."⁴⁰ Similarly, a *Fortune* story explained that "The surge of strangers creeping around lawns and alleys looking for Pokémon has led to a predictable result—a corresponding surge in people calling the police about trespassers."⁴¹ Reports of competition to catch

³⁶ See, e.g., Joseph Rothberg, 'Pokémon GO' Field Guide: What You Need To Know About Civil Trespass Laws, FORBES, July 21, 2016, <http://www.forbes.com/sites/legalentertainment/2016/07/21/a-field-guide-to-civil-trespass-in-the-age-of-pokemon-go/#31fc24866aaf>.

³⁷ Costa-Lima & Hudetz, *supra* note 31 (reporting that the terms of Service "warnings don't seem to be getting through").

³⁸ See, e.g., Patricia Harman, *Hunting Pokémon raises liability issues when incidents happen*, PROPERTYCASUALTY360, July 19, 2016, <http://www.propertycasualty360.com/2016/07/19/hunting-pokmon-raises-liability-issues-when-incide> (describing the millions of Pokémon players, stating "In their zeal to reach the next level, capture the next creature or find Lucky Eggs, they are walking into traffic, trampling on private property and exposing themselves to unsafe conditions.").

³⁹ Costa-Lima & Hudetz, *supra* note 31.

⁴⁰ *Id.*

⁴¹ Roberts, *supra* note 4. This story went on to report that "police officers nationwide are being called on to investigate Pokémon related incidents" and "The phenomena is happening everywhere, leading fed-up cops to tell people to knock it off." *Id.* (depicting some examples of police department tweets warning players to stop their transgressions into private property)

Pokémon and win prizes leading to massive crowds,⁴² mob scenes,⁴³ and even “stampedes” at some locations⁴⁴ are not uncommon, not to mention just the more regular intrusions as players engage in day-to-day gaming that brings them in contact with public and private properties.

Property owners can exercise their right to exclude or their right to include physical players. A simple Google Images search for “Pokémon trespassing” reveals countless examples of signs being posted—by private property owners and public property managers—warning players against intruding on physical spaces. These “no trespassing” signs remind players that their presence is without permission.

Of course, a complete review of these search results in Google Images also reveals signs posted welcoming players to public and private properties—often by property owners who want to encourage players to come onto their property because it stirs up business or because the owner wants the pleasure of the players’ company or otherwise wants to play along. Several examples can be seen of businesses, libraries, and churches trying to attract players through the owners’ openness to the game being played on their property.

So, some owners dislike that their property is incorporated into the game. Others see it as an opportunity to lure in new customers or otherwise draw individuals to their locations that might not otherwise visit.

⁴² See, e.g., Jennifer Gonzalez, *Large Crowds of Pokémon Go Players Invade San Francisco to “Catch Them All,”* NBC NEWS BAY AREA, July 20, 2016, <http://www.nbcbayarea.com/news/local/Over-8000-People-Exepcted-at-SF-Pokemon-Go-Crawl-387548801.html>.

⁴³ See, e.g., Dave Smith, *Hundreds of people mobbed Central Park to catch a Vaporeon in Pokémon GO,* BUS. INSIDER, July 17, 2016, <http://www.businessinsider.com/pokemon-go-mob-runs-after-vaporeon-video-2016-7>.

⁴⁴ See, e.g., Kim Bellware, *Rare Pokémon Sparks Massive Stampede In Taiwan,* HUFFINGTON POST, Aug. 23, 2016, http://www.huffingtonpost.com/entry/pokemon-go-stampede-taiwan_us_57bc5c32e4b0b51733a5c165.

Current law forbids game players from trespassing on other people's land when playing and trying to accomplish their goals in Pokémon Go. Therefore, as to physical trespass, there is not a particularly unique legal response necessary.⁴⁵ Those who commit traditional physical trespass for gaming purposes commit wrongs and are liable for their intrusions (although subject to traditional exceptions and limitations within trespass law, the details of which are beyond the scope of this essay).

However, just because the players commit a legal wrong if they intrude past the boundaries of another's property, that does not mean that the legal property system will always work seamlessly to deter or punish such wrongdoers. There may be some heightened enforceability hurdles experienced in the Pokémon-type trespass. For example, players that commit physical trespass may not be easy to identify. Thus, proving trespass or tracing damage to particular individuals may be difficult due to the transitory nature of many of the trespasses that might occur from Pokémon Go play.

Furthermore, a Pokémon Go-related invasion might occur on such a large scale (when dozens or hundreds of competitors trounce upon a single spot to be the first to get the prize) that the transaction costs associated with any civil lawsuits or criminal sanctions may be too high to accomplish restitution or deterrence.

These difficulties in holding individual players liable represent part of the driving force behind recent litigation to hold the gamemakers responsible for the transgressions against property by game players. The trespass and other concerns associated with Pokémon Go play are generating property owner litigation against companies like Niantic. At least three class action suits have been recently filed with similar claims—*Marder v. Niantic, Inc.*⁴⁶ in the

⁴⁵ WASSOM, *supra* note 7, at 169-70 (discussing the possible physical trespass issues that arise when “people congregate on someone’s property . . . uninvited” to engage in augmented reality gaming activities.)

⁴⁶ *Marder v. Niantic, Inc.*, 3:16 cv 04300 JD (N.D. Ca. complaint filed 7/29/2016). A copy of the complaint is available at 2016 WL 4073537 (N.D. Cal.) (Trial Pleading) and https://www.scribd.com/document/319936053/Marder-v-Niantic-Complaint-7-29#from_embed. For a reports on the litigation, see Brian Crecente,

federal district court for the District of North Dakota, and *Dodich v. Niantic, Inc.*⁴⁷ and *The Villas of Positano Condominium Association, Inc. v. Niantic, Inc.*,⁴⁸ both in the federal district court for the Northern District of California—each relying on a variety of nuisance, trespass, and unjust enrichment theories. These cases have since been consolidated as *In re: Pokémon Go Nuisance Litigation*, Case No. 3:16-cv-04300, in the U.S. District Court for the Northern District of California. Motions to dismiss in these consolidated class actions were filed in January 2017 and under consideration while this essay is in press. It is noteworthy, but expected, that the recent motions to dismiss by Niantic disclaim any liability—resting their defense on arguments including that: the gamemakers require players to abide by real-world law; that the theories of liability are broad and if imposed would lead to the prohibition of countless uses of technology that serve societal goals; and that there cannot be a “virtual trespass” because nothing tangible intrudes upon real property by mapping property and creating augmented reality overlays.⁴⁹

Pokémon Go trespassing spurs lawsuit against Nintendo, Pokémon Company and Niantic: Gotta sue 'em all, POLYGON.COM, Aug. 2, 2016, <http://www.polygon.com/2016/8/2/12350580/pokemon-go-lawsuit> (describing the *Marder* litigation instituted by the plaintiff after “strangers began lingering outside his home with their phones in hand”); Steven Musil, *Pokémon Go catches lawsuit for game's creators*, CNET NEWS, Aug. 1, 2016, <https://www.cnet.com/news/pokemon-go-finds-lawsuit-for-games-creators/> (describing the complaint and controversy leading to it).

⁴⁷ *Dodich v. Niantic, Inc.*, 3:16 cv 04556 (N.D. Ca. complaint filed 8/10/2016).

⁴⁸ *Villas of Positano Condominium Association, Inc. v. Niantic, Inc.*, 3:16 cv 05091 JCS (N.D. Ca. complaint filed 9/2/16).

⁴⁹ See, e.g., Allison Grande, *'Pokémon Go' Maker Says Players' Trespass Not Its Problem*, LAW360, Jan. 30, 2017, <https://www.law360.com/privacy/articles/886257/-pok-mon-go-maker-says-players-trespass-not-its-problem>; Ross Todd, *Lawyers for Pokémon Go Maker Try for KO of Property Owners' Suit*, THE RECORDER, Jan. 30, 2017, <http://www.therecorder.com/home/id=1202777999378/Lawyers-for-Pokemon-Go-Maker-Try-for-KO-of-Property-Owners-Suit?mcode=1202617072607&curindex=4&slreturn=20170107221635> (summarizing Niantic's defense claims in its motions to dismiss).

These and other suits that will undoubtedly be filed will begin to test the waters for innovative theories designed to establish gamemaker liability. There may be some possible theories why the gamemakers might be responsible for encouraging, inciting, or failing to prevent players from trespass,⁵⁰ for example. The nuisance and unjust enrichment claims might also have legs. This brief essay is not intended to evaluate the merits of these claims, but instead it is focused only on providing an outline of the questions associated with the trespass claims and provide an overview of the exclusion concerns generated by Pokémon Go. Nevertheless, it will be interesting to see how the plaintiffs' theories and Niantic's defenses fare in the pending litigation and to watch for what new theories will emerge as more lawsuits are inevitably filed to assert private property rights and privacy claims against game players and gamemakers.

In the days ahead, legal thinkers should begin examining and brainstorming about all of these possible new theories of liability. Some questions that might be considered include: What actions should be available to property owners to sue under property law or tort law doctrines for invasions of their property rights (not to mention possible related privacy violations)? If current law does not provide remedies for injuries, should we create liability regimes by statute or by an extension of common law principles?

Is there potential culpability, responsibility, or liability of game makers in inciting or inducing violations of private property? Could the gamemakers be seen as inducing such intrusions with the prizes they award? Might we fashion a claim like "incitement to trespass" or conspiracy to commit trespass, with civil causes of action or criminal liabilities that alter gamemakers behavior to minimize property intrusions? Should we?

Do these gamemaking companies have legal or at least ethical obligations to warn their players about the legal regime in

⁵⁰ See, e.g., WASSOM, *supra* note 7, at 169-70 ("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.").

which they play the game? If trespass is foreseeable, can the gamemakers be responsible? It seems hard to argue that these companies cannot foresee the actions the players are likely to take to play the game, including potential property rights violations. If they could not foresee such behavior when they created the game, then they surely can now after all of the press reports regarding the ubiquity of trespassory behaviors.

Concurrently we might ask whether there are ways that property owners should protect themselves from virtual intrusions in the same way that they do to prevent physical intrusions—such as with fences or by posting “no trespassing” signs. What result should obtain if a property owner does not take such extra steps to ward off would-be trespassers?

These and other questions will need to be addressed in coming years to determine whether the law can and should respond to this new augmented reality-phenomenon to provide better protections for private property rights. We should evaluate some of the legal mechanisms that might be employed against game players and gamemakers in Pokémon Go or similar online entertainment platforms. But, while doing so, we should also remember that the law has a limited capacity to respond to all problems. The inherent limitations of legal mechanisms, therefore, must also be analyzed, together with alternatives to law for resolving conflicts with property owners, including, for example, greater reliance on informal norms as will be discussed in Part V. Before getting there, Part IV explores a separate innovative avenue of legal pursuit—based on the values inherent in the trespass norms—where gamemakers could be liable for their blending technologies and for layering augmented elements onto other people’s physical private property when creating a mixed reality.

IV. POKÉMON DESIGN AND “TRESPASS TO AUGMENTED SPACE”: A THOUGHT EXPERIMENT AND A PREFERENCE FOR AN “OPT-IN” REGIME

Perhaps there is utility in thinking of another type of “trespass” (beyond the physical trespass from the foot traffic of the Pokémon Go players)—this one to “augmented space.”⁵¹ This Part conducts a thought experiment on a potential expansion of the trespass concept to create something we might call “trespass to augmented-reality space,” with the rights to (and control of) such augmented-reality space rights allocated to the owners of the physical real property to which augmentation “attaches” or upon which augmentation elements are layered. This theoretical right would apply the trespass concepts to the act of incorporating real property into the augmented reality space of the Pokémon Go (or a similar) gaming platform.

If an owner’s property is immediately layered into the augmented reality that becomes the playing board, without any prior negotiations or permissions, and the owner never had the option of

⁵¹ For advocacy favoring this theory of a broad interpretation of property rights to include augmented space, see, for example, Andrew L. Rossow, *Gotta catch...a lawsuit? A legal insight into the battlefield Pokémon Go has downloaded unto smartphones and properties around the world*, OHIO ST. BAR ASSN. NEWS, July 20, 2016, <https://www.ohiobar.org/NewsAndPublications/News/OSBANews/Pages/Gotta-catch-a-lawsuit-A-legal-insight-into-the-battlefield-Pokemon-Go-has-downloaded-onto-smartphones-and-properties.aspx>. For a more skeptical view, especially given the competing concerns of First Amendment speech rights, see, for example, WASSOM, *supra* note 7, at 158 (“In the augmented medium . . . No intrusion into the physical space itself ever occurs, so the landowner’s right to exclude me from his property is never triggered. . . . AR is designed to create the illusion of physical presence”); Brian D. Wassom, *Milwaukee, Pokémon Go, And The First Amendment: Is the City’s New Ordinance a Step Too Far?*, Dec. 7, 2016, <http://www.wassom.com/milwaukee-pokemon-go-first-amendment.html#more-6479> (“Here’s the problem: AR gaming companies don’t ‘place things like PokeStops in Milwaukee County parks,’ because they’re not actually there. . . . The entire appeal of AR is all about creating the illusion that virtual content is present in the physical world—but it’s just an illusion.”)

granting or withholding consent for that type of incorporative use of her property, then one question becomes whether the game designers have overstepped their rights. They may have intruded upon some consent- and exclusion-based rights that should be granted to owners of potentially-incorporated real property.

Might a property owner own rights to the augmentation “space” of her property? After all, surpluses from underutilized assets associated with a piece of private property are still within the control of the property owner—the sharing economy is an example of this fact.⁵² 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.

In the Pokémon Go game, the virtual “placement” of game elements often does not include consent from the owners of the physical space upon which the creatures and other game features are virtually placed. There is technically no physical boundary being crossed and no physical fencing can keep the virtual intruders out. In fact, that is the primary reason why some feel that this analogy fails—because augmented reality does not physically interact with the physical private property space.

For example, Wassom argues that, because “augmented content does not actually occupy the physical space in which it appears” and is instead “AR is, in this respect, a mere illusion” that “property law does not help us think accurately about the AR experience.”⁵³ This criticism has some merit because its descriptions of physicality and non-physicality are technically true. However, stating that the physical focus of existing trespass law precludes its application to an augmented layer lacks imagination. We cannot simply foreclose the possibility that (1) trespass law might nonetheless evolve to apply to such an augmented layer, or (2) that trespass concepts and policies of exclusion might be useful

⁵² See generally Donald J. Kochan, *I Share, Therefore It’s Mine*, 51 U. RICH. L. REV. (forthcoming 2017) (discussing the sharing economy as an exemplar of the alienability of underutilized assets in real property), available at https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2820456.

⁵³ WASSOM, *supra* note 7, at 159.

in developing new doctrines or legislation that create new property owner rights, tracking the exclusion-like concepts and justifications in trespass law—even if the resulting doctrine or legal rules are not thereafter called “*trespass laws*” per se. Therefore, even if we concede that it would be a stretch to take the existing law of trespass and immediately apply it to activities layering private property with augmented reality,⁵⁴ there may nonetheless be some useful analogies to think about, especially as we consider the relative benefits of an opt-in or opt-out system for the inclusion of real property in augmented gaming platforms.

As explained in Part III, the prototypical trespass is the physical invasion onto the property owned by another. But the “big picture” trespass idea, as expressed by Blackstone, helps us understand the philosophical foundations of trespass that might guide our development of law or policy to deal with conflicts between augmented reality activities and the physical world of real property:

Every unwarrantable entry on another’s soil the law entitles a trespass by *breaking his close*; the words of the writ of trespass commanding the defendant to shew cause, *quare clausum querentis fregit*. For every man’s land is in the eye of the law enclosed and set apart from his neighbour’s: and that either by a visible and material fence, as one field is divided from another by a hedge; or, by an ideal invisible

⁵⁴ *Id.* t 153-69 (with augmented advertising as his primary example, examining then rejecting the idea that “an owner of real property can stop someone else from creating an augmented layer associating digital content with that property”); See Woodrow Barfield, *Commercial Speech, Intellectual Property Rights, and Advertising Using Virtual Images Inserted in TV, Film, and the Real World*, 13 UCLA ENT. L. REV. 153, 171-72 (2006) (expressing doubt about the success of a trespass action for mediated reality advertising where “the apparent projection of a virtual image into [a property owners’] airspace” would be the basis for the claim because the author claims it would be unlikely the owner could establish that such action “resulted in damage since no physical contact with the plaintiff’s land occurs.”), available at <http://escholarship.org/uc/item/26b704xs>.

boundary, existing only in the contemplation of law, as when one man's land adjoins to another's in the same field. And every such entry or breach of a man's close carries necessarily along with it some damage or other: for, if no other special loss can be assigned, yet still the words of the writ itself specify one general damage, viz. the treading down and bruising his herbage.⁵⁵

Blackstone's focus on trespass as protecting against unwarrantable entry, the sanctity of the property boundary such that an intruder is strictly liable for any breach, and that we may protect property boundaries of all sorts even those constructed "only in the contemplation of law" demonstrates that the trespass concept has always been very broadly construed to justify giving private property owners protections against intrusions of many sorts.

This Blackstonian idea captures the extensive category of obligations flowing from the law of neighbors⁵⁶ and embraces the foundational contribution of the right to exclude in setting standards of behavior and defining wrongs. While Blackstone could not contemplate augmented reality, a question clearly follows from his justification for trespass-related protections: does incorporating another's property into a virtual game—in a manner designed to trigger at least some level of physical interaction with that physical property of another—create an "unwarrantable entry on another's soil"? Might the enclosure and the "invisible boundary, existing only in the contemplation of law" allow for an invisible fence against invisible virtual things, the potential breach of which triggers the right to exclude?

⁵⁵ WILLIAM BLACKSTONE, 3 COMMENTARIES ON THE LAWS OF ENGLAND 209-10 (1768).

⁵⁶ See generally Stewart E. Sterk, *Neighbors in American Land Law*, 87 COLUM. L. REV. 55 (1987); see also THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY: PRINCIPLES AND POLICIES 1-16, 938 (2d ed. 2012) (sections discussing trespass and chapter exploring the law governing "the uses to which neighboring property is put").

These are important questions, especially because trespass has always been considered an evolving concept, adaptable to new situations. Moreover, trespass has also been the model tort upon which many independent causes of action have hatched. Pollock and Maitland, for example, call trespass the “fertile mother of all actions,” often breeding new or enlarged doctrines across the common law:

Our forms of action are not mere rubrics nor dead categories; they are not the outcome of a classificatory process that has been applied to pre-existing materials. They are institutes of the law; they are – we say it without scruple – living things. Each of them lives its own life, has its own adventures, enjoys a longer or shorter day of vigour, usefulness, and popularity and then sinks perhaps into a decrepit and friendless old age. A few are still-born, some are sterile, others live to see their children and children’s children in high places. The struggle for life is keen among them and only the fittest survive.⁵⁷

Perhaps trespass has new breeding yet to do, providing the genetic material upon which the common law can birth new doctrines that preserve our private property values while adapting to technological advances and an ever-changing modern world.

The chain of argument for a possible new theory applied to augmented reality and birthed from the trespass concept could be constructed in the following manner: (1) Establish that owners of physical space also own what we would call the “augmented space”; (2) Like the physical space, we would decide that the owner has the right to exclude others from the augmented space; (3) It would follow that the “placement” or positioning within a game of Pokéstops or other Poké attributes in that augmented space without consent violates the right to exclude and constitutes an augmented trespass; (4) Such placement without consent destroys the value the

⁵⁷ SIR FREDERICK POLLOCK AND FREDERICK WILLIAM MAITLAND, II *THE HISTORY OF ENGLISH LAW* 561 (Cambridge 1968) [1898].

owner has in the sale of the augmented right; thus, to preserve that value, the owner of the physical space should be empowered to exclude and should have an enforceable property right through some kind of trespass-like action; and (5) This initial assignment of rights then leaves the property owner free to include game elements, should she wish to do so (in exchange for financial consideration from gamemakers—and, even in some instances, game players—or perhaps because she sees some other benefit in having visitors to her property).

Recognizing these rights of the owners of physical private real property to exclude others from augmented layering of their property would accomplish a system that could then be structured to replace the current system—where property owners have only limited means to request to be left out of the game (“opt-out”) after contacting Niantic and trying to convince the company to exclude their property from the game⁵⁸—with a system that would require proof that property owners have “opted in” before any gaming company could make another’s property an integral part of its augmented reality game.⁵⁹

Many businesses already see a benefit to engaging with Pokémon Go and they embrace the idea of their property and their establishments being part of the game.⁶⁰ The game draws in

⁵⁸ See, e.g., Alex Heath, *A new bill called ‘Pidgey’s Law’ aims to force the removal of Pokéstops in Pokémon Go*, BUS. INSIDER, Aug. 25, 2016, <http://www.businessinsider.com/pidgeys-law-bill-aims-to-force-removal-of-pokestops-in-pokemon-go-2016-8> (explaining the ways that “Niantic lets people ask for the removal of Pokéstops . . . through a form on its website” and listing some notable removals and some notable requests that had not led to removal).

⁵⁹ Businesses and institutions determining whether to embrace or reject Pokémon Go See, e.g., Marijke Rowland, *Modesto sites: Should I stay or should I ‘Pokémon Go’?*, MODESTO BEE, July 14, 2016, <http://www.modbee.com/news/article89735457.html>.

⁶⁰ Ashfords LLP, *Augmented Real Estate?*, Sept. 21, 2016, available at <http://www.lexology.com/library/detail.aspx?g=6d517aa8-25cc-4201-ba54-f5a5b26a09ec> (discussing ways that businesses can leverage Pokémon Go to attract customers, including through lures and the possibility of sponsorships (although indicating that Niantic does not have plans to create sponsored locations), and how real estate can be sold using augmented reality technology).

customers.⁶¹ Places of worship, libraries, and the like have also welcomed the idea that their properties would become part of Pokémon Go because it draws in new congregants, new readers, or others to their properties, expanding the outreach and mission of those organizations. There is evidence that many of these establishments actively advertise the Pokémon-related attributes of their properties—such as the “existence” of Pokéstops or gyms “at” those properties. The desirability of Pokémon-generated business is further evidenced by the existence of service-oriented companies that have developed and are offering courses to teach businesses how to market to Pokémon players and otherwise capitalize on the Pokémon craze.⁶²

The point here is that law and policy might develop to distinguish between willing owners and unwilling owners and develop some types of rules that protect unwilling owners with strong exclusion rights (while allowing willing owners to gain financially from their consent). It is very likely that many property owners would exercise their right to include—*i.e.*, “opt in” their properties making them available for augmented layering by gamemakers and probably even thereafter marketing the presence of Pokémon attributes in a promotional way that is mutually beneficial to the incorporated properties as well as the gamemakers.

The game designers could coordinate with willing businesses and other property owners to identify welcoming, physical real world locations upon which augmented game elements could be layered. The system could be designed for more robust “lures” to be used that attract players to particular properties. Perhaps sponsorships might also become the norm, where particular owners, such as a business, sponsor certain game locations and otherwise use game traffic to their advantage. We could imagine

⁶¹ See *Pokémon Go: How Popular Is It?*, https://www.youtube.com/watch?v=H_z9PyZ5m8M (describing businesses using Pokémon Go to attract customers).

⁶² See, e.g., *Pokémon GO! Local Business Marketing—Get Traffic & Grow online course*, <https://www.youtube.com/watch?v=5KAzxIc6fT4> (a dramatic video promoting a course to teach businesses how to profit from the Pokémon craze).

situations where competition might even emerge in which businesses or others wishing to capitalize on increased foot traffic bid to have particularly attractive elements located at their properties so that they can maximize the benefits of opting in. Or, the game designers might start selling exclusive rights of play to some properties for set periods of time, making the value proposition of buying such rights higher because of the heightened importance of certain properties in the game as a result of such exclusivity. These and other innovations might obviate the need to locate Pokémon Go-elements anywhere else. The number of willing properties opting in may very well make the game manageable at its current scale or larger, but without the need for layering over the properties of non-consenting owners.

This focus on “opting in” better respects traditional property norms by making the augmented space more like a stick in the bundle. Once we apply exclusivity principles to that augmented reality stick, we can realize the types of integral gains we see elsewhere in property systems generated by respecting the corresponding rights to exclude and to include. And, such an exclusion-based approach to augmented layering allows property owners to monetize the asset—defining the “asset” as the attractiveness of their property as a good location for integration into the augmented reality space—by allowing such owners to bargain and control the licensing for their property’s use.

This Part is intended to introduce a thought experiment and present some ideas for discussion on where law and policy might go in the near and distant future. I believe it is unlikely that such a system of augmented property rights is likely to be recognized anytime soon. Furthermore, it is not clear that we should recognize exclusion of this kind or create new legal standards to do so even if we could. After all, we cannot charge people for driving past and looking at our houses, and we do not even have a complete expectation of privacy or observational-exclusion rights to such things as the heat we generate inside our homes, including our body heat. Private companies have been able to take satellite pictures that capture images of our property without compensation. It is unclear

why we could charge individuals for interacting with an image of our property from afar in ways similar to these that the law currently asks us to tolerate. Moreover, maps, educational tours, and other immersive experiences can help educate people about the physical world in new ways that may require “free access” to “augmented space.” Perhaps granting private property owners rights to “augmented space” could impede progress or stymie important social goals.

Yet, we must at least consider whether there is a type of unauthorized appropriation happening, over a kind of interest we might wish to call a property right, when augmented reality incorporates someone else’s property into a game, benefitting a stranger to the property without any compensation for the property owner. Such incorporation might come with at least an indirect cost to the property owner’s use and enjoyment of her property—including loss to what would otherwise include the right to profit from selling access rights to her land (and to resources on and attributes of that land).

Augmented reality gaming like Pokémon Go certainly forces us to ask how, if at all, the laws and norms of trespass should next evolve. In other words, even if it is determined that the existing trespass standards do not allow a suit for trespass to augmented space, that should not foreclose the possibility that trespass or other law might expand over time to regulate the conduct in augmented layering over real property.

Without fully advocating such a move here, I nonetheless think it is worth pondering whether such evolution might be appropriate. This Part has provided some of the opening metrics for that discussion. At the very least, we should take into account the spirit of the trespass law to help shape any legislative response to new augmented reality activities that may create strife between real property owners and those benefitting—financially or through mere recreational enjoyment—by interacting with the world through augmented reality technology (potentially without any existing opportunity for property owners to consent or receive compensation

for their incorporation in another's amusement or profit-seeking activity).

Of course, all of these difficulties remind us of the limitations of the law. The fact that existing doctrines and existing realities are ill-equipped to deal with augmented reality's interaction with them reinforces the notion that, if one sees a current problem with law's capability to resolve property owner conflicts with users and designers of augmented space, then to manage it perhaps we need to look beyond law and beyond legislation. Much of human interaction is coordinated and privately "governed" outside the law. Indeed, sometimes it is better that it is. Hence, in Part V, we consider informal norms and their power to induce self-respect for private property, to regulate conflicts, and to facilitate socially beneficial behavior.

V. THE LIMITATIONS OF THE LAW AND THE CONTRIBUTION OF INFORMAL NORMS

This final Part discusses the role that non-legal, or informal norms of self-restraint, respect, morality, and civility have played across time in enforcing, recognizing, and observing the sanctity of property boundaries and how these norms operate to facilitate the peaceful ordering of private property rights within society. As McAdams wisely counsels, "those who study law should study norms," and "[w]here norms govern individual behavior, one cannot correctly assess the effect of formal, state-enforced rules without understanding the informal rules also at work."⁶³ This Part seeks such an understanding of this interplay between law and norms as it might apply to coordinate augmented reality and real world property. If the law has a limited capacity to deal with invisible intrusions that invite physical ones, perhaps even greater emphasis must be placed on preserving and strengthening these social norms of private ordering without law and placed on encouraging

⁶³ See Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 346 (1997).

respectful behavior by all those who, now and in the future, find our expanding technological capacity testing our respect for property-related civility.

No matter how we fashion the legal response to either the invasion into physical space or the invasion into what I am calling augmented space, we need to recognize that trespass wrongs are, in large part, enforced against through informal norms. “Law” is principally about formal norms, but law is not the only way to regulate social interaction. Informal norms that are cooperation-enhancing exist too, and these can be especially effective in areas where law’s limitations constrain its ability to coordinate preferences.

The effectiveness of a legal prohibition on conduct is determined, in part, by the assessment by all relevant parties of the gravity of the legal wrong. This is true both from the perspective of an aggrieved party and her incentives to enforce her legal rights and from the perspective of the potential wrongdoer assessing the likelihood of incurring liability when evaluating whether to commit a wrong. There will be (1) a calculation made by the injured property owner whether to enforce; and (2) a determination by the potential wrongdoer whether to commit the wrong, calculated by assessing the likelihood and severity of liability.

The incentives to enforce one’s rights against trespass (whether traditional or even if we were to create the idea of trespass to augmented space) are skewed against enforcement. High costs to litigating a trespass dispute, let alone any lawsuit, dis-incentivize enforcement—especially when compared to the expected damages which could be quite low. Furthermore, the cost of detection and monitoring is high. Often it will be difficult to identify who, where and when someone trespasses. Even if an owner observes the perpetrator trespassing, it may be difficult to identify the wrongdoer and track him down in order to bring suit. Such identification might be easier in close-knit communities where individuals tend to know who’s who. But this identification problem can be particularly acute for the one-time, non-repeat trespass of a stranger invading another’s property while visiting the Pokéstop, for example.

Similarly, potential trespassing wrongdoers are not easily dis-incentivized to trespass by law alone. For one, the low likelihood of enforcement discussed above means that the risks of trespassing are proportionally low. And, one's willingness to commit the trespass wrong is directly proportional to the likelihood of suffering adverse consequences from that action.

In addition to low legal enforcement levels even if owners are alerted to the trespass itself, potential trespassers—especially for transient trespasses—probably recognize there is a low likelihood of being identifiable even if seen. Consequently, such individuals likely determine there is a low likelihood of getting caught and thus a low probability of facing liability or other consequences. Thus, in light of all of these factors (and all else being equal without any other non-legal constraints), someone who stands to benefit from trespassing (including just by the enhanced pleasure of playing a game) might calculate from a cost-benefit perspective that it is actually rational to trespass.

In the end, a “live and let live” mentality governs minor trespass wrongs (sometimes, for example, because of the inability to prove injury; other times because the cost of litigation outweighs the available damages).⁶⁴ One might say that there is a reciprocal expectation—between owners and strangers to the property—of non-enforcement of minor trespasses.

For all of these reasons, although trespass is a strict liability offense, many invasions go unpunished and uncompensated. As a consequence, law itself is not the primary driver of compliance with trespass norms because it necessarily under-deters. Yet, harmful trespass is not generally rampant in our society.

The law simply does not fully capture and explain our culture of trespass avoidance. Something besides the fear of getting caught and suffering legal liability motivates people to respect

⁶⁴ See generally Donald J. Kochan, *Bubbles (or, Some Reflections on the Basic Laws of Human Relations)*, 26 *FORDHAM ENVTL. L. REV.* 133 (2015) (discussing the metrics the law uses to identify which actions should be identified as remediable legal wrongs, including in the field of trespass), available at https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2557670.

property boundaries. Informal norms and private ordering are pivotal to explaining that consequence, and these forms of non-legal regulators of behavior become areas to be tapped when new stressors on property boundaries emerge, like with augmented reality gaming and other virtual “intrusions.” The ineffectiveness of formal legal norms at enforcing trespass norms makes us more dependent on informal norms for the peaceful recognition of and respect for property boundaries.

Our liberal system of private property is grounded in concepts of reciprocity—with equality of rights and equality of obligations. David Hume, for example, stresses that our reliance on conventions, not just law, is critical to peaceable coexistence. He posits that we share “a general sense of common interest; which sense all the members of the society express to one another, and which induces them to regulate their conduct by certain rules.”⁶⁵ Hume continues to explain that self-interested individuals will “leave another in the possession of his goods, *provided* he will act in the same manner with regard to me.”⁶⁶ An individual is willing to engage in self-restraint because he expects to see reciprocal gains, *i.e.* “[h]e is sensible of a like interest in the regulation of his conduct.”⁶⁷ Hume explains that behaviors are adapted as a matter of mutuality of interest: “When this common sense of interest is mutually express’d, and is known to both, it produces a suitable resolution and behaviour.”⁶⁸ Individuals adhere to informal norms out of an expectation of, or desire for, reciprocal beneficial behavior. Compliance with an informal norm signals to others that the actor is complying with the terms of an implied agreement and expects commensurate behavior. In this process, respect for others’

⁶⁵ DAVID HUME, A TREATISE OF HUMAN NATURE part II ¶10 (Oxford Univ. Press ed. 2000) [1739]; *see also* James Madison, *Property*, NATIONAL GAZETTE (Mar. 27, 1792), *reprinted in* 14 THE PAPERS OF JAMES MADISON 266 (Robert Rutland et al. eds., 1983) (explaining the concept of reciprocity in property norms when the idea of property “embraces every thing to which a man may attach a value and have a right; and *which leaves to every one else the like advantage.*”).

⁶⁶ HUME, *supra* note 63, at part II ¶10.

⁶⁷ *Id.*

⁶⁸ *Id.*

property, moral standards, common values, civility, and custom undoubtedly also influence adherence to informal norms.

It is worth underscoring here Hume’s recognition that such regard, respect, and understanding can arise outside the law. They can emerge and take hold through the formation and adherence to informal norms, or conventions, that exist independent of law (even though they oftentimes become the models for law):

Nor is the rule concerning the stability of possession the less deriv’d from human conventions, that it arises gradually, and acquires force by a slow progression, and by our repeated experience of the inconveniences of transgressing it. On the contrary, this experience assures us still more, that the sense of interest has become common to all our fellows, and gives us a confidence of the future regularity of their conduct: And ‘tis only on the expectation of this, that our moderation and abstinence are founded. After this convention, concerning abstinence from the possessions of others, is enter’d into, and every one has acquir’d a stability in his possessions, there immediately arise the ideas of justice and injustice; as also those of property, right, and obligation.⁶⁹

Informal norms drive the content of law, and so too does law’s recognition of norms then further add legitimacy to the informal norms without necessarily displacing them.⁷⁰ Both points of recognition—formal and informal—may exist for the norm, and each may play a role in driving behavior. No matter the source, the strongest adherence to such norms comes when individuals recognize the mutual benefits gained from ordering their affairs in compliance with it.

Respect for private property is one of the drivers of norms that generates behavioral responses inside and outside legal

⁶⁹ *Id.*

⁷⁰ See McAdams, *supra* note 63, at 346-49 (noting the dual directional nature of influence—norms influencing law creation and that the “law can influence the norm”).

enforcement mechanisms. As such, the relative ineffectiveness of the legal system to prevent all trespasses does not predict the expected frequency of trespass. For that, we must assess the operational strength of the informal norms against trespass.

Although there exists a deep common law tradition for trespass law, it seems reasonable to conclude that the protection of property rights through the minimization of trespass has relied more heavily on informal norms. As mentioned above, property owners do not always enforce their rights to enforce strict liability for trespasses, yet strangers can be seen respecting property boundaries in order to follow informal norms (including because those strangers want others to reciprocate when engaging with the boundaries of their property) rather than because the law says they must. We begin to adhere to such informal norms as part of the social contract, including the Golden Rule⁷¹ and basic understandings regarding reciprocal expectations.⁷² Consequently, trespass is often controlled not by law but by simpler rules of human behavior and our understanding of the benefits of adhering to certain norms, including respect—or, deferential regard⁷³—for the exclusion rights of property owners.

Indeed, trespass avoidance can be seen as an outgrowth of socialization. Our desire to do what society considers right and to comport our behavior to the expectations of the community predicts

⁷¹ “*Quod tibi fieri non vis, alteri ne feceris.*” THOMAS HOBBS, *LEVIATHAN* 73 (Richard E. Flathman et al. eds., W.W. Norton & Company, Inc. 1997) (1651) (loosely translated as the Golden Rule, do not do unto others what you do not want done to yourself).

⁷² “Requite injury with justice, and kindness with kindness.” Confucius, *The Confucian Analects*, in *THE SACRED BOOKS OF CONFUCIUS, AND OTHER CONFUCIAN CLASSICS* 23, 41 (Ch’u Chai et al. eds., University Books 1965).; “As every man doth, so it shall be done to him . . .” ADAM SMITH, *THE THEORY OF MORAL SENTIMENTS* 117 (August M. Kelley 1966) (1759).

⁷³ OXFORD ENGLISH DICTIONARY, Vol. XIII, 732-734 (2nd ed. 1989) (defining respect as “To regard, consider, take into account” and “To treat or regard with deference, esteem, or honour”); AMERICAN DICTIONARY OF ENGLISH LANGUAGE, 4TH EDITION 1485 (4th ed. 2000) (defining “respect” as meaning “To feel or show deferential regard for” and “Willingness to show consideration or appreciation”).

our restraint. As psychologist Jessica Tracy explains, we usually want to be “the kind of person our society or societies want us to be” and we will adjust our behavior accordingly.⁷⁴ This then, she continues, usually “means respecting group norms—following laws and rules of social conduct and treating others as we wish to be treated ourselves.”⁷⁵

If we are walking out and about in the world, most humans from time to time commit minor trespasses that are not worth enforcing. At other times, we are cognizant of boundaries and other people’s space and avoid interfering with it out of custom, respect, or sheer politeness—even when we see little risk of civil or criminal liability if we were to commit the wrong we avoid. We engage in avoidance techniques, like “walking around” or staying on the sidewalk because it is the right thing to do, not because of fear of prosecution or a lawsuit deters us. Perhaps we do so to avoid shame or to garner community acceptance, but those too are conditions generating a self-imposed constraint following informal norms and soft sanctions, rather than a behavior dictated by legal liability.

Therefore, even if we concede that the law is not suited to solve the Pokémon Go-related problems vis-à-vis private property owners—to the extent one thinks there are problems—informal norms might have greater potential as a moderating force. Players should be encouraged to follow existing informal norms respecting property ownership and develop new ones when appropriate to make game play respectful of property boundaries. They should refrain from trespassing on other people’s property out of respect and self-restraint—even when they might get utility out of the wrong and can calculate that the likelihood of suffering adverse consequences is low.

Robert Ellickson’s seminal work on informal norms, exploring how and why “people frequently resolve their disputes in cooperative fashion without paying any attention to the laws that

⁷⁴ JESSICA TRACY, TAKE PRIDE: WHY THE DEADLIEST SIN HOLDS THE SECRET TO HUMAN SUCCESS 74-75 (2016).

⁷⁵ *Id.*

apply to those disputes,”⁷⁶ is instructive and supports a greater reliance on informal, social norms against trespass. Ellickson studied cattle ranchers in Shasta County, California, documenting the conditions when informal social norms become more important than law in determining attitudes and behavior regarding trespass.⁷⁷ His findings, stated generally, support the conclusion that trespass norms and the sanctity of property exclusion rights largely depend on the effective existence of informal social norms.⁷⁸

Most trespass concerns can be and are handled by informal norms, but there are admittedly limitations. For example, as Ellickson points out, informal trespass norms work best in close-knit communities because detection of the wrong is easier, identification of the wrongdoer is less difficult, and the expectation within the community of reciprocal treatment is higher and thus serves as a stronger motivator for avoiding trespass.⁷⁹ Owners benefit if others refrain from trespassing, so they will refrain from trespassing on others, developing a type of social compact. Furthermore, in such close-knit communities, the social consequences can be severe because of reputational harms, shaming effects, maintenance of esteem, and avoidance of other impositions of social costs.

Of course, the conditions for effective control of trespass through informal norms obtain less, and thus trespass norms break down, when, for example, the behavior from which we hope individuals will refrain is capable of occurring at a larger scale and within communities that are less close-knit. Moreover, when wrongdoers are not as likely themselves to be landowners because they cannot recoup benefits of reciprocity effects of restraint (no one will be restraining from harming them), then some of the conditions

⁷⁶ ROBERT ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES vii (1991).

⁷⁷ *Id.* at 40-64; *see also generally* Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623 (1986).

⁷⁸ ELLICKSON, *supra* note 76, at 123 (“the theory offered is designed to illuminate in what social contexts and with what content informal norms emerge to help people achieve order without law”).

⁷⁹ *Id.* at 40-64.

that encourage adopting informal norms against trespass may be absent. Those persons we hope to deter will not always be beneficiaries of reciprocal restraint, so they have less reason to engage in the otherwise-expected mutually advantageous self-restraint.

All of these studies on the effectiveness and limitations of informal norms should inform any decisions on how to craft law or policy that best resolves disputes between augmented reality gamers and gamemakers and the property owners they affect by their actions. That leaves us with several questions for further consideration, including: Who follows informal norms and why? Are augmented reality game players and game makers too distant from the properties that become subjects of the game and over which they are laying augmenting elements and too disconnected from the communities invaded so that the reliance on informal norms breaks down?

In the end, this essay's discussion is not intended to provide any bright line answers; but it is meant to underscore the limitations of the law as a solution to social conflicts, including emerging ones infused with the complexities of technology—especially technology that has the effect of changing our very understanding of what constitutes “reality.” Maybe law is not the best way to address these things. Maybe informal norm strengthening and adjustment or moral persuasion is better. At the very least, we must consider comparative institutional competencies to find the right entities, if any, to intervene and the right vehicles, if any, to regulate the potential conflicts.

If neither the existing law nor informal norms can resolve all conflicts between augmented reality gaming and real property ownership, new solutions may emerge. We might need to create new law—either through common law innovations or by statute—if we cannot find acceptable levels of cooperation within existing formal or informal structures of rules and norms. These new laws could include ones that create new rights for property owners, define new wrongs such as virtual trespass or trespass to augmented space, establish opt-in or opt-out protections that force gamemakers to

engage with the property owners whose interests might be affected,⁸⁰ or develop other ways to allocate rights and identify liabilities between parties affected by augmented reality's interaction with real property.⁸¹

Alternatively, real property owners might need to just learn to “live and let live” the “intrusions” they see from augmented reality—which could involve acknowledging that augmented reality is not causing property wrongs or alternatively that augmented reality maybe causing property wrongs but that they are ones that we cannot exclude or that we otherwise must or should accept. Epstein, for example, notes that sometimes we simply must decide to accept that we will have some costs imposed on us without an opportunity for injunction or compensation.⁸² He posits that, “To avoid [the] risk of persistent turmoil between neighbors, all legal systems intuitively gravitate toward a principle of live-and-let-live for reciprocal, low-level harms.”⁸³ The *Restatement (Second) of Torts* provides similar commentary when explaining what is “unreasonable” conduct for purposes of nuisance law, for example.⁸⁴ The Reporters counseled:

It is an obvious truth that each individual in a community must put up with a certain amount of annoyance, inconvenience and interference and must take a certain amount of risk in order that all may get

⁸⁰ For example, a bill was introduced in Illinois called “Pidgey’s Law” (an opt-out protection law) where Niantic would be required to remove Pokestops in the game at the request of a property owner. See Heath, *supra* note 58.

⁸¹ Proposing any specific model is beyond the scope of this short symposium essay.

⁸² RICHARD A. EPSTEIN, *DESIGN FOR LIBERTY: PRIVATE PROPERTY, PUBLIC ADMINISTRATION, AND THE RULE OF LAW* 85 (2011).

⁸³ *Id.*

⁸⁴ RESTATEMENT (SECOND) OF TORTS §822, cmt. g (1977) (“Life in organized society and especially in populous communities involves an unavoidable clash of individual interests. Practically all human activities unless carried on in a wilderness interfere to some extent with others or involve some risk of interference, and these interferences range from mere trifling annoyances to serious harms.”).

on together. The very existence of organized society depends upon the principle of “give and take, live and let live,” and therefore the law of torts does not attempt to impose liability or shift the loss in every case in which one person’s conduct has some detrimental effect on another.

Augmented reality and the gaming activities that it facilitates will continue to pose problems for the property owners whose property (or at least its depiction) becomes an element of the gaming experience. Setting the levels of acceptable interference and expected tolerance will be an ongoing struggle as we concurrently work to set the levels for our legal rules and informal norms associated with those activities—all against a backdrop of the private property system and its preferences for exclusion-enhancing protections.

There are limitations on law’s capacity, but this need not end the matter. The capacity of people—including Pokémon game players and gamemakers—for self-restraint and for respecting the property of others is unbounded. If those playing and designing Pokémon Go were to better recognize that the trespass norms have meaning beyond law, perhaps cooperation can be enhanced and conflict avoided as property rights and the spirit of exclusion surrounding ownership are better acknowledged.

VI. CONCLUSION

We can try to make the law, particularly common law, adapt to address emerging issues between property owners and augmented reality. Perhaps Pollock and Maitland are correct that trespass still has the ability to carry a heavier load, breeding new legal norms to resolve these types of technology-driven conflicts.⁸⁵ We can work to make informal norms adapt to accept new understandings of ethical obligations. Or, perhaps legislation should be passed to intervene, creating rights, recognizing new causes of action, or

⁸⁵ POLLOCK & MAITLAND, *supra* note 57, at 561.

providing new remedies to property owners. Legislation may very well be the wave of the future to address some of these emerging technology issues and emerging ethical issues resulting from technology.

The conflicts emerging with Pokémon Go are just a start. Augmented reality will test the limitations of the law in many ways in coming years. Legal thinkers searching for mechanisms to resolve the disputes emerging between property owners and the participants in augmented reality platforms will find their best solutions if, when addressing these problems of blended reality, they similarly blend law and informal norms—each of which have profound impacts on our core property values.