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VIRTUAL PROPERTY: PROTECTING BITS IN CONTEXT

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I. INTRODUCTION

[1] A virtual environment is a presentation of a virtual world to a real person, as if the person were virtual and in that world.¹ The most ubiquitous examples today of virtual environments are multiplayer online games such as World of Warcraft² and Project Entropia.³ These games provide thousands of users from all over the real world with persistent virtual worlds and consistent personal representation in the virtual world in the form of characters. The characters interact with each other within the virtual world. In fact, players spend ten hours per week building up the strength and abilities of their characters.⁴ This process is called “leveling up.”⁵ The higher the player’s level, the better the player is at battling other characters and monsters, casting spells, flying spaceships,

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¹ Hal Berghel, *Virtual Reality is Virtually Here*, CYBERNAUTICA, Jan.-Feb. 1997, http://berghel.net/col-edit/cybernautica/jan-feb97/pcai_97a.php.

² World of Warcraft, <http://www.worldofwarcraft.com> (last visited Dec. 18, 2006).

³ Entropia Universe, <http://www.entropiauniverse.com> (last visited Dec. 18, 2006).

⁴ Lev Grossman, *Bloody Ethics*, VILLAGE VOICE, Feb. 9-15, 2000 (“The average ‘citizen’ spends between 17 and 20 hours a week playing Ultima [Online], and more than half log on every single day.”), *available at* <http://www.villagevoice.com/news/0006.grossman.12395.8.html>.

⁵ See Wikipedia, <http://www.wikipedia.com> (search “leveling up”) (last visited Dec. 18, 2006).

etc. Additionally, different areas of the virtual world presented in the game may be accessible only to players whose characters have attained a certain level.⁶

[2] As the players navigate their characters through the virtual world and battle monsters, aliens, or other players, they can acquire or create in-game assets or “virtual property.” Often, when a monster is killed, treasure in the form of virtual property is left on the corpse.⁷ In other cases, performing certain tasks or completing certain missions results in the acquisition of virtual property.⁸ These in-game assets can include virtual currency, virtual armor to help protect the characters from attacks by other characters, virtual weapons to help inflict damage on enemies, enchanted virtual items to make the characters stronger, virtual real estate to raise the status of the characters and possibly provide them with a source of virtual currency,⁹ or any other virtual item that may be an asset to the user’s character.¹⁰

[3] Another form of virtual property is a player’s game account. This account provides the player with the right and ability to play particular game characters.¹¹ When a game player sells a character account, the player is usually selling the password to the account, thereby allowing the purchaser to play the character and take ownership of any virtual property associated with the character.¹²

⁶ *See id.*

⁷ World of Warcraft: Parties, <http://www.worldofwarcraft.com/info/basics/parties.html>. (last visited Dec. 18, 2006).

⁸ World of Warcraft: Quest Basics, <http://www.worldofwarcraft.com/info/basics/questbasics.html>. (last visited Dec. 18, 2006).

⁹ *See* Secondlife: The Marketplace, <http://secondlife.com/whatis/marketplace.php> (last visited Dec. 18, 2006). *See generally* Entropia Universe, *supra* note 3.

¹⁰ *See* Entropia Universe: Apply for Account §§ 6-7, <https://account.entropiauniverse.com/pe/en/rich/5185.html> (last visited Oct. 12, 2006); World of Warcraft: Item Basics, <http://www.worldofwarcraft.com/info/items/basics.html> (last visited Dec. 18, 2006).

¹¹ *See* Mike Musgrove, *Virtual Games Create a Real World Market*, WASH. POST, Sept. 17, 2005, at A1, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/16/AR2005091602083.html>.

¹² *See id.*

[4] Sales of virtual property happen daily and are often made via eBay or other online auction sites.¹³ Character accounts regularly sell for hundreds of dollars.¹⁴ Thus, players are willing to pay hundreds of dollars to enter the game with a character account that would otherwise take much time to develop. Rare virtual items regularly sell for tens to hundreds of dollars.¹⁵ Virtual real estate is often the most expensive. In the game Project Entropia, a virtual island sold for over \$26,000¹⁶ and a virtual space station sold for \$100,000.¹⁷ Some of these sales are made by regular game

¹³ After a real-world sale on eBay or elsewhere, the game players transfer the virtual items between their characters. The transfers are often negotiated via the game's text chat or an offline instant message or email system. Once an agreement has been reached, items are traded between the characters within the game. During the trade, a graphical trade confirmation interface appears on each game player's computer, displaying what each side is willing to give to the other. The appearance of the items in the trade window lets players be sure of exactly what they are giving and receiving. *See* World of Warcraft: Trading, <http://www.worldofwarcraft.com/info/basics/trading.html> (last visited Dec. 18, 2006). For example, if a player buys a virtual sword via eBay, then she will arrange for a "virtual meeting" with the seller's character in order to receive the virtual sword from the seller. In World of Warcraft, there is also a "mail" service with which sellers can "mail" some virtual items and thereby obviate the need for a virtual meeting of players' respective characters. World of Warcraft: Mail, <http://www.worldofwarcraft.com/info/basics/mail.html> (last visited Dec. 18, 2006). If the seller is the game company itself, the company simply places bits representing the virtual property in the game player's virtual inventory. Edward Castronova estimated in December of 2001 that the average per capita yearly income of game players in the game Everquest was about 180,000 Norrathian Platinum Pieces, which, at the time, was equivalent to about \$2,266. This income made Norrath the 77th richest country in the world. Edward Castronova, *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier* 31-32, 33 (CESifo Working Paper No. 618, 2001), available at <http://papers.ssrn.com/abstract=294828>.

¹⁴ At the time of this writing, on eBay, one World of Warcraft character account had already been bid to over \$1,000 and numerous others had been bid to over \$600. *See* Ebay, <http://www.ebay.com> (last visited Dec. 18, 2006).

¹⁵ At the time of this writing, on eBay, a "Godly Crystalline Sword" in the game Guild Wars was on sale for \$50 and World of Warcraft in-game currency was selling at a rate of approximately 20-25 virtual gold per U.S. dollar, depending on the amount purchased. *Id.*

¹⁶ *Gamer Buys \$26,500 Virtual Land*, BBC News, Dec. 17, 2004, <http://news.bbc.co.uk/2/hi/technology/4104731.stm>.

¹⁷ *Gamer Buys Virtual Space Station*, BBC News, Oct. 25, 2005, <http://news.bbc.co.uk/2/hi/technology/4374610.stm>.

players,¹⁸ while other sales are made by the game company itself.¹⁹ Yet other sales are made by gaming sweatshops that pay workers, often in poor countries, to play online games for eighty or more hours per week.²⁰ In playing the games, the sweatshop workers create powerful characters and collect virtual property. The sweatshop owners then sell this virtual property on the open market.²¹ In all of these sales, a player spends real money to purchase virtual property in order to gain prestige or competitive advantage in the game or simply to have more fun playing.²²

[5] What, however, are purchasers of virtual property getting for their money? Consider the purchase of the virtual space station for \$100,000. What would happen if the computer went down, the game company went out of business, the land map was upgraded (i.e., the game was changed in a way that deleted the virtual space station), the game was reset, or there was a bug, hack, or glitch in the system that caused the virtual property to be lost or rendered worthless? Are there, or should there be, default rules to govern virtual property? This paper will examine these questions. Section I describes various kinds of virtual property. Section II discusses the uncertain default rules for the protection of virtual property. Section III explores how virtual property should be conceptualized. Section IV proposes default legal rules for virtual property that are based on the realities of the underlying technology and the reasonable expectations of game players and game companies.

[6] It should be noted that the discussion herein of the legal rights and duties related to virtual property draws from the “seamless web of law,”²³

¹⁸ Though perhaps not a “regular” game player, writer Julian Dibbell spent one year as a real-money businessman in the game *Ultima Online*. See Daniel Terdiman, *Virtual Trader Barely Misses Goal*, WIRED, Apr. 16, 2004, available at <http://www.wired.com/news/games/0,2101,63083,00.html>.

¹⁹ See Wikipedia, *supra* note 5 (search “Entropia Universe”).

²⁰ David Barboza, *Ogre to Slay? Outsource It To Chinese*, N.Y. TIMES, Dec. 9, 2005, available at <http://www.nytimes.com/2005/12/09/technology/09gaming.html?ex=1291784400&en=a723d0f8592dff2e&ei=5090>. According to the article, the workers get paid less than \$1 per hour and play games 12 hours per day 7 days per week.

²¹ *Id.*

²² *Id.*

²³ Thomas Ross, *Metaphor and Paradox*, 23 GA. L. REV. 1053, 1053 (1989).

and the theories that explain and expand that web. This paper draws from what those areas of law termed “property law” and “contract law.” The terminology in this paper, however, is drawn less from the broad expanse of the “seamless web of life”²⁴ from the realm of physical property (e.g., “owning” or “destroying” virtual property). Although discussion of virtual property lends itself to the use of physical property terms, this does not mean that the rights discussed herein should necessarily be considered property rights. Notwithstanding, as noted by Thomas Grey, property law has moved from a discussion of “things that are owned by persons” to a fragmentation of property rights into “bundle[s] of rights” and an “eliminat[ion of] any necessary connection between property rights and things.”²⁵ The rights and duties discussed and proposed herein might be more appropriately categorized as contractual duties between the game companies and game players than property laws relating the game companies and game players to virtual property. Little may turn, however, on how virtual property rights are classified. Given that the law is a seamless web, and is not always easily delineated along the lines of property and contract, a court might rely directly or analogically on property law, contract law, or other areas of law to address the issues that will arise with respect to virtual property.

II. VIRTUAL PROPERTY

[7] There are many computer programs that could be considered virtual environments. Not all of these will lead to the creation of virtual property, at least not the type that is discussed herein. First consider creation software. For example, with Form Z, an architectural design program, one can design buildings.²⁶ With AutoCAD, a computer-aided design program, one can design engines, machines, and other devices.²⁷ With

²⁴ Frederick Schauer, *1985 Survey of Books Relating to the Law: VIII. Legal Practice and Profession*, 83 MICH. L. REV. 1141, 1141 (1985).

²⁵ THOMAS C. GREY, *Disintegration of Property*, in PROPERTY: NOMOS XXII 69-85 (J. Roland Pennock & John W. Chapman, eds., 1980), reprinted in A PROPERTY ANTHOLOGY 534-42, 534 (Richard H. Chused, ed. 1997).

²⁶ See Form Z Products, <http://www.formz.com/Products.html> (last visited Dec. 18, 2006).

²⁷ See AutoCAD, <http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=2704278> (last visited Dec. 18, 2006).

Adobe Photoshop, one can create 2D images.²⁸ With Microsoft Word, one can create documents and stories.²⁹ Each of these programs allows users to create property that is represented electronically. The items created are covered by well understood laws, for example a copyright can protect a building design.³⁰ The machines made in AutoCAD can be protected with patents.³¹ The images made in Adobe Photoshop can be protected with trademark or copyright.³² The documents written in Microsoft Word can be protected by copyright,³³ or a more limited license.³⁴ Given that these items are represented electronically, one might consider these forms of electronically represented property as “virtual property” although these will not be treated in this paper.

[8] A second type of virtual property, that which will be considered in this paper, is anything that is “owned” in a multi-user online game. This can include character accounts and in-game assets such as virtual currency, virtual weapons, and virtual real estate.³⁵ Though this type of virtual property exists whether or not the player attaches any value to the property, the discussion in this paper will focus on those situations in which the virtual property is valued by the player. The reason for this focus is that issues of rights to virtual property are likely to arise only if the player values it. The most common indication that virtual property is valued is that a market for virtual property develops.

²⁸ See Adobe Photoshop, <http://www.adobe.com/products/photoshop/main.html> (last visited Dec. 18, 2006).

²⁹ See Microsoft Office Online Homepage, <http://office.microsoft.com/en-us/default.aspx> (last visited Dec. 18, 2006).

³⁰ See Rashida Y.V. MacMurray, *Trademarks or Copyrights: Which Intellectual Property Right Affords its Owner the Greatest Protection of Architectural Ingenuity?*, 3 NW. J. TECH. & INTELL. PROP. 111, 2 (Spring 2005).

³¹ See General Information Concerning Patents, <http://www.uspto.gov/web/offices/pac/doc/general/index.html> (last visited Dec. 18, 2006).

³² See *id.*

³³ See *id.*

³⁴ See Creative Commons: Choosing a License, <http://creativecommons.org/about/licenses> (last visited Dec. 18, 2006).

³⁵ See Mark Wallace, *The Game is Virtual. The Profit is Real.*, N.Y. TIMES, May 29, 2005, available at 2005 WL 8515571.

[9] A market for virtual property is likely to arise only if the virtual environment (or game) is persistent and multi-user and the virtual property is persistent and non-replicable. In order for virtual property to be persistent, the game must be persistent. When a person plays a non-persistent, multi-user game such as ID Software's Quake series,³⁶ she may find a virtual gun in the game. The weapon is no doubt valuable within the game as it allows the player to perform the object of the game—shooting other players. When the game ends or is restarted, however, the player restarts play without the virtual gun. The weapon's lack of persistence results in the lack of a market for any particular instance of the virtual gun.³⁷ Whether or not the ownership of the ephemeral virtual gun should be protected by law is unlikely to be litigated. A player's loss of a virtual gun in Quake due to an error in the game, for example, will be of limited importance once the game has restarted. Though this paper will deal with the case in which ownership of virtual property is persistent, the discussion herein may also be applicable to situations in which the virtual property is ephemeral, as in the Quake example.

[10] A game must typically be multi-user in order for a market for virtual property to form. Yet, there are single-user games in which virtual property exists. In many console games, such as Rockstar Games' Vice City,³⁸ items collected in the game can be stored for long periods of time on memory cards in the game console. The player may find a virtual car or weapon in the game. The ownership of this virtual property is stored but, since the game is single-user, the virtual property cannot be sold among players.³⁹ Though the ideas in this paper might be applicable to

³⁶ See ID Software: Quake, <http://www.idsoftware.com/games/quake/quake> (last visited Dec. 18, 2006).

³⁷ Whereas one could imagine players paying some amount each time the game is restarted in order to start the particular session of the game in possession of the virtual gun, it would be hard to believe a market would form based on player X finding the virtual weapon and selling it to player Y before the particular session of the game ends, which will often be after tens of minutes. Quake II: Capture the Flag User Manual, <http://q2ctf.com/> (last visited Dec. 18, 2006) (stating that "the default is a twenty minute match").

³⁸ See Rockstar Games: Grand Theft Auto Vice City, <http://www.rockstargames.com/vicecity> (last visited Dec. 18, 2006).

³⁹ One could, however, sell the memory card on which the ownership and character information is stored. I have never found such sales.

such types of virtual property, the discussion will be limited to those scenarios in which virtual property is alienable or assignable among players' characters within the game, as transactions around such items represent much of the market for virtual property.

[11] Markets will typically form only if the virtual property is non-replicable. Consider, for example, a virtual sword in a persistent, multi-user game. If the sword is particularly powerful, then other users will want to obtain the sword from the owner. If the other players were, for example, able to "right-click" their cursors over the virtual sword and select "make me a copy of the sword," thereby making a copy of the sword for free, then no one would buy the sword from the original owner. On the other hand, if the virtual sword is not freely replicable then a market might form for the sword.⁴⁰ Markets around non-replicable virtual property have formed in World of Warcraft and other games.⁴¹ A virtual property market may form where: games provide for alienation of virtual property, the virtual property persists over time, there are multiple users available to create a market for the property, and the virtual property is not freely replicable. The issues surrounding such virtual property are the focus of this paper.

III. THE UNCERTAIN DEFAULT RULES FOR VIRTUAL PROPERTY

A. VIRTUAL PROPERTY AND END-USER LICENSE AGREEMENTS

⁴⁰ Strictly speaking, markets should form if the virtual property is not freely replicable, unlike the sword described in the example above. If property is replicable in a controlled manner, then a market may still be created around it. For example, if the owner of the virtual sword in the example could keep ten copies of the sword in circulation, then the virtual sword would be "replicable," but a market could form around the alienation of the ten copies of the sword.

⁴¹ For example, as this was being written, a virtual sword for sale on eBay had been bid up to \$50. *See supra* note 14. *See generally* Musgrove, *supra* note 11 (describing the real-world economy created by online role-playing games).

[12] Users of online games typically sign End-User License Agreements (“EULAs”) in order to gain access to the games.⁴² EULAs often deny players any ownership interest in virtual property and allow for arbitrary termination of players’ accounts. For example, the EULA of Project Entropia has an ownership clause by which game players forego all rights to virtual property⁴³ and a termination clause that allows MindArk to terminate a character’s account arbitrarily.⁴⁴ The EULA for World of Warcraft has similarly harsh ownership and termination clauses.⁴⁵

[13] Consider the implications of the EULA in the recent \$100,000 virtual real estate sale in the game Project Entropia. The maker of Project

⁴² Jack M. Balkin, *Law and Liberty in Virtual Worlds*, 1 N.Y.L. SCH. L. REV. 63, 64-65 (2004-2005).

⁴³ Entropia Universe: Apply for Account, *supra* note 10, at § 7 (stating that “all virtual items are part of the System and MindArk retains all rights, title, and interest in all parts including, but not limited to Avatars and Virtual Items; these retained rights include, without limitation, patent, copyright, trademark, trade secret and other proprietary rights throughout the world. As part of your interactions with the System, you may acquire, create, design, or modify Virtual Items, but you agree that you will not gain any ownership interest whatsoever in any Virtual Item, and you hereby assign to MindArk all of your rights, title and interest in any such Virtual Item.”).

⁴⁴ Entropia Universe: Apply for Account, *supra* note 10, at § 6, *Account Inactivity and Account Termination* (stating that “MindArk may terminate this Agreement upon notice to Participant. Such termination may be made without reason . . .”).

⁴⁵ Throughout this paper, Project Entropia and Mr. Jacobs are used as examples. As noted above, the EULA for Project Entropia is representative of the EULAs for at least some other online games. Compare, for example, the termination and virtual property clauses of the World of Warcraft. Blizzard Entertainment, the maker of World of Warcraft, “reserves the right to terminate this Agreement without notice, if, in Blizzard Entertainments sole and absolute discretion, you fail to comply with any terms contained in these Terms of Use or the World of Warcraft EULA.” *World of Warcraft: Terms of Use*, <https://signup.worldofwarcraft.com/agreement.html> (last visited Dec. 18, 2006). Read literally, this may effectively allow at will termination at will by Blizzard Entertainment, given that its sole and absolute discretion may not be challenged. Furthermore, the ownership clause for World of Warcraft reads: “[N]o one has the right to ‘sell’ Blizzard Entertainments content, except Blizzard Entertainment! So Blizzard Entertainment does not recognize any property claims outside of World of Warcraft or the purported sale, gift or trade in the ‘real world’ of anything related to World of Warcraft. Accordingly, you may not sell items for ‘real’ money or exchange items outside of World of Warcraft.” *World of Warcraft Terms of Use Agreement*, <https://signup.worldofwarcraft.com/agreement.html>. At a high level, this has the same effect as Project Entropia’s ownership clause: eliminating any virtual property rights of game players.

Entropia, MindArk, sold a virtual space resort located in the “treacherous but Mineral Rich Paradise V Asteroid Belt.”⁴⁶ The space resort provides the purchaser with 1,000 virtual apartment deeds, 100 virtual store deeds in a virtual shopping mall, taxation rights, land management, event management, marketing management systems, and a landing point for new characters.⁴⁷ The space resort was originally set for a \$0.10 starting price with a pre-auction buyout price of \$100,000.⁴⁸ Within a few days of the announcement, the buyout price was met by Jon Jacobs, an independent filmmaker whose character in Project Entropia is called “NeverDie.”⁴⁹

[14] What did Mr. Jacobs purchase? According to the EULA, “MindArk retains all rights, title, and interest in all parts including, but not limited to [Characters] and Virtual Items”⁵⁰ The contract further reads:

As part of your interactions with [Project Entropia], you may acquire, create, design, or modify Virtual Items, but you agree that you will not gain any ownership interest whatsoever in any Virtual Item, and you hereby assign to

⁴⁶ Posting of Dan Hunter to Terra Nova, http://terranova.blogs.com/terra_nova/2005/10/the_winner_and_.html (Oct. 25, 2005). MindArk, the maker of Project Entropia, allows people to play its game for free and sells in-game currency for real money. Once in the game, players can create wealth by killing monsters and retrieving treasure from the corpses worth pennies or tens of cents. Some of the treasures on the monsters’ corpses, however, are worth the equivalent of over \$1,000. See About: Hunting Guide, <http://www.project-entropia.com/en/rich/5115.html> (last visited Oct. 17, 2006). The wealth that a player has in the game can be converted into real-world currency for a 1.5% fee. See Withdrawals: Bank Withdrawal, <http://www.project-entropia.com/en/rich/5675.html> (last visited Oct. 17, 2006); Screen shot of Withdrawal (on file with author).

⁴⁷ New arrivals, or “newbs,” can choose to start their experience in the virtual world of Project Entropia at the space resort. The advantage for the space resort owner of hosting new arrivals is that the new arrivals will invariably spend in-game money, thereby increasing the wealth of the space station owner. Geoff Duncan, *Psst! Buddy! Wanna Buy a Space Station?* DIGITAL TRENDS NEWS, Oct. 27, 2005, <http://news.digitaltrends.com/article8658.html>.

⁴⁸ *Id.*

⁴⁹ Daniel Terdiman, *Man Pays \$100,000 for Virtual Resort*, CNET NEWS.COM, Nov. 11, 2005, http://news.com.com/2102-1043_3-5945248.html?tag=st.util.print.

⁵⁰ Entropia Universe: Apply for Account, *supra* note 10, at § 7.

MindArk all of your rights, title and interest in any such Virtual Item.⁵¹

If MindArk retains all rights to all virtual items, including the space station, then what did the company sell to Mr. Jacobs for \$100,000? One may argue that MindArk sold the right for Mr. Jacobs to “play space resort owner.” However, he also purchased the right to sell the 1,000 virtual apartment deeds and the 100 virtual store deeds for in-game currency. Considering that in-game currency can be withdrawn from Project Entropia from any real-world ATM machine in the form of real-world currency, Mr. Jacobs can sell the deeds and convert the in-game proceeds into real-world money—all within the limits of the EULA.⁵² If he can sell the property, effectively for real-world money, then does he own something more than the right to play space station owner? Did Mr. Jacobs gain an ownership interest, at least in the alienable deeds, that is arguably contrary to the EULA?

[15] Perhaps, notwithstanding the language of the EULA, MindArk is selling some right in the virtual real estate to Mr. Jacobs. The website on which the auction was hosted clearly states that the “ownership interest” in that virtual space station includes 1,000 apartment deeds, 100 shop deeds, and other virtual property.⁵³ If the assignment of all virtual property rights to MindArk in the EULA controls the interpretation of any “ownership interest” listed in the offer, or if the represented “ownership interests” were merely rights to play certain aspects of the game in the first instance, then the question remains: what did Mr. Jacobs buy? Consider also that the EULA states that MindArk can terminate Mr. Jacobs’ account at any time for no reason.⁵⁴ According to the EULA, he owns merely a right to play “space station owner” but little else, and even that right can be taken away without cause. Can the rights transferred really be so ephemeral?

⁵¹ *Id.*

⁵² See Seth Schiesel, *An Online Game’s Economy Yields A.T.M. Dollars*, N.Y. TIMES, May 2, 2006, at E1. See also Entropia Universe: Withdrawals: Entropia Universe Cash Card, <http://www.project-entropia.com/en/rich/5676.html> (last visited Dec. 18, 2006).

⁵³ See Duncan, *supra* note 47.

⁵⁴ Entropia Universe: Apply for Account, *supra* note 10, at § 6 (“MindArk may terminate this Agreement upon notice to Participant. Such termination may be made without reason . . .”).

[16] Perhaps, since the EULA had already been signed at the time the offer was made, a court would interpret the offer (insomuch as its terms conflicted with the EULA) as superseding the terms of the EULA.⁵⁵ If this were the case, then the ownership interest of Mr. Jacobs might be less ephemeral. The offer for sale, under the heading of “ownership rights,” offered, among other things, 1,000 “Apartment Deeds” and a “[s]pawning point for newcomers to Project Entropia [, which] will enable the owner to market his Space station Resort outside Project Entropia so that the newcomers will arrive directly at the resort”⁵⁶ These terms of this offer may be in conflict with the EULA. It is possible to read the ownership interest in the 1,000 apartment deeds as implying a right to sell the deeds to other players. The sale of the ownership interest in the deeds to Mr. Jacobs could indicate that he has the right to retain his account, or at least the ability to sell the deeds, thereby at least partially overriding the termination and ownership clauses of the EULA.

[17] The “spawning point” term in the offer for sale may also, at least partially, override the clauses of the EULA. The term implies that the owner should be able to market his space station to new players, which implies that he will have a continuing ownership right. If he has a right to market the space station over time, then a court might find Mr. Jacobs has a right to continue playing the game, or otherwise maintain pecuniary control over the space station in opposition to the termination and ownership clauses.

[18] Moreover, a court might find that the plain meaning of the terms of the offer overrides the EULA’s ownership clause. The EULA states that the players of the game cannot “own” any virtual item;⁵⁷ however, the offer clearly includes “ownership rights.”⁵⁸ Mr. Jacobs may “own” the space station and the related virtual property contrary to the terms of the ownership clause. The question remains, however, if Mr. Jacobs “owns”

⁵⁵ See *Howard University v. Good Food Servs., Inc.*, 608 A.2d 116, 127, n. 8 (D.C. Cir. 1992).

⁵⁶ Posting by Mike Sellers to *Tetra Nova*, http://terranova.blogs.com/terra_nova/2005/10/the_winner_and_.html (last visited Dec. 18, 2006). Sellers quotes language from the original offer to sell.

⁵⁷ *Entropia Universe: Apply for Account*, *supra* note 10, at § 7.

⁵⁸ *Duncan*, *supra* note 47.

something, then what exactly are his rights? I address that question in the discussion of the conceptualization and protection of bits in context.

B. ENFORCEABILITY OF END-USER LICENSE AGREEMENTS

[19] Gregory Lastowka and Dan Hunter believe that more cases surrounding virtual property rights will go to court notwithstanding the restrictive EULAs.⁵⁹ “Click-through” agreements, such as the EULAs in the case of online games, are generally enforceable.⁶⁰ The agreements themselves, which are electronic for most online games, are considered “writings” and, therefore, are enforceable under the Statute of Frauds.⁶¹ If the terms are presented to the user and the user accepts the terms, perhaps by pressing a button reading “I agree,” then the contract will generally be held as enforceable.⁶² However, as noted in *ProCD, Inc. v. Zeidenberg*, shrinkwrap and click-through licenses may be unenforceable if they are contrary to positive law or are unconscionable.⁶³

⁵⁹ Gregory Lastowka & Dan Hunter, *The Laws of the Virtual World*, 92 CAL. L. REV. 1, 50-51 (2004). At least one such case was filed in the United States. “BlackSnow Interactive, which runs the CamelotExchange Website, filed the suit . . . in the U.S. Court for the Central District of California against Mythic Entertainment, developer of the game ‘Dark Age of Camelot’” David Becker, *Game Exchange Dispute Goes to Court*, CNET NEWS.COM, Apr. 7, 2002, http://news.com.com/2102-1040_3-832347.html?tag=st.util.print. The case was eventually dismissed before trial. See generally Richard Raysman & Peter Brown, *Computer Law: Novel Legal Issues in Virtual Property*, 234 N.Y. L.J. 3 (2005).

⁶⁰ See *Moore v. Microsoft Corp.*, 741 N.Y.S.2d 91, 91 (N.Y. App. Div. 2002) (holding that a user clicking an “I agree” button at the end of the EULA indicates the user’s assent to the provider’s terms).

⁶¹ See *In re RealNetworks, Inc., Privacy Litigation.*, No. 00 C 1366, 2000 WL 631341, Section I. at *3-4. (N.D. Ill. May 8, 2000) (applying Washington law) (Not Reported in F.Supp.2d).

⁶² *Moore v. Microsoft Corp.*, 293 A.D, 741 N.Y.S.2d 587, 587 (2d Dep’t 2002) (holding that a user clicking an “I agree” button at the end of an EULA indicates the user’s assent to the provider’s terms). 91.

⁶³ *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1449 (7th Cir. 1996). See also *ProCD, Inc. v. Zeidenberg*, 908 F. Supp. 640, 650 (W.D. Wis. 1996) (overturned *rev’d on other grounds* by *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996)) (holding that a shrinkwrap license takes the “place of any bargains or agreements between mass market software producers and users, because the typical software transaction does not involve bargained agreements concerning use limitations . . .”).

[20] The EULAs for online games do not appear to be contrary to positive law.⁶⁴ Whether the EULAs in online games, such as MindArk's EULA for Project Entropia,⁶⁵ are unconscionable is debatable. Below is a discussion of whether the EULA itself is unconscionable, looking particularly at termination⁶⁶ and ownership clauses.⁶⁷ There is also discussion of whether a sale of virtual property incorporating terms of the EULA is unconscionable. This is followed by discussion of whether the contracts (either the EULA itself or the sale of virtual property incorporating terms of the EULA) should be reformed based on the reasonable expectations of the game players, and whether there is an implied duty on the part of the game company that would contravene the termination and ownership clauses.

1. UNCONSCIONABILITY OF THE END-USER LICENSE AGREEMENT

[21] A finding of unconscionability can rest on procedural unconscionability, substantive unconscionability, or both.⁶⁸ Generally, when addressing procedural unconscionability, courts consider the likelihood that the adhering party has read and understood the terms,⁶⁹ the relative number of similar transactions in which each party has engaged,⁷⁰ the relative bargaining power of the parties,⁷¹ and whether there was

⁶⁴ This paper proposes default rules for game player rights with respect to virtual property. One might propose legislation or the courts might adopt precedential positions with respect to virtual property. Today, however, there does not appear to be any positive law concerning game player rights with respect to virtual property.

⁶⁵ Entropia Universe: Apply for Account, *supra* note 10.

⁶⁶ *Id.* at § 6.

⁶⁷ *Id.* at §§ 7-8.

⁶⁸ Gillman v. Chase Manhattan Bank, N.A., 534 N.E.2d 824, 828 (N.Y. 1988) (citations omitted); Frank's Maint. & Eng'g, Inc. v. C. A. Roberts Co., 408 N.E.2d 403, 409-10 (Ill. App. Ct. 1980). *See also* Maxwell v. Fid. Fin. Servs., Inc., 907 P.2d 51, 58-59 (Ariz. 1995) (recognizing that either procedural or substantive unconscionability is sufficient); Lewis Kornhauser, *Unconscionability in Standard Forms*, 64 CAL. L. REV. 1152, 1152-53 (1976) (stating that enforceability of a contract is determined by the process leading up to the agreement).

⁶⁹ *See* Wheeler v. St. Joseph Hosp., 133 Cal. Rptr. 775, 785 (Cal. Ct. App. 1976) (citations omitted).

⁷⁰ *See* Featherstone v. Merrill Lynch, Inc., 822 N.E.2d 841, 846 (Ohio Ct. App. 2004) (citations omitted).

⁷¹ *See* Williams, 350 F.2d at 449.

meaningful choice.⁷² These factors arguably weigh in favor of finding procedural unconscionability for the EULAs. Whereas it may be impossible to know if the game player read and understood all of the terms of the contract,⁷³ it is clear that the number of EULAs engaged in by game players is smaller by an order of magnitude of 1,000 to 10,000 than the number engaged in by game companies.⁷⁴ There is no evidence, however, and it is unlikely, that MindArk or any game companies have negotiated or would negotiate with game players before they sign EULAs.⁷⁵ Furthermore, whereas game players clearly have a choice among game companies, since the terms of each game company's EULA are similar, that choice may be illusory.⁷⁶ Additionally, although game players can

⁷² Courts have also held that procedural unconscionability may be "satisfied if the agreement constitutes a contract of adhesion." This results in a similar analysis. (*Parilla v. IAP Worldwide Servs. VI, Inc.*, 368 F.3d 269, 276-77 (3d Cir. 2004) (citing RESTATEMENT (SECOND) OF CONTRACTS § 208 (1981)).

⁷³ Furthermore, "the general proposition that a person who signs a contract is bound by all of its terms even though he signed it without reading it may not be given full sweep where the contract is one of adhesion." *Wheeler*, 133 Cal. Rptr. at 785 (citations omitted). A contract of adhesion is defined as a "standardized contract . . . offered to consumers of goods and services on essentially a take-it-or-leave-it basis without affording the consumer a realistic opportunity to bargain . . ." *Id.* at 783. On the other hand, as noted by Leff, though the terms of a contract of adhesion may not have been negotiated, this does not necessarily indicate that the contract should not be enforced. Arthur Leff, *Contract as Thing*, 19 AM. U. L. REV. 131, 144 (1970). The EULA was arguably signed with no realistic opportunity to bargain, and, therefore, may be a contract of adhesion. As such, game players who sign the EULA might not be bound by all of its terms. *See Wheeler*, 133 Cal. Rptr. at 785 (citations omitted).

⁷⁴ Project Entropia, for example, has over 300,000 players and MindArk presumably entered into an EULA with each of those players. Entropia Universe, *supra* note 3. *See also* Entropia Universe: Apply for Account, *supra* note 10. World of Warcraft has over 5 million users worldwide. Press Release, Blizzard Entertainment, World of Warcraft Surpasses Five Million Customers Worldwide (Dec. 19, 2005), available at <http://www.blizzard.com/press/051219.shtml>.

⁷⁵ As noted by Leff, the adhesion contract provides an opportunity for the consumer to "flip the switch": either enter into the contract provided by the drafting party or opt out of the commercial transaction altogether. In such transactions very few of the individual terms of the contract are open to bargaining. Leff, *supra* note 73, at 142-43.

⁷⁶ Having multiple sellers offering similar or identical terms is tantamount to having no meaningful choice. *See* Richard Craswell, *Property Rules and Liability Rules in Unconscionability and Related Doctrines*, 60 U. CHI. L. REV. 1, 47 (1993).

simply avoid playing these games, the ability to forego entering into a contract does not necessarily overcome procedural unconscionability.⁷⁷

[22] As noted by Margaret Radin however, courts are unlikely to invalidate click-through contracts, such as the EULAs discussed herein, on purely procedural unconscionability grounds.⁷⁸ Instead, courts look to the substance of the contract and invalidate only those whose terms are so “onerous . . . [that] they are [unlikely] to be the result of buyer choice.”⁷⁹ Finding such onerosity of contract terms is tantamount to finding substantive unconscionability. As such, any finding of procedural unconscionability of the EULAs would likely be based on a finding of substantive unconscionability. Therefore, the discussion herein will focus on an analysis of the substantive unconscionability of the EULAs.

[23] A court can find that a contract is substantively unconscionable when the terms unduly favor one party⁸⁰ or when the “disputed provision of the contract falls outside the ‘reasonable expectations’ of the nondrafting party”⁸¹ It is arguably the case for Project Entropia that the EULA unduly favors MindArk. MindArk, if it so chooses, can *arbitrarily*

⁷⁷ See generally *Williams*, 350 F.2d 445 (holding a contract for furniture purchase unconscionable based in part on lack of meaningful choice where purchaser could have opted not to purchase at all); *Pardee Constr. Co. v. Super. Ct.*, 123 Cal. Rptr. 2d 288 (Cal. Ct. App. 2002) (holding a contract for home purchase unconscionable based in part on lack of meaningful choice where buyers could have opted not to purchase at all). Although purchasing a home or furniture may be more essential—or at least more mainstream—than playing a game, courts should arguably not be biased against contractees’ rights with respect to games as compared to contractees’ rights with respect to more traditional agreements.

⁷⁸ Margaret Jane Radin, *Humans, Computers, and Binding Commitment*, 75 IND. L.J. 1125, 1156 (2000).

⁷⁹ *Id.* at 1149. Similarly, Craswell notes that onerous terms may indicate a lack of consent. Craswell, *supra* note 76, at 41-42.

⁸⁰ See *John Deere Leasing Co. v. Blubaugh*, 636 F.Supp. 1569, 1573 (D. Kan. 1986). See also *Sprague v. Household Int’l*, No. 04-0106-CV-W-NKL, 2005 U.S. Dist. LEXIS 11694, at *20 (W.D. Mo. June 15, 2005).

⁸¹ *Gutierrez v. Autowest, Inc.*, 7 Cal. Rptr.3d 267, 275 (Cal. Ct. App. 2003). See also *C & J Fertilizer, Inc. v. Allied Mut. Ins. Co.*, 227 N.W.2d 169, 177 (Iowa 1975); Craswell, *supra* note 76, at 27 (noting that whereas the reasonable expectations doctrine was originally applied to insurance contracts, it is increasingly being applied “to other standard form contracts as well.”).

undermine virtual property rights or terminate game players' accounts, all within the terms of the EULA.⁸² A court might find such facially one-sided terms unduly favorable to MindArk.

[24] Additionally, as to the one-sided nature of a EULA, a court can also consider whether there is a lack of business necessity for harsh terms in the EULA,⁸³ and the importance of the rights the drafter retains by incorporating particular terms.⁸⁴ MindArk might argue that it has a business necessity to retain the right to terminate players or destroy virtual property at will in order to maintain control of or otherwise sustain Project Entropia. MindArk might also argue that it would not terminate player accounts or destroy virtual property arbitrarily given counterincentives, such as maintaining a good reputation among game players. Those concerns about reputation, however, are not part of the contract and do not negate the unduly one-sided nature of the contract or the lack of business necessity for the terms. If MindArk does not need arbitrary termination and ownership clauses, then a court might be left to ask: why include such harsh clauses? A finding that there is no reason for the arbitrariness of the clauses weighs in favor of finding the EULA, or at least the harsh clauses, substantively unconscionable.

[25] Furthermore, the virtual property theory of bits in context described below may provide a more reasonable distribution of the rights between Mr. Jacobs and MindArk than the EULA for Project Entropia. That the EULA is unnecessarily harsh or oppressive, and that there exist more balanced theories or proposals for virtual property rights, supports a finding that the restrictive terms of the EULA may be unenforceable as unconscionable "in the light of the general commercial background and the commercial needs of the particular trade or case."⁸⁵

[26] The terms of the EULA also arguably fall outside of the reasonable expectations of game players and; therefore, favor a finding of substantive

⁸² Entropia Universe: Apply for Account, *supra* note 10, at §§ 6-8.

⁸³ See *Williams*, 350 F.2d at 450 (citations omitted).

⁸⁴ See *Waters v. Min Ltd.*, 587 N.E.2d 231, 234 (Mass. 1992) (citing A. Corbin, *Contracts* § 128, at 551 (1963 & Supp. 1991)).

⁸⁵ *Williams*, 350 F.2d at 450 (citations omitted).

unconscionability. Whereas it might be difficult or impossible to fully determine what would constitute reasonable expectations of game players, a game player will reasonably expect that she will not be terminated arbitrarily from a game and that her virtual property will not be arbitrarily destroyed. For example, consider a game player who is part of Project Entropia's population of over 300,000 players. It is reasonable for her to expect that she will not be terminated from the game arbitrarily and for no cause while the other 300,000 players continue to play the game. Such an arbitrary termination would be permissible under the current termination clause.⁸⁶ Similarly, a game player who owns a virtual sword of a particular type will reasonably expect that, if other players who own the same type of sword retain their virtual swords from one day to the next, that she will also. Under the current terms of the EULA, however, arbitrary and individual destruction of virtual property by MindArk would be permissible.⁸⁷ That the EULA would allow MindArk to take actions that are arguably outside of the reasonable expectations of the game players, both with respect to termination of players' accounts and with respect to virtual property, favors a finding that the terms are substantively unconscionable. Based on the arguments above, a court could find that at least these termination and ownership clauses are substantively unconscionable and, therefore, that at least these terms of the EULA are unenforceable.⁸⁸

2. UNCONSCIONABILITY OF THE SALE

[27] There are colorable arguments for the unconscionability of EULAs that allow for arbitrary game-player account termination and require game players to surrender all rights to virtual property. A contract for the sale of virtual property by a game company, such as MindArk's sale of the space station to Mr. Jacobs, might also be unconscionable. If the sale of virtual property grants rights to the virtual property in a manner that overrides the terms of the EULA, then the arguments made above for the unconscionability of the EULA would not apply. There would still be, however, a question as to what rights the player has gained with respect to

⁸⁶ Entropia Universe: Apply for Account, *supra* note 10, at § 6.

⁸⁷ *Id.* at §§ 7-8.

⁸⁸ *See ProCD, Inc.*, 86 F.3d at 1449.

the purchased virtual property. This is discussed below with respect to the proposed default right to bits in context.

[28] If, on the other hand, the sale of virtual property were interpreted to incorporate the ownership and termination clauses of the EULA, then the case for finding unconscionability would be stronger than for the EULA alone.⁸⁹ A sale incorporating the termination and ownership clauses would be even more favorable to MindArk than the EULA itself. For example, MindArk would be able to sell the space station to Mr. Jacobs, terminate his account the next day for any reason, and resell the space station to another user. Furthermore, MindArk's ability to sell virtual property, combined with the ability to terminate accounts at will, might result in undesirable, but rational, behavior. If MindArk felt that it would receive a net benefit by terminating Mr. Jacobs' account and reselling the space station (for example, if Mr. Jacobs or his character were particularly disliked in the Project Entropia community), notwithstanding concerns about reputation, then it might rationally do so after the sale—all within the terms of the EULA.⁹⁰ Clearly, given the preposterous liberty such a one-sided sale would provide MindArk, the terms of the sale incorporating the terms of the EULA are unduly favorable to MindArk, and thus arguably unconscionable.

⁸⁹ If, in a particular instance or litigated case, a sale of virtual property were found to incorporate the termination and ownership clauses of the EULA and, therefore, to be unconscionable and unenforceable as discussed below, then in future sales a game company would likely incorporate wording that would clarify that the contract for sale of virtual property did not incorporate the harsh terms of the EULA. In the future sales, which would arguably grant virtual property rights, there would remain a question as to what rights were granted.

⁹⁰ Getting rid of an unpopular character may be seen in the virtual society of Project Entropia as a net positive action, notwithstanding the unpopular player's loss of virtual property. That is, the damage done to MindArk's reputation by destroying virtual property might be outweighed by the benefit afforded to its reputation by excommunicating the unpopular player. The destruction of virtual property in that case might have no negative real-world economic repercussions for MindArk. If this were the case, MindArk would have incentive to terminate Mr. Jacobs' account: it would get rid of an unpopular character, NeverDie, and it would allow them to resell the virtual space station, presumably for another \$100,000.

[29] If a court did find the EULA itself, or the offer for sale interpreted as incorporating the harsh terms of the EULA, to be unconscionable, and Mr. Jacobs was bestowed some right with respect to the virtual property, then the question would remain: What are his rights? I attempt to address this below with the proposed default right to bits in context.

3. REASONABLE EXPECTATIONS

[30] Perhaps analyzing the conscionability of the EULA and the sale of virtual property incorporating the terms of the EULA goes beyond what is needed. As has been seen primarily in the insurance context, courts can look to the “reasonable expectations” of contractees to decide whether particular provisions of a contract should be enforced.⁹¹ When a game company sells a virtual item to a game player, as when Mr. Jacobs purchased the \$100,000 virtual space station from MindArk, reasonable parties would expect that the terms in the offer for sale that apparently grant rights to virtual property would override the harsh terms of the EULA.⁹²

[31] Even if a court found that the sale incorporated the terms of the EULA, however, a court might still find that the incorporated terms of the EULA do not meet the reasonable expectations of the game player. To assess reasonable expectations, the court determines whether the game player was specially informed of “important, but obscure,” terms, whether the terms were generally known by game players, and whether the contract was ambiguous.⁹³ If the terms do not meet reasonable expectations of game players, then the court can replace the harsh terms with what it believes is “objectively reasonable.”⁹⁴ In Mr. Jacobs’ case, he was not given notice of the harsh terms, given that the wording of the offer for sale of the space station apparently overrode the harsh terms; there was

⁹¹ Craswell, *supra* note 76, at 27-29 (citations omitted). *See generally* Robert E. Keeton, *Insurance Law Rights at Variance with Policy Provisions*, 83 HARV. L. REV. 961 (1970).

⁹² *See supra* notes 55 to 56 and accompanying text.

⁹³ *Atwater Creamery Co. v. Western Nat. Mut. Ins. Co.*, 366 N.W.2d 271, 278 (Minn. 1985).

⁹⁴ Keeton, *supra* note 91, at 967, 974. *Accord* *Perrine v. Prudential Ins. Co. of America*, 56 N.J. 120, 127 (N.J. 1970). *See also* Craswell, *supra* note 76, at 14. *See also* Radin, *supra* note 78, at 1156.

ambiguity in the sale, given the apparent contradiction between the wording of the offer and the terms of the EULA; and a reasonable player would not assume that such harsh terms were in the contract. If the harsh terms incorporated into the sale were replaced with terms that were objectively reasonable, however, there would still be a question as to what rights game players would be afforded.

[32] When considering the EULA itself, and not a sale incorporating the terms of the EULA, a court might find that the EULA's termination and ownership clauses fall outside the reasonable expectations of game players and therefore should be replaced with clauses that are objectively reasonable – although the case may not be as strong as for the sale incorporating the harsh terms. A game player, when signing up for a game, might expect that her account would only be terminated for good cause and that her virtual property would not arbitrarily disappear, notwithstanding that the EULA indicates otherwise. Although the language of the termination and ownership clauses of the EULA are clear,⁹⁵ the terms are arguably outside the general knowledge or expectations of the game players⁹⁶ and have not been specifically pointed out to game players.⁹⁷ Therefore, a court could find the terms to be outside the reasonable expectations of game players and replace the offending terms with objectively reasonable terms.⁹⁸ The question remains, however, what terms would be objectively reasonable? A proposal for such rights is presented in the discussion of bits in context.

⁹⁵ Project Entropia's EULA appears on the first page a player accesses when applying for an account. *See* Project Entropia, *Apply for an Account*, *supra* note 10.

⁹⁶ *See supra* notes 86-88.

⁹⁷ The terms are included in the EULA, but the mere inclusion of terms in a contract is not always sufficient to overcome the reasonable expectations of contractees. *Atwater Creamery Co.*, 366 N.W.2d at 278-79 (holding that a non-standard, non-ambiguous burglary definition in an insurance contract did not meet the reasonable expectations of the insured in part because the definition was not separately discussed or pointed out to the insured).

⁹⁸ *See supra* note 94.

4. IS THERE AN IMPLIED DUTY?

[33] One might be tempted to bind a game player to the terms of the EULA since she had an opportunity to view the harsh terms. As has been seen in other commercial transactions, however, purchasers do not always bear all the risk in transactions, even in contravention of terms set forth by the seller. The warranty of merchantability, for example, was developed to place some burden for the quality of goods on sellers,⁹⁹ regardless of whether there was an absence of related terms in the contract or in contravention of the terms of the contract.¹⁰⁰

[34] The warranty of merchantability, which deals with the quality of goods, might not apply directly in the case of the rights of game players to virtual property, since the duties in question arguably relate to services and not products. There are parallels, however. The implied warranty of merchantability provides reasonable rights for purchasers. If one adopts the objectively reasonable expectations of a game player (e.g., that a game player is purchasing a contractual right to continue playing a game, unless there is a good cause for termination, and to continue having reasonable continuity of access to virtual property within the game) as the standard to which the game companies should be held, then a game company would breach the implied duty by arbitrarily terminating the account or destroying virtual property, which would be permitted under the EULA. A parallel to the implied warranty of merchantability would provide game players with some implied rights with respect to termination and virtual property that contravene the harsh terms of the EULA. The rights that might be implied are addressed below with respect to bits in context.

⁹⁹ *Mazetti v. Armour & Co.*, 75 Wash. 622, 630 (Wash. 1913) (holding that a manufacturer of food products has an implied warranty of merchantability where no express warranty was given). *See also* U.C.C. § 2-314 (stating that merchants are generally held to implied warranty as to the fitness and quality of merchandise sold).

¹⁰⁰ *See* U.C.C. § 2-316 (stating that a warranty of merchantability is implied, regardless of the terms of the contract, unless there is “conspicuous” wording to the contrary).

C. COPYRIGHT

[35] Mia Garlick and Molly Stephens have discussed the issue of virtual property rights in the context of game companies attempting to preclude sales of virtual property. Both have concluded that copyright law cannot be used by game companies to stop users from selling virtual property. Garlick argues that neither the copyright doctrine of “substantial similarity” nor the copyright doctrine of “infringement of derivative works” should enable game companies to exclude game players from selling in-game items¹⁰¹ and that courts should consider with more weight the creative contribution of the gamers.¹⁰²

[36] Stephens notes that none of the copyright doctrines of protection against making copies, making derivative works, selling copies, performing publicly, and displaying publicly should allow game companies to preclude users from selling in-game items.¹⁰³ Stephens further argues that no part of intellectual property law, including copyright, is likely to afford protection to game players for their in-game assets.¹⁰⁴

[37] The analysis of Garlick and Stephens may indicate that copyright law is unable to preclude game players from obtaining some rights to virtual property. That is, based on the analysis of Garlick and Stephens, MindArk cannot rely on copyright law to deny Mr. Jacobs all rights with respect to virtual property.

¹⁰¹ Mia Garlick, *Player, Pirate or Conducer? A Consideration of the Rights of Online Gamers*, 7 YALE J. OF L. & TECH. 1, 28-29 (Spring 2004-2005).

¹⁰² *Id.* at 41.

¹⁰³ See generally, Molly Stephens, Note, *Sales of In-Game Assets: An Illustration of the Continuing Failure of Intellectual Property Law to Protect Digital-Content Creators*, 80 TEX. L. REV. 1513 (2002).

¹⁰⁴ *Id.* at 1530-1531, 1532 (arguing, however, that a game player may have a right to her *character*, but not to the assets it carries. She argues that game players may be able to rely on unfair competition doctrine to protect some aspects of their in-game characters).

IV. CONCEPTUALIZING VIRTUAL PROPERTY

[38] Assuming that the threshold issue of whether game players have rights with respect to virtual property is resolved affirmatively, the question remains: what should be protected? That is, presuming that the EULAs (or copyright, etc.) do not preclude rights to virtual property, there is still a question as to how rights should be apportioned between game players and game companies. In order to address this issue, it is important to properly conceptualize the rights bestowed upon game players with respect to the virtual property that they own in games. Improper conceptualization of the default rights of game players could cause improper rulings or faulty or unduly complicated protection of players' rights. Below, I reject a few conceptualizations of the rights to virtual property: Epstein's cybertrespass theory, protection of the integer as a numeric concept, and protection of the database on which the bits representing the virtual property reside. The rejections of these ideas are followed by a discussion of conceptualizing rights to virtual property as *bits in context*.

[39] Online games are typically built using client programs (clients) and server programs (servers). The clients reside and run on the game players' computers. The servers run on the game provider's server. Each client communicates electronically with a single server or with multiple servers acting as a single server.¹⁰⁵ The functionality of a client typically includes rendering the graphics for the game player's view. The server typically stores information about the shared aspects of the virtual world in which the game players' characters reside. Other information related to particular user accounts might be stored on the server or the client. Decisions as to where to store particular information or data related to characters and game play is usually based on server and client computing

¹⁰⁵ Carnegie Mellon Software Engineering Institute, *Client/Server Software Architectures--An Overview*, http://www.sei.cmu.edu/str/descriptions/clientserver_body.html (last visited Dec. 18, 2006). See also Carnegie Mellon Software Engineering Institute, *Three Tier Architecture*, <http://www.sei.cmu.edu/str/descriptions/threetier.html#34492> and Transaction Processing Monitor Technology, <http://www.sei.cmu.edu/str/descriptions/tpmt.html>.

resource availability and on reducing the bandwidth needed to transfer information between the client and server.¹⁰⁶

A. EPSTEIN'S CYBERTRESPASS THEORY

[40] Richard Epstein, in his cybertrespass theory, proffers that the law should protect real-world chattels (computers) on which the in-game elements reside.¹⁰⁷ In a strict construction, this would tie rights in virtual property to the physical computer or server on which the electronic representation of the virtual property resides. For example, in a case where a game player's in-game inventory includes a virtual sword, represented by an integer on the game company's server,¹⁰⁸ the strict construction of the cybertrespass theory would provide the game company protection for the computer server on which the integer representing the virtual sword resides. No protection would be afforded to the game user. If, on the other hand, information about the virtual sword was held within a client program residing on the game player's computer,¹⁰⁹ then the game player would have protection for the virtual property and the game company would not have protection. This strict construction would hinge rights to virtual property on the game company's decision of where to store data related to the virtual property.

¹⁰⁶ *Id.*

¹⁰⁷ See generally Richard Epstein, *Cybertrespass*, 70 U. CHI. L. REV. 73 (Winter 2003).

¹⁰⁸ For simplicity we are assuming that these virtual items are represented as integers and are stored in databases. In general, they may be represented as floating point numbers, complex data structures, raw bits, or any other electronic representation. Furthermore, whereas it is likely that most game companies use databases to store the integer or other electronic representation of the virtual property, the bits-in-context theory is not limited to database representations. This theory applies equally to other storage mechanisms, such as flat file or file/folder hierarchies. It is also herein presented that the bits will reside on the game provider's computer server. The theory, however, applies equally regardless of where the bits are stored. The bits may be stored on the game player's computer or may be distributed between the client and server. See *infra* notes 111 to 114. The program running the game on the server will interpret the integer as representing the virtual property of a particular user. That is, the program creates the context in which the server can interpret the integer to be the user's virtual property.

¹⁰⁹ *Client/Server Software Architectures*, *supra* note 105.

[41] In some systems of clients and servers, information is replicated between the client and server.¹¹⁰ In such cases, more complex algorithms are needed to ensure that the data between the two remains synchronized. For example, one of the two data sources would be considered dominant and editable, and the other source considered a local cache or copy of the data, which cannot be edited.¹¹¹ The cybertrespass theory might accord rights to one or both copies of the data. If the rights are split then, as described below, it is not clear how the two sets of rights would be apportioned. On the other hand, if the rights are not split, but instead are given to the owner of the chattel on which the dominant and editable copy of the data resides, then other problems may arise. In some systems, the designation of which copy of the data is dominant and editable shifts over time.¹¹² That is, the dominant, editable copy of the data could be on either the server computer or the client computer at any given moment. To further complicate the matter, with more complex data, the first portion of the data could be editable on the server computer and a second portion could be editable on the client computer.¹¹³ It would be unclear who had virtual property protection under the cybertrespass theory, given the division of control.¹¹⁴ As this abbreviated discussion of distributed system theory illustrates, depending on how a game is designed and where data related to characters is stored, drastically different legal rights could emerge under the cybertrespass theory. Given that the game player should receive the same rights regardless of where the data resides, the strict

¹¹⁰ Microsoft Development Network, Replicating Data Between a Server and Clients, <http://msdn2.microsoft.com/en-us/library/ms151787.aspx> (last visited Dec. 18, 2006).

¹¹¹ See, e.g., Alan Fekete et al., *Eventually Serializable Data Services*, PROCEEDINGS OF THE FIFTEENTH ANNUAL ACM SYMPOSIUM ON PRINCIPLES OF DISTRIBUTED COMPUTING 300 (ACM Press 1996), available at <http://citeseer.csail.mit.edu/fekete96eventuallyserializable.html> (last visited Dec. 18, 2006).

¹¹² See, e.g., Kai Shen et al., *Neptune: Scalable Replication Management and Programming Support for Cluster-Based Network Services*, PROCEEDINGS OF 3RD USENIX SYMPOSIUM ON INTERNET TECHNOLOGIES AND SYSTEMS 197 (2001), available at http://www.usenix.org/events/usits01/full_papers/shen/shen_html (last visited Dec. 18, 2006).

¹¹³ Stijn Dekeyser, *Towards a New Approach to Tightly Coupled Document Collaboration*, PROCEEDINGS OF THE NINTH AUSTRALASIAN DOCUMENT COMPUTING SYMPOSIUM (2004), available at <http://www.cs.mu.oz.au/~alastair/adcs2004/papers/paper10.pdf> (last visited Oct. 19, 2006).

¹¹⁴ *Client/Server Software Architectures*, *supra* note 105.

construction of the cybertrespass theory is clearly not the desired conceptualization for virtual property rights.

[42] Perhaps, however, the cybertrespass theorist would argue for a broader construction: providing shared rights in the part of the computer disk on which the important bits reside between the owner of the server (the game company) and the game player. This would circumvent some of the overly complex rights-determination circumstances arising from the distributed nature of the online games and would allow apportioning of the rights to virtual property between the game provider and the game player. It is not for the portion of the computer disk, however, that the game player wants protection. Under this broad construction of the cybertrespass theory, absurd circumstances could arise. A game provider could leave intact a file server to which a user's rights are attached and use a different file server for the game, thereby effectively disregarding any useful virtual property rights; or a game provider could change the game so that the bits on the protected portion of the server are useless or unused – again disregarding any useful virtual property rights.

[43] Consider an example where a game player's character "owns" one million in game currency (GC). The one million GC are represented as an integer on one of the game provider's disk drives. Under the broad reading of the cybertrespass theory, the game player would have some right to the portion of the file server on which the integer representing the one million GC is stored. The game company could not legally delete the integer but could alter or destroy the usefulness of the integer by changing the way in which currency is handled in the game and ignoring the integer. This would effectively destroy any rights the game player would want protected. The game player wants rights to the functionality associated with the one million GC, not the portion of the disk on which the one million GC are represented.

B. THERE SHOULD BE NO PROTECTION FOR THE INTEGER AS A NUMERIC
CONCEPT

[44] Courts should not base protection of virtual property on the integer representing the virtual property that resides in the game company's

database. The user does not have a right to that integer outside of the context of the game or outside of the context of the user's account for that game.¹¹⁵ Furthermore, even within the context of the game, another user may have the same virtual sword and therefore have protection for an equal integer stored elsewhere in the game's database. The user should be afforded no protection for that number outside the context of the user's account within the game.

[45] If the game company changed or upgraded the game, then it might alter the underlying representation of the virtual property.¹¹⁶ Clearly, a right to virtual property should not follow the old representation – the old integer. If it did, then neither the interests of the game player nor the interests of the game provider would be met. A “loss of virtual property” would be caused by changing the underlying representation, even if the game player retained all of her rights to use her virtual property within the context of the game. A right that follows the new, changed representation is appropriate. If the default right follows the new representation, then we are closer to a conception of what is valuable to the game player – closer to a conception of virtual property as bits in context.

C. PROTECTION SHOULD NOT BE ATTACHED TO THE DATABASE CONTAINING THE INTEGER

[46] Virtual property protection should not be afforded to the portion of the database in which the virtual property resides. A database is structured data stored on a hard disk.¹¹⁷ It is conceivable to assign protection of virtual property to the portion of the database storing the integer

¹¹⁵ If a virtual sword were represented by the integer forty-two, then the user would have no right to the number forty-two outside of the context of the game. The user should have no protection for the number forty-two as used in a business application, in another game, or in any other context.

¹¹⁶ Underlying representations of virtual property might be changed in order to keep virtual property consistent in the face of changing game code.

¹¹⁷ See Paragon Corporation, *Databases: Past, Present, and Future*, June 13, 2003, <http://www.paragoncorporation.com/ArticleDetail.aspx?ArticleID=20> (last visited Dec. 18, 2006) (explaining that “database” typically refers to the electronic representation of data on a hard disk. A database server is the computer that controls access to the data in the database).

representing the virtual property.¹¹⁸ This would overcome some of the problems associated with the cybertrespass theory insomuch as migration of the database from one physical computer hard disk to another would not cause a fragmenting or failure of the rights, because the database, as a unit, would still exist on the server to which the database is migrated. However, paralleling a problem with the cybertrespass theory, the database could be maintained even if the game no longer used the database. Such a circumstance would destroy the usefulness of the game player's virtual property while maintaining the database containing the virtual property.

[47] Furthermore, in such a legal regime, a user's enjoyment of virtual property could continue even if the portion of the database in which the integer representing the virtual property originally or previously resided were destroyed. For example, if a game provider upgraded a game, created a new database that included a representation for the virtual property, and destroyed the old database that included the original representation of the virtual property, then the game player would continue to enjoy the virtual property notwithstanding the destruction of the virtual property's original representation within the original database. Attaching rights associated with virtual property to the destroyed database representation would create liability where there was no harm. Instead, it would be more coherent to have the rights to virtual property attach first to the original representation in the original database and later to the subsequent representation in the upgraded database. This approaches the suggested protection of bits within their context, as discussed next.

D. PROTECTION SHOULD BE FOR THE PARTICULAR INTEGER (BITS) AS USED IN THE GAME (CONTEXT)

[48] In order to best protect the rights of game players with respect to functionality of virtual property in the context of computer games, a conceptualization of the rights of game players should be based on bits

¹¹⁸ The same argument applies to all electronic data sets. For example, in a flat file-based system, protection should not be afforded to the part of the file that holds the integer representing the virtual property. For a folder/file hierarchy, protection should not be afforded to the file or part of a file within the hierarchy that stores the integer.

(the integer represented electronically) in context (as used in the game). It is within the context of a game that the bits have value, either objective or subjective, and it is over bits representing virtual property as used in the context of a game that issues of legal rights arise.

[49] One court case has already followed this construction. In China, a user's virtual property (the bits) in an online game (the context) was lost – allegedly due to a hacker. Li Hongchen had spent years, and over one thousand dollars, building up a virtual arsenal in Red Moon, a persistent, online, multiuser game provided by Arctic Ice. One day he found that his virtual arsenal was missing. Thus, the bits representing his virtual arsenal were no longer accessible in the context of the game Red Moon. In the court case that ensued, *Li Hongchen v. Beijing Arctic Ice Technology Development Co.* in the Chaoyang District People's Court in Beijing, the court found that the game provider, Arctic Ice, was negligent in allowing a hacker to access and alter Li Hongchen's account and alter the bits representing the arsenal. The court ordered Arctic Ice to replace the virtual property – to replace the bits so that they could be used in the context of the game.¹¹⁹

[50] It does not matter that Arctic Ice, in replacing the virtual property, might use different bits¹²⁰ or that the replaced bits might be on a different physical hard disk or in a different electronic database.¹²¹ The bits representing the virtual property, as used in the context of the game, are what held value for Li Hongchen. The bits in context provided him functionality, and it was for those bits that he sought protection. A construction of a default right to virtual property associated with the numeric representation, the electronic database, or the physical server

¹¹⁹ David Canton, *Theft Case Raises Questions*, LONDON FREE PRESS (Can.), March 20, 2004, at C5.

¹²⁰ If Arctic Ice had upgraded Red Moon, changing the underlying representation of virtual property within the context of the game, then the bits used to replace the virtual arsenal might have been different than those that were used before the hacker's attack.

¹²¹ If Arctic Ice, from the time of the initial destruction of the virtual arsenal to the time the bits were restored, had moved the game to a different physical server, then the case would not be resolved by focusing on the portion of the old server on which the bits resided.

would at best provide an obscuring method of understanding the rights of and the remedy for Li Hongchen.

[51] Conceptualizing the default right as bits in context should help courts handle the subtle intricacies of individual cases coherently. Of course, the default right of protecting bits in context cannot be absolute. The following section discusses how the bits-in-context conceptualization of rights to virtual property can provide a guideline for future cases, and how existing doctrines can inform the protection of bits in context.

V. DEFAULT RIGHTS TO BITS IN CONTEXT

A. PROTECTION FROM DESTRUCTION AND DEVALUATION

[52] The default right for virtual property should protect bits in context from destruction or theft – in certain circumstances. That is, virtual property as represented by bits in the context of an online game should generally be protected from actions which destroy the bits themselves while the context, the game, continues. The case of *Li Hongchen v. Beijing Arctic Ice* is an example of such protection. Li Hongchen's virtual property was protected from destruction caused by Arctic Ice's negligence.¹²² On the other hand, there may be circumstances in which virtual property should not be protected from loss or theft. Consider, for example, if a game company lost virtual property due to a natural disaster. If a hurricane hit its computer center and caused the details of particular virtual property to be unrecoverable, but did not cause so much damage that the game was discontinued, then the game company arguably should not be responsible for the lost virtual property. This begs the question: when should virtual property be protected from loss or theft?

[53] Virtual property should also be protected from devaluation – in certain circumstances. Suppose, for example, that a game company introduces a set of virtual armor. A player determines a way to use the armor to make her in-game character effectively invincible, thereby making the armor very valuable. The invincibility is a problem for the

¹²² See *supra* note 120 and accompanying text.

game company, which strives to keep a game “balanced.”¹²³ The game company arguably should be allowed to modify the game (the context of the bits) to change the unbalanced aspects of the armor. Thus, the game company should be able to change the virtual armor’s characteristics within the game. Since balancing will typically weaken the armor, the change is likely to devalue the armor. How much devaluation is too much? When is devaluation justified?

[54] To address the scenarios of permissible and prohibited devaluation and destruction (which is arguably a special case of devaluation) of virtual property, I consider issues of grouping virtual property, permissible and impermissible devaluation, and partial and total devaluation.

1. WHAT PRECISELY IS BEING DEVALUED?

[55] Before addressing prohibited destruction and devaluation, courts must address whether or how virtual items should be grouped for consideration. If the game player has a set of virtual armor comprising chest, arm, and leg plates, then should the set of armor be considered together for purposes of determining devaluation, or should each piece of armor be considered separately? Should all of a player’s virtual property within a game be grouped together when considering devaluation? If the game player has a set of virtual armor worth \$100 and a virtual sword worth \$200, then should one consider the devaluation of the \$300 inventory or the devaluation of the armor and sword separately?

[56] Grouping all virtual property together would create an undue bias against those game players who own more virtual property. If a player held only one piece of virtual property, then it would be protected from destruction or total devaluation since that piece of virtual property would be the inventory. However, if a devalued piece of virtual property were part of a large, valuable inventory, then it might not be protected. Completely devaluing the piece of virtual property would devalue the inventory only slightly. Perhaps, instead, a decision of what to group for

¹²³ “Balancing” a game refers to ensuring that no particular type of virtual property is significantly more powerful than other alternatives and ensuring that no particular virtual property provides one character or one type of character undue power.

devaluation purposes could be based on whether the items could be found or purchased separately or whether the items are generally purchased or used together. Regardless of how virtual property is grouped, however, one must consider when devaluation should be permitted.

2. PROHIBITING UNJUST DESTRUCTION AND DEVALUATION: LOOKING TO THE DUTIES OF BAILEES AND THE “GOOD CAUSE” AND “GOOD FAITH” DOCTRINES

[57] An approach that courts might adopt to determine whether a particular devaluation or destruction of virtual property was permissible would be to borrow from the contract law doctrine of “good cause.” In some jurisdictions, for example, an employer has a recognized interest in running the business profitably.¹²⁴ Furthermore, the employer’s interest in profitability outweighs the employee’s interest in continued employment.¹²⁵ The employer does not, however, have unlimited discretion in firing employees. The employer may fire employees for legitimate business reasons but not for all reasons,¹²⁶ and in particular not for reasons that would contravene public policy.¹²⁷ Although devaluation in the context of virtual property is arguably not balanced against the dire public policy concerns that infect employment termination cases, some of the analysis used in the employment context could provide useful insight for courts when considering devaluation.

¹²⁴ See, e.g., *Clement v. Farmers Ins. Exch.*, 776 P.2d 768, 777 (Idaho 1988) (Huntley, J., dissenting).

¹²⁵ See, e.g., *McCone v. New Eng. Tel. and Tel. Co.*, 471 N.E.2d 47, 50 (Mass. 1984) (holding that employee’s interest, based on past performance, in potential future promotions or salary increases does not require employer to continue employment if that employee was fired for an otherwise legitimate reason).

¹²⁶ See *Cecil v. Cardinal Drilling Co.*, 797 P.2d 232, 234-35 (Mont. 1990) (citations omitted). See also *Askin v. Firestone Tire & Rubber Co.*, No. 85-5120, 1986 WL 16324, at *2 (6th Cir. Jan. 15, 1986) (citing *Tex. Dep’t of Cmty. Aff. v. Burdine*, 450 U.S. 248, 254-55 (1981)).

¹²⁷ Employers may not fire employees in retaliation for refusing to perform actions that would be illegal. See e.g., *Wagenseller v. Scottsdale Mem’l Hosp.*, 710 P.2d 1025, 1035 (Ariz. 1985) (holding that it was not legitimate to fire an employee who refused to engage in illegal activity, activity that would be indecent exposure), *superseded by statute* Arizona Employment Protection Act, ARIZ. REV. STAT. § 23-1501 (LexisNexis 2005).

[58] One approach to finding a reasonable balance between the rights of the game players to virtual property and the financial rights of game companies would be to allow game companies to devalue virtual property for legitimate business reasons. Consider Mr. Jacobs' purchase of the \$100,000 space station.¹²⁸ If MindArk later determined that there was "overpopulation" in the game¹²⁹ and that new land areas were needed to reduce the overpopulation problem, then MindArk might add a new "moon" to Project Entropia. The addition of the moon is likely to reduce the value of Mr. Jacobs' space station by decreasing the scarcity of land and thereby decreasing the value of the alienable residences on the space station.¹³⁰ In such a scenario, courts might find that MindArk acted for a legitimate business reason and that the devaluation of the space station would therefore not be compensable.

[59] Drawing a parallel to good cause may not, however, bring satisfactory results in every case. Game companies may have legitimate business reasons for particular actions that would be contrary to what is just and equitable. Consider again Mr. Jacobs' purchase of the space station. Some may consider it legitimate from a business perspective, for MindArk to give space stations to every player in Project Entropia the very next day. Such action could make Project Entropia more popular, allowing MindArk to make more money. It might also allow MindArk to sell larger quantities of other virtual items – perhaps items that are needed for a functioning space station. Whereas this appears to be based on a legitimate business decision, it does not strike one as a fair balance of the rights of Mr. Jacobs and MindArk. Perhaps the scenario represents,

¹²⁸ See *supra* note 37 and accompanying text.

¹²⁹ "Overpopulation" in a game may cause, among other things, difficulties in synchronization and rendering when large numbers of players are all within view of each other. If players are dispersed, then fewer game players will interact with one another and, therefore, the synchronizing and rendering problems will be ameliorated.

¹³⁰ Duncan, *supra* note 47 (noting that the space station included 1,000 apartment deeds and 100 store deeds which Mr. Jacobs could sell to other players). On the other hand, if there really were overpopulation in the game, then the scarcity of land may have increased and there might be a net increase in the value of the salable portions of Mr. Jacobs' space station. For argument's sake, however, it is assumed that there is a net decrease in the value of Mr. Jacobs' space station upon introduction of the new moon.

instead, a situation in which the game company should compensate the virtual property owner.¹³¹

[60] Courts might also consider whether the action on the part of the game company is a breach of “good faith and fair dealing” in the contract drawn between the game company and the game player.¹³² The “doctrine duty of good faith and fair dealing is implied in every contract . . . [and t]he boundaries set by the duty of good faith are generally defined by the parties' intent and reasonable expectations in entering the contract.”¹³³ In the example above, one might argue that Mr. Jacobs purchased only the functionality associated with the space station, that the good faith duty of MindArk extends only to providing those functions, and that the value of the space station is irrelevant. That is, even if MindArk gave away space stations to every player in Project Entropia, Mr. Jacobs could continue to perform all of the functions related to space station ownership, but the potential economic value of those actions would be greatly diluted or eliminated completely.¹³⁴ If these were the only duties of MindArk with respect to the space station, then the game company arguably would not have to compensate Mr. Jacobs for his loss. Perhaps, however, merely providing functionality to Mr. Jacobs “evad[es] . . . the spirit of the bargain.”¹³⁵ The duty of good faith could encompass both providing the functionality and not unduly diluting the value of the rights purchased. If such were understood to be the implied duty on the part of MindArk, then flooding the space station market would breach its good faith duty with respect to the value of Mr. Jacobs’ space station.

¹³¹ Even with compensation, this might be economically rational for MindArk if creating the multitude of space stations provided more value to MindArk than it took from Mr. Jacobs, so that MindArk would have the surplus to compensate Mr. Jacobs for his loss.

¹³² RESTATEMENT (SECOND) OF CONTRACTS § 205 (1981).

¹³³ *Cross & Cross Props., Ltd. v. Everett Allied Co.*, 886 F.2d 497, 502 (2d Cir. 1989) (citing *Contemp. Mission, Inc. v. Famous Music Corp.*, 557 F.2d 918, 923 n.8 (2d Cir. 1977) and RESTATEMENT (SECOND) OF CONTRACTS § 205 (1981)).

¹³⁴ *Duncan*, *supra* note 47.

¹³⁵ RESTATEMENT (SECOND) OF CONTRACTS § 205(d) (1981) (noting that a party does not engage in “good faith performance” of a bargain if they “evad[e] . . . the spirit of the bargain”).

[61] Protection of bits in context from unjust devaluation or destruction also parallels the duty of reasonable care owed by bailees in mutually beneficial bailments. Traditionally, the duty owed by a bailee to a bailor was based on whether each party benefited from the bailment. If the bailment primarily benefited the bailor (e.g., when a bailee finds a bailor's lost property), then the bailee's duty was based on gross negligence. If the bailment primarily benefited the bailee (e.g., when a bailee borrows a car from the bailor), then the bailee had a duty to act with great care. If the bailment benefited both parties (e.g., a hotel storing the valuables of its customers), then the bailee owed a duty of ordinary and reasonable care.¹³⁶ Some courts have rejected classifying the duties of bailees based on the balance of the benefits to the parties of the bailment and instead use a unified standard of reasonable care under the circumstances of the case.¹³⁷

[62] In order to see the parallels with bailments it is useful to describe the duties as if the virtual property were real, were owned by the game player, and were in the possession of a bailee game company. Such a bailment would arguably benefit both parties. The game company benefits by attracting the game player, and the game player benefits by having the virtual property sustained by the game company. Therefore, the game company would either owe a duty of ordinary and reasonable care under the classification system or, equivalently, reasonable care under the circumstances. One might be able to generally map the duty of reasonable care to the proposed default rights to bits in context discussed herein.

[63] A duty of reasonable care could inform an analysis of unjust devaluation or destruction. In the example above, if MindArk devalues Mr. Jacobs' \$100,000 space station by creating a new, habitable moon, then the court could look to whether MindArk acted with reasonable care. The test for reasonable care might parallel the tests for good cause and good faith, discussed above, by assessing whether MindArk's actions were

¹³⁶ 8 C.J.S. *Bailments* § 57 (2005).

¹³⁷ *Koennecke v. Waxwing Cedar Prods., Ltd.*, 543 P.2d 669, 673 (Or. 1975) (noting that "a substantial number of jurisdictions have completely abandoned the concept of divisibility of diligence and negligence into degrees and, consequently, apply only one standard of care, that of the ordinary prudent men (sic) under the particular circumstances.") (citations omitted). *Accord Christensen v. Hoover*, 643 P.2d 525, 529-30 (Colo. 1982) (citations omitted).

reasonable or whether they followed the spirit of the original bargain. If MindArk acted with reasonable care, then MindArk's actions should be allowed, and it should not be required to compensate Mr. Jacobs. Otherwise, MindArk should have to compensate Mr. Jacobs. Considering the examples of destruction of bits in context, the protection of Li Hongchen's virtual arsenal from destruction caused by negligence¹³⁸ should clearly be within the reasonable care owed by Artic Ice in a mutually beneficial bailment. On the other hand, the loss of virtual property due to a natural disaster, such as a hurricane, is arguably outside a game provider's duty of reasonable care.

[64] Whereas the doctrines of good cause, good faith, and the reasonable care of bailees might not identically inform an assessment of unjustified partial devaluation of bits in context, each does provide a familiar doctrinal basis for constructing such a balance of the rights to bits in context. This still leaves an important question to be answered: should courts consider the extent of devaluation? The next section looks to regulatory takings in order to find what might be appropriate doctrinal parallels to address that question.

3. DESTRUCTION AND EFFECTIVE TOTAL DEVALUATION: LOOKING TO REGULATORY TAKINGS

[65] One area of law to which courts can look when deciding whether a particular change constitutes a total devaluation of virtual property and whether destruction or devaluation of virtual property should be compensated is regulatory takings. Regulatory takings occur when regulations or laws change, thereby changing the value of personal property.¹³⁹ If an owner sacrifices all economically beneficial use, she has

¹³⁸ See *supra* note 119.

¹³⁹ See, e.g., *Yee v. City of Escondido*, 503 U.S. 519, 528-29 (1992). Whereas the government does have a right to change regulations and laws concerning property. *Connolly v. Pension Benefit Guar. Corp.*, 475 U.S. 211, 224 (1986). If the regulation goes too far, it will be recognized as a taking. *Keystone Bituminous Coal Ass'n v. Duncan*, 771 F.2d 707, 713 (3d Cir. 1985), *aff'd* 480 U.S. 470 (1987). Additionally, complete devaluation is permitted to avoid a nuisance. *Kelo v. City of New London*, 125 S.Ct. 2655 (U.S. 2005). There is arguably no parallel to nuisance abatement in the virtual property context.

suffered a taking.¹⁴⁰ On the other hand, a taking is less readily found when the law or regulation is simply adjusting the benefits and burdens of economic life¹⁴¹ or when the regulation advances a legitimate government interest and does not take all economic benefit from the owner.¹⁴²

[66] A court might draw upon the regulatory takings doctrine to help determine the outcome in a case in which a game company attempts to “balance” its game. Consider an example in which the game company alters a game to make particular virtual armor less powerful and thereby less valuable. Depending on the facts of the case, a court could interpret this change as balancing the benefits (e.g., protection from virtual attacks by other characters) and burdens (e.g., difficulty for other characters to successfully hurt or damage the character wearing the virtual armor) within the game, and therefore not a taking. If particular virtual armor is too powerful, then the benefits and burdens of virtual life may too strongly favor the owners of the virtual armor. This is precisely what game companies are attempting to correct when they balance the game and thus change the value of virtual property. Balancing these benefits and burdens might be seen as a permitted devaluation – a permitted change in context.

[67] A change within a game, such as the balancing of the virtual armor, might also be seen as advancing a legitimate interest of the game company and, therefore, as a permitted change in context. In particular, the game company has a legitimate interest in keeping the game fair and enjoyable for all game players. If one player’s character is effectively invincible because of a particular set of virtual armor, then the game will become less enjoyable for all players who engage in virtual battles with that character. Notwithstanding the owner’s increased enjoyment due to invincibility, the aggregate enjoyment within the game, however that may be measured, is likely to be lower. Maintaining players’ aggregate enjoyment of the game is certainly a legitimate interest of the game company. Hence, the

¹⁴⁰ *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1015 (1992) (citations omitted).

¹⁴¹ *Keystone Bituminous Coal Ass’n v. DeBenedictis*, 480 U.S. 470, 488 n.18 (1987) (citing *Penn Cent. Transp. Co. v. City of New York*, 438 U.S. 104, 124 (1978)).

¹⁴² *Long Cove Club Assoc. v. Town of Hilton Head Island*, 458 S.E.2d 757, 758 (S.C. 1995).

company might have a right to balance the game by making the armor less powerful, even if that takes some value from the owners of the armor.

[68] On the other hand, if virtual property or the game is changed such that the virtual property becomes effectively valueless or useless, or if virtual property is deleted or destroyed, then a court might find that the change is equivalent to a taking and therefore is prohibited. In the virtual armor example, if the game is changed such that the virtual armor no longer protects the player's character from the virtual attacks of other characters, the armor becomes so weak that it is valueless, or the armor is deleted from the user's inventory, then a court might find that the change took all benefit from the virtual property owner. The court might rule that, whether or not the bits still exist in the context of the game, the change is effectively a prohibited destruction of bits in context.

[69] There are likely other doctrines from which courts might draw upon to help with the fine distinctions between permitted and prohibited devaluation and destruction of virtual property. This paper discusses a few useful doctrines which can provide some guidance to courts: duties of bailees, good cause, good faith, and takings. The doctrines could be used separately or in combination. For example, a court might find liability whenever a game company acts in a way that devalues (or destroys) a game player's virtual property if that action: a) was not performed in good faith or was not for good cause or b) undermines all economically beneficial use of the virtual property, regardless of whether there was good cause or whether the game company was acting in good faith. Given that such a doctrinal choice would not put a threshold on the level of devaluation needed for potential fault, liability might exist even in the most mundane cases. Perhaps a more reasonable doctrinal choice would view undermining all economically beneficial use as a necessary, but not sufficient, condition for liability. If that threshold were met by destruction or devaluation of the virtual property, then the court could look to whether the changes were made for good cause and in good faith. This doctrinal choice would reduce the breadth of liability to only the cases most important to game players – those in which virtual property has become effectively valueless.

B. THE PERMITTED DESTRUCTION OF CONTEXT

[70] Seemingly to the contrary of the previous section, where I argued that bits should be protected from unjust destruction or devaluation, here I argue that virtual property should not be protected in instances where it is the context, and not the bits in context, that is being destroyed. That is, game players should not be protected when it is the game, and not their virtual property within the game, that is being destroyed. To address this issue, I look first at whether game companies should be forced to continue to operate games in which players own virtual property. I then discuss whether game companies should be required to compensate game players when a game, and thereby their virtual property within the game, is destroyed. Finally, I look at whether destruction of context should be permitted for other reasons.

[71] When addressing the wholesale destruction of virtual property that had existed in the context of a terminated game, there are a number of reasons why a court might not award specific performance (forcing a game company to continue to offer a game after it has made a decision to terminate). A game company is arguably in the best position to decide when continuation of a game is a net economic benefit, and it has the incentive to continue games that provide net economic benefits. As such, if a court is concerned about maximizing economic benefit, then it should arguably not force a company to continue providing a game after it has made a decision to terminate. Additionally, forcing the game company to continue providing the game would violate the company's right to terminate the game as it sees fit.¹⁴³ Forcing game companies to continue providing games could also implicate a *Peevyhouse v. Garland* analysis, whereby a court can award diminution in market value to a contractee in cases where specific performance would cost more than the worth of the

¹⁴³ See *Pittsburgh Lake Erie R. Co. v. Railway Labor Executives' Ass'n* 491 U.S. 490, 507 (1989) (citing *Textile Workers v. Darlington Mfg. Co.*, 380 U.S. 263, 268 (1965) (noting that a company has an absolute right to terminate its business)). On the other hand, one might argue that termination of a game is a precluded termination of part of a business unit, if the company provided other games. *Textile Workers*, 380 U.S. at 268. However, it might be unreasonable for a company's right to terminate a game to turn on whether the company provides other games.

performance to the recipient.¹⁴⁴ The cost to the game company of maintaining the virtual property could greatly outweigh the benefit to the game player.¹⁴⁵ Therefore, in those cases, a court should not award specific performance.¹⁴⁶

[72] Furthermore, if courts could force game companies to continue providing games, then the cost of providing games would increase and the price game players paid would reflect this increase in risk and burden on the game companies. One should question whether game players are willing to pay for this type of “insurance.” If players do not want this specific performance insurance, then, based on the factors noted above, courts might not force game companies to continue to provide games, irrespective of the loss of virtual property.

[73] There is an open question, however, as to whether game companies should compensate game players for their lost virtual property. If courts forced game companies to compensate game players for the worth of destroyed virtual property when terminating a game, based on

¹⁴⁴ *Peevyhouse v. Garland Coal & Mining Co.*, 382 P.2d 109 (Okla. 1962).

¹⁴⁵ *Supra* note 143.

¹⁴⁶ If a game is a net monetary drain on society, then a game company should arguably not be enjoined from terminating the game. If a game is losing money and the net present value (NPV) of the losses is larger than the aggregate value of the virtual property, then discontinuing the game will be a net benefit to society, notwithstanding the loss of virtual property. Arguably the net present value of the virtual property should be weighed against the net present value of the game company’s losses. Given the difficulty of determining even the present value of virtual property, let alone the potential future value of virtual property discounted to today’s dollars, I use aggregate virtual property valuation as a first approximation. If the game company will profit on the game or if the NPV of any losses is less than the value of the virtual property, then society will lose out economically by terminating the particular game. There may be more to the situation, however. It is likely that the game company is trying to increase its profits in the long run and that a different game would be more profitable: $NPV(\text{current game}) < NPV(\text{future game})$. The cost or benefit to society of the change from one game to another is based on whether $[NPV(\text{new game}) + \text{new game virtual property value}] > [NPV(\text{old game}) + \text{old game virtual property value}]$. If we assume that the worth of virtual property in the new and old games is similar, then the game company will always be working toward a higher value to society.

For a discussion of the NPV method, see JAMES D. EDWARDS, ET. AL., *HOW ACCOUNTING WORKS* 331-332 (Dow Jones-Irwin 1983).

Peevyhouse, for example, then there might be problems valuing the virtual property. First, basing valuation on the market prices for virtual items might be the only reasonable, pragmatic approach.¹⁴⁷ Even market price, however, might not provide a complete picture. Many items, especially common ones owned or easily found by most players, will not be priceable if they have never been sold. These items might individually be of minimal real-world value due to their large supply but might have much aggregate value. Furthermore, extremely rare items which are never sold may be unpriceable but might have much value.¹⁴⁸ Given the uncertainty in market value, game companies who would be acting as insurers of the virtual property would not only increase the price charged to game players to reflect known market values of virtual property, but would also increase prices to reflect the risk of potentially large compensation for virtual property of unknown value. Again, one might question whether this is the type of insurance for which the game players are willing to pay.

[74] Perhaps it would be better for game players, upon destruction of their virtual property, to get equivalent amounts of virtual property in a different game provided by the same game company. This would be ideal inasmuch as it would allow an exchange of virtual goods that might pass little to no insurance costs to players.¹⁴⁹ Such an exchange, however, is still infected with problems of valuation. It is arguably impossible to determine the relative value of a virtual item in one game in terms of virtual items in another game.¹⁵⁰ One might consider using real-world market price as an exchange-rate intermediary. This approach, however, would suffer the same incompleteness of market information as did the

¹⁴⁷ Market price could be based on actual sales. *See, e.g.*, EDWARD CASTRONOVA, *SYNTHETIC WORLDS: THE BUSINESS AND CULTURE OF ONLINE GAMES 2* (University of Chicago Press) (2005); *see also supra* notes 7, 14.

¹⁴⁸ In UBISoft's *Shadowbane*, for example, players can build "guilds," which are cities with membership. *Shadowbane*, <http://chronicle.ubi.com/Guilds.php> (last visited Dec. 18, 2006). Each guild is created by the players in the game and is unique. It may be impossible to price any particular one.

¹⁴⁹ Since *MindArk* sells virtual property, replacing destroyed virtual property with virtual property in a different game may be tantamount to paying a monetary compensation award. *See infra* note 159 and accompanying text.

¹⁵⁰ For example, is a particular sword in Blizzard Entertainment's *World of Warcraft*. (*World of Warcraft*, *supra* note 2), equivalent to a sword, or anything else, in Blizzard's *Diablo II* (Blizzard Entertainment -- *Diablo II*, <http://www.blizzard.com/diablo2> (last visited Dec. 18, 2006))?

compensation scheme discussed above. But where information is available and where no insurance cost would be passed on to the players, it may be a reasonable way to attempt to make players whole again.¹⁵¹

[75] Even if players were willing to pay the “insurance” price for virtual property, or if game companies could compensate the loss of virtual property in one game with the grant of virtual property in another game, we still might not want to compensate virtual property owners for termination of the game in which their virtual property lies. In contrast to the arguments made for protection of bits in context, the termination of a game is arguably within the reasonable expectations of game players when they sign up for a game. Most players would expect to play a game and keep virtual property as long as the game is around – not after the game company has decided to terminate the game. The company is likely to hold the same view. Both the players and the game companies know that there is a risk that providing a game will become costly and, when that happens, that the game will be discontinued. If the contracting parties had a “meeting of the minds” about the potential for discontinuation of the game at the time the user signed up, then the game player should not be able to receive a windfall when that foreseen condition arises.¹⁵²

[76] Furthermore, when it comes to protecting virtual property in the context of a continuing game, it seems rational to favor the rights of the consumer (the game player). When it comes to addressing the termination of particular games, it seems rational to favor the actors in the gaming industry (the game companies). Game companies are in the best position to promote and grow the gaming industry and will suffer any economic

¹⁵¹ One would still have to address what happens when a game company does not offer any other online games.

¹⁵² Furthermore any reasonable care, good faith, and good cause duties owed by the game company might all be met. The game company would have presumably been doing its best to keep the game running and profitable. Presumably the game company acted in good faith and with reasonable care in attempting to keep its game as profitable as possible. Additionally, as noted above, there would arguably be good cause, or at least economic rationality, if the game company decided to terminate a game. In total, the game company will protect the context, the game, as best it can. If a situation arises in which the game company was not acting in good faith or did not have a good reason to terminate the game, then perhaps compensation or specific performance would be justified.

hardships that result from ill-advised game terminations. Allowing game companies to freely terminate games, perhaps without compensating the virtual property owners, follows this intuition.

[77] The previous sections describe a theory of virtual property that is both truer to the underlying technology and better represents parties' expectations than other currently available theories. The next section addresses the issue of remedies, and what should be available to game players when a game company fails to uphold a duty with respect to virtual property.

C. REMEDIES

[78] Above, I argue that there should be no remedy for termination of a game. There remains an open question, however, of what remedy should follow a prohibited destruction or devaluation of bits in context. I argue in this section that the remedy for prohibited destruction of virtual property should be replacement of the virtual property. I then discuss the options for remedying the prohibited devaluation of bits in context.

[79] The remedy for destruction of virtual property should be replacement of the bits in the context of the game. That is, in addition to any related civil or criminal charges based on fraud or theft (e.g., one might charge the hacker from *Arctic Ice* with theft or destruction of property), the legal system should attempt to replace virtual property and to avoid providing monetary equivalents. Replacement of the virtual property, as opposed to providing a monetary equivalent, allows the court to avoid determining the real-world value of virtual property. As discussed above, determining real-world value of virtual property may be an intractable task¹⁵³ and one for which a court might be ill-equipped. Furthermore, replacement of destroyed virtual property should have minimal cost.¹⁵⁴

¹⁵³ See note 149 and accompanying text.

¹⁵⁴ Since virtual property in the context of a continued game can be replaced by appropriately placing integers in the game's database (*supra* notes 109-111, 114 and accompanying text) the game company will bear only a minimal administrative cost for restoring the virtual property.

[80] Only in cases where replacement is impossible should other compensation for the destroyed virtual property be considered. This may not be a common scenario for online games. However, in some online games, such as Linden Lab's Second Life,¹⁵⁵ it is possible to create potentially irreplaceable virtual property. Users of Second Life can write computer programs that represent buildings, vehicles, weapons, games, and almost anything else that the mind can imagine. If such virtual property were destroyed, and no backup or record usable to reconstruct the virtual property existed, then replacement of the virtual property would effectively be impossible. In such a case, it might be appropriate to provide another form of compensation, such as those discussed below, for compensating devalued virtual property.

[81] For prohibited devaluation of virtual property, "replacement" of the virtual property would be ideal. Restoring the value of unjustly devalued virtual property would consist of reverting the game, the context, back to how it was before the devaluation.¹⁵⁶ For example, this might consist of restoring properties of unjustly devalued virtual armor or swords. In other cases, this replacement or restoration might not be possible. Consider the arguably unjust devaluation hypothetical considered above wherein MindArk gave away space stations to every player immediately after selling one to Mr. Jacobs for \$100,000. Restoring the value of Mr. Jacobs' space station would consist of destroying all of the space stations that MindArk had given away. Such destruction would contravene the rights of the other space station owners.

[82] Where restoration is not possible, monetary damages or equivalent virtual property might be acceptable compensation. If MindArk began giving away space stations in Project Entropia after selling one to Mr. Jacobs, then Mr. Jacobs' space station would also be valued at or near zero dollars. Therefore, an appropriate award for Mr. Jacobs could be the previous value of the space station, \$100,000. As noted, above, however, perhaps courts should avoid awarding monetary damages when possible.

¹⁵⁵ Second Life: Your World, Your Imagination, <http://secondlife.com> (last visited Dec. 18, 2006).

¹⁵⁶ See *supra* section IV.A.

Avoidable monetary damages unduly increase the cost that consumers will be charged to play games and could stifle the gaming industry.

[83] Instead of providing game players with monetary compensation, it may be preferable, where possible, to replace virtual property in a particular game with equivalently-valued virtual property in that same game. Since items are often traded in-game and because virtual items in the same game are often sold in the real-world market, it should be easier to find equivalent virtual property within the same game than in the inter-game scenario considered above.¹⁵⁷ Consider a situation where Blizzard Entertainment unjustly and completely devalued a virtual sword in the game World of Warcraft. If the virtual sword had been commonly exchanged in-game among players for a particular set of virtual armor or for a particular amount of virtual currency, then Blizzard could arguably make the player whole again by giving the player the virtual currency or the virtual armor. In this way, compensation would be set by the virtual market and the game company would not act as insurers of the virtual property.¹⁵⁸

[84] Game players who have suffered unjust devaluation of virtual property might be made whole again by restoring the game to its previous state, providing monetary compensation, or providing equivalent virtual goods. None of the solutions is perfect for every situation. Therefore, determining a remedy will depend on the information and solutions available in each case.

¹⁵⁷ If the players of the particular game value two virtual items in that game equivalently, then perhaps a court should also. This is in contrast to the issue discussed above with respect to game termination. It is arguably harder to justify equating virtual property in two different games. *Supra* note 152.

¹⁵⁸ This would not be the case for MindArk and Project Entropia. Blizzard does not sell virtual items for World of Warcraft. Therefore, when replacing one virtual item with another virtual item, Blizzard bears nothing more than an administrative cost. MindArk, on the other hand, sells the virtual items to the players. If MindArk is forced to replace one item of virtual property with another, then MindArk is arguably losing out on the sale of the later virtual property. For example, if MindArk were to give Mr. Jacobs \$100,000 worth of virtual property in exchange for unjustly and completely devaluing his virtual space station, then MindArk is arguably giving away \$100,000 in virtual property that it could have otherwise sold. For MindArk such virtual-property-for-virtual-property exchange might be tantamount to a monetary damage award.

VI. CONCLUSION

[85] This paper proposes that the protection afforded to the “owners” of virtual property should be based on a conceptualization of bits in context. The numbers representing the bits, the underlying physical server on which the bits are stored, and the electronic database in which the bits are located would, at best, provide obscuring or confusing bases for the formulation of default rights for virtual property. The bits-in-context theory provides a more coherent formulation for the rights of the game players and game companies. Furthermore, although the game player should have rights to virtual property within the game for as long as the game exists – regardless of whether the game player found or purchased the virtual property, game companies should be free to discontinue games, thereby destroying the context of the bits.

[86] Virtual property represents an economic interest that is clearly valuable to those who buy, sell, trade, and use it. The market in virtual property, and society in general, will be better served with legal protection. For example, at the margin, the protection of virtual property may reduce crime. Whereas adequate legal protection might not have stopped one game player’s murder of another when the latter sold the former’s virtual sword,¹⁵⁹ it might prevent similar crimes. If the users know that there is a legal regime to protect their virtual property interests, then at least some of the users will avoid crime and choose legal enforcement instead.

[87] The role of virtual property as discussed herein is limited to ownership of assets and characters within multi-user, persistent online games. The issues addressed, however, may not be so limited. As virtual environments become more ubiquitous and are used in a broader range of commercial and social enterprises, the types of virtual property will expand and may include artistic, scientific, and other creations that we, as

¹⁵⁹ *Sale of Virtual Weapon Leads to a Murder*, CANBERRA TIMES (Australia), Apr. 4, 2005, at A17 (noting that “Qiu Chengwei, 41, stabbed competitor Zhu Caoyuan repeatedly in the chest after he was told Zhu had sold his ‘dragon saber’, used in the popular online game *Legend of Mir 3*”).

a society, will value more than we do mere online gaming-related virtual property.¹⁶⁰ As such, it is important that we establish default rules and legal precedents that provide the kind of protection we will want in the future.

¹⁶⁰ The bits-in-context theory may apply to other current issues. Email addresses or universal resource locators (URLs), for example, may warrant protection only in certain contexts. When we consider protection for email addresses, for example, we would usually consider the ability to receive email as a protectable element. That is, we would not want one person to be able to use another's email address to receive email. We may also want to protect an email address from use by a third party as a return address – often called “email spoofing.” In order to protect these two uses of the *bits* representing the email address, we must protect them in the *context* of use as a routing mechanism. If one were to illicitly receive email using another's email address, then they would be using those bits in the context of message routing – the protected context for email addresses. If we choose to also protect people from email spoofing, then we would be protecting the use of the email address again in the context of message routing.