Copyright Law and Video Games: A Brief History of an Interactive Medium

Greg Lastowka

ABSTRACT

Throughout their short history, video games have posed challenges to intellectual property laws. This chapter explores how courts in the United States have struggled to apply the traditional laws of copyright to video games. The primary problem that video games pose to copyright is that they, like all games, are interactive processes. Players of video games both experience the games as creative works and perform those works during the course of their play. From the perspective of copyright law, the interactive nature of video games makes players somewhat like authors and undermines the authorial status of the game creator. A video game creator does not design a single scripted experience, but instead designs an interactive system.

Early case law in the United States has suggested that video game design, to the extent it is not traditionally authorial, is not fully protected by copyright law. Video games receive protection under copyright only to the extent that they resemble non-interactive authorship. Traditional copyright law may therefore be insufficiently protective game designers as authors.

Additionally, video games today are increasingly social and rich with creative affordances. Those who provide video games as platform technologies often benefit from the creative labor of authorial players. Copyright law may therefore be insufficiently protective of player authorship by channeling the economic benefits of player authorship toward platform owners.

1. DEFINING VIDEO GAMES

Video games are very popular today, but the serious academic study of video games is a comparatively recent enterprise. This is due, in large part, to the fact that video games were only recently invented. The birthdate of the video game genre is often debated. Some histories point to William Higginbotham's 1958 Tennis for Two, created on an early analog computer and oscilloscope at the Brookhaven National Laboratory. Others point to 1961's Spacewar!, a game created by graduate students tinkering with very expensive systems at Boston's MIT. Ford (2012) states that in 1972, Atari's Pong marked the beginning of the cabinet arcade game industry. Ralph Baer's Magnavox Odyssey console, also released in 1972, marked the origin of household video games. Hobbyist computers, and the early games written for them, first arrived in the 1970's, but became more mainstream with each passing year. Which of these events marked the origin of video games?

As Kent (2001) explains, video game historians acknowledge the uncertainty concerning how "video games" should be properly defined. If video games consist of any form of electronic and interactive graphical amusement, Higginbotham's Tennis for Two or even early electronic amusements like pinball could be the first video games. If video games are defined by computer-based entertainment technologies and legions of fans, then Spacewar! would qualify. If they must be consumer commodities involving display screens, Ralph Baer's Magnavox Odyssey system might be the first video game. But however one defines the word "video game," it must be noted that the term is often used synonymously with "electronic games," "digital games," "computer games," "entertainment software," and the broader category of "interactive media." Literal interpretations of these terms would encompass separate genealogies, such as: hand-held electronic devices, client-server technologies (including early MUDs and new social network games), and other forms of digital art (Kerr, 2006; Kline et al., 2003; Mortensen, 2009). As Kerr (2006) explains, this mélange of terminology creates significant slipperiness in academic discussions of the video game medium.

However they are defined, video games account for a significant segment of today's media landscape. As Kerr (2006) explains, contemporary video games have a significant market penetration in developed countries, ranging from roughly a quarter to over half of the populations identifying as regular players. While video game players do skew toward

younger and male audiences, a growing number of games are targeted at older demographics, and woman are actually the dominant consumers in particular market segments (Kerr, 2006). Extrapolating from Kerr (2006), we can estimate that the size of the contemporary global market for video games today is likely upwards of US$40 billion, rivaling the size of the motion picture and music industries (Kerr, 2006; Kline et al., 2003).

This rivalry, however, is often more of a partnership, given that many popular video games today are based on motion pictures and sometimes (less frequently) motion pictures can be based on video games. Even in the early days of video gaming, one of the most popular hobbyist computer games was Mike Mayfield's Star Trek, an unlicensed text-based space battle written in BASIC (Kent, 2001). However, not all adaptations have been so successful. It is commonly claimed that the terrible quality of Atari's E.T. the Extra-Terrestrial video game played a significant part in the crash of the industry in the early 1980's (Montfort and Bogost, 2009). The destruction and burial of thousands of copies of the game in a New Mexico landfill (Guins, 2009) demonstrates that video games and motion pictures are indeed separate media forms. While a successful book may not lead to a successful movie, both novels and motion pictures have similar narrative structures. It is no trivial task, however, to adapt a successful book or film into a successful video game – the characteristics of interactive electronic media are quite different than the characteristics of traditional media (Bogost, 2007; Ryan, 2001).

Much of the work of game studies scholarship has been focused on understanding how video games are unlike other textual and audiovisual media. Over the past two decades, numerous scholars have drawn out the formal characteristics of games in many papers and monographs (Aarseth, 1997; Bogost, 2006, 2007; Elias, 2012; Juul, 2005; Mortensen, 2009; Murray, 1997; Myers, 2003, 2009; Ryan, 2001; Salen and Zimmerman, 2003). However, the first individuals to collaboratively theorize the unique nature of video games were surely video game designers themselves.

Perhaps the most notable early work by a game developer was published in 1984 by Chris Crawford, who wrote a book entitled The Art of Computer Game Design: Reflections of a Master Game Designer. Crawford was largely dismissive of the state of the video game art circa 1984, when Taito's Space Invaders was still a flagship arcade game. He acknowledged that skeptics might claim "computer games are too trivial, too frivolous to be called art. They are idle recreation at best." (Crawford, 2011, loc. 24)." However, he aspired

to put game design on par with other media and to create an aesthetic theory of video game design.

Crawford explained that the key appeal and aesthetic potential of video games resided in their ability to combine player participation with representational media: "the highest and most complete form of representation is interactive representation. Games provide this interactive element, and it is a crucial factor in their appeal." (Crawford, 2011, loc. 214) However, the works that Crawford valorized were not games, i.e. the artistry and authorship of Michelangelo, Beethoven, and Hemmingway.

It may seem curious that Crawford faulted video games for failing to meet the standards of great visual, musical and literary art, given that traditional games are generally not understood as art, but as rule-based leisure activities. A footrace or a game of hopscotch is generally not as appreciated by participants or spectators as an artistic work, but as a rule-based activity that motivates and gives meaning to pleasurable physical performances (Huizinga, 1950; Lastowka, 2010; Suits, 2005). Play and games are sometimes associated with creative performances, yet traditional theorists of play and games did not generally equate the design of game rules or game environments with art (Caillois, 1961; Huizinga, 1950; Suits, 2005; Sutton-Smith, 1998).

Video games, however, are unlike traditional games. Game rules are encoded into software constraints. Players use common digital interfaces (keyboards, buttons, joysticks, trackpads) to manipulate and explore symbolic representations that are projected on screens. Unlike sports practices, video game titles are sold as reproduced copies of information that are marketed similarly to books and films (e.g. featured new releases and sequels). Video games are generally developed by commercially-motivated firms and distributed by industry publishers. The consumption of video games is tied to specific technological platforms that are also consumer commodities, such as consoles, computers, or handheld devices (Kline et al., 2003). And certainly the contemporary complexity (and industrial scale) of video game animation, music, and acting can make a modern video game share more in common with a motion picture than with a child's game of noughts and crosses. Given all of this, perhaps Crawford's expectation that computer games would some day possess visual, musical, and narrative complexity rivaling traditional media was prescient, given contemporary titles such

as Grand Theft Auto V and Journey. However, despite their increased complexity and artistry, video games remain interactive games.

The schism between traditional forms of artistry and the medium of the video game is reflected in the game studies literature as a tension between so-called "narratological" and "ludulogical" approaches to game studies. Narratological approaches emphasize the similarities between video games and traditional narratives. Ludological approaches emphasize the similarities between video game play and traditional game play. It should be emphasized that these two categories are not camps within game studies. In fact, no game studies scholar has ever explicitly adopted the cause of narratology and those who claim to be ludologists are often eager to admit that games can have fictive elements and narrative structures (Frasca, 2003). Nonetheless, the narratology/ludology divide helps to describe the variance between traditional textual approaches and rule-based approaches to understanding games (Kerr, 2006; Mortensen, 2009).

The narratological approach to video games derives from the past traditions, methodologies, and vocabularies for interpreting literary and audiovisual texts. Alvin Toffler, as early as 1980, claimed that video games were changing the way their players interacted with media:

> "through such seemingly innocent devices millions of people are learning to play with the television set, to talk back to it, to interact with it. In the process they are changing from passive receivers to message senders as well." (Toffler, 1980).

Early game studies scholars made similar observations. Janet Murray emphasized that game players were granted agency over the unfolding events in a game (Murray, 1997). Espen Aarseth, in Cybertext (1997), contrasted the passive consumption of conventional literature with the laborious and multi-directional "reading" practices of interactive fiction and electronic games. It is common to see claims among those who study games that players actively collaborate with the game's interface to shape the game's narrative (e.g. Gee, 2007; McGonigal, 2011; Papert, 1993; Ryan, 1997). The narratological approach frames reader-text interactivity as a novel development and contrasts video games with past media.

The ludological approach, by comparison, frames video games as a medium related to non-electronic games, such as card games or sports (Costikyan, 2013; Elias et al., 2012; Juul, 2001; Salen and Zimmerman, 2003). Games have always involved purposeful activity

constrained by rules, so interactivity, from the ludological standpoint, is a given. At the extreme, ludological approaches downplay or even reject the salience of representation and narrative to game studies, focusing on games as formal systems characterized by, e.g., players, objects, and rules defining goals and constraints (Juul, 2001).

Perhaps not surprising, many of the early ludologists were often video game developers who were interested in games generally and believed that academic commentary on video games should not start and end with post-structural literary theory. The ludological approach to video game studies is also more congruent with video game development practice. In large-scale game development, the traditional forms of authorship (e.g. fine artwork, music, and writing) are certainly present, but are generally created by specialists (e.g. fine artists, musicians, and animators). Artwork, music, and writing are sometimes referred to as the "assets" of a game and distinguished thereby from the design of the game.

Debates about the proper formal categorization of video games may seem rather obscure, but the question has also been raised in legal proceedings. While the United States Supreme Court has never considered a case involving copyright law in video games, it has considered the question of whether video games constitute a form of speech protected by the First Amendment.

Put simply, the legal question confronted by the Supreme Court in Brown v. EMA, 131 S.Ct. 2729 (2011), was whether video games were fundamentally different than books, films, artwork, and other forms of traditional media. Some early decisions on this issue suggested that video games were so simple and crude that they amounted to trivial electronic amusements devoid of expressive value. More recent decisions, including the lower court decision in Brown, had extended First Amendment protections to video games. If video games were protected speech, then California's effort to limit the sale of violent video games to minors would face the strict scrutiny that would attend a similar restriction on the sale of violent books or artwork.

Justice Scalia, writing for the majority, extended full First Amendment protections to video games. In the course of doing so, he downplayed the salience of video game interactivity. He stated that textual interactivity:

> "is nothing new: Since at least the publication of The Adventures of You: Sugarcane Island in 1969, young readers of choose-your-own-

> adventure stories have been able to make decisions that determine the plot by following instructions about which page to turn to... As for the argument that video games enable participation in the violent action, that seems to us more a matter of degree than of kind. As Judge Posner has observed, all literature is interactive" (p. 2738).

In essence, Justice Scalia played the narratologist, stressing the continuity between past forms of experimental literature and the modern video game. Justice Alito, concurring in the judgment, played the ludologist. He argued that conflating interactive video games with other media was premature and could lead to erroneous decisions. Justice Alito explained that reading the murder scene in Dostoyevsky's Crime & Punishment was a far different experience than enacting it:

> "When all of the characteristics of video games are taken into account, there is certainly a reasonable basis for thinking that the experience of playing a video game may be quite different from the experience of reading a book, listening to a radio broadcast, or viewing a movie" (p. 2751).

But even though Scalia and Alito disagreed about whether video games were a significantly different medium, both agreed that the efforts of California to regulate the sale of violent video games to minors violated the constitutional protections of the First Amendment. So the Supreme Court's disagreement about interactivity ultimately had no practical import in the Brown v. EMA decision.

In the next section, I will describe how similar debates about interactivity appear in copyright law decisions. The presence of video game interactivity has influenced the contours of copyright protection for videogames and continues to create difficulties for courts today.

2. PROTECTING EARLY VIDEO GAMES WITH COPYRIGHT

In this section and the section to follow, the analysis of video games and copyright law will focus on the statutory and case law of the United States. United States copyright law is not radically different from the copyright laws of other countries, but different countries may have slightly different approaches to copyright protection for interactive media. That said, jurisdictional differences may be somewhat less important to this field than they are to other legal domains. This is because today's major video game studios, such as

Blizzard/Activision, Rockstar, Ubisoft, Bethesda, and Mojang, generally produce games for an international marketplace (Kerr, 2006; Kline et al., 2003). Historically, given the U.S. origins of the video game industry, the copyright law of the United States has exerted a significant (perhaps overly significant) influence on the practices of the video game industry. Due to the importance of the United States market, game companies will generally attempt to comply with United States copyright law when developing any title that might be marketed in the United States.

However, it is still worth noting that there are sizeable, geographically-limited markets for the production of video games outside the United States. Smaller scale game production in Europe and some large commercial game companies in Asia may be unaffected by the rules of United States copyright, to the extent that United States law does not track the law of other jurisdictions. Even outside the United States, however, the discussion below should illustrate the general contours of the copyright problems posed by interactive video games.

Some of the most popular early video games, such as Spacewar!, were not consumer commodities, but were instead the hobbyist works of computer technicians toying with expensive equipment that they did not own (Kent, 2001). These games were labors of love, not commerce. They were often copied and shared across early digital networks. Their creators had no expectation -- or at least no practical hope -- of monetary compensation.

This state of affairs changed, gradually, during the 1970's as popular computer software attained commodity status. Arcade games like Pong and Space War took the early hobbyist games and combined them with quarter-consuming cabinets. Competitors often copied the designs of these simple games with impunity (Ford, 2012). Even though, in theory, copyright law might have been asserted against certain unauthorized imitators during the 1970's, the industry's innovation-oriented and cash-strapped pioneers generally chose to invest in innovation rather than litigation -- with a handful of exceptions that led to no significant recorded opinions (Ford, 2012). Additionally, given the novelty of the machines and interfaces and the simplicity of the early representational elements (e.g. a Pong paddle), patent law may have seemed more appropriate than copyright. Indeed, it may have been unclear whether copyright law could protect a very simple form of electronic amusement, such as Pong.

It took over a decade for courts to address the question of copyright in very simple video games. Years after the game's advent, Atari sought to register a copyright in its Breakout game. Breakout was essentially a Pong variant, originally developed for Atari by both Steve Jobs and Steve Wozniak, the founders of Apple. Instead of playing against an opponent, the player used a paddle to rebound a ball into a wall of bricks, with each collision removing an additional brick from the wall.

By the late 1980's, the original 1976 Breakout arcade game had been replaced by a slew of computer and console-based successors. Atari was, no doubt, eager to assert its exclusive rights to the game design and force infringers to obtain licenses for Breakout clones. However, the Copyright Office initially rejected Atari's copyright registration for Breakout, stating that the game was insufficiently creative to constitute an authorial work.

According to the Register, the Breakout game was composed of simple colors, sounds, and geometric shapes, and therefore lacked the originality requisite for copyright protection. Atari appealed the Register's decision in Atari Games v. Oman, 693 F. Supp. 1204 (D.D.C. 1988), to no avail. Judge Pratt, writing for the federal district court, affirmed the Register's decision. Judge Pratt explained that Breakout was:

> little more than a stock description of a paddle-and-ball game, inseparable in any principled manner from the idea which it embodies. This is quite distinct from video games which feature expressive and artistically creative renditions of an idea, and which thereby merit copyright protection (p. 1207).

Appealing Judge Pratt's ruling, however, Atari found a panel of more sympathetic jurists. In Atari Games v. Oman, 888 F. 2d 878 (D.C. Cir. 1989), then-Judge (later Justice) Ruth Bader Ginsburg, writing for the Federal Court of Appeals for the District of Columbia Circuit, faulted the Register's analysis for failing to appreciate how Breakout consisted not just of simple shapes, but presented a sequential audiovisual combination of simple elements. According to Judge Ginsburg, the whole of Breakout was greater than the sum of its parts. Adopting a narratological viewpoint, she stressed that Breakout was fundamentally no different than a complex audiovisual work (e.g. a motion picture), and should be analyzed as such.

On remand, the Copyright Office again refused registration, finding that, even considered as a whole, Breakout contained no original authorship in either the selection or

arrangement of the images or their components. The case worked its way up to Judge Ginsburg again, who, in Atari Games Corp. v. Oman, 979 F. 2d 242 (1992), again faulted the Register for failing to appreciate the dynamic and interactive nature of the game. She stated that it was improper for the Register to "focus on the individual screens, rather than the flow of the game as a whole. The hallmark of a video game is the expression found in the entire effect of the game as it appears and sounds, its sequence of images." (p 245). Once again, the case was remanded. Atari's Breakout registration finally issued (Boyd, 2006), giving Atari the legal right to pursue those who reproduced the game without permission.

It is possible that the Register's decision in Atari was biased by the Copyright Office's late 1980's vantage point. Even by the early 1980's, the majority of commercially prominent video games were much more complex than Breakout. Games like Pac-Man, Defender, and Donkey Kong featured crude but effective characters acting in crude but effective stories.

In the 1980's, companies like Atari had transitioned into more traditional corporate practices, were flush with cash, and were ready to litigate against pirates (Lipson and Brain, 2009). When the first wave of video game copyright cases reached the courts in the early 1980's, judges seemed eager to reward the plaintiffs who had designed these new forms of interactive media. Cases in which a defendant had copied a plaintiff's software wholesale were quickly resolved in favor of plaintiffs and against the pirates.

There were, however, some novel questions, especially in cases where a defendant's copying was inexact. Perhaps the primary question concerning courts in the 1980's was the same question concerning game studies scholars in more recent history: as a form of artistic expression, how are video games different than traditional media? This question was prompted by the difficulty of comparing the authorial work in video games with the allegedly infringing work.

Defining the scope of copyright protection is an essential step in any copyright infringement case. The scope of an intellectual property right is analogous to the metes and bounds of a piece of real property. With traditional works, courts and juries generally look at sculptures and two-dimensional artworks side-by-side, noting similarities and differences. According to doctrinal standards, the copying of certain elements in authorial works may be allowed, but even if discrete elements are not subject to protection (e.g. facts in a biography),

their creative arrangement by the author (e.g. how the facts are expressed linguistically) is generally still subject to copyright protection.

Courts do make similarity comparisons across media. An author's novel can be compared to an allegedly infringing film adaptation. Courts have also analyzed complex media, e.g., dissecting two allegedly similar songs and enlisting the aid of expert musicologists to testify about usual and unusual melodic sequences. The practice of determining substantial similarity, though it has its doctrinal complexities, is certainly more of an art than a science: the fundamental issue is whether the defendant has taken "too much" or has misappropriated "the heart" of the authorial work. However, even given the ambiguity inherent in that standard, courts generally feel comfortable that they understand the two works at issue. A song has a beginning and an end. A photograph has four corners.

Video games, by contrast, are inchoate media. They must be played to be experienced, and no two players will play a video game in exactly the same manner. So when comparing two video games, how can a court obtain a firm sense of the copyright-protected work? Contemporary video games like Skyrim or World of Warcraft, which often feature vast imaginary continents and require hundreds of hours to fully explore, make this even more difficult.

Courts might have analogized video games to scripted plays, which are also inchoate media in a sense. Each actor's performance of any given script does vary. Yet the text of the play's script remains the same. Videogames do have a sort of script analogous to the script of a play -- their unchanging core is their software code. Jurists concluded that they were obligated by copyright law to protect this software code as a "literary work," but this did not always make matters simpler. Without expert testimony, most jurists and jurors found the software and its relation to the video game's output incomprehensible (Montfort and Bogost, 2009). It was (and still is) quite difficult for the average legal professional to distinguish between code that is creative and code that is routine and functional. Therefore, in cases where the code was not admittedly copied verbatim, the "script" of the video game was actually less accessible to the jurist than the game's performance, even though the performance varied according to the player. So, in comparing two works, court struggled to discern the work of the video game's author from the variable interactions of the player with the video game's interface.

An additional concern was presented by copyright's requirement that protected works be "fixed" in some tangible medium of expression. Given that video game play requires collaboration between the player's actions and the game's software, it could be argued that no particular video game performance is ever fixed. Each performance of a video game, like each performance of a game, is arguably dependent on the specific actions of particular players. If this were true, copying the mere appearance of a video game without copying the game's underlying code might not be infringing, given that the audiovisual appearance of the game would fall outside the scope of copyright's protection.

Invariably, courts managed to overcome both of these objections. With regard to the latter fixation objection, courts found that because it was uncontested that the game's software code was static and permanently fixed, and that software code was perceived through the game's interface, variances in any individual performance of the game did not undermine the fixed nature of the resulting audiovisual work. (Some have argued against this conclusion, see, e.g. Burk (2013)).

But even accepting that the audiovisual work of the video game was fixed, this just led to the prior question about the appropriate scope of the protected work: if the work varied with each player, how much of the game was actually protected by copyright and how much was simply attributable to the game's performance by the player? Could the player's contribution be separated from the game? Or, as Yeats once put it, could the dancer be separated from the dance? (Yeats, 1928.)

Some litigants essentially dodged the interactivity question by successfully arguing that their "attract sequences" -- the animated sequences that served to entice customers to insert a quarter -- were never controlled by players and therefore presented an invariable audiovisual display. Courts accepted these arguments, finding that when defendants had exactly copied attract sequences, they infringed. A similar litigation strategy entailed operating the video game without the interaction of the player. Some courts observed how, when the two compared games were initiated and players did not operate their controls, identical audiovisual sequences would be presented: e.g. a player's ship would crash and be destroyed in an identical manner. One might query how often this particular scenario occurred outside of courtrooms, but enacting a counter-factual game play situation allowed

courts to avoid the thorny questions of interactivity. It also allowed judges and lawyers to avoid playing video games during judicial proceedings.

Still, many courts accepted that, in their normal course of operation, video games were played, and that, at their core, video games were an interactive medium. In close cases, this recognition led to some curious judicial opinions. These will be discussed in the next section.

3. THE PROBLEM OF INTERACTIVE COPYRIGHT

For the strategic reasons mentioned above, defendants, not plaintiffs, were more likely to argue that the player, not the game's creator, was the true author of the audiovisual work. This argument did have some initial appeal to some jurists. Indeed, in the Breakout case discussed above, the Copyright Office asserted this argument, determining that Breakout as played (the audiovisual work) was "created randomly by the player and not by the author of the video game." Atari Games v. Oman, 888 F. 2d 878, 880.

The Register's arguments did not win the day, however, and Atari prevailed by pointing to discrete elements and sequences that could not be altered. Similar strategies were pursued by other plaintiffs confronting claims of player authorship. For example, in many games, the background playing fields (e.g. mazes and buildings) were fixed. Copying those playing fields as an element of a new game, therefore, could contribute to copyright infringement. The appearance of player avatars (e.g. the "gobbler" character in Pac-Man or the spaceships in Scramble or Asteroids) was also not subject to player modification. Courts concluded that these fixed components and sequences of video games were, essentially, the protected work, and dismissed the actions of players as choosing and "reading" the elements. So a player might control how Pac-Man moved through a maze, but the player had no control over Pac-Man's color or shape, the design of the maze, or the animation sequence associated with Pac-Man's death. A defendant making a video game that copied Pac-Man, the maze shape, and the death sequence could therefore infringe on the Pac-Man copyright.

The analysis of Chief Judge Cummings, writing for the Seventh Circuit Court of Appeals in Midway Mfg. v. Artic International, 704 F. 2d 1009 (1983), is typical of the analytical approach used to defeat a defendant's claim that players engaged in "authorship." With regard to the video game Defender, he stated:

> The person playing the game can vary the order in which the stored images appear on the screen by moving the machine's control lever. That makes playing a video game a little like arranging words in a dictionary into sentences or paints on a palette into a painting. The question is whether the creative effort in playing a video game is enough like writing or painting to make each performance of a video game the work of the player and not the game's inventor.
>
> We think it is not…
>
> Playing a video game is more like changing channels on a television than it is like writing a novel or painting a picture. The player of a video game does not have control over the sequence of images that appears on the video game screen. He cannot create any sequence he wants out of the images stored on the game's circuit boards. The most he can do is choose one of the limited number of sequences the game allows him to choose. He is unlike a writer or a painter because the video game in effect writes the sentences and paints the painting for him; he merely chooses one of the sentences stored in its memory, one of the paintings stored in its collection (pp. 1011-12).

This sort of approach did not resolve all the difficulties of video game infringement, but it did make many cases more straightforward. If player authorship was largely marginal and the invariable component features of video games were dominant, a substantial similarity comparison could proceed largely in the same manner it occurred with respect to traditional authorial media. Infringement could be established without reference to the game's underlying software code or how the games were actually played.

So, for instance, in Atari v. North American, 672 F. 2d 607 (1982), involving Atari's claim that the copyright in Pac-Man was infringed by a game called K.C. Munchkin, the court found infringement, noting a list of close similarities between the original and infringing works:

> North American not only adopted the same basic characters but also portrayed them in a manner which made K. C. Munchkin appear substantially similar to PAC-MAN. The K. C. Munchkin gobbler has several blatantly similar features, including the relative size and shape of the "body," the V-shaped "mouth," its distinctive gobbling action (with appropriate sounds), and especially the way in which it disappears upon being captured. An examination of the K. C. Munchkin ghost monsters reveals even more significant visual similarities. In size, shape, and manner of movement, they are virtually identical to their PAC-MAN counterparts. K. C. Munchkin's monsters, for example, exhibit the

> same peculiar "eye" and "leg" movement. Both games, moreover, express the role reversal and "regeneration" process with such great similarity that an ordinary observer could conclude only that North American copied plaintiffs' PAC-MAN (p. 618).

Of course, this sort of analysis raised the question of how to understand and map conventional narrative notions like "stock characters," "genre," and "plot" -- all of which influenced the substantial similarity test in narrative media -- to the context of video games. In a young medium featuring constant innovation and imitation, notions of "genre" were quite fluid and perhaps were constructed by copyright law as much as copyright law constructed them.

For instance, in Atari v. Amusement World, 547 F. Supp. 222 (1981), an early case involving a Meteors version of Atari's Asteroids, a district court in Maryland determined that the defendant had copied only the concept of the Asteroids game, but not the particularized expression. The court explained that any similarities between the two games were dictated by the "idea" of a video game involving spaceships and free-floating space rocks -- essentially transforming Asteroids into a genre of video games:

> There are certain forms of expression that one must necessarily use in designing a video game in which a player fights his way through space rocks and enemy spaceships. The player must be able to rotate and move his craft. All the spaceships must be able to fire weapons which can destroy targets. The game must be easy at first and gradually get harder, so that bad players are not frustrated and good ones are challenged. Therefore, the rocks must move faster as the game progresses. In order for the game to look at all realistic, there must be more than one size of rock. Rocks cannot split into very many pieces, or else the screen would quickly become filled with rocks and the player would lose too quickly…
>
> All these requirements of a video game in which the player combats space rocks and spaceships combine to dictate certain forms of expression that must appear in any version of such a game. In fact, these requirements account for most of the similarities between "Meteors" and "Asteroids." Similarities so accounted for do not constitute copyright infringement, because they are part of plaintiff's idea and are not protected by plaintiff's copyright (p. 229).

The Meteors decision issue when Star Wars had re-ignited a popular interest in spaceships and asteroid fields, an interest that was part and parcel of the commercial success of Asteroids. However, if the Meteors court was right that video games involving space ships

blasting space rocks constituted an unprotectable genre, then could not one also conclude that K.C. Munchkin had simply copied the "idea" of a maze game where a pie-shaped "gobbler" vied with four ghost monsters? What made a video game involving "spaceships and space rocks" an unprotected idea, but a video game involving a pie-shaped gobbler and four ghost monsters a particularized form of expression?

Commentators have long complained about the metaphysical muddiness involved in copyright law's requirement of separating the idea of an artistic work from its particular expression. The doctrine is clearly no better -- and perhaps somewhat worse -- when applied to the constantly evolving medium of interactive video games.

4. GAMES AS UNPROTECTABLE SYSTEMS

There is an additional wrinkle in the idea/expression dichotomy that is arguably unique to video games and the copyright law of the United States. The idea/expression dichotomy is set forth in Section 102(b) of the copyright statute. That section specifically bars protection for "any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." While Section 102(b) expresses the historic prohibition against securing a copyright in an "idea" (e.g the genre of asteroid shooting games), it also prohibits copyright protection for any "system" or "procedure." To the extent that games are primarily systems and procedures that guide player behavior (as the ludologists would have it), certain elements of video game design may also be barred copyright protection for that reason.

Professor Bruce Boyden has written extensively about this rationale for denying copyright protection to games, arguing that games, insofar as they consist of systems of rules, properly should not be subject to copyright protection (Boyden, 2011a, 2011b). Boyden's argument draws on various caselaw as well as the Nimmer treatise, which reaches a similar conclusion. The gist of this argument is not specific to video games, but encompasses all game forms.

Notably, the prohibition has limits. Both the Nimmer treatise and Boyden accept that games may have independently copyrightable components (such as a Monopoly game board or a sculpted playing piece) and that these artistic components ("assets" in game

development parlance) can and should be subject to copyright protection. So it is not the game elements, but their combination in a game system that the Nimmer treatise and Boyden argue must be excluded from protection. As Boyden himself notes, this rule seems somewhat incongruous: "Imagine there were a rule that 'novels are not copyrightable,' but that a novel's plot, characters, setting, dialog, and cover art all were. What would be the point of such a rule?" (Boyden, 2011a, p. 445)

Boyden's answer is that games, as abstract systems (composed of constraining rules, players, motivating goals, etc.) should not be protected, and therefore instances of game play should fall outside the scope of copyright law. Boyden applies this understanding to video games specifically by stating:

> the experience of play is supplied by the players, not the game designer... Even video games, despite being comprised of software, audiovisual elements, plots, graphics, and characters, nevertheless have an uncopyrightable core: the actual play of the game... Systems are shells into which users pour meaning (Boyden, 2011a, p. 479).

In subsequent work (2011b), Boyden has made additional arguments that the scope of copyright protection for video games cannot include the player's performance of the game. For Boyden, the actual experience of game play is akin to an individual reader's encounter with a book or an individual viewer's perception of a film -- it combines the reader's activity with the text. Building on this claim, Boyden states that unauthorized recordings of video game play should provide a compelling case for fair use due to "the limited nature of copyrightable information captured in a recording and its dissimilarity from the original work, a noninteractive recording as opposed to an interactive game." (Boyden 2011b, p. 8.) Boyden concedes, however, that his argument is in conflict with at least one opinion, Red Baron-Franklin Park v. Taito, 883 F. 2d 275 (1989), a case involving the arcade game Double Dragon, where a court found that unauthorized player performances of the game infringed on the performance rights of the game's owners.

In essence, Boyden's "systems" approach recalls the ludological perspective, identifying video games with rule-based performance rather than traditional narrative. However, not all commentators agree that Boyden's proposed "systems" exclusion is warranted. Dan Burk, in a recent article (2013), argues that certain forms of art (e.g. ballet performance or haiku) operate under constraints that are similar to the constraints imposed by game rules. Just as a video game player acts creatively within the game space, so a poet

composing a Haiku must work within the constraints of that genre. Hence, according to Burk, the historic prohibition against copyright in games as systems is essentially a prohibition against copyright in a genre as an idea. Works constructed within the genre of Westerns, for instance, can be protected by copyright, but the stock elements of that genre (showdowns, bar fights, cowboy hats) fall outside the scope of copyright. Essentially, Burk plays the narratologist to Boyden's ludologist, pointing out the analytic congruence between traditional artistic genres and game performances.

What are the practical consequences of failing to protect video games as systems? Consider two hypothetical games, both based on Atari's Asteroids. The first game is Squid Attack, which borrows Asteroid's system, but adorns that framework with a different fiction. In Squid Attack a submarine shoots torpedoes at waves of oncoming squids and octopi that then break down (contra realism) into multiple smaller units of squids and octopi. Squid Attack is a ludological copy of Asteroids. The optimal play strategy is identical, as is the scoring system.

A second game, Space Miner is visually identical to Asteroids. It uses vector graphics and displays a triangular space ship on a black screen amid drifting geometric outlines of asteroids. Space Miner embraces the Asteroids outer space fiction, but changes the game play. The goal of Space Miner is to collide with space rocks, resulting in the same animated explosion of Asteroids, but with this graphic scoring points for the player who is deemed to have "mined" the asteroid. In Space Miner, the player has unlimited ships, but limited time.

From the perspective of a game developer, Squid Attack is simply Asteroids with different art assets, but Space Miner is a different game using identical art assets. For players, which game would be understood as the closer copy of Asteroids? The answer depends on what makes video games appealing -- fiction or rules? However that question is resolved, a court applying the logic of the Meteors and K.C. Munchkin cases would likely find Space Miner a form of copyright infringement, but would find Squid Attack to be a non-infringing copy of the unprotected rule system of Asteroids.

In reality, there is rarely a game that only copies game rules or game fiction. Indeed, it isn't clear that the line can be clearly drawn. For instance: were the unlimited space ships in Space Miner merely a change in Asteroid's rules (as I suggested) or did Space Miner

change the Asteroids narrative? Two recent cases, both involving fairly simple games designed for mobile devices, show the problems that courts have in separating interactive games into unprotected rules and traditionally protected art and narrative.

In Spry Fox v. LOLApps, No. C12–147RAJ (W.D.Wash. 2012), the creators of the puzzle game Triple Town sued the makers of Yeti Town, alleging infringement of copyright. Yeti Town was essentially a clone of Triple Town, but, somewhat like Squid Attack, it replaced the medieval pastoral setting of Triple Town, featuring trees and bears, with an arctic setting, featuring with Eskimos and Yetis. The court first explained that the ludological structure of Triple Town was outside the scope of copyright protection:

> the idea underlying Triple Town is that of a hierarchical matching game, one in which players create objects that are higher in the hierarchy by matching three objects that are lower in the hierarchy. Frustrating the player's efforts are antagonist objects; aiding the player are objects that destroy unwanted or ill-placed objects. Spry Fox's copyright gives it no monopoly over this idea. 6Waves (or anyone else) is free to create a video game based on the same idea....

The court continued, however, by stating:

> A video game, much like a screenplay expressed in a film, also has elements of plot, theme, dialogue, mood, setting, pace, and character. Spry Fox took the idea underlying Triple Town and expressed it with its own characters, its own setting, and more. These objective elements of expression are within the scope of Spry Fox's copyright…
>
> Spry Fox's allegations are more than adequate to illustrate plausibly the objectively similar expression embodied in Yeti Town. The object hierarchy is similar. Progressing from grass to bush to tree to hut is similar to progressing from sapling to tree to tent to cabin. Perhaps more importantly, the object hierarchy coupled with the depiction of the field of play comprise a setting and theme that is similar to Triple Town's. A snowfield is not so different from a meadow, bears and yetis are both wild creatures, and the construction of a "plain" is not [sic] plausibly similar to the construction of a "patch," at least as the two games depict those terms."

In a typical copyright substantial similarity analysis, it would be absurd to equate a tent with a tree. Yet the court here engages in what amounts to a very high-level comparison of fictional elements, equating bears and yetis as wild creatures, in order to find infringement. The court seems to be saying that when two game elements are situated in similar locations within a ludological system, lesser similarities between those elements may

be sufficient to establish infringement. Allowing Triple Town's ludological structure to influence the infringement analysis affords a weak form of copyright protection to the game's ostensibly unprotected rules.

Another recent case involved a claim by the owners of Tetris against a cloned version of that game. In Tetris Holding v. Xio Interactive, 863 F. Supp. 2d 394 (2012), Judge Wolfson of the District of New Jersey struggled with "the unenviable task of dissecting a game's ideas from its expression." She stated that the idea of Tetris consisted of "the game at an abstract level and the concepts that drive the game." After explaining the basic rules and concept of Tetris, Judge Wolfson concluded that the defendant had infringed by copying not only the idea of Tetris, but also its protected expression:

> In addition to the design and movement of the playing pieces as discussed above (including the use of bright colors, the individually delineated squares within the pieces, and the downward, lateral, and rotating movement), I find the following elements are also protected expression and further support a finding of infringement: the dimensions of the playing field, the display of "garbage" lines, the appearance of "ghost" or shadow pieces, the display of the next piece to fall, the change in color of the pieces when they lock with the accumulated pieces, and the appearance of squares automatically filling in the game board when the game is over. None of these elements are part of the idea (or the rules or the functionality) of Tetris, but rather are means of expressing those ideas (p. 32).

What this analysis demonstrates is that separating Tetris into ideas and expressions is, as Judge Wolfson indicated, an unenviable task, and one prone to raise difficult questions in the context of interactive games. While the court places the rotational movement of the Tetris pieces, the "ghost pieces", and the display of the upcoming game piece in the realm of protected expression, all are arguably part of the rules of Tetris. They all clearly influence optimal play strategy. Judge Wolfson even found that the twenty-by-ten grid of Tetris was included in the game's protected expression, given that the defendant could have just as easily copies the idea of Tetris and used a fifteen-by-eight grid. The court rejected the defendant's argument that the size of the Tetris grid was part of the game's idea.

The Triple Town and Tetris cases both suggest that courts either cannot or will not disentangle video game rules from video game fiction. Courts know that copyright law requires them to divorce the abstract ideas in games from their particularized expressions in

specific characters, objects, and settings. In practice, however, drawing this line invariably involves rendering arbitrary judgments. Even if it could be done successfully, it would still leave the hallmark of video games, the ludological design of interactive systems, with the least amount of copyright protection.

5. COPYRIGHT AND VIDEO GAMES IN THE 21ST CENTURY

More than forty years after the first commercial video games were introduced, some aspects of the industry are largely unchanged today. Although there have been many new platforms for video game play, most of the early genres of games (e.g. racing games, sports games, shooting games, and multi-player combat games) are still popular in more detailed modern incarnations. Joysticks, keyboards, and buttons are still the most common tools that players use to interact with represented environments portrayed on flat screens.

Certain aspects of the industry have changed. A myriad of new business models have replaced the quarter-guzzling arcade machines of the 1980's, and there is intense competition among large and small (and "indie") creators making mobile and handheld games, console games, PC games, and social network games. For the most part, video game graphics, audio, and animation have grown much more detailed and complex, buoyed by technological advances in data storage, processing, transfer, and image display.

With some notable exceptions, like Tetris, very few of today's most popular games are characterized by the geometric simplicity of Pong or Breakout. While simple games, such as Triple Town and Tetris, are still popular, many games today have very rich and detailed creative assets and stories, making it that much easier for courts, like the Supreme Court in Brown, to narratologically equate video games with motion pictures. As one court stated in 2004, finding that video games had become worthy of free speech protections:

> The early generations of video games may have lacked the requisite expressive element, being little more than electronic board games or computerized races. The games at issue in this litigation, however, frequently involve intricate, if obnoxious, story lines, detailed artwork, original scores, and a complex narrative which evolves as the player makes choices and gains experience. Video Software Dealers Association v. Maleng, 325 F.Supp.2d 1180 (2004).

The elements of player interactivity in most games today are also more complex. Players interact not only with the game during play, but often compete and collaborate with

other players in a multitude of game contexts (Banks and Deuze, 2009; Boellstoff, 2008; Grimes, 2012; Malaby 2009; Nardi, 2010; Taylor 2006, 2012). This is because contemporary video games are increasingly integrated into Internet-based networks. Though online game play dates back to the 1970's, early arcade machines, consoles, and PC games were rarely networked with other machines. Today, even when a video game is not directly dependent on a constant link to the Internet, Internet-based resources invariably serve as the central site for player community interactions.

Video game companies are therefore increasingly playing a governance role as they host and supervise interactions within online player communities (Humphreys, 2009). Many popular games are played exclusively online and the current home game consoles (the Xbox One, Wii U, and PlayStation 4) are designed to take advantage of online interactions. When player communities use proprietary technologies to interact with each other via the Internet, this gives rise to new forms of technological and legal control over player behavior (Burk, 2010; Lastowka, 2010).

For instance, game companies can use passwords, encryption, digital rights management, click-through contracts, anti-hacking and computer trespass laws, and other techno-legal means to police player behaviors. Copyright becomes another tool that can be used to govern the interactions of player communities. Some courts have even found, in some cases, that players violating game rules can face liability for violations of copyright law, provided there is a nexus between the unauthorized player activity and the protected work of the game company. Of course, the same holds true today with respect to non-game, Internet-based social websites, such as Facebook or Twitter: where communities interact online, the owners of platforms effectively become the governors of virtual communities (Lastowka, 2010).

From a copyright perspective, the ability of communities of players to interact online within and around video games raises novel issues. As this chapter explained previously, courts deciding earlier video game cases generally concluded that the claimed interactive authorship of players did not withdraw video games from copyright protection. As the court in the Midway case stated, a player could only "choose one of the limited number of sequences the game allows him to choose." Midway Mfg. v. Artic International, 704 F. 2d 1009, 1012 (1983).

However, game studies scholars have observed the various ways that game players today co-create the experience of game play (Banks and Deuze, 2009; Consalvo, 2007; Taylor, 2006; Postigo, 2007, 2008, 2010; Wirman, 2011). This game studies literature overlaps, to some extent, with the study of various forms of media fandom, such as communities of Star Trek or Japanese anime enthusiasts who enjoy sharing fan fiction, homemade character costumes and props, and fan artwork among their community (Jenkins, 2008). It also overlaps with broader claims about the rise of "user generated content," "crowdsourcing," "remix culture," "peer production," "Web 2.0," "prosumption," "produsage," and other terms describing popular creativity that is shared (primarily) online (e.g. Banks & Dueze, 2009; Baym, 2010; Benkler, 2006; Bruns, 2008; Burri-Nenova, 2010; Coombe, 1998; Jenkins, 2008; Lessig, 2008; Litman, 2006; Shirky, 2010; Tapscott and Williams, 2010). Within the legal academy, many copyright scholars are similarly attempting to map out the implications of user-generated content for copyright law (e.g. Fiesler, 2008; Gervais, 2009; Halbert, 2009; Hetcher, 2009; Nichols, 2007).

Game players can certainly be "fans" in much the same manner that television audiences might be fans of a particular series, such as Star Trek or Buffy the Vampire Slayer. However, there are many game-specific creative practices, such as sharing play strategies, composing "walkthroughs" that explain how to win solo games, creating "skins" and "cheats" that change the appearance and nature of play, and providing other software modifications that enhance or alter the play experience (Consalvo, 2007). In some video games, players collaborate during game play, assisting each other and forming social groups like "clans" and "guilds" (often with elaborate Web-based systems of recruitment, governance, scheduling, and resource management) (Taylor, 2006). Finally, in a growing number of games, players use in-game and out-of-game tools to create their own original works (avatars, objects, and environments) that they share, by various means, with other players.

For game studies scholars and those who study fan communities, there is a lively debate over whether the labor that fans and players invest in producing new information resources is ultimately exploitative or empowering (Banks & Deuze 2009; Terranova, 2004). Critics of the rise in video game co-creation point to the fact that game companies retain the majority of the economic value produced by free player labor (Kline et al., 2003; Scholz, 2013; Terranova, 2004). A related complaint is that game owners do not sufficiently respect

the value contributed to their companies by player communities, refusing to listen to their players and sometimes treating them with contempt (Taylor, 2006).

Those with more optimistic views of co-creativity in video games generally make arguments that are essentially consistent with those made by early proponents of Web 2.0. For instance, they claim that greater player participation in shaping video game culture leads players to feel empowered with respect to media. They claim that active media participation is intrinsically beneficial for players insofar as it teaches new communicative and interpersonal skills. They point out the ways that player co-creation of game content increases the diversity of ethnic and cultural perspectives. They claim that player participation in video games operates in a non-market cultural sphere that is normatively superior to domains of commoditized culture. (See, e.g., Benkler, 2006; Burri-Nenova, 2010.)

Those who defend the importance of video games often make similar claims about the benefits of video games vis-à-vis other more "passive" media forms. Whatever one's position on the social harms and benefits of co-creative technologies, the practice clearly raises new questions for copyright law. Players who author game modifications, create fan fiction and artwork, or build elaborate avatars, objects, and environments are not merely choosing a particular pre-authored sequence already fixed within the video game's code. They are creating works of authorship as part of the process of video game play. Such user-generated game content should lead us to re-examine earlier jurisprudence on copyright in interactive media.

6. USER GENERATED CONTENT IN VIDEO GAMES

"User-generated content" has been defined in a number of ways (Burri-Nenova, 2010). An often-cited definition (Gervais, 2009) is from the OECD's 2007 Report entitled "Participative Web: User-Created Content." That report, while acknowledging the variable uses of the term, defined "user-created content" (a synonym of "user-generated content") as 1) content made publicly available over the Internet, 2) which reflects a certain amount of creative effort, and which is 3) created outside of professional routines and practices. Clearly, this OECD definition is a broad one -- it essentially encompasses all non-commercial Internet-based creative content.

In order for this definition to dovetail neatly with copyright law, it might be helpful to re-define "a certain amount of creative effort," to denote such creative effort that rises to the level of originality necessary for copyright protection. Under this definition, a mundane tweet might not amount to UGC (since it would not be protected by copyright), but a series of lengthy tweets might cross the UGC threshold. This definition would make UGC a subset of copyright-protected works generally.

Defined this way, video game UGC is both familiar and novel. It is familiar because there is no requirement that authorial works should be professional in order to be protected by copyright. Under contemporary copyright law, copyright subsists in original works upon their fixation, regardless of their authorship or their authorial motivations. Copyright law, in theory, subsists in the billions of new amateur works created online every day, including amateur stories, photographs, journalism, videos, music and software.

The term "user-generated" arguably adds nothing new to traditional copyright law, given that, historically, almost all authors (e.g. poets, painters, musicians, sculptors) have "used" particular technologies as part of their artistic practices. Given the OECD's broad definition, any non-professional author, artist, or musician uploading a text, image, or song to the Internet would be characterized not as an author but as a "user" -- a somewhat strange substitution. Much like "player" is a term that defines an individual in relation to a game, "user" is a term that defines an individual in relation to a technology (the Internet) rather than highlighting the individual's role as an author (Lastowka, 2008).

Player-created UGC can be divided into three general categories. First, player UGC might include video game "fan works" that are not directly incorporated into the video game experiences. Many video game players create stories, artwork, costumes, videos, walkthroughs, fan websites, and other works of authorship that do not directly borrow audiovisual assets from the video game. The copyright implications of these sorts of fan works are largely indistinguishable from the copyright implications of fan works based on other popular media (Wirman, 2009).

A second category of fan works includes traditional works of authorship (e.g. poems, songs, or paintings) that are authored outside the context of the video game and then inserted into game play in some manner (Reuveni, 2007). For instance, a player might compose a poem and then read it to other players within a multi-player game. In such a case, the player would clearly own the copyright to the poem, at least initially. After the player

included the poem in the game, ownership and licensing would depend on the game's contract and one's interpretation of applicable copyright doctrines. Most online games that permit players to upload new content generally demand that players license the platform owners to make use of those works. Some even demand an assignment of the uploaded content to the game company.

The third, and most confusing, situation is where players create works of authorship that directly incorporate and depend upon the software of the video game, either with or without permission of the game developer (Scacchi, 2010). This differs from the second situation insofar as the player works are not first created independently of the video game, but are reliant on the video game's software or audiovisual presentation for their creation.

There is a long history of these sorts of creative tools in games. Some video games, past and present, have been designed to allow players to create and save a variety of in-game works: e.g., avatars, narratives, in-game objects, new environments, and animation sequences. An early example is the 1983 game, Pinball Construction Set, authored by Bill Budge, which, as the title suggests, allowed players to build virtual pinball tables with flippers, bumpers, spinners, magnets, lanes, gates, etc. More recent examples include games like Spore, Little Big Planet, and Minecraft, all of which provide players with sophisticated authorship tools.

Even in cases where players are not provided with authorship tools, many players today use third-party software and technologies to copy and reproduce particular elements of video games. This sort of practice can range from the use of simple technologies to capture game performances to more complicated interventions, such as "modding" games (Postigo, 2007, 2008, 2010; Scacchi, 2010) or using a game's graphic assets to create the combination of video game animation and cinematography known as machinima.

As Tyler Ochoa (2012) has explained, many forms of software are used today as authorial tools. If we put aside the contractual issues surrounding player authorship within the context of video games, there seems to be no reason that players cannot qualify under copyright law as authors when they use robust creative tools provided by video games. Ochoa notes that typical word processing software constrains the creative freedom of the user in some ways. Yet no one would argue that Microsoft owns all creative output from literary works created by authors who use its program. It follows that video game players

can author works in video games using tools that are equivalent to paint programs and 3-D modeling software.

Ochoa uses the example of player-created video game avatars, and in particular those created in the multi-player game City of Heroes. Given that, by conservative estimates, City of Heroes enabled players to create trillions of possible avatars, Ochoa concludes that such avatars should qualify as copyright-protected works of authorship. Ochoa concludes that the existing law with respect to collaborative copyright is not ideal, but argues that the optimal way of understanding avatar copyright is to view player avatars either as joint or independent works (dependent on their qualities and mode of creation) and to view them as contributions to the "collective work" of the game space.

Similarly, as mentioned previously, Burk (2013) argues that, barring contractual modifications to the status quo ante, game play performances might be subject to copyright protection. Burk analogizes sophisticated video game play performance to improvisational music, dance, or theater. He explains that both forms of activity are creative and that skilled performances can be constrained by technological limitations and cultural conventions. He concludes, therefore, that athletic performance (including e-sports performance) could qualify as original expression under copyright law. Burk does recognize, however, that this position is in tension with a leading case in point, National Basketball Association v. Motorola, 105 F.3d 841 (1997). In that case, Judge Winter, citing the same section of the Nimmer treatise cited by Boyden, explained:

> Sports events are not 'authored' in any common sense of the word... Unlike movies, plays, television programs, or operas, athletic events are competitive and have no underlying script... If the inventor of the T-formation in football had been able to copyright it, the sport might have come to an end instead of prospering. Even where athletic preparation most resembles authorship--figure skating, gymnastics, and, some would uncharitably say, professional wrestling--a performer who conceives and executes a particularly graceful and difficult--or, in the case of wrestling, seemingly painful--acrobatic feat cannot copyright it without impairing the underlying competition in the future.

Even if we reject Burk's arguments and agree with Judge Winter (and Nimmer and Boyden) that video game performances should be generally excluded from copyright authorship, Tyler Ochoa's example of player-created avatars and more traditional forms of in-game authorship (e.g. creating in-game artworks, stories, or sculptures) would seem to fall

within Judge Winter's conception of the appropriate limits of copyright's scope. Creating an avatar is more like painting a portrait and less like playing basketball, hence it would not seem to be barred by a legal rule excluding game play from authorship.

It is an open question whether most games will feature player authorship tools in the future, but an increasing number of popular games today include some built-in tools for player creativity. Even in cases where such tools are not part of the game, players increasingly use third-party creative technologies to increase their creative control over games.

As Ochoa and Burk both acknowledge, the application of copyright law to player authorship presents difficult questions for copyright. These new questions may take some time to reach courts, if they are litigated at all. As numerous game studies scholars have noted, technological powers and click-through contracts have already proven to be effective mechanisms enabling game companies to monetize various forms of player productivity. Whether copyright law theoretically protects specific forms of player creativity may not be as important as more pragmatic questions about the likely assertion and enforcement of player copyright interests. Even if we conclude that video game players should hold copyright in particular recorded play performances, the majority of recorded performances will be of low value. Only those who seek to monetize expert performances (e.g. e-sports leagues) will have the commercial motivation to enforce their copyrights, provided they have power to do so under contract law. Like the early video game pioneers, these e-sports innovators may lack the funds to pursue expensive litigation in order to enforce uncertain rights.

The vast majority of player authors today are sharing amateur works that lack market value when they are considered individually. Collectively, such works may add significant value to video game cultures and technological platforms, but they are unlikely to form the basis of active markets for copyright claims.

7. CONCLUSION

Although video games are increasingly part of the 21st century media landscape, their protection under copyright law still poses complex doctrinal questions. This is despite the fact that their key distinguishing feature -- player interactivity -- has existed since their earliest inception. Early cases largely discounted the importance of video game interactivity,

focusing on the similarities between video games and prior media. The traditional doctrine prohibiting copyright in games bolstered this approach, suggesting to courts that interactive play practices were outside the appropriate scope of copyright. However, in recent years, authorial tools are increasingly embedded into video games, making it clear that video game software can actually give rise to various forms of player authorship. This makes video games a technologically, doctrinally, and formally unique realm of interactive media within the domain of copyright law.

In coming years, with the rise of more powerful tools for player authorship, we may see the questions of interactivity once again challenge courts. However, it seems equally possible that players will simply contribute their creative work to game platforms without the expectation of receiving the economic and legal rewards that normally accompany copyright productivity.

Bibliography:

Aarseth, Espen J. (1997) Cybertext: Perspectives on Ergodic Literature. Baltimore, MD: Johns Hopkins University Press.

Banks, John A. and Deuze, Mark (2009) 'Co-creative labour,' International Journal of Cultural Studies 12:4194.

Baym, Nancy (2010) 'Embracing the Flow', research memo for the Convergence Culture Consortium.

Benkler, Yochai (2006) The Wealth of Networks: How Social Production Transforms Markets and Freedom. New Haven: Yale University Press.

Boellstorff, Tom (2008) Coming of Age in Second Life: An Anthropologist Explores the Virtually Human. Princeton: Princeton University Press.

Bogost, Ian (2006) Unit Operations: An Approach to Videogame Criticism. Cambridge, Mass.: MIT Press.

Bogost, Ian (2007) Persuasive Games: The Expressive Power of Videogames. Cambridge, Mass: MIT Press.

Boyd, Greg (2006) 'Litigations that Changed the Games Industry', Gamasutra, available at: http://www.gamasutra.com/view/feature/1757/litigations_that_changed_the_games_.php

Boyden, Bruce E. (2011a) 'Games and Other Uncopyrightable Systems,' George Mason Law Review 18: 439.

Boyden, Bruce E. (2011b) 'Copyright's middle ground: The interaction of players and video games' in proceedings of The Game Behind the Video Game: Business, Regulation, and Society in the Gaming Industry, New Brunswick, New Jersey, April 8−9, 2011.

Bruns, Axel (2008) Blogs, Wikipedia, Second Life, and Beyond. Peter Lang Publishing.

Burk, Dan L. (2010) 'Authorization and governance in virtual worlds', First Monday 15(5)

Burk, Dan L. (2013) 'Owning E-Sports: Proprietary Rights in Professional Computer Gaming', University of Pennsylvania Law Review 161:1535.

Burri-Nenova, Mira. (2010) 'User Created Content in Virtual Worlds and Cultural Diversity', in C.B. Graber and M. Burri-Nenova (eds.), Governance of Digital Game Environments and Cultural Diversity. Edward Elgar pp. 74–112.

Caillois, Roger (1961) Man, Play, and Games. University of Illinois Press.

Consalvo, Mia (2007) Cheating: Gaining Advantage in Videogames. Cambridge: The MIT Press.

Coombe, Rosemary J. (1998) The Cultural Life of Intellectual Properties: Authorship, Appropriation, and the Law. Durham: Duke University Press.

Costikyan, Greg (2013) Uncertainty in Games. Cambridge, Mass: MIT Press.

Crawford, Chris (1984) The Art Of Computer Game Design: Reflections Of A Master Game Designer. Osborne/McGraw-Hill; rev. ed. 2011 [Kindle ed.].

Elias, George Skaff, Garfield, Richard and Gutschera, K. Robert (2012) Characteristics of Games. Cambridge, MA: MIT Press.

Festinger, Jonathan B. (2005) Video Game Law. Dayton, Ohio: LexisNexis Butterworths.

Fiesler, Casey (2008) 'Everything I Need To Know I Learned from Fandom: How Existing Social Norms Can Help Shape the Next Generation of User-Generated Content', Vanderbilt Journal of Entertainment and Technology Law 10:729.

Ford, William K. (2012) 'Copy Game for High Score: The First Video Game Lawsuit,' Journal of Intellectual Property Law 1:1.

Frasca, Gonzalo (2003) 'Ludologists Love Stories, Too: Notes from a Debate that Never Took Place', in Marinka Copier and Joost Raessens (eds.), Level Up: Digital Games Research Conference Proceedings. Utrecht: DiGRA and University of Utrecht.

Gee, James Paul (2007) What Video Games Have to Teach Us About Learning and Literacy. Palgrave Macmillan.

Gervais, Daniel (2009) 'The Tangled Web of UGC: Making Copyright Sense of User-Generated Content', Vanderbilt Journal of Entertainment and Technology Law 11:841.

Grimes, Sarah M. and Fields, Deborah A. (2012) 'A new research agenda for understanding social networking forums'.

Guins, Raiford (2009) 'Concrete and Clay: The Afterlife and Times of E.T. The Extra-Terrestrial for the Atari VideoComputer System', Design and Culture 1:345.

Halbert, Deborah (2009) 'Mass Culture and the Culture of the Masses: A Manifesto for User-Generated Rights', Vanderbilt Journal of Entertainment and Technology Law 11:921.

Hetcher, Steven A. (2009) 'Hume's Penguin, or, Yochai Benkler & the Nature of Peer Production,' Vanderbilt Journal of Entertainment and Technology Law 11:963.

Huizinga, Johan (1950) Homo Ludens: a study of the play element in culture. Boston: The Beacon Press.

Humphreys, Sal (2009) 'Discursive constructions of MMOGs and some implications for policy and regulation', Media International Australia 130:53.

Jenkins, Henry (2008) Convergence Culture: Where Old and New Media Collide. New York: NYU Press.

Juul, Jesper (2001) 'Games Telling stories? A Brief Note on Games and Narratives', Game Studies 1:1.

Juul, Jesper (2005) Half-real: Video Games Between Real Rules and Fictional Worlds. Cambridge, Mass.: MIT Press.

Kent, Steven L. (2001) The Ultimate History of Video Games: From Pong to Pokemon--The Story Behind the Craze That Touched Our Lives and Changed the World. Three Rivers Press.

Kerr, Aphra (2002) 'Representing Users in the Design of Digital Games,' in Computer Games and Digital Cultures Conference Proceedings.

Kerr, Aphra (2006) The Business and Culture of Digital Games: Gamework and Gameplay. Sage Publications Ltd.

Kline, Stephen, Nick Dyer-Witheford, and Greig DePeuter (2003) Digital Play: The Interaction of Technology, Culture, and Marketing. Montreal: McGill-Queen's University Press.

Lastowka, Greg (2010) Virtual Justice: The New Laws of Online Worlds. New Haven, Conn.: Yale University Press.

Lastowka, Greg (2008) 'User-Generated Content & Virtual Worlds', Vanderbilt Journal of Entertainment and Technology Law 10:893.

Lessig, Lawrence (2008) Remix: Making Art and Commerce Thrive in the Hybrid Economy. Penguin Press.

Lipson, Ashley S. and Brain, Robert D. (2009) Computer and Video Game Law: Cases, Statutes, Forms, Problems & Materials. Durham, N.C.: Carolina Academic Press.

Malaby, Thomas (2009) Making Virtual Worlds: Linden Lab and Second Life. Ithaca, NY: Cornell University Press.

McGonigal, Jane (2011) Reality Is Broken: Why Games Make Us Better and How They Can Change the World. New York: Penguin Press.

Montfort, Nick and Bogost, Ian (2009) Racing the Beam: The Atari Video Computer System. Cambridge, Mass: The MIT Press.

Mortensen, Torill Elvira (2009) Perceiving Play: The Art and Study of Computer Games. New York: Peter Lang.

Murray, Janet (1997) Hamlet on the Holodeck: The Future of Narrative in Cyberspace. New York: Free Press.

Myers, David (2003) The Nature of Computer Games, Peter Lang Publishing.

Myers, David (2010) Play Redux: the Form of Computer Games. Ann Arbor: University of Michigan Press .

Nardi, Bonnie A. (2010) My Life as a Night Elf Priest: An Anthropological Account of World of Warcraft. Ann Arbor: University of Michigan Press.

Nichols, W. Joss (2007) 'Painting through Pixels: The Case for a Copyright in Videogame Play,' Columbia Journal of Law and the Arts 30:101.

Ochoa, Tyler (2012) 'Who Owns an Avatar? Copyright, Creativity, and Virtual Worlds, Vanderbilt Journal of Entertainment and Technology Law 14:959.

Papert, Seymour (1993) The Children's Machine: Rethinking School in the Age of the Computer. New York: BasicBooks.

Postigo, Hector (2007) 'Of Mods and Modders: Chasing Down the Value of Fan-Based Digital Game Modifications,' Games and Culture 2:300.

Postigo, Hector (2008) 'Video Game Appropriation through Modifications', Convergence: The International Journal of Research into New Media Technologies 14(1):59–74.

Postigo, Hector (2010) 'Modding to the big leagues: Exploring the space between modders and the game industry', First Monday 15.

Reuveni, Erez (2007) 'Authorship in the Age of the Conducer', Journal of the Copyright Society of the USA 54:285.

Ryan, Marie-Laure (2001) Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media. Baltimore: John Hopkins Press.

Salen, Katie and Zimmerman, Eric (2003) Rules of Play: Game Design Fundamentals. Cambridge, Mass.: MIT Press.

Scacchi, Walt (2010) 'Computer game mods, modders, modding, and the mod scene', First Monday 15(5).

Scholz, Trebor (2013) Digital Labor: The Internet as Playground and Factory. New York: Routledge.

Shirky, Clay (2010) Cognitive Surplus: How Technology Makes Consumers into Collaborators. Penguin.

Suits, Bernard (2005) The Grasshopper: Games, Life and Utopia. Broadview Press.

Sutton-Smith, Brian (1998) The ambiguity of play. Cambridge, Massachussets: Harvard University Press.

Tapscott, Don, and Williams, Anthony D. (2010) Wikinomics: How Mass Collaboration Changes Everything. Portfolio Trade.

Taylor, T. L. (2006) Play Between Worlds: Exploring Online Game Culture. Cambridge, Mass.: MIT Press.

Taylor, T.L. (2012) Raising the Stakes: E-sports and the Professionalization of Computer Gaming. Cambridge, Mass.: MIT Press.

Tehranian, John (2011) Infringement Nation: Copyright 2.0 and You. New York: Oxford University Press.

Terranova, Tiziana (2004) Network Culture: Politics for the Information Age. Pluto Press.

Wirman, Hanna Elina (2009) 'On Productivity and Game Fandom', Transformative Works and Cultures 3.

Wirman, Hanna Elina (2011) 'Playing The Sims 2: Constructing and negotiating woman computer game player identities through the practice of skinning' PhD dissertation, University of the West of England.

Yeats, W.B. (1928) 'Among School Children,' in The Tower. New York: Macmillan.