

What in the World (of Warcraft) Is “Virtual Property”?

ABSTRACT

Virtual property is a relatively new concept. The growing popularity of online virtual worlds in games such as World of Warcraft® has resulted in the creation of this entirely new class of property. The investment of time, effort, and money in the acquisition of virtual goods and money and in the development of avatars creates real-world value in those items, despite the fact that they only exist as computer code on a server. Many members of these virtual worlds now argue that because the value of these items is due largely to their efforts, they should be entitled to the same legal property protections that are afforded to owners of tangible real-world property. Because the concept of virtual property is so new, there is a dearth of legislation and judicial precedent regarding its ownership and protection. This article will give a brief history of the development of virtual property, examine the philosophical and economic arguments proffered by both owners/developers of virtual worlds and the users thereof, and will theorize as to the possible ramifications if varying degrees of property rights were granted to users.

Bob and Shannon were getting divorced. In dividing their assets, they were confronted with a dilemma: a single account in the game World of Warcraft®, an online fantasy role-playing game resembling Dungeons and Dragons. Both are avid players, and while they had shared an account, they had each developed their own characters. Wanting to make a clean break, Bob and Shannon decided that Shannon would open a second account and move her game characters into it. When Bob contacted Blizzard Entertainment, the corporation that owns World of Warcraft®, the customer service representative told him that the policy was to refuse to transfer any game assets from one account to another without a court order.

This real-life scenario launched my research into virtual property. Blizzard Entertainment recognized that Bob and Shannon’s proposal affected a relatively new, yet valuable, type of property. Preferring to err on the side of caution, Blizzard chooses to leave the ownership of that property to a higher authority—the courts. An initial search for more information on “cyber-property” led to a single article where I learned that the appropriate term is “virtual property” and that virtual property is a hot topic. Online gaming has become a huge industry worldwide, and like most new and innovative technologies, it has come with its share of new and innovative problems. This article will examine the origins, definitions and importance of virtual property and the arguments for and against virtual property rights. I will then consider the possible implications to the future of virtual worlds should our courts or legislatures choose to recognize the virtual property rights of users.

The ABCs of MMORPGs

MMORPGs are massively multi-player online role-playing games. These are computer-simulated environments played over the Internet. These virtual worlds include three-dimensional structures and topography as well as physical laws that do not always mirror those of the real world. Virtual worlds also include mechanisms that allow participants to interact with the virtual

environment, like locomotion, as well as avenues for communication with other residents of the world (Chein, 2006). Because these games are constantly being played by users around the world, they mirror the real world in that they “exist” twenty-four hours a day and are always changing. Almost all of these MMORPGs are commercial ventures with users paying fees to play.

The popularity of these games has grown exponentially since *Island of Kesmai*®, the first commercially available MMORPG, became available via CompuServe in 1984. At that time, massive would be defined very differently, as Kesmai only supported one hundred players and was a text-based game (Bell & Trueman, 2008). Today, millions of people worldwide play MMORPGs. Blizzard’s *World of Warcraft*®, a fantasy-world MMORPG and the largest of the online games, boasts over 12 million users worldwide (Blizzard, 2010), and www.mmorpg.com, a forum website for online gamers, lists some 396 different MMORPGs. Online gaming is here to stay and will continue to grow.

In these games, players interact with the virtual environment and each other through avatars. An avatar is a three-dimensional graphical representation of oneself that does not necessarily resemble the player in any way and which facilitates the role-playing within the virtual world. Through the development of their avatars, players define their identities within the virtual world. They create backgrounds, develop reputations, and even choose vocations. This adaptability is perhaps the draw of MMORPGs: one can be whatever one wishes to be within the virtual world.

Through their avatars, players interact with objects within the virtual world. Many virtual worlds, such as *World of Warcraft*®, involve quests, levels, or goals that, when achieved, build an avatar’s reputation, strength, and/or skill and often give the avatar/player access to new areas of and new objects in the virtual world. Other games, however, such as Linden Lab’s *Second Life*® or EA’s *The Sims*®, involve no quest but allow users to do or be whatever they please. To facilitate quests and/or the acquisition of virtual property, almost all MMORPGs feature some medium of exchange: in *World of Warcraft*®, it is gold; in *Second Life*®, it is Linden Dollars or “Lindens”; and in *The Sims*®, it is Simoleans.

All of these virtual worlds are governed by an End-User License Agreement (EULA) and/or a Terms of Service (ToS) agreement. These EULAs and ToSs are what are commonly referred to as “click-wrap” agreements and are commonplace today. They are generally packaged with the software, or if the software is downloaded or preloaded on a machine, they appear on the computer screen and must be agreed to before a user can access the software. These agreements define the terms under which one is licensed to use the software and define the rights and responsibilities of the user and the software company. Click-wrap agreements are legally known as adhesion contracts. An adhesion contract is defined as a “standardized contract form 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 and under such conditions that [the] consumer cannot obtain [the] desired product or services except by acquiescing in the form contract” (Black, 1990, p. 394).

Inherent in EULAs or ToSs is a sort of “deification” of the administrators of these worlds. That is, administrators have absolute power over the landscape, property and even life and death within the virtual world. The EULA for World of Warcraft® very clearly expresses this concept:

Blizzard Entertainment may change, modify, suspend, or discontinue any aspect of the Game at any time. Blizzard Entertainment may also impose limits on certain features or restrict your access to parts or all of the Game without notice or liability . . . Further, [the licensor shall not be] liable in any way for any loss or damage to player characters, virtual goods (e.g., armor, potions, weapons, etc.) or currency, accounts, statistics, or user standings, ranks, or profile information stored by the game and/or the service. Blizzard Entertainment shall not be responsible for any interruptions of service, including without limitation ISP disruptions, software or hardware failures, or any other event which may result in a loss of data or disruption of service (Blizzard, 2008, n.p.).

This sort of absolute power is necessary, gaming companies argue, to keep virtual worlds enjoyable for all and because of the tenuous and often fugacious nature of computer-generated worlds and of computer data in general. One may argue that by maintaining this god-like power and thus order within the virtual world, companies actually protect gamers and themselves; in the event of a catastrophic system failure, the company is also protected from what would no doubt be an onslaught of legal claims.

Virtual worlds are divided into two types: property-averse worlds and property-promoting worlds (Kriegshauser, 2009). Property-averse worlds are concerned with protecting the investment made by the virtual world’s owners/developers in creating the game to the greatest extent legally possible. This is true even to the point that World of Warcraft® regulates all in-game activity: “Game play is what World of Warcraft is all about. Accordingly, the rules that govern game play in World of Warcraft are taken very seriously by Blizzard Entertainment. Note that Blizzard Entertainment considers all valid play styles in World of Warcraft to be part of the game” (Blizzard, 2008, n.p.). This language illustrates Blizzard’s attitude that it must exclusively control the virtual world as an author to maintain its revenue stream and the game’s conceit. This attitude is common to property-averse worlds.

At the other end of the spectrum are property-promoting, or commoditized, virtual worlds. The game Second Life® serves as a good example of this type of world. In a 2003 press release, Linden Lab explained this policy:

Linden Lab, creator of online world Second Life, today announced a significant breakthrough in digital property rights for its customers and for users of online worlds. Changes to Second Life’s Terms of Service now recognize the ownership of in-world content by the subscribers who make it. The revised TOS allows subscribers to retain full intellectual property protection for the digital content they create, including characters, clothing, scripts, textures, objects and designs . . . Unlike traditional online game environments where anything created in-world is owned by the service provider, Second Life has responded to its residents’ desire to own their work just as they would any other original creations. Under these

terms they can create, and sell derivative works based on content they've made, or license the work to others (Linden Lab, 2003, n.p.).

It is important to note that Linden allows users *intellectual* property rights in their creations, which differ significantly from property rights. A simplified example of this difference is the difference between designing an article of clothing and owning that design, and owning a physical article of clothing. In the latter case, one owns tangible property; in the former, one owns an idea. World of Warcraft® and Second Life® exemplify property-averse and property-promoting virtual worlds, respectively, but many virtual worlds fall somewhere in the middle of this spectrum.

What Is Virtual Property?

According to C. Blazer (2006), “virtual property,” rather broadly defined, “is persistent computer code stored on a remote source system, where one or more persons are granted certain powers to control the computer code, to the exclusion of all other people” (p. 141). In a 2005 article, J. Fairfield describes three “legally relevant” qualities that virtual property shares with real-world property: “Virtual property is rivalrous, persistent, and interconnected code that mimics real world characteristics” (p. 1052). Building on Fairfield’s work, Blazer goes further to describe what he believes to be five indicia that courts might use to identify virtual property.

The first indicium of virtual property is rivalry. Put simply, rivalry means a right to possess to the exclusion of all others. As an example, if someone owns a shoe, only he can wear it, and no one else can wear it, as long as he is wearing it.

The second indicium is persistence. Persistence is that characteristic of property by which the property remains unchanged. For example, if one parks a car somewhere while shopping, then that car continues to exist in an unchanged state, even though the car is not currently possessed. Similarly, if a user logs out of a Hotmail email account and turns her computer off, her email continues to exist on Hotmail’s servers. This characteristic of virtual property distinguishes it from intellectual property, which is of a more intangible nature.

The third indicium of virtual property is interconnectivity. Interconnectivity is the characteristic of property that allows it to affect and to be affected by other persons or property. Blazer uses the example of an account that allows users to track stock prices; such an account does not demonstrate interconnectivity, as users’ accounts cannot affect other people or property. In contrast, an account that allows users to trade stocks gives them the opportunity to affect other property. That difference is interconnectivity.

The fourth indicium of virtual property, added to Fairchild’s first three characteristics by Blazer, is the existence of secondary markets. In many cases, users develop secondary markets to trade in virtual goods. These secondary markets create tangible value in virtual property. The existence, or non-existence, of secondary markets is, however, not dispositive of virtual property. As an example, email accounts are not generally bought and sold, yet a user whose account is stolen should certainly have a legal right to recover that account.

Blazer's fifth and final indicium of virtual property is value-added-by-users. As users participate in MMORPGs, they add value by personalizing the virtual world with which they interact. Blazer notes that he is not advocating a Lockean labor theory, which will be discussed later in this article, but he argues that this added value comes from the sense of ownership, security, utility and value that users develop, which is the impetus for the hours of "labor" that they invest in developing virtual property (Blazer, 2006). This bears strong resemblance to Radin's personality theory of property, which will also be discussed below.

Fairfield's and Blazer's opinions on the qualities possessed by virtual property are not universally held. J. W. Nelson (2009) questions whether virtual property possesses these qualities at all. For property to be truly rivalrous, the holder must be able to control the property to the exclusion of all others. Take the examples that Fairfield provides, like URLs and email addresses: holders of these resources do not have the inherent ability to own or control them, argues Nelson. The ability to control these resources is held collectively by the user, the ToS agreed to by the user and the company providing the URL or email account. Contractual rights grant users the ability to exclude others from controlling resources but also provide recourse for the providing company to terminate these rights should the user violate the terms of the contract. Unlike the users of URLs and email addresses, users in virtual worlds are not provided the right to exclude others from using their virtual objects through ToSs and EULAs. Administrators in virtual worlds can exert control over the virtual objects possessed by users in the virtual world at any time.

Nelson also addresses Fairfield's and Blazer's idea of the persistence of virtual property. Fairfield (2005) uses emails as an example of virtual property possessing the persistence characteristic. He focuses on code that "does not fade after each use, and does not run on one single computer"; emails do not cease to exist "when an email account owner turns her laptop off" (p. 1054). While Fairfield is correct in that messages in most modern email systems do not disappear when an account owner turns off her computer, he appears to misunderstand how email systems work. Microsoft's Hotmail email system runs on Microsoft's email servers. It does not run on the account owner's laptop. The account owner is merely accessing Microsoft's email servers while using the Hotmail service. The Hotmail account may be accessible from multiple computers, but the account code is only being run on Hotmail's infrastructure. There is a fundamental difference between running code on the user's computer with the user's hardware and Internet connection, and accessing another person's computer to run code that uses his hardware and his Internet connection.

While Fairfield is correct that current technology means that email accounts do possess a great amount of persistence and that the storage of this information is more reliable, digital information remains impermanent by its very nature. Even with advances in data storage technology, data loss continues to be a serious problem. Emails and other data are lost to power failures, hardware failures and software failures. It is also important to note that virtual worlds have, on numerous occasions, been "rolled back" to previous states of existence as a result of bugs in software code. These rollbacks, of course, result in the loss of virtual objects acquired by users. Therefore, Nelson concludes, any perception of persistence is merely illusory (Nelson, 2009).

The third of Fairfield's and Blazer's characteristics, interconnectivity, is also missing from virtual property according to Nelson. While virtual objects may appear to possess the characteristic of interconnectivity upon first inspection, this does not bear close scrutiny. Users do connect to virtual worlds using the Internet, which is an interconnected collection of computers, but there are significant limits to the interconnectedness of virtual property. The interconnectivity of virtual property is almost entirely dependent upon the virtual world in which it exists: "People in EVE Online® cannot use the virtual weapons of World of Warcraft®. Someone in EverQuest® cannot use the virtual real estate in Second Life®" (Nelson, 2009, p. 17). It is equally true that someone using an older computer or a computer with an unsupported operating system may not be able to experience virtual property because they are unable to access the virtual world.

Why Virtual Property Rights?

There are three classic property-use rights: acquisition, use and disposal. These rights are exercised through a fourth right: the right to exclude others from acquiring, using or disposing of your property (Black, 1990). Extending property rights to virtual resources means those resources will be imbued with these four rights. There are two main justifications users in virtual worlds cite for their desire for property rights. The first of these is what is known in the law as alienability. To alienate is "to convey; to transfer the title to property" (p. 96). In simple terms, users desire the ability to transfer virtual property, generally in real-money transactions. Most EULAs, however, prohibit such transfers, but this has done little to slow the grey market that has developed for virtual property.

Most people who play MMORPGs do so solely for the social and entertainment value, but even in the normal course of play, participants often receive such items as armor, weapons or virtual currency that have value within the game. Some participants accept real money in return for transferring such an item in-world. As a result of these grey-market trades, many items have developed market value of some significance. For example, level sixty EverQuest® characters reportedly have sold for as much as five thousand USD (Lederman, 2007). There are people who make a living playing the games, using their avatars to obtain virtual property that has real-world value and then selling it, typically via online auction sites.

The growth of grey-market trading in virtual property has led to an increase in virtual crime, particularly the theft of virtual property. According to one study, the majority of online-gaming crime is theft (73.7%) and fraud (20.2%); the average value of the online gaming loss is about 459 USD; and 34.3% of criminal loss is between 100 and 300 USD. Similarly, statistics from the National Police Administration of Taiwan show that Taiwanese police prosecuted 3,983 criminals for 3,553 cyber-crime cases during 2002; more than 1,300 of these cases concerned MMORPGs. Korea's Cyber Terror Response Center (KCTRC) has also reported that cyber crime increases exponentially every year: in 2000 there were only 675 cases; in 2001 there were 2,193; in 2002 there were 8,250; and in 2003 the total number of cyber crimes was 10,187. KCTRC concluded that 70% of cyber crimes relate to item-trade fraud (Arias, 2008).

While no study has examined the theft of virtual property in the United States, crime numbers in Taiwan and Korea serve to illustrate the prevalence of these thefts. Despite the daily occurrence

of theft within MMORPGs, this type of theft remains unregulated in the United States. Due to this lack of regulation, American users in virtual worlds find themselves with minimal protection against theft of their virtual property, and they suggest that property rights are the answer to the problem (Nelson, 2010).

Arguments For and Against Virtual Property Rights

Lockean Arguments

John Locke was a seventeenth-century British philosopher who provided many of the political-philosophical principles upon which the U.S. Constitution is based. Locke's ideas on appropriation provide a justification for property rights, that is, ownership of goods at the exclusion of others. In Locke's philosophy, the primary justification for private property is necessity. He first reasons that the resources of the world are commonly owned, but if the resources are commonly owned, then how can anyone make use of them without infringing upon the rights of others. Locke, therefore, posits that "there must of necessity be a means to appropriate [natural resources from the common] . . . before they can be of any use" (Locke, 1988, p. 26).

The question then becomes by what means does one appropriate resources from the common. Locke answers in eloquent fashion, "Whatsoever then he removes out of the State that Nature hath provided, and left it in, he hath mixed his labour with, and joyned to it something that is his own, and thereby makes it his property" (p. 27). Locke's theory is commonly referred to as labor-desert theory—the person who labors to render that which he has taken from the state of nature into valuable form deserves to reap the benefit from it.

Locke does offer two provisos to this theory. The first is that when taking from the common, one must leave "enough and as good" in the common for everyone else. The second is that one may take only as much as one can use before it spoils (Locke, 1988). Neither of Locke's provisos offers much guidance in either direction with regard to virtual worlds and virtual property. Since computer code itself is an unlimited resource, there is no issue of leaving "as much and as good," and since computer code does not spoil, there is as much code as one wishes without wasting or depriving anyone else.

Advocates of virtual property rights for users claim that Locke's philosophy of property rights fits well within the virtual world. Users spend literally thousands of hours developing their avatars and acquiring virtual property, whether it is a powerful sword in *World of Warcraft*® or an island in *Second Life*®. There are those who might raise the argument that playing a game is not labor in the Lockean sense; however, D. Hunter and F. G. Lastowka (2004) note that professional sports figures are paid millions of dollars for "playing games" (p. 31).

There is, nevertheless, a serious problem with the Lockean argument for virtual property rights. Locke's labor theory is concerned with the origin of private property, meaning where property acquisition from nature first begins and with how the concept of property rights justifies this acquisition from nature. Locke focuses on labor that removes a resource "out of the state that nature hath provided." Property ownership must begin somewhere, and Locke's theory is that it

begins when a person first mixes labor with a resource taken from the state of nature. Virtual resources, however, do not exist in a state of nature. These resources have already been removed from the state of nature, and mixed with the labor of the game's developers and offered to users in the virtual world. Although Hunter and Lastowka are correct in their claim that "the assets in question emerge from the time and effort of the players" (p. 31), it was the time and effort of the developers that have already removed those assets from the state of nature (Horowitz, 2007).

This concept can be illustrated using Hunter and Lastowka's virtual forge analogy. Applying Locke's labor theory to the real world, a blacksmith who unearths ore, transports it to his forge, smelts it and produces a sword has removed that ore from nature and, therefore, deserves property rights in the ore and the resulting sword. Virtual worlds simulate this process by allowing users to mine ore, transport it back to a forge and craft a sword (Hunter & Lastowka, 2004). What Hunter and Lastowka fail to take into account is that it was the game developers who labored to create the graphics representing the ore, the forge and the sword; the code functions to allow the user to mine the ore, smelt it and create the sword, while the hardware and network run the code that allows the user access to the virtual world with its virtual forge and ore. A more reasonable analogy to the real world would be a situation where a blacksmith does not mine his own ore but buys his ore from a miner. It is the miner who labored to remove the ore from the state of nature and, therefore, has property rights in the ore, according to Locke's theory.

To take Hunter and Lastowka's real-world example a step further, imagine that the blacksmith takes the ore back to his forge and creates a sword. Is it his labor that creates a property interest? Had he taken the ore back to the forge and left it sitting in a corner, doing nothing with it, would it still be his property? The answer to the first question is a very obvious no: the ore is his property because he purchased it and a clear chain of title was created. This is also why, even if our blacksmith chose to do nothing with the ore, it still remains his property. This example shows us why Locke's labor-desert theory applies only to resources taken out of the state of nature.

The negation of Hunter and Lastowka's forge analogy, however, is not complete. What of users in such worlds as *Second Life*®, who create virtual property out of their own imaginations and their own code? Do not these users remove resources out of the state of nature? Certainly, these users and their creations have a more solid claim to Locke's theory. But there is a problem that none of the authors referenced in this article seem to have recognized. The same theory that grants these users property rights in their creations also grants game owners/developers property rights in their creations. This seems intuitive and most of the authors agree on this point. But what, exactly, are those rights? One of the basic rights of property ownership is the right of exclusion; so, while users may have property rights in their creations, virtual world owners/developers have the right to exclude these users (and their creations) from their worlds. Because of the nature of virtual worlds, users' creations lack value without the context of the worlds for which they are designed.

Utilitarian Arguments

The term utilitarianism was first coined by late-eighteenth- and early-nineteenth-century English legal philosopher Jeremy Bentham, although many of the principles of utilitarianism have been around since Plato. The basic premise of utilitarianism is that actions are right if they create the greatest happiness for the greatest number of people. For Bentham, one must take into account the effect an action has on everyone affected by the action when determining the rightness or wrongness of the action (McGee, 2004). Thus, the utilitarian argument for property rights for virtual property would be to do so if it would increase overall utility or, in other words, increase the welfare of society: “An action then may be said to be conformable to the principle of utility . . . when the tendency it has to augment the happiness of the community is greater than any it has to diminish it” (Bentham, 1970, p. 6)

Seemingly counter-intuitive, utilitarianism is often used to justify private property rights. The “tragedy of the commons” is perhaps the most popular example given. The story begins with the commons, pastureland that is commonly held and used by local ranchers to graze their herds. Each rancher finds that it is in his own best interest to graze as many cattle as possible in the commons, since the rancher gains all the benefit of the sale of his cattle, which has been fattened on the commons, for himself but has only a small shared liability for the destruction of the commons. Thus, private ownership is justified because if each rancher is responsible for his own pastureland, then he has a direct self-interested incentive to nurture his pastureland so that his herd will always be fed, which benefits not only himself but also society as a whole (Hunter & Lastowka, 2004).

The utilitarian theory of property states that it is appropriate to grant private property rights, if doing so would increase its overall utility or social welfare. In a capitalist society, it is often posited that people only create things if they have an incentive; granting private property rights creates such an incentive. This theory lends some validity to granting virtual property rights in that giving people the incentive to create a better reality in the virtual world through property rights would benefit the greater good.

There are, however, other utilitarian arguments that do not favor users’ property rights. As mentioned above, private property rights, and the potential monetary gains they imply, are an incentive for creating new and better products. Most owners/developers of virtual worlds develop those worlds with just such a profit motive. Granting users property rights within those worlds would necessarily decrease those profits and, therefore, create disincentives both for would-be owners/developers to enter the market and for current owners/developers to improve existing virtual worlds or to create new ones. While granting property rights to users in virtual worlds may create greater utility in the short term, it is altogether likely that in the long run, the quality and variety of virtual worlds would be reduced and all would suffer.

Personality Theory Arguments

In 1982 legal scholar Margaret Jane Radin published “Property and Personhood,” the paper in which she introduced her “personhood theory of property,” the theory that later came to be known as the personality theory of property. This theory puts forth the idea that property

ownership is bound up with self-constitution or personhood. The basic premise of Radin's theory is that property or, more precisely, one's relationship to property can be described in two ways: personal or fungible. Personal property is property that "has become bound up with the individual, the loss of which would cause a level of loss greater than the monetary value of the property" (as cited in Boone, 2008, p. 723) Some examples of personal property include homes, engagement or wedding rings, and pets. Fungible property is property that is easily replaceable. The ultimate example of fungible property is money. In Radin's theory, personal and fungible are not an either/or descriptive; rather, they are two ends of a scale.

The question of whether property is personal or fungible is not a question of what type of thing the property is but what the individual's relationship to the property is. The same item may be fungible property to one and personal to another. M. S. Boone uses the example of the wedding ring; to the artisan who creates it or the jeweler who sells it, the wedding ring is merely fungible property—something to be exchanged for value. However, that same ring develops a great deal of value when it becomes bound up with the married person's self-constitution. This special attachment is not, though, the only manifestation of whether property may be deemed personal. This self-constitutive characteristic should also be a healthy one, that is, it should further "human flourishing" (Boone, 2008, p. 725).

Once property is found to be personal as opposed to merely fungible, then the rights associated with that property are potentially altered. The personhood theory affects property in two distinct ways. First, personal property is given preferential treatment over fungible property. Put another way, when personal property interests and fungible property interests conflict, personal property rights should be protected to the detriment of fungible property rights. The second way in which property interests are altered in the face of personhood theory is alienability. Property that has become personal should, according to Radin's theory, be maintained in a non-commodified state. Market inalienable items may be given away but not sold. Radin's theory has been applied to sexual services, adoptions and surrogacy services (Boone, 2008).

The question of whether virtual property can be classified as personal is not an easy one to answer. Certainly, some virtual property is highly valued by the users who hold it within various virtual worlds. Players invest thousands of hours (and often large sums of money) developing and using virtual property. Aside from the obvious value some players place on the virtual property, many players place a high subjective value and are strongly connected with certain virtual world objects, particularly avatars.

This high value and strong connection are not, however, dispositive of the case for virtual property as personal under Radin's theory. If it were, then it seems almost certain that the empires of the Donald Trumps or Sam Waltons of the world would be comprised entirely of personal property, as they place a high value on their assets and their identities as billionaires are tied up in those assets. In addition to this self-constitutive connection to virtual world property, Radin's theory also requires that that connection support human flourishing in order to justify its classification as personal property. This is where Radin's theory offers very little guidance as to how human flourishing should be defined.

One possible method for determining whether the connections that users have to the virtual property they interact with support human flourishing is to examine the common or popular view of these virtual worlds and the individuals who invest their time in them. Much of the mainstream media coverage of these individuals tends to be sensational and largely negative. As an example, the work by A. Chein (2006) referenced earlier in this article was inspired by the story of a real-world murder that occurred over a stolen virtual sword. Similarly, numerous fictional television programs have featured storylines about a person who spends an inordinate amount of time in some virtual world, generally with unfortunate consequences. In both the news accounts and the fictional accounts, there is, at least implicitly, a high degree of connection between the individual and the virtual property. If one accepts that the media and entertainment industries, however flawed, are very good at gauging the opinions of their audiences, then one recognizes that the current popular opinion of virtual property as self-constitutive is more negative than positive. Without opposing evidence, it appears that virtual property fails to meet the second of Radin's criteria for qualification as personal, the need to support human flourishing by today's standards.

Because societal values, like virtual worlds, are constantly evolving, it is not unrealistic to envision a time when a self-constitutive attachment to virtual property could become much more socially accepted, if not the norm. Therefore, an examination of the affects that the application of personality theory to virtual property might have on virtual worlds is in order. Boone makes the comparison between protecting users' personal property rights in virtual property and rent-control statutes. This analogy is reasonable because as the landlord owns the building, owners/developers own the virtual worlds; though a tenant merely inhabits her rental unit, her relationship to the property that becomes her home is, as a rule, much more personal than that of the landlord's relationship to the property, whose interest is monetary and thus fungible. Similarly, the user's relationship to her avatar is self-constitutive and, for purposes of example, contributes to her human flourishing and is therefore personal, whereas the owner/developer's interest is that of a money-producing asset and is fungible (Boone, 2008).

Rent-control statutes protect tenants to the detriment of landlords (landlords are prevented from raising rents and cannot simply evict one tenant in favor of another who would pay higher rent), but those protections are not absolute. Bad conduct by the tenant is one justification for favoring the rights of the landlord over those of the tenant. The statutes, and Radin's theory, seem to draw a distinction on where the tenant's personal property rights trump those of the landlord. That line is drawn at the justification for the landlord's action(s); the landlord's actions must not be simply motivated by economic gain.

In applying personality theory to virtual property, some clear parallels can be drawn to rent-control statutes. Users' rights in their virtual property would not be protected absolutely. When owners/developers have to reset virtual worlds to an earlier point in time to correct some software issue, users' virtual property is affected: users lose any gains that they had made in the intervening time. This loss would be justified under Radin's theory because the owners/developers' actions are taken to protect the integrity of the virtual world itself and not simply for economic gain.

There are criticisms of rent-control statutes that, via analogy, result in similar criticisms of proposed virtual property rights. Price-theory analysis states that suppressing the rent a landlord can charge to below what the market will bear decreases the incentive for landlords to both use current buildings for rental properties and construct new residential apartment buildings. As a result, price-theory analysis suggests that rent-control statutes will actually increase shortages in rental housing (Boone, 2008). Applying personality theory to virtual worlds could result in similar restrictions in virtual worlds, increasing potential liability risks to owners/developers. Those risks reduce the incentive to develop new virtual worlds and to maintain the quality and variety of virtual worlds. Therefore, if virtual property rights support human flourishing but result in reduced access to those worlds, then the application of Radin's theory could actually be self-defeating by reducing the opportunities for human flourishing.

Applying personality theory to virtual property could also result in reduced alienability of that property. Under the theory, highly personal property may have partially or completely limited alienability. This idea stands in direct opposition to the impetus many have for seeking property rights in virtual resources in the first place: profits (Boone, 2008). While personality theory may support the allocation of some property rights to users, it does not provide support for alienation rights that would create an entitlement to real-money transfers. Commodification or market alienability, which is a necessity for alienation rights that enable real-money transfer, is anathema to personality theory. Commodification is an aspect of fungible property, not personal property. Therefore, the application of Radin's theory would not provide support for users seeking the right to sell their virtual property.

Theft Protection Arguments

In order to examine users' rights to virtual property as they relate to theft protection, J. W. Nelson (2010) suggests two possible models. The first is a positive model: a positive model grants property rights in virtual resources to the owners/developers of a virtual world. These rights are derived from the underlying property rights of the owners/developers in the hardware and code that make up the virtual world. The owners/developers' property rights in virtual resources are derived from those underlying rights. The result of this positive model is the status quo, since it provides users no more rights to virtual property than they currently have. Nelson's second model, a normative model, is more important to my current discussion. A normative model grants property rights in virtual resources to the users of virtual worlds. These rights are based on two justifications: the need to punish and deter theft, and the need to create efficient virtual resource markets. In this normative model, users will possess the right to acquire, use and dispose of virtual resources, and the user will be able to exclude others from exercising those same rights. There are two ways to apply this normative model: the first is a total rights approach and the second is a conditional rights approach.

A total rights approach to virtual property rights grants users unrestrained property rights to virtual resources. Users hold these rights against all others' rights, including those of owners/developers. Once a user acquires a property right in a virtual resource, s/he has the full right to use it and dispose of it in any way s/he wishes. The user can also bring a legal action against any who interfere with these rights. A conditional rights approach, in contrast, grants users property rights in virtual resources that are subject to the rights of others, including

owners/developers and other users. The user possesses a right to use and dispose of his or her virtual resource but this right is not absolute as in the total rights approach above. This is because the user's rights are subject to the rights of the owners/developers invested in their code and hardware. The user's property rights are also limited by any underlying rules of the virtual world, such as whether avatars are allowed steal from each other, as well as the ToS or EULA.

Having laid out two possible models for a normative analysis, the next step is to apply these property protection models to different scenarios involving virtual resources, namely three examples of theft of virtual property. First, I will examine theft based upon unauthorized access to a user's account, also known as hacking. Next, I will examine theft based upon allowable in-game mechanics, i.e., theft within game by another user, which is allowed by the rules that govern the virtual world. Lastly, I will examine theft through the exploitation of software bugs—vulnerabilities in the software code exploited by a user to take the property of another user outside of the rules that govern that world.

I will use conversion as the legal remedy in each scenario. The Restatement (Second) of Torts defines conversion as “an intentional exercise of dominion or control over a chattel which so seriously interferes with the right of another to control it that the actor may justly be required to pay the other the full value of the chattel” (American Law Institute, 1965). It is important to note that in order for a plaintiff to assert a cause of action for conversion, the plaintiff must have a property interest in the object.

In the first scenario, a thief steals a user's virtual property by gaining unauthorized access to the user's account. The thief is able to appropriate the user's avatar, possessions and currency, the aggregate value of which in real-world currency is nine hundred dollars. For the sake of this example, assume that the user is able to ascertain the identity of the thief and compel the thief's presence in court.

Since the normative model grants property rights to the user, the user may bring a conversion suit against the thief. The thief's actions were intentional, and the interference is material and substantial, since the resources have been transferred out of the user's control or deleted. The loss is a complete loss rather than a minor interference. Therefore, the thief is liable for conversion and will have to pay the user the nine hundred dollars, the value of the stolen property. This result is the same under both the total rights and conditional rights approaches to the normative model. The total rights approach grants the user property rights against all other people. The thief has clearly interfered with those rights in this scenario.

The conditional rights approach also grants the user property rights subject to specific conditions. The first condition is that the user's property rights are subject to those of the owners/developers. The second condition is that the user's property rights are subject to the virtual world's internal game mechanics. Neither the owners/developers nor internal game mechanics permitted the thief to steal the user's virtual property in this scenario. The thief accessed the user's account without authorization. No conditions have been met that would limit the user's property rights, and there is clear interference with the user's property rights in the virtual resources.

In the second scenario, a thief steals a user's virtual property within the internal mechanics of the game. A number of virtual worlds allow users' characters to kill, rob, loot and/or pickpocket others' characters. These abilities are an integral part of the game's conceit. Killing or stealing from other users' characters is neither against the rules nor against the conceit of the owners/developers. A thief in one of these worlds picks the pocket of another user's avatar, stealing a valuable sword and shield. The property is worth two hundred dollars in real-world currency. As above, assume that the user is able to ascertain the identity of the thief and compel the thief's presence in court.

Since the total rights approach gives the user property rights to the exclusion of all others, it allows the user to sue the thief in a real-world court for an action taken within the virtual world, which did not violate the rules or the conceit of that world. The thief has interfered with the personal property of the user by stealing the sword and shield. This interference is material as the user completely lost both items to the thief. Hence, the thief is liable for conversion and must pay the user the two hundred dollars, the value of the items. The total rights model works well in the first scenario; however, in this scenario, it appears excessive. The thief was acting within the rules of the virtual world, but the thief is nonetheless liable for conversion, since the virtual resources he stole are endowed with property rights. By granting absolute property rights, the virtual world's rules and the user's property rights are placed at odds with each other.

The conditional rights model overcomes this discrepancy by subjugating the user's property rights in his virtual resources to the internal game mechanics of the virtual world. The user assumes the risk of property loss when entering the virtual world by agreeing to the EULA. The user has no claim for conversion against the thief under the conditional rights model. While it is true that the thief intended to steal the user's sword and shield, the user's property rights in the sword and shield are subject to the thief's ability, according to the game's rules, to steal them.

In the final scenario, a thief steals a user's virtual property by exploiting a software bug. By way of example, a virtual world allows the opening of a virtual store in which users can exchange virtual property for virtual currency. Once the items to be purchased are placed on the virtual counter, the price in virtual currency appears in a window, and a user accepts the trade by clicking a button. Now imagine that something in the code allows a dishonest merchant to take a user's virtual currency without providing the selected merchandise. Because of a software bug, the merchant is able to log off before the trade is completed; the merchant is credited while the would-be customer debited the virtual currency, but the virtual property is never transferred. The thief uses this unintended feature to take five thousand virtual gold pieces from another user. The value of the gold pieces in real-world currency is fifty dollars. As in our former examples, the user is able to ascertain the identity of the thief and compel the thief's presence in court.

The thief's actions fall somewhere in between the first two scenarios. The thief was acting within the internal game mechanics but outside of the authorization of the owners/developers and the user. The software bug that permitted the theft is the unintended result of developer error and not an intended or allowed method of game play, as in the sanctioned pick-pocketing scenario above. The total rights model allows the user to bring suit for conversion against the thief. The thief intentionally interfered with the user's property rights in the five thousand gold pieces. This interference resulted in the complete loss of the virtual resource, and the thief is liable for fifty dollars, the value of the virtual gold.

Liability does not necessarily end there, however. The user's loss was the result of the developer's error, and issues of negligence could find the owners/developers liable for the user's loss as well as the thief. The user may be able to successfully argue that the owners/developers failed to adequately protect the user's property interest. The owners/developers may in turn be able to absolve themselves of liability by way of the EULA. The EULA can serve as an express assumption of risk, much like a release signed to go skydiving or some other high-risk activity. This solution chips away at the extensive property rights granted to the user under the total rights approach. In fact, this approach creates an exception to the user's property rights in his virtual resources in ways similar to the conditional rights approach.

Under the conditional rights model, liability is less clear. This situation differs from the first scenario in that the thief did not access the user's account. In this case, the thief took advantage of an unintended loophole in the code of the virtual world. The question of where the line is drawn in determining liability makes all the difference in this case. In the conditional rights model, that line is drawn not at the intent of the thief but at authorization. In this scenario, neither the user nor the owners/developers authorized the thief to use the software bug to take the user's virtual property, and therefore, the thief is liable. Any question of the owners/developers liability for negligence is also answered under the conditional rights model. The user's property rights are inferior to those of the owners/developers in the conditional rights model. The user is unable to sue the owners/developers. Explicit waivers are not necessary in this model, as there is no intentional misconduct on the part of the owners/developers.

To summarize the effects of Nelson's positive and normative models on theft of virtual property, each scenario provides the same outcome under the positive model, i.e., there being no possibility of conversion claim. The normative model, however, results in the different outcomes in every scenario. The total rights model is the most simple, but it results in questionable outcomes in the second and third scenarios. The conditional rights model seems to provide a more reasonable balance between the competing property interests of the owners/developers, users and third parties, but the resulting effect is increased complexity (Nelson, 2010).

Conditional rights approaches to property are not a new concept. The idea of property rights existing against the entire world is not feasible even in the "real" world. Real-world property rights are limited by tort laws, nuisance laws and even criminal laws. Property rights have always been subject to the rights of others (Nelson, 2010). The conditional rights model does go beyond the traditional limitations on property rights. Conditional property rights are not only subject to the rights of others, but they are also inferior to those of the owners/developers. The rights of the owners/developers have priority over the users' conditional property rights. Nelson states that this view results in an effective horizontal slicing of those rights:

This horizontal slicing can be pictured through analogy. Imagine a row of buildings on a city street. My right in my building is separated vertically from my neighbor's through the vertical wall. Nevertheless, I have a landlord. My landlord has a right between me and the ground. This is a horizontal slicing of the building's rights. My landlord's property rights separate me from the underlying right in the land and the building (p. 26).

Of course, this interpretation is simplistic, and courts and legislative bodies have acted to protect the rights of the lessee and to limit the actions a property owner can take with regard to a leased property, e.g., rent control. Even so, this analogy is useful in demonstrating how property rights in virtual worlds might work under the conditional model.

Market Efficiency Arguments

Market efficiency is an economic theory based on the idea that resources should be permitted to develop in the most efficient manner. Greater market efficiency leads to an increase in productivity. In turn, greater productivity leads to an increase in overall value. This greater value increases everyone's welfare. Thus, market efficiency might be likened to a sort of economic utilitarianism. This economic theory is embodied in the phrase "a rising tide lifts all boats." The goal of efficiency is increasing the size of the economic pie and, therefore, increasing the size of each consumer's slice of that pie. In contrast, equity in economics is concerned with the relative size of everyone's pie slice, especially who has the bigger piece (Hines, Hoynes, & Krueger, 2001).

The argument that property rights should extend to virtual property focuses on efficiency interests, increasing the size of the pie, rather than equity interests, relativizing everyone's piece of the pie. In economics, "efficiency dictates that resources should move into the hands of the highest valuing user" (Miceli, 1997, p. 127). The reasoning here is that the highest-valuing user, i.e., the user that places the greatest value on the resource, will develop the resource in the most beneficial way. In turn, this beneficial development will increase the overall productivity of the resource. Therefore, in order for a resource to be used most productively, and most efficiently, it should be transferred into the hands of the person who values it the most. Efficient markets facilitate this transfer.

Fairfield (2005) believes that new technology has opened new possibilities and created "new uses of resources" (p. 1065). Property law, he argues, is the best way for these new uses to be efficiently allocated and used. Otherwise, Fairfield believes "[f]ailure to recognize virtual property raises both negotiation and search costs for third parties" (p. 1090). These increased negotiation and search costs result in increased transaction costs. Search costs are costs incurred in determining whether the required good is available on the market, who has the lowest price, etc. Negotiating costs are the costs required to come to an acceptable agreement with the other party to the transaction, drawing up an appropriate contract and so on (Niehans, 1987). Transaction costs may become so costly that an efficient transaction does not occur. The fear of market efficiency devotees who advocate for property rights in virtual resources is that without property rights, transaction costs will remain too high for beneficial transfers to occur (Fairfield, 2005). The markets for virtual property must be examined in considering a market efficiency justification for extending property rights to virtual resources. Advocates argue that granting property rights will result in reduced search and negotiation costs for the buyers and sellers in these markets, and reducing search and negotiation costs reduces transaction costs (Niehans, 1987).

Before any analysis of transaction costs can be thoroughly explored, it is necessary to understand how computer code affects transfer costs. Computer code has an effect on the transaction costs of almost all market transactions today, and virtual resources are no exception. Computer code gives users of virtual worlds the ability to post auctions for their virtual resources that other users can browse and bid on. In this way, computer code lowers the search costs of buyers seeking out specific virtual resources by creating a single location where they can be bought and sold. Furthermore, computer code not only creates virtual resources with all of their attributes, and determines what an object looks like and does in the virtual world, but computer code also entirely facilitates their exchanges, that is, dictates whether an object can be transferred between users within world and whether a particular seller can transfer an object to a particular buyer. Even when transactions of virtual resources occur externally to their virtual worlds, and are partially dependent on external regulations, the actual transfer must occur within the virtual world and is regulated by that world's computer code.

Having explained the important role that computer code plays in virtual world transactions, I will now analyze three different transaction scenarios. In all of these scenarios, I will use the same normative and positive models that I used for the analysis of theft protection scenarios. Just as in the theft protection scenarios, the positive model results in no changes from the current state of affairs, because the positive model vests property rights with owners/developers as they exist currently under EULAs and ToSs. I will first examine transfers of virtual resources between two users within a virtual world. Next, I will examine transfers of virtual resources that are partially external to the virtual world. These types of transfers are typical of grey markets. Last, I will view transfers of virtual resources between owners/developers and users.

In the first scenario, a buyer agrees to purchase a shield from a seller for five hundred virtual gold pieces. The shield is exchanged for the gold pieces within the mechanics (computer code) of the virtual world. The issue is what effect the granting of property rights to virtual resources will have on transaction costs.

Any search costs to the buyer are a function of the virtual world's computer code, which describes the shield and allows its transfer. Granting property rights to the shield in either the positive or normative models does not, in and of itself, change the way that the virtual world's computer code regulates that transfer. But because users, and not owners/developers, would possess property rights in the shield under the normative model, the code-based, owner/developer-determined regulation governing its in-world transfer may have to be altered, resulting in a fundamental change in the character of the world. This result is most likely in the total rights approach to virtual property.

In this scenario under the total rights approach, the buyer's search costs are increased because it is no longer just the world's code-based regulations that must be considered. The user now has property rights protected by property law, and any difference between those rights and the world's regulation will need to be determined and resolved. For example, in some virtual worlds, certain items bind to the first avatar who uses them. This would then limit the buyer's ability to transfer the shield to another user after purchasing it. Property law, however, favors the alienability of property. Therefore, the world's code-based regulation, which restricts future transfer of the shield, may conflict with legal regulation favoring property alienability. The

conditional rights approach to virtual property does not encounter this problem, because both the seller's and buyer's property rights in the shield are inferior to the virtual world's code-based regulations. If the world's code-based regulations restrict future transfers of the shield, the user's alienation rights are subject to that code-based restriction.

In the partially external transfer scenario, a buyer agrees to pay a seller fifty real dollars for one thousand virtual gold pieces. The real-world money changes hands outside of the virtual world on a trading website. Then the transfer of the gold pieces occurs within the virtual world and is subject to any of the world's code-based regulations. The buyer's search costs for this transaction are controlled by the virtual world's code-based regulations of the gold pieces and their transfer. Neither the seller nor property laws dictate the attributes of the gold pieces. They are dictated by the virtual world's computer code, and the ability to transfer the gold pieces is dependent on how the mechanics of the virtual world allow gold pieces to be transferred.

The total approach gives the seller property rights in the gold, which s/he can then transfer to the buyer, but these rights may differ from the rights granted by the virtual world's code-based regulation. If users in the virtual world were not allowed to transfer gold, then this would conflict with the seller's legal right to dispose of his or her virtual resources, which s/he is granted in the total rights model. The conditional rights approach does not suffer from a similar problem, as the seller's property rights in the gold pieces are subject to those granted by the virtual world's computer code. This does nothing more than bring the transaction costs back to what they are in the positive model, which is the current circumstance of no property protection.

Some virtual worlds allow users to spend real-world money in order to purchase equipment and virtual lands. If a user were to purchase a new vehicle from the owners/developers for one thousand dollars, then the user would have property rights in the vehicle in both the positive and normative models. The question is how this affects the transaction costs. The total approach grants the user absolute rights over the new vehicle. Any code-based restrictions would change the transaction from a transfer to a license to use the vehicle. The conditional rights approach subjects the vehicle to the underlying rights of the owners/developers and the code-based regulations of the virtual world. Search costs in this transaction are controlled by the code-based regulations of the virtual world. Once again, the total model leads us to the difficulty of having to reconcile the legal attributes of the vehicle granted by property rights, such as the unqualified right to use and dispose of it, with the virtual world's code-based regulations of the vehicle. The virtual world's computer code may impose limits on how the vehicle can be transferred or where and how it can be used. Users will expend more time and effort to research what these differences are and how they can be reconciled than they would under either the conditional model or the current system where there are no property rights in virtual resources.

The conditional rights model, in contrast, works like an implied license of the vehicle. The vehicle is subject to the owners/developers' underlying rights in hardware and software, as well as any code-based regulations or restrictions within the game. The user cannot fully control how the vehicle is used, since the computer code may determine where and when it can be used. The search costs of the conditional model remain the same as if property rights were never extended to virtual resources. These rights give the user nothing more than what is allowed by the virtual world's code-based regulations, that is, they mirror the virtual world's laws.

Each of these scenarios, discussed by Nelson, end with no reduction in transaction costs when property rights are extended to virtual resources. In fact, the total model results in an increase in transaction costs. Inevitably, external property laws will conflict with virtual worlds' code-based regulations, leaving the users, owners/developers and legal authorities searching to find a way to reconcile the two. Nelson writes:

Similar to the increased regulation of home rental markets, virtual worlds may find legislatures and courts reaching into them in order to reconcile legal rights with code-based rights. This will necessarily limit what developers are allowed to do with their property, the virtual worlds themselves, and how those worlds may be developed. If this occurs, the real world will be invading the fantasy world, destroying the game conceit created by its developers (Nelson, 2010, p. 30).

Conclusion

Extending virtual property rights to users in virtual worlds is a bad idea. Locke's labor theory clearly does not apply to the majority of virtual property; even in situations where users would be granted property rights, owners/developers have equally compelling, competing interests. Similarly, a utilitarian approach yields what could at best be described as mixed results. Virtual property fails to meet the criteria for classification as personal under personality theory. And if property rights were granted under Radin's theory, then the human flourishing that is at the heart of personality theory would likely be reduced. Furthermore, virtual property would be inalienable under personality theory—the exact opposite result sought by many users seeking property rights.

Extending property rights to cover virtual resources does not meet the goals of those who seek to protect the users, developers and virtual resources of virtual worlds from theft. The limited protections provided in the considered scenarios involving theft may also be provided through remedies not dependent upon the granting of property rights. For instance, privacy laws protecting against intrusion into seclusion are designed to address the mental harm of such an intrusion. The intrusion of a hacker into one's accounts has a similar mental impact upon that person. Additionally, the Computer Fraud and Abuse Act may be exercised in both criminal and civil actions against such a hacker. The granting of property rights only serves to unnecessarily complicate matters and could destroy the conceit of virtual worlds.

Virtual property rights will not create more efficient markets. Rather, these markets may become less efficient if users are granted property rights, unless courts and legislatures invade the virtual world and impose constraints on how virtual resources can be designed and transferred. The value of virtual resources would be destroyed rather than protected by such an action. Finally, owners/developers of virtual worlds also suffer if users are given property rights in virtual resources. Virtual worlds are the product of the creativity and imagination of the owner/developer through years of sweat, toil and ingenuity. An owner/developer's rights in his or her hardware and intellectual property are horizontally sliced if a new property form is carved out of them. Any way it is considered, the developer is left with fewer rights over his or her creations. In the end, it must be remembered that these virtual worlds were designed as a form of

entertainment and recreation. For all of these reasons, property rights should not be extended to virtual resources.

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BIOGRAPHICAL NOTE

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