https://doi.org/10.38044/2686-9136-2022-3-4-8-31



ESSAYS

# VIDEO GAME MODDING IN THE U.S. INTELLECTUAL PROPERTY LAW: CONTROVERSIAL ISSUES AND GAPS

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## Abstract

This essay's purpose is to illustrate a broad understanding of legal issues and gaps in U.S. law regarding video game modifications. Digital entertainment technology develops so quickly that often new technology does not fit precisely into current law and statutes. Two different approaches to video game modification are explored pertinent to companies' different attitudes toward modification by third parties and end-users. These two approaches include companies that encourage third party modifications, and companies that want to deter against third party modifications. Then, issues and risks of modification are explored through potential breach of contract, copyright infringement, and reverse engineering. The author analyzes the relevant court rulings on the matter of distributing these risks. Besides there are different forms of affirmative defenses such as fair use in the U.S case law which are also discussed in the article. Finally, gaps in the law and ownership issues regarding modifications are shown in the cases involving Blizzard Entertainment Inc. This essay is meant to illuminate the dichotomy of laws and courts protecting the interests of copyright holders, giving them protection and incentive to continue creating, versus anti-monopolistic rules, and providing the ultimate beneficiaries of video games the right to modify them.

## Keywords

intellectual property law, USA, IP, video game, modding, IP remedies, copyright infringement, license agreement

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| **Conflict of interest** | The author declares no conflict of interest. |
| **Financial disclosure** | The study has no sponsorship. |
| **For citation** | Lee, C. A. (2022). Video game modding in the U.S. intellectual property law: Controversial issues and gaps. *Digital Law Journal, 3*(4), 8–31. https://doi.org/10.38044/2686-9136-2022-3-4-8-31 |

Submitted: 3 June. 2022, accepted: 3 Oct. 2022, published: 31 Dec. 2022

ЭССЕ

# ПРОБЛЕМЫ МОДИФИКАЦИИ ВИДЕОИГР В ПРАВЕ ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ США

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## Аннотация

Цель данного эссе — проиллюстрировать широту юридических вопросов и пробелов в праве США, касающихся модификаций видеоигр. Цифровые развлекательные технологии развиваются так быстро, что зачастую они не укладываются в рамки действующего правового регулирования. В статье анализируются два различных подхода к модификации видеоигр, соответствующих разному отношению компаний к изменению их продукта третьими лицами и конечными пользователями: от поощрения до воздержания от использования сторонних модификаций. Правовые проблемы и риски, связанные с модификацией видеоигр, исследуются в нескольких плоскостях: с точки зрения потенциального нарушения договорного обязательства (*breach of contract*), с позиции нарушения авторских прав и в связи с разработкой программного обеспечения на основе копирования технологии, лежащей в основе видеоигры (*reverse engineering*). Автор рассматривает судебные решения по вопросу распределения данных рисков между сторонами. Также анализируются решения, вынесенными в пользу конечных пользователей, в частности на основе доктрины добросовестного использования (*fair use*). Наконец, автором продемонстрированы пробелы в интеллектуальном праве США на примере дел, в которых одной из сторон выступает компания *Blizzard Entertainment Inc.* Автор демонстрирует существующую в США двойственность подхода к защите прав на продукты игровой индустрии: с одной стороны, приоритет отдается охране интересов правообладателей и их стимулов для продолжения создания новых видеоигр, а с другой стороны, предпочтением пользуется интерес конечных бенефициаров, что дает право пользователям изменять игру согласно своим предпочтениям и выступать против монополизма компаний-разработчиков.

## Ключевые слова

право интеллектуальной собственности, США, IP, видеоигры, модификация, средства защиты интеллектуальных прав, нарушение авторских прав, лицензионные соглашения

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| **Конфликт интересов** | Автор сообщает об отсутствии конфликта интересов. |
| **Финансирование** | Исследование не имеет спонсорской поддержки. |

**Для цитирования** Ли, К. А. (2022). Проблемы модификации видеоигр в праве интеллектуальной собственности США. *Цифровое право, 3*(4), 8–31. https://doi.org/10.38044/2686-9136-2022-3-4-8-31

Поступила: 03.06.2022, принята в печать: 03.10.2022, опубликована: 31.12.2022

## Introduction

This essay begins with a legal definition of video game modification, as well as a brief overview of the copyright statute, (Copyright Act 1976, U.S.C. 17), which is the overarching law that presides over this area.

Then the examples of video game modifications and their creators are considered. Videogame modifications can be aesthetic, for example the change in the way something looks in a game. They can be functional, such as minor fixes utilized to make a game run properly or more smoothly. Finally, they can involve changing a game so completely that it is unrecognizable from the original. Usually, those who modify a game are owners of intellectual property or a third-party end user.

After that we provide introduction to the End-User License Agreements and Terms of Use that frequently are provided with video games and establish brief rules on copyright holders' desire or lack thereof for their intellectual property to be modified. Two different approaches to video game modification are explored, pertinent to companies' different attitudes toward modification by third parties and end users. The first is adopted by companies that encourage modification. This is demonstrated by terms in their EULA or Terms and Conditions. Some companies, such as Bethesda, also offer opportunities and incentives for third parties to modify their intellectual property. The second is taken by companies that want to discourage modifying, such as Nintendo, which illustrates this through aggressive litigation, strict EULAs, and Terms and Conditions covering their property.

Furthermore, issues and risks with respect to modifying are explored through potential breach of contract, copyright infringement, and reverse engineering. Breach of contract may arise when terms of the copyright holder's EULA or Terms of Use are violated. An example of breach of contract and its remedy is discussed in the case of *iRacing.com Motorsport Simulations, L.L.C. v. Robinson, Micro Star v. FormGen Inc.,* where a third-party user violated the copyright holder's EULA and the court awarded only nominal damages. Copyright infringement will be implicated where the end user has exceeded the scope of their license, and exercises an exclusive right reserved for the copyright owner, as was in the case *Micro Star v. FormGen Inc.,* where the court held that a third party infringed upon the copyright holder's intellectual property by selling and distributing a modification without permission. Reverse engineering is a process which may involve a copyrighted item being dismantled and used to create a new product. Reverse engineering can be useful, as well as harmful. *Blizzard Entertainment, Inc. v. Reeves* illustrates how reverse engineering may be used as a vehicle for copyright infringement.

The defense of fair use is analyzed in counterexamples to *iRacing.com Motorsport Simulations, L.L.C., Micro Star* and *Blizzard Entertainment, Inc.,* where the court essentially found in favor of the modifiers. These include the cases of *Sony Computer Entertainment Inc. v. Connectix Corp.,* and *Sega Enterprises Ltd. v. Accolade, Inc.,* where the modifiers successfully pleaded fair use in their reverse engineering of a copyright protected product, and *Nintendo of America, Inc. v. Lewis Galoob Toys, Inc.*, where the court found all the factors of fair use weighed in favor of the modifier.

Finally, gaps in the law are shown in the cases of *MDY Industries, L.L.C. v. Blizzard Entertainment Inc.,* where a prohibition on cheating predated the use of bots that gave players unfair advantages, and the case of DoTA, where open-source code led to the copyright holder, Blizzard, losing their intellectual property rights to their competitor, Valve.

When considering the legal ramifications of video game modding, numerous balancing interests between copyright holders and end users or third-party modifiers must be taken into account. On the one hand, it is the right of copyright holders to protect their intellectual property and determine how much of their work they are willing to license out, or whether they are willing to license it out at all. On the other, third-party end users may want to customize games to best benefit from the creation or want to reverse engineer them in order to make something entirely new. In addition to accommodating these two interests, as technology rapidly develops sometimes, it is difficult for the law to provide the most equitable remedy when technology faces new unanticipated challenges.

## Legal Concept of Video Game Modding

### What Are Video Game Modifications

There are different ways to define video game modification. The 9th Circuit in *Nintendo v. Galoob* refers to video game modification as being a derivative work that exists in permanent or concrete form.[1] Under 17 U.S.C. § 101, a derivative work is a "A copyrightable creation that is based on a preexisting product; a translation, musical arrangement, fictionalization, motion-picture version, abridgment, or any other recast or adapted form of an original work. Only the holder of the copyright of the original form can produce or permit someone else to produce a derivative work."[2] According to an article by Lindstrom (2020), video game modifications "[i]n the video game industry, is 'the act of changing a game, usually through computer programming, with software tools that are not part of the game.'" To elaborate on this definition, in an article by Wallace (2019), "Modding is the process of altering, adding to, or deleting video game code to change the way that a particular game is played."

### What Law Governs Mods

The most pertinent statutes regarding video game modifications fall under the copyright statute, U.S.C. Title 17 Copyrights. Categories of protected works fall under 17 U.S.C. § 102 Subject matter of copyright. There is no video game specific statute, and thus different aspects of a video game are covered by different parts of the law. The program code of a video game is protectable as a literary work under 17 U.S.C. § 102 (1) literary works.[3] A video game's image data is protectable as a pictorial, graphic, and sculptural work under 17 U.S.C. § 102 (5).[4] The sounds of a video game are protectable under 17 U.S.C. § 102 (7) sound recordings, and the gameplay as experienced by a player is potentially protectable under 17 U.S.C. § 102 (6) Motion pictures and other audiovisual works.[5] Once a game has been developed and copyright protected, the video game modification, or derivative work, that ends

1 Lewis Galoob Toys, Inc. v. Nintendo of America, Inc., 780 F.Supp. 1283 (N.D.Cal.1991).

2 Garner, B. A. (2019). Derivative work. In *Black's Law Dictionary*. (11th ed.).

3 17 U.S.C.A. § 102 (West).

4 Id.

5 Id.

up getting litigated will likely implicate copyright infringement, because in video game modification suits, the modifier is usually a third-party user who is creating a derivative work of copyrighted subject matter without a license from the owner.

## Examples of Modifications

Both the copyright holder and third parties can create modifications. There are many different uses and purposes of video game modifications. This can range from "minor bug fixes, to complete overhauls rendering the underlying game all but unrecognizable." (Lindstrom, 2020). On one end of the spectrum, a video game modification can be something minor, such as a developer manually rewriting a part of the game's source code to fix an issue. (Allamanis et al., 2021). An example of a minor modification is a bug fix, such as New World's 1.3.2 Patch Update. In the update, the copyright owners corrected a small issue within the game "where the same player could be listed multiple times on [a]... roster list."[6]

Other modifications can be simple aesthetic changes that players want to see in a game. Another example is the number of different types of modifications available for Electronic Arts' game, The Sims4. The Sims4 is a "simulation game that gives you the power to create and control people," like a virtual dollhouse.[7] Modifications available for The Sims4 range from offering different heights, growing an automatic beard, to different types of furniture not offered in the base game.[8] The popular game Minecraft also has a large modding community and offers numerous aesthetic changes. Some examples include offering items for interior decorating such as different types of tables and chairs not available in the base game (https://www.minecraftmods.com/). Other functional modifications available to download include the ability to tame wild animals and adding a hygiene bar for your player to make identifying their needs easier.

On the other end of the spectrum of video game modifications, an original work can be changed so much that the final product is nearly unrecognizable from its original form. An example of this is the game Defense of The Ancients (DoTA). A third-party end user created DoTA as a modification derived from the game Warcraft III's map editor and became so successful it eventually branched off into its own game.[9] Another example is the community that made the Enderal: Forgotten Stories modification.[10] Enderal is a modification of a Bethesda game, Skyrim, that was altered so extensively it became its own game with completely different characters, settings, and storylines.

While it is the right of copyright holders to modify video games any way they want, issues may emerge when third-party users create modifications. It is the right of the copyright owners to determine how much of their software they are willing to license out to end users or whether they are willing to license any of it out at all. The degree to which copyright holders are willing to allow end users to alter their property is usually outlined in an End User License Agreement or their Terms of Use.

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6 Amazon.com Services L.L.C. (2022, February 8). *New World Update 1.3.2.* https://www.newworld.com/en-us/news/articles/new-world-update-1-3-2#ags-MediaPopup

7 Electronic Arts Inc. (n.d.). *The Sims 4.* Retrieved February 23, 2022, from https://www.ea.com/games/the-sims/the-sims-4

8 Horti. S., Morton, L., & Webber, J.E. (2022, August 31). *The best Sims 4 mods in 2022.* PC Gamer. https://www.pcgamer.com/best-sims-4-mods/

9 Dean, P. (2014, April 14). *The Story of Dota*. Eurogamer. https://www.eurogamer.net/articles/2011-08-16-the-story-of-dota-article

10 Steam. (n.d.). *Enderal: Forgotten Stories (Special Edition).* Valve Corporation. Retrieved February 23, 2022, from https://store.steampowered.com/app/976620/Enderal_Forgotten_Stories_Special_Edition/

## End User License Agreement and Terms of Use

"An End-User License Agreement (EULA), also known as 'tear open,' or 'box top' or 'shrink-wrap' license agreement is the document that purports to form a contract between the mass market software developer and end-user." (Lutten & Wilf, 2021). In addition to EULAs, video game companies will typically provide Terms of Use via click wrap agreements. Click wrap agreements "require a user to consent to any terms or conditions by clicking on a dialogue box on a screen in order to proceed with an internet transaction." (Gans, Krause, & Speiser, 2022). EULAs and Terms of use will generally include a variation of a license grant, prohibition against disassembly, prohibition against resale or renting, choice of forum and law/binding arbitration, and, at the end, an agreement for the consumer who uses the software to agree to the terms outlined (Gans, Krause, & Speiser, 2022).

In EULAs and Terms of Use agreements, companies will outline provisions that address how much of their software they are licensing to the end user. These include provisions stipulating whether or not user generated content is permissible, whether sharing is acceptable, whether user generated content and sharing can be done for a fee, or cannot be done freely, and some companies offer to provide that editing tools and forums for creation and content sharing. Other companies may expressly forbid any type of user generated content and sharing.

### Companies That Encourage Modding

Some video game companies encourage modifications by providing provisions in their Terms of Use and/or EULA as well as copyright owner generated tools to create third-party end-user generated content. Bethesda's EULA specifically addresses video game modifications in its terms of service:

> The term "Game Mod" means downloadable, user-generated Content developed or created by You or a third party using an Editor Tool (as defined below). In certain cases, as determined by ZeniMax, Game Mods may be made available to other users of a Service or a Game and in such cases, such other users may download the Game Mods from ZeniMax or third parties and use such Game Mods in connection with playing a Game or receiving a Service from ZeniMax.[11]

According to Bethesda's EULA, ZeniMax, the copyright owner, provides editing tools for end users to create their own user generated content, and allows for those third-party modifications to be "made available to other users," thus facilitating creation and sharing.[12]

Apart from its EULA, Bethesda also offers opportunities for video game modifiers to share and get paid for their creations for certain games, through its Creation Club. Creation Club's website states, "Creation Club is a collection of all-new content for both Fallout 4 and Skyrim. It features new items, abilities, Bethesda Games Studios created gameplay, and outside development partners including the best community creators. Creation Club content is fully curated and compatible with the main game and official add-ons."[13] Skyrim, in particular, has over 45,000 mods available on the Nexusmods sharing platform. According to an article from Geforce, Skyrim is one of the most mod-

[11] Zenimax Media Company. (2021, December 13). *Bethesda Terms of Service*. Bethesda Softworks L.L.C.. Retrieved February 23, 2022, from https://bethesda.net/en/document/terms-of-service

[12] Id.

[13] Bethesda. (n.d.). *Creation Club.* Bethesda Softworks L.L.C.. Retrieved February 23, 2022, from https://creationclub.bethesda.net/en

ded games, and this contributes to its continual market success despite it being released several years ago.[14] Bethesda encourages and facilitates modifications created by end users, by offering incentives, offering sharing platforms, and giving third-party end users the opportunity to work with the owners to create and share content.

Like Bethesda, Electronic Arts also addresses and encourages third-party end-user generated modifications by providing provisions addressing user generated content. This shows that Electronic Arts anticipates third-party end-user modification creation and sharing. Their user generated content provision states:

> When you contribute UGC, you grant to EA, its licensors and licensees... sublicensable license to use, host, store, reproduce, modify, create derivative works, publicly perform, publicly display or otherwise transmit and communicate the UGC... You also grant to all other users who can access and use your UGC on an EA Service the right to use, copy, modify, display, perform, create derivative works from, and otherwise communicate and distribute your UGC on or through the relevant EA Service...[15]

Electronic Arts further encourages third party end user created modifications by making it easy for users of certain games to share and download modifications. For example, Electronic Arts offers this for their game, The Sims 4. In Maxis Policy on Mods, Electronic Arts "strives to support the creativity of our community. We know that, for many of you, Mods are an important part of your game experience. For that reason, [Electronic Arts] support a framework in The Sims 4 that makes it easier for [players and end users] to install and use Mods."[16] Like Bethesda, Electronic Arts encourages third party end user generated content, and offers tools that make it easy to share content with other players.

Bethesda's and Electronic Arts' policies illustrate that there is an approach where some copyright owners encourage modification creation and sharing. In addition to Bethesda and Electronic Arts' approaches to modification, other companies encourage modifying by offering mod competitions. Modding competitions invite third-party end users to share their creativity for a monetary prize. An example of this was Nvidia's 'Make Something Unreal Competition 2004', which was conducted in association with Epic Games and Atari. For the competition, third-party developers were invited to submit modifications intended to be played in an 'Unreal Tournament' for a prize of $1,000,000.[17] The best modifications were made available for third parties and end users to download from Epic Games' website and were compatible with gameplay. In addition to the prize fund, the sponsors also offered the winner the opportunity to work with Epic Games developers or create a commercial version of the modification and publish it as a separate independent entity.[18]

## Discouraging Modding

In contrast to companies that offer tools, encourage modifying communities, and create competitions, at the other end of the modification spectrum, there are some companies that expressly limit

[14] Dyer, A. (2016, March 18). *PC game mods — From smurfs to counter strike and beyond.* NVIDIA. https://www.nvidia.com/en-us/geforce/news/history-of-pc-game-mods/

[15] Electronic Arts. (n.d.). *Electronic Arts User Agreement*. Retrieved February 23, 2022, from https://tos.ea.com/legalapp/WEBTERMS/US/en/PC/#section10

[16] Electronic Arts. (n.d.). *The Sims 4 — Mods and game updates.* https://help.ea.com/en/help/the-sims/the-sims-4/mods-and-the-sims-4-game-updates/

[17] Epic Games. (n.d.). *Make something unreal*. Retrieved February 23, 2022, from https://docs.unrealengine.com/udk/Two/MakeSomethingUnreal.html#FAQ

[18] Epic Games. (n.d.).

third-party modification, creation, and sharing. According to an article by Wilson Sonsini Goodrich & Rosati, a legal technology firm, video game copyright owners take different approaches to encouraging or discouraging third-party modifications.[19] On the encouraging end of the spectrum, companies like Bethesda offer tools and opportunities for third parties to work with copyright owners, in addition to the possibility of being compensated for their creations. In contrast to Bethesda's, Electronic Arts', and Nvidia's policies on video game modification by end users and third parties, which encourage and facilitate the creation and sharing of modifications, there are companies that discourage third-party end-user generated content sharing. For example, Nintendo Switch's current EULA discourages modification and reverse engineering by explicitly stating, "(4) You may not copy, duplicate, publish, transmit publicly, lease, modify or reverse engineer the Software. (5) You may not illegally modify this Nintendo video game system itself, its peripheral equipment or the Software, or may not use any peripheral equipment of this Nintendo video game system or any software which are not authorized by Nintendo."[20] As illustrated, Nintendo Switch's EULA prohibits end users from modifying or reverse engineering their software. In contrast to Bethesda's, Nintendo's EULA also lacks a provision addressing user-generated content and sharing, further positing that Nintendo discourages third-party end-user modification and sharing.

In Wilson Sonsini Goodrich & Rosati's article on video game modification, is described as a company with a "No Modding Approach," which is "famous for taking aggressive action to defend its intellectual property rights" by sending cease and desist letters to modifiers.[21] Nintendo has even shut down largely popular gaming tournaments. In 2020, Nintendo sent the producer of the large Super Smash Brother's Online Tournament, BigHouse, a cease-and-desist letter, and BigHouse cancelled the tournament in response. Nintendo stated that the online tournament would require the use of an unauthorized modifications to play online and insisted that it had no choice but to protect its intellectual property rights.[22] The modification was likely required because Super Smash Brothers Melee is not playable online. However, this cancellation supports Wilson Sonsini Goodrich & Rosati's statement that Nintendo has a no modding approach toward game modification. This is evident because the tournament Nintendo essentially shut down brought Nintendo fans and users together to play its game in a hugely anticipated tournament.

Additionally, in a modification article by Murty (2020), intellectual property lawyers opine that Nintendo is aggressive in sending out cease-and-desist letters to such a degree that it may even face a backlash.[23] In 2020, Nintendo sent a cease-and-desist letter to a charity being held for a streamer who died by suicide.[24] As part of the charity event, custom JOY-CON controllers were being sold to raise suicide awareness. Nintendo owns the intellectual property rights to JOY-CON controllers, and the charity had modified the controllers by customizing their appearance. Nintendo sent a cease-and-desist letter to the charity organizers, who could no longer sell the merchandise as a result.[25]

[19] Krosnicki, J, McKinney, S, & Shevall, A. (2020, July 20). *Are gaming companies maddened by mods or embracing them?* JD Supra. https://www.jdsupra.com/legalnews/are-gaming-companies-maddened-by-mods-51053/#25

[20] Nintendo. (n.d.). *Nintendo Switch Support: End User License Agreement.* Retrieved February 23, 2022, from https://www.nintendo.com/sg/support/switch/eula/usage_policy.html

[21] Krosnicki, J. et al (2020).

[22] Good, O. S. (2020, November 19). *Smash Bros. Tournament the Big House 10 canceled over Netcode*. Polygon. https://www.polygon.com/2020/11/19/21578200/super-smash-bros-tournament-the-big-house-10-canceled-nintendo-c-d

[23] Murty, P. (2020, December 8). *Nintendo faces backlash over cease & desist letters*. Smith & Hopen. https://smithhopen.com/2020/12/09/nintendo-faces-backlash-over-cease-desist-letters/

[24] Murty, 2020.

[25] Id.

The author of the article concludes that, although Nintendo had the right to protect its intellectual property Nintendo incurred a "huge PR backlash" by shutting down a charity, which may serve as a cautionary tale about taking aggressive action against third-party end-user generated content.[26]

## Issues and Risks with Modifying

Different companies' attitudes towards video game modification are reflected in the provisions included (or not included) in their EULAs and Terms of Use.[27]. Nintendo illustrates that unauthorized alterations to protected works can result in modifiers receiving cease-and-desist letters from the copyright holders. For companies that encourage modifying, such as Electronic Arts and Bethesda, issues will emerge if end users exceed the scope of their limited license in using the copyright owner's software or violate the covenants and conditions in their terms.

### Breach of Contract

Breach of contract may arise when a condition or term of a copyright holder's EULA or Terms of Use is violated. The terms in an agreement can either be covenants or conditions. When a copyright holder grants a nonexclusive, limited license to end users to use their software, the contractual terms that "limit a license's scope are 'conditions.'"[28] "All other license terms are 'covenants' that are actionable under contract law."[29] Typically, the EULA or Terms of Use will state which jurisdiction's laws will apply in contractual disputes because contract law is governed by state law. The EULA and Terms of Use can also state whether disputes will be arbitrated. Some provisions will expressly state that end users must make their claims in small claims court and put limitations on recoverable damages.[30]

Damages for an end user's breach of contract for violating the copyright owner's EULA or Terms of Use are generally minimal in comparison to the remedies available for copyright infringement claims. Some notable differences are that in a copyright claim the prevailing party can seek attorney's fees, while in a breach of contract claim, each side normally bears the cost of attorney's fees on their own.[31] Additionally, contract damages can be minimal. Many video game's Terms of Use limit the amount of damages that are claimable.[32] The amount recoverable may be how much the game cost,

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26 Murty, 2020.

27 The EULA and Terms of Use examples provided in this essay relative to Electronic Arts, Bethesda and Blizzard are U.S. based companies. While Electronic Arts and Bethesda tend to follow a mod freely approach, Blizzard in comparison has stricter guidelines. Additionally, in the example of Nintendo, a Japanese based company, it is hypothesized in Are Gaming Companies Maddened by Mods or Embracing Them?, by Wilson Sonsini & Rosati, that Nintendo's stricter approach to modification is influenced by Japan's approach to modding generally, as "[t]he Japanese government recently expanded regulations under its Unfair Competition Prevention Law to make modding game save data and game consoles punishable by up to five years in jail and up to $46,000 in fines."

28 MDY Indus., L.L.C. v. Blizzard Ent., Inc., 629 F.3d 928, 939 (9th Cir. 2010), as amended on denial of reh'g (Feb. 17, 2011), opinion amended and superseded on denial of reh'g, No. 09-15932, 2011 WL 538748 (9th Cir. Feb. 17, 2011).

29 Id.

30 Ellison, S. J. (2022, February 2). *Can I sue a video game creator or company?* https://www.findlaw.com/consumer/consumer-transactions/can-i-sue-a-video-game-creator-or-company-.html

31 Electronic Frontier Foundation. (2008, August 13). *Condition or covenant, and why should you care?* https://www.eff.org/deeplinks/2008/08/condition-or-covenant-and-why-should-you-care

32 Ellison, 2022.

or "for an online game the amount you paid the previous year."[33] An example of a limitation on recovery was illustrated in *iRacing.com Motorsport Simulations, L.L.C. v. Robinson*. In the Massachusetts District Court case, a third-party end user reverse engineered NASCAR 2003, a copyright protected game, in violation of the copyright holder's EULA, and the court only permitted nominal damages, or one dollar ($1.00) for the breach.[34]

Another example of breach of contract remedies for violating a video game's terms occurs when a copyright owner's software is used in excess. Some companies' terms can include a clause for the case of over deployment of property. This means that companies may anticipate their property being used on only one computer at a time. When over deployment occurs, or software is used on multiple computers, the remedy for this breach of covenant is repayment of the amount of additional licenses.[35]

## Copyright Infringement

When an end user violates a condition of the copyright holder's EULA or Terms of Use, copyright infringement will be implicated if the end user has exceeded the scope of the license and has exercised an exclusive right reserved for the copyright owner.[36] Video game modifiers potentially infringe on the rights of copyright owners when they take a copyright protected original and make a derivative work from it. Under 17 U.S.C.§106, exclusive rights of copyright holders include reproducing the work in copies, creating derivative works, distributing copies, and, in the case of literary, musical and audiovisual works, displaying the work publicly.[37] Issues with respect to modifying emerge when third-party end users take an original work, and make a derivative from it. This includes modifying any part of the protected work, which encompasses virtually all modifications.

*Micro Star v. FormGen Inc* is an example of case where a copyright owner sued a third-party modifier because of user generated content.[38] In this case, a third-party modifier, Micro Star, compiled 300 user generated modifications, or additional player-created levels, of FormGen's Duke Nukem video game, copied them onto a CD, and then sold it commercially as Nuke It.[39] The modifier also took screen shots of images from the video game to decorate the packaging of the box that the compilation was sold in. In finding in favor of FormGen, the court took into account that Micro Star had replicated images from Duke Nukem gameplay on Nuke It's packaging without a license from FormGen and commercially profited from distributing the work.[40] Micro Star argued that it had not infringed on FormGen's copyright because FormGen gave end users a license to create and share their own created levels of the game. The court ultimately granted FormGen a preliminary injunction against Micro Star, requiring it to cease selling and distributing the modification. This ruling was based, in part, on Form Gen's license to end users, which allowed players to create and share their own levels, but also stipulated that "any new levels the players create must be offered to others solely for free."[41]

33 Ellison, 2022.

34 iRacing.com Motorsport Simulations, L.L.C. v. Robinson., (Mass. Dist. Ct. 2005) Case No. 1:05-cv-11639-NG.

35 Fulmer, P. (2019, September 30). *United States: Covenant or condition: When can a licensor sue its licensees for copyright infringement?* Mondaq. https://www.mondaq.com/unitedstates/licensing-syndication/849364/covenant-or-condition-when-can-a-licensor-sue-its-licensee-for-copyright-infringement

36 MDY Indus., L.L.C. v. Blizzard Ent., Inc., 629 F.3d 928, 939 (9th Cir. 2010).

37 17 U.S.C.§106 Exclusive rights in copyrighted works.

38 Micro Star v. FormGen Inc., 154 F.3d 1107 9th Cir.

39 Id.

40 Id. at 1113.

41 Id.

FormGen's approach to modding stands in contrast to Bethesda's system and Nintendo's. While Bethesda encourages and facilitates third-party generated modification, and Nintendo has an aggressive no third-party modification approach, FormGen suggests an intermediate category: selective enforcement. According to Wilson Sonsini Goodrich & Rosati's article, this intermediate approach to modifying occurs when copyright owners selectively "come after certain modders such as those mods designed to promote cheating or the insertion of inappropriate content."[42] Expanding on Wilson Sonsini Goodrich's & Rosati's description of the type of modifiers copyright owners will come after, this list should also include third-party modifiers that commercially profit while stealing potential customers from the copyright owners. In the case of *Microstar,* FormGen provided third-party end users with tools to be creative with their software and to create and share their own levels of Duke Nukem. However, when *Microstar* compiled user generated content and sold it commercially, the copyright owners chose to litigate. This illustrates an approach to third-party modifications, where the copyright owners may license and facilitation third-party modifications, but also demonstrates that, if modifiers' activities pass a point where copyright owners consider that they have overstepped the license, the copyright owner may choose to allege infringement.

## Reverse Engineering

"Reverse engineering is the process [where] a copyrighted item is dismantled from the end product and reformulated to create another product..."[43] Reverse engineering can occur in several different ways. With respect to the gaming industry, this can involve unauthorized copying of copyright protected software onto a third party's computer in order to understand it and/or modify it to create a derivative work. When this occurs, copyright infringement may be implicated because copying is an exclusive right reserved for the owner.

Blizzard is another company that encourages and facilitates third-party user generated modifications but has litigated against end users that have overstepped the license to modify. Blizzard allows a degree of space for third-party end users to create modifications. For example, Blizzard offers a Warcraft III editor that allows third parties and end users to create their own maps for gameplay. [44] According to the current EULA for Blizzard's BattleNet gaming platform, while Blizzard provides third party modifiers and end users forums and editing tools to modify certain aspects of gameplay, it expressly prohibits unauthorized creation of derivative works, such as copying, reproducing, translating, reverse engineering, deriving source code from, modifying, disassembling, or decompiling.[45] The fact that Blizzard offers editing tools suggests that the company supports modification to a degree. However, their reservation of rights and provision against unauthorized derivative works also suggests that Blizzard anticipates the possibility of modifiers overstepping their license to use its software.

In the case of Blizzard Entertainment, Inc. v. Reeves, a third-party end user of World of Warcraft reverse engineered part of World of Warcraft's software to create a modification that allowed users to access World of Warcraft game servers and play without paying the required monthly subscription

[42] Krosnicki, J. et al (2020).

[43] Krosnicki, J, McKinney, S, & Shevall, A. (2020, July 20). *Are gaming companies maddened by mods or embracing them?* JD Supra. https://www.jdsupra.com/legalnews/are-gaming-companies

[44] Blizzard. (2020, August 27). *Revisiting the Warcraft III Editor.* Blizzard Entertainment Inc. https://news.blizzard.com/en-us/warcraft3/23395649/revisiting-the-warcraft-iii-editor

[45] Blizzard Entertainment Inc. (n.d.). *Blizzard end user license agreement.* Retrieved March 1, 2022, from https://www.blizzard.com/en-us/legal/fba4d00f-c7e4-4883-b8b9-1b4500a402ea/blizzard-end-user-license-agreement

fee, thus infringing on Blizzard's copyright.[46] In this case, the third-party modifier, Reeves, reverse engineered part of World of Warcraft code in order to create new servers that could access World of Warcraft servers without paying the subscription fee that is required to log in. Reeves offered other third parties access to her circumvention software on her website, scapegaming, in exchange for donations, which ended up totaling $3,052,339.[47] Blizzard requested damages under the 17 U.S.C § 1201 DMCA anti-circumvention statute, alleging that Reeves had infringed on their copyright when she offered the software through her website. Blizzard also claimed that, by copying and reverse engineering their property without authorization, Reeves had violated Blizzard's EULA and Terms of Use, and was thus in breach of contract.

The court ended up awarding Blizzard Reeve's $3,052,339 in profit as compensation for copyright infringement because Reeves had copied World of Warcraft's software to her own computer in order to modify so that World of Warcraft servers could be accessed while circumventing Blizzard's subscription fee. This constituted unauthorized copying, which is the exclusive right of copyright owners. Blizzard lost its claim for $20,886,200 ($2,500 per act of circumvention) for DMCA statutory violations because Blizzard could not prove that the 104,431 payments to Reeves for using the scapegaming website represented acts of circumvention, as the transactions did not reflect "the number of times that Plaintiff's anti-piracy mechanisms have been by-passed or the number of times that Defendant's servers performed their infringing services for users... [T]he quantity of transactions reflects the number of times people have paid money to Defendant — an act that is separate from a user's act of accessing Defendant's servers."[48]

The case of Blizzard Entertainment Inc. illustrates why some copyright holders may choose to expressly prohibit reverse engineering in their EULAs and Terms of Use. Reeves reverse engineering World of Warcraft's software resulted in her taking away Blizzard's revenue by circumventing its subscription fee. While this shows how reverse engineering can be a vehicle for copyright infringement, there are also instances where courts may allow for reverse engineering, as well as defenses against copyright infringement claims.

## Defenses: Fair Use

Fair use is an affirmative defense against copyright infringement claims that involve unauthorized copying, modifying, or reverse engineering. In the case of Sony Computer Entertainment Inc. v. Connectix Corp., Connectix successfully pleaded fair use for its reverse engineering of Sony's PlayStation. Sony alleged Connectix had infringed on its copyright by reverse engineering its copyright protected game console. This involved altering the PlayStation's input-output system BIOS in order to make PlayStation games playable on personal computers.[49] In this case, Connectix engineers needed to copy Sony's input-output system BIOS onto a computer and disassemble object code into source code to produce a modification that allowed PlayStation games to be played on personal computers. Despite copying being an infringement of the copyright holder's exclusive rights, the court found that Connectix's copying was only an intermediary step. The court reasoned that reverse engineering was necessary to reach unprotected functional elements in the PlayStation, and that none of the copyrightable elements appeared in the final modification.[50]

[46] Blizzard Ent., Inc. v. Reeves, No. CV 09-7621 SVW AJWX, 2010 WL 4054095, at 4 (C.D. Cal. Aug. 10, 2010).

[47] Blizzard Ent., Inc. v. Reeves, No. CV097621SVWAJWX, 2010 WL 11508371, at 5 (C.D. Cal. July 22, 2010).

[48] Id.

[49] Sony Computer Ent., Inc. v. Connectix Corp., 203 F.3d 596, 601 (9th Cir. 2000).

[50] Id.

## The Statute

The Fair Use statute is 17 U.S.C.A. § 107.[51] There are four factors that courts will use in analyzing a claim. The first is (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes. With regard to this factor, the court may inquire as to whether the use of the derivative work is commercial in nature, and whether its use is transformative in comparison to the original.[52] Typically, if the use is found to be noncommercial and the new work found to be transformative, this will favor a finding of fair use. The second factor is (2) the nature of the copyrighted work. With regard to this factor, courts may consider whether a work is creative or factual, and whether the work is published or unpublished. The more creative a work is, the more this favors fair use, and if the disputed work has already been published, this favors fair use because the copyright owner has had the opportunity to profit commercially. The third factor (3) involves the amount and substantiality of the portion used in relation to the copyrighted work as a whole and depends on the case. A small portion of a copyrighted work can be unfair, while using a substantial portion of a copyrighted work can favor fair use. The final factor (4) is the effect of the use upon the potential market for or value of the copyrighted work. When considering this factor, the harm done to the copyright protected work's market will be analyzed.[53] If the harm is great and results in lost profits, diverted sales, or lost licensing revenue for the copyright owner, this will disfavor a finding of fair use.[54] Of the four factors, no single factor is dispositive to finding fair use, and the Supreme Court has cautioned that it should be applied on a case-by-case basis.[55]

In a case similar to that of Sony Computer Entertainment, Inc., Sega Enterprises Ltd. v. Accolade, Inc. involved reverse engineering. In this proceeding, the court analyzed Accolade's derivative work using fair use analysis and "concluded that where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyrighted computer program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work, as a matter of law."[56] In this case, Accolade reverse engineered Sega's gaming console, Genesis, in order to create video games that were compatible with Sega's console. Just like Sony Computer Entertainment, Inc., Sega alleged copyright infringement for the unauthorized copying of Genesis' code, as Accolade had saved Sony's files on multiple computers in order to disassemble it. The court found that Accolade had met the requirements for fair use, despite the "intermediate copying done... [falling] squarely within the category of" acts prohibited by the copyright statute.

With respect to the first factor, which involves character and purpose, the court found that Accolade's direct purpose "was... to study the functional requirements for Genesis compatibility so that it could modify existing games and make them usable with the Genesis console. Moreover...no other method of studying those requirements was available to Accolade...[additionally,] Accolade copied Sega's code for a legitimate, essentially non-exploitative purpose, and that the commercial aspect of its use can best be described as of minimal significance.[57] Thus the first factor favored fair use. With respect to the second factor, the nature of the copyrighted work, the court reasoned that

[51] 17 U.S.C.A. § 107, 17 USCA § 107.

[52] Cunard, J.P., Keller, B.P., & Potenza, M. (2022). *Copyright Fair Use, Practical Law Practice Note 2-523-3404.* Thomson Reuters. https://uk.practicallaw.thomsonreuters.com/2-523-3404?transitionType=Default&contextData=(sc.Default)

[53] Cunard et al. (2022).

[54] Cunard et al. (2022).

[55] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994).

[56] Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1527–28 (9th Cir. 1992), as amended (Jan. 6, 1993).

[57] Id. at 1522.

because disassembly was required and some of Sega's programs contained unprotected "aspects that cannot be examined without copying," it would be subject to less protection than traditional literary works, and found this factor favored fair use. With respect to the third factor, the amount and substantiality copied, the court reasoned that, by disassembling the console, Accolade had used the entire work, and thus this factor disfavored a finding of fair use. With respect to the fourth factor, which considers the effect of the use upon the market in relation to the copyrighted work, the court distinguished this case from *Harper and Row*, where the usurpation of a copyright holder's market was dispositive.[58] Here, though Accolade entered Sega's gaming market by selling games compatible with Sega, the court reasoned that introducing a new game would not necessarily usurp Sega's games, as purchasers could buy both, and found in favor of Accolade.[59]

The cases of Sony Computer Entertainment, Inc. and Sega Enterprises Ltd. v. Accolade, Inc. illustrate instances where modifiers have successfully raised fair use when the defendants were involved with reverse engineering of the plaintiff's copyright protected systems. In both cases, the disassembly of the copyright owner's consoles was necessary: in the first case, in order to make Sony games playable on other platforms, and in the latter case, in order to develop video games compatible with Genesis, which benefitted purchasers. These cases stand in contrast to the case of Blizzard Entertainment, where the modifier reverse engineered Blizzard's video game in order to circumvent subscription fees, and in addition, improperly cut into Blizzard's revenue by offering the derivative work. These cases show that there is a thin line between what the court will find permissible versus what is illegal.

Nintendo of America, Inc. v. Lewis Galoob Toys, Inc. is another case where a court found fair use in a copyright infringement case. In the case, Lewis Galoob Toys created the Game Genie, "an electronic device allowing NES (Nintendo Entertainment System) owners to change aspects of NES video games.[60] For example, the Game Genie would permit a video game character to run faster, jump higher, or become immortal."[61] According to Game Genie's website, there is a list of various cheats available for different games.[62] For Mario Brothers, the cheats include infinite lives, running faster, "Mega-jumping" and "Mega fast baddies."[63] In analyzing the Game Genie with respect to the four factors of fair use, under the first factor, character and purpose, the 9th Circuit Court found that this factor favored a finding of fair use because Nintendo had already published the games prior to the release of the Game Genie, thus it could benefit from it being on the market.[64] For the second and third factors, the court also favored a finding of fair use. The court compared end users' use of Game Genie to how Betamax users in *Sony Corp. of America v. Universal City Studios, Inc.* copied TV programs in their entirety.[65] The court reasoned that "consumers are not invited to witness Nintendo's audiovisual displays free of charge" and, despite Game Genie totally encompassing Nintendo's copyright, displays did not "militate against a finding of fair use."[66] For the fourth factor, which was considered

58 Harper & Row 471 U.S. at 562, 105 S.Ct. at 2231.

59 Sega, 977 F.2d.

60 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., 16 F.3d 1032, 1033 (9th Cir. 1994).

61 Id.

62 GameGenie.com. (n.d.). *Nintendo (game genie) codes — Mario Bros*. Danworld, Inc. Retrieved March 3, 2022, from https://www.gamegenie.com/cheats/gamegenie/nes/mario_bros.html

63 Id.

64 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., at 970.

65 Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 104 S. Ct. 774, 78 L. Ed. 2d 574 (1984).

66 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., at 971.

the most significant, the court found that Nintendo failed to show market harm.[67] The court noted that Nintendo had not issued altered versions of games like Game Genie, nor had they established that they were going to enter that market, so it favored fair use for Lewis Galoob Toys, Inc.[68]

The rulings in the Sony Computer Entertainment Inc., Sega Enterprises Ltd., and Nintendo of America, Inc. reverse engineering modification cases differ from that in the Blizzard Entertainment case. These four cases represent a gray area for copyright holders and licensees/third party end users, where the court balances the rights of copyright holders with the rights of licensees and third-party end user to promote "the progress of science and the useful arts."[69] In the first cases, the courts found that the modifier's exercise of the copyright holder's exclusive rights was fair, while in the last, they found the derivative work to be inequitable. While all these cases had third-party modifiers committing an infringing activity in common, the different outcomes illustrate how developing technology does not always fall neatly within the law.

## Gaps in the Law

A gap in the law can occur when an issue arises that lacks precedent or statutes to follow. As gaming technology advances, sometimes it is difficult for issues to fall neatly within the law. Two issues are: unanticipated advances in technology that go against the copyright owner's terms, and ownership over modifications. The following examples both pertain to Blizzard's game, World of Warcraft. Under the first issue, a third-party end user made a bot that altered World of Warcraft gameplay in violation of the copyright owner's EULA. However, Blizzard did not initiate anti-bot measures until the year after the modifier's bot was used. Under the second issue, a third party created the Defense of the Ancients game using licenses from Blizzard. Valve later employed the owner of the modification, and the owner eventually sold the rights to Valve, causing Blizzard to lose some of its property rights.[70]

### MDY Industries, LLC v. Blizzard Entertainment Inc.

In *MDY Industries, LLC v. Blizzard Entertainment, Inc,* a third-party end user of World of Warcraft created a game modification software bot, Glider, that simulated game play while the user of the bot was not actually playing the game.[71] The purpose of using Glider was to gain experience, in game currency, and items, without the user of Glider actually having to actively play the game. The modifier initially only used Glider personally, but eventually created a website and sold the software online for $15 to $25 per license.[72] Blizzard alleged that, in addition to copyright infringement and contributory infringement of World of Warcraft, MDY's bot disrupted gameplay for other players because users of the bot were unfairly advantaged.[73] The court found that MDY was not contributorily liable for secondary infringement because Glider did not alter World of Warcraft's software in violation of copyright holder's rights. However, the modification did fall foul of 17 USC § 1201 Circumvention of

67 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., at 971.

68 Id.

69 U.S. Const. art. I, § 8, cl. 8.

70 Orland, K. (2017, May 18). *Does Valve really own Dota? A jury will decide.* Ars Technica. https://arstechnica.com/gaming/2017/05/does-valve-really-own-dota-a-jury-will-decide/

71 MDY Indus., LLC v. Blizzard Ent., Inc., 629 F.3d 928, 936 (9th Cir. 2010).

72 Id.

73 Id.

copyright protection systems because Glider was designed to be undetected by World of Warcraft's anti-bot scanner.

MDY is a complex case that illustrates potential gaps in the law. The copyright owner wanted to protect World of Warcraft against third-party end user modifications that disrupted gameplay. Despite MDY's modification, MDY did not technically infringe Blizzard's exclusive rights, and Blizzard was unsuccessful in its copyright infringement claim. At the time of the dispute, World of Warcraft's terms of use expressly stated: "You agree that you will not ... (ii) create or use cheats, bots, 'mods,' and/or hacks, or any other third-party software designed to modify the World of Warcraft experience..."[74] MDY violated Blizzard's terms when it created the bot Glider. The court held that this violation was a breach of covenant under contract law, a promise to do or abstain from doing something, but did not actually violate the copyright holder's exclusive rights to prepare derivative works or exceed the scope of the license granted to end users. The court reasoned that to find a breach of Blizzard's terms of use as actionable under copyright infringement would essentially be allowing any software copyright holder to designate unfavorable conduct as infringement and would "allow software copyright owners far greater rights than Congress has generally conferred on copyright owners."[75] Though, in making this distinction, the court showed the balancing of rights between copyright holders and licensees, the outcome feels incomplete. MDY made over $6,000,000 selling Glider bots, despite the copyright holder's desire to ban the use of modifications to cheat.

MDY illustrates how advancing technology makes it difficult to enforce copyright owner's rights. MDY made the modification in 2004, but Blizzard did not release its anti-bot scanner until one year later, in 2005.[76] The release of anti-bot software at a later date could suggest that the technology was not anticipated when World of Warcraft was released because the Terms of Use drafted at that time showed that Blizzard desired to ban the use of modifications to cheat in the game. This shows that, while the desire to prohibit this conduct was anticipated at the release of World of Warcraft, technology was still advancing and not every type of modification could be adequately protected against. The copyright statute, which contains the cause of action Blizzard wanted against MDY, copyright infringement, was passed as a series of acts in 1976.[77] While Blizzard was unsuccessful in its copyright infringement claim, it was able to get an injunctive relief from the court under the Digital Millennial Copyright Act, or 17 USC § 1201. Potential gaps in the law are that the statue that Blizzard was able to receive relief under, violations regarding circumvention of technological measures, was not in effect until November 1999.[78] Had World of Warcraft been released just 5 years prior, Blizzard may not have had a remedy against MDY.

## DoTA

DoTA delineates issues regarding modification ownership. As previously mentioned, the popular video game DoTA is a modification of Blizzard's Warcraft III. Blizzard's editing tools for modification, Warcraft's map editor tool, made DoTA's inception possible. From its creation in 2002, Blizzard licensed out intellectual property that was the starting point of several websites and variations of DoTA, such as DoTA Allstars.[79] Blizzard's competitor, Valve, then acquired DoTA Allstars's lead devel-

[74] Id.

[75] Id.

[76] Id.

[77] 17 U.S.C.A. § 103, 17 USCA § 103 (West).

[78] 17 U.S.C.A. § 1201, 17 USCA § 1201 (West).

[79] Notice of Opposition (Valve., Corp. v. Blizzard Ent., Inc.) ESTTA441431 (TTAB 2011), https://ttabvue.uspto.gov/ttabvue/ttabvue-91202572-OPP-1.pdf

oper in 2009. Later, Valve applied to the USPTO to trademark DoTA, which Blizzard opposed in 2011. Blizzard argued that DoTA had been created by years of reputation building, contact networking, intellectual property, and branding on the part of Blizzard, and allowing Valve to claim the trademark would unfairly appropriate all the work Blizzard associated with DoTA.[80] Blizzard lost its case, and Valve acquired the rights to DoTA. According to both Blizzard's and Valve's websites, the use of the DoTA trademark belongs to Valve, and Blizzard features DoTA on their website through a license obtained from Valve.

In addition to Blizzard and Valve's competition over the trademark, in 2017, Blizzard Entertainment and Valve Corporation were plaintiffs in a motion for summary judgment in a subsequent copyright infringement case, Blizzard Entertainment, Inc. v. Lilith Games (Shanghai) Co. Ltd. In that case, a third-party modifier and one of the original contributors to DoTA, Lilith Games, infringed DoTA's copyrights to create a mobile game, DoTA Legends and Heroes Charge.[81] The defendant in that case was one of the original modifiers of DoTA and argued that its mobile games were separate works and not derivatives of the copyright protected DoTA, which was owned by Valve. Lilith Games argued that Valve had no rights to subsequent works derived from DoTA, i.e., Lilith's mobile version, and moved for summary judgment. The court held that Valve had validly acquired the rights to DoTA from the original modifiers and "may recover for original expression that [the original modifiers] contributed to their versions of DotA and DotA Allstars, as well as original expression that Valve itself contributed to DotA 2."[82]

DoTA illustrates how complicated creating a successful modification and establishing rights can be. From its inception, Blizzard arguably encouraged and facilitated modifications when it licensed out DoTA to third parties. However, despite coming to a mutual agreement, where Blizzard retained the noncommercial rights to DoTA and Valve retained the commercial rights to the same game, it is unlikely that this was the outcome Blizzard wanted, given its opposition to Valve's application to trademark DoTA. In its opposition to the USPTO, Blizzard argued that allowing Valve to trademark DoTA would essentially be allowing Valve to appropriate Blizzard's goodwill, because DoTA was created from Warcraft III and had gained popularity and association with it for several years.[83] Blizzard further argued that allowing Valve to own the trademark would create a source of confusion for the same reason.[84]

Blizzard's provision of modification tools most likely created the environment that caused Blizzard to lose DoTA to Valve. One of the original developers of DoTA used the Warcraft III editing tool to create DoTA and made his creation available as open-source code. Subsequent modifiers built upon the modification, and Valve later acquired these creators. Ownership of the modification was further exacerbated in Blizzard Entertainment, Inc. v. Lilith Games (Shanghai) Co. Ltd., when one of the original creators, who had already sold his rights, tried to make a mobile DoTA game and reclaim the intellectual property that belonged to Valve. Blizzard has since updated its custom game acceptable use policy, which now reflects a conservative approach to modification. Blizzard's terms state that "ownership [of] custom games are and shall remain the sole and exclusive property of Blizzard."[85]

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80 Orland (2017).

81 Blizzard Ent., Inc. v. Lilith Games (Shanghai) Co., No. 3:15-CV-04084-CRB, 2017 WL 2118342, at 8 (N.D. Cal. May 16, 2017).

82 Id. at 11.

83 Notice of Opposition (Valve., Corp. v. Blizzard Ent., Inc.) ESTTA441431 (TTAB 2011), https://ttabvue.uspto.gov/ttabvue/ttabvue-91202572-OPP-1.pdf

84 Id.

85 Blizzard Entertainment Inc. (n.d.). *Custom game acceptable use policy*. Retrieved March 1, 2022, from https://www.blizzard.com/en-us/legal/2749df07-2b53-4990-b75e-a7cb3610318b/custom-game-acceptable-use-policy

This could possibly be a reflection of its success and loss of DoTA, or purely a preventative measure, edging further away from strong encouragement of third-party end-user modifications.

The court ended up awarding Blizzard Reeve's $3,052,339 in profit as compensation for copyright infringement because Reeves had copied World of Warcraft's software to her own computer in order to modify so that World of Warcraft servers could be accessed while circumventing Blizzard's subscription fee. This constituted unauthorized copying, which is the exclusive right of copyright owners. Blizzard lost its claim for $20,886,200 ($2,500 per act of circumvention) for DMCA statutory violations because Blizzard could not prove that the 104,431 payments to Reeves for using the scape-gaming website represented acts of circumvention, as the transactions did not reflect "the number of times that Plaintiff's anti-piracy mechanisms have been by-passed or the number of times that Defendant's servers performed their infringing services for users... [T]he quantity of transactions reflects the number of times people have paid money to Defendant — an act that is separate from a user's act of accessing Defendant's servers."[86]

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86 Id.

87 Sony Computer Ent., Inc. v. Connectix Corp., 203 F.3d 596, 601 (9th Cir. 2000).

88 Id.

89 17 U.S.C.A. § 107, 17 USCA § 107.

transformative in comparison to the original.[90] Typically, if the use is found to be noncommercial and the new work found to be transformative, this will favor a finding of fair use. The second factor is (2) the nature of the copyrighted work. With regard to this factor, courts may consider whether a work is creative or factual, and whether the work is published or unpublished. The more creative a work is, the more this favors fair use, and if the disputed work has already been published, this favors fair use because the copyright owner has had the opportunity to profit commercially. The third factor (3) involves the amount and substantiality of the portion used in relation to the copyrighted work as a whole and depends on the case. A small portion of a copyrighted work can be unfair, while using a substantial portion of a copyrighted work can favor fair use. The final factor (4) is the effect of the use upon the potential market for or value of the copyrighted work. When considering this factor, the harm done to the copyright protected work's market will be analyzed.[91] If the harm is great and results in lost profits, diverted sales, or lost licensing revenue for the copyright owner, this will disfavor a finding of fair use.[92] Of the four factors, no single factor is dispositive to finding fair use, and the Supreme Court has cautioned that it should be applied on a case-by-case basis.[93]

In a case similar to that of Sony Computer Entertainment, Inc., Sega Enterprises Ltd. v. Accolade, Inc. involved reverse engineering. In this proceeding, the court analyzed Accolade's derivative work using fair use analysis and "concluded that where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyrighted computer program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work, as a matter of law."[94] In this case, Accolade reverse engineered Sega's gaming console, Genesis, in order to create video games that were compatible with Sega's console. Just like Sony Computer Entertainment, Inc., Sega alleged copyright infringement for the unauthorized copying of Genesis' code, as Accolade had saved Sony's files on multiple computers in order to disassemble it. The court found that Accolade had met the requirements for fair use, despite the "intermediate copying done... [falling] squarely within the category of" acts prohibited by the copyright statute.

With respect to the first factor, which involves character and purpose, the court found that Accolade's direct purpose "was...to study the functional requirements for Genesis compatibility so that it could modify existing games and make them usable with the Genesis console. Moreover...no other method of studying those requirements was available to Accolade...[additionally,] Accolade copied Sega's code for a legitimate, essentially non-exploitative purpose, and that the commercial aspect of its use can best be described as of minimal significance.[95] Thus the first factor favored fair use. With respect to the second factor, the nature of the copyrighted work, the court reasoned that because disassembly was required and some of Sega's programs contained unprotected "aspects that cannot be examined without copying," it would be subject to less protection than traditional literary works, and found this factor favored fair use. With respect to the third factor, the amount and substantiality copied, the court reasoned that, by disassembling the console, Accolade had used the entire work, and thus this factor disfavored a finding of fair use. With respect to the fourth factor, which considers the effect of the use upon the market in relation to the copyrighted work, the court

90 Cunard, J.P., Keller, B.P., & Potenza, M. (2022). *Copyright Fair Use, Practical Law Practice Note 2-523-3404.* Thomson Reuters. https://uk.practicallaw.thomsonreuters.com/2-523-3404?transitionType=Default&contextData=(sc.Default)

91 Cunard et al. (2022).

92 Cunard et al. (2022).

93 Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994).

94 Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1527–28 (9th Cir. 1992), as amended (Jan. 6, 1993).

95 Id. at 1522.

distinguished this case from *Harper and Row*, where the usurpation of a copyright holder's market was dispositive.[96] Here, though Accolade entered Sega's gaming market by selling games compatible with Sega, the court reasoned that introducing a new game would not necessarily usurp Sega's games, as purchasers could buy both, and found in favor of Accolade.[97]

The cases of Sony Computer Entertainment, Inc. and Sega Enterprises Ltd. v. Accolade, Inc. illustrate instances where modifiers have successfully raised fair use when the defendants were involved with reverse engineering of the plaintiff's copyright protected systems. In both cases, the disassembly of the copyright owner's consoles was necessary: in the first case, in order to make Sony games playable on other platforms, and in the latter case, in order to develop video games compatible with Genesis, which benefitted purchasers. These cases stand in contrast to the case of Blizzard Entertainment, where the modifier reverse engineered Blizzard's video game in order to circumvent subscription fees, and in addition, improperly cut into Blizzard's revenue by offering the derivative work. These cases show that there is a thin line between what the court will find permissible versus what is illegal.

Nintendo of America, Inc. v. Lewis Galoob Toys, Inc. is another case where a court found fair use in a copyright infringement case. In the case, Lewis Galoob Toys created the Game Genie, "an electronic device allowing NES (Nintendo Entertainment System) owners to change aspects of NES video games.[98] For example, the Game Genie would permit a video game character to run faster, jump higher, or become immortal."[99] According to Game Genie's website, there is a list of various cheats available for different games.[100] For Mario Brothers, the cheats include infinite lives, running faster, "Mega-jumping" and "Mega fast baddies."[101] In analyzing the Game Genie with respect to the four factors of fair use, under the first factor, character and purpose, the 9th Circuit Court found that this factor favored a finding of fair use because Nintendo had already published the games prior to the release of the Game Genie, thus it could benefit from it being on the market.[102] For the second and third factors, the court also favored a finding of fair use. The court compared end users' use of Game Genie to how Betamax users in *Sony Corp. of America v. Universal City Studios, Inc.* copied TV programs in their entirety.[103] The court reasoned that "consumers are not invited to witness Nintendo's audiovisual displays free of charge" and, despite Game Genie totally encompassing Nintendo's copyright, displays did not "militate against a finding of fair use."[104] For the fourth factor, which was considered the most significant, the court found that Nintendo failed to show market harm.[105] The court noted that Nintendo had not issued altered versions of games like Game Genie, nor had they established that they were going to enter that market, so it favored fair use for Lewis Galoob Toys, Inc.[106]

The rulings in the Sony Computer Entertainment Inc., Sega Enterprises Ltd., and Nintendo of America, Inc. reverse engineering modification cases differ from that in the Blizzard Entertainment

96 Harper & Row 471 U.S. at 562, 105 S.Ct. at 2231.

97 Sega, 977 F.2d.

98 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., 16 F.3d 1032, 1033 (9th Cir. 1994).

99 Id.

100 GameGenie.com. (n.d.). *Nintendo (game genie) codes — Mario Bros.* Danworld, Inc. Retrieved March 3, 2022, from https://www.gamegenie.com/cheats/gamegenie/nes/mario_bros.html

101 Id.

102 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., at 970.

103 Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 104 S. Ct. 774, 78 L. Ed. 2d 574 (1984).

104 Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc., at 971.

105 Id.

106 Id.

case. These four cases represent a gray area for copyright holders and licensees/third party end users, where the court balances the rights of copyright holders with the rights of licensees and third-party end user to promote "the progress of science and the useful arts."[107] In the first cases, the courts found that the modifier's exercise of the copyright holder's exclusive rights was fair, while in the last, they found the derivative work to be inequitable. While all these cases had third-party modifiers committing an infringing activity in common, the different outcomes illustrate how developing technology does not always fall neatly within the law.

## Gaps in the Law

A gap in the law can occur when an issue arises that lacks precedent or statutes to follow. As gaming technology advances, sometimes it is difficult for issues to fall neatly within the law. Two issues are: unanticipated advances in technology that go against the copyright owner's terms, and ownership over modifications. The following examples both pertain to Blizzard's game, World of Warcraft. Under the first issue, a third-party end user made a bot that altered World of Warcraft gameplay in violation of the copyright owner's EULA. However, Blizzard did not initiate anti-bot measures until the year after the modifier's bot was used. Under the second issue, a third party created the Defense of the Ancients game using licenses from Blizzard. Valve later employed the owner of the modification, and the owner eventually sold the rights to Valve, causing Blizzard to lose some of its property rights.[108]

### MDY Industries, LLC v. Blizzard Entertainment Inc.

In *MDY Industries, LLC v. Blizzard Entertainment, Inc,* a third-party end user of World of Warcraft created a game modification software bot, Glider, that simulated game play while the user of the bot was not actually playing the game.[109] The purpose of using Glider was to gain experience, in game currency, and items, without the user of Glider actually having to actively play the game. The modifier initially only used Glider personally, but eventually created a website and sold the software online for $15 to $25 per license.[110] Blizzard alleged that, in addition to copyright infringement and contributory infringement of World of Warcraft, MDY's bot disrupted gameplay for other players because users of the bot were unfairly advantaged.[111] The court found that MDY was not contributorily liable for secondary infringement because Glider did not alter World of Warcraft's software in violation of copyright holder's rights. However, the modification did fall foul of 17 USC § 1201 Circumvention of copyright protection systems because Glider was designed to be undetected by World of Warcraft's anti-bot scanner.

MDY is a complex case that illustrates potential gaps in the law. The copyright owner wanted to protect World of Warcraft against third-party end user modifications that disrupted gameplay. Despite MDY's modification, MDY did not technically infringe Blizzard's exclusive rights, and Blizzard was unsuccessful in its copyright infringement claim. At the time of the dispute, World of Warcraft's terms of use expressly stated: "You agree that you will not … (ii) create or use cheats,

[107] U.S. Const. art. I, § 8, cl. 8.

[108] Orland, K. (2017, May 18). *Does Valve really own Dota? A jury will decide.* Ars Technica. https://arstechnica.com/gaming/2017/05/does-valve-really-own-dota-a-jury-will-decide/

[109] MDY Indus., LLC v. Blizzard Ent., Inc., 629 F.3d 928, 936 (9th Cir. 2010).

[110] Id.

[111] Id.

bots, 'mods,' and/or hacks, or any other third-party software designed to modify the World of Warcraft experience..."[112] MDY violated Blizzard's terms when it created the bot Glider. The court held that this violation was a breach of covenant under contract law, a promise to do or abstain from doing something, but did not actually violate the copyright holder's exclusive rights to prepare derivative works or exceed the scope of the license granted to end users. The court reasoned that to find a breach of Blizzard's terms of use as actionable under copyright infringement would essentially be allowing any software copyright holder to designate unfavorable conduct as infringement and would "allow software copyright owners far greater rights than Congress has generally conferred on copyright owners."[113] Though, in making this distinction, the court showed the balancing of rights between copyright holders and licensees, the outcome feels incomplete. MDY made over $6,000,000 selling Glider bots, despite the copyright holder's desire to ban the use of modifications to cheat.

MDY illustrates how advancing technology makes it difficult to enforce copyright owner's rights. MDY made the modification in 2004, but Blizzard did not release its anti-bot scanner until one year later, in 2005.[114] The release of anti-bot software at a later date could suggest that the technology was not anticipated when World of Warcraft was released because the Terms of Use drafted at that time showed that Blizzard desired to ban the use of modifications to cheat in the game. This shows that, while the desire to prohibit this conduct was anticipated at the release of World of Warcraft, technology was still advancing and not every type of modification could be adequately protected against. The copyright statute, which contains the cause of action Blizzard wanted against MDY, copyright infringement, was passed as a series of acts in 1976.[115] While Blizzard was unsuccessful in its copyright infringement claim, it was able to get an injunctive relief from the court under the Digital Millennial Copyright Act, or 17 USC § 1201. Potential gaps in the law are that the statue that Blizzard was able to receive relief under, violations regarding circumvention of technological measures, was not in effect until November 1999.[116] Had World of Warcraft been released just 5 years prior, Blizzard may not have had a remedy against MDY.

## DoTA

DoTA delineates issues regarding modification ownership. As previously mentioned, the popular video game DoTA is a modification of Blizzard's Warcraft III. Blizzard's editing tools for modification, Warcraft's map editor tool, made DoTA's inception possible. From its creation in 2002, Blizzard licensed out intellectual property that was the starting point of several websites and variations of DoTA, such as DoTA Allstars.[117] Blizzard's competitor, Valve, then acquired DoTA Allstars's lead developer in 2009. Later, Valve applied to the USPTO to trademark DoTA, which Blizzard opposed in 2011. Blizzard argued that DoTA had been created by years of reputation building, contact networking, intellectual property, and branding on the part of Blizzard, and allowing Valve to claim the trademark would unfairly appropriate all the work Blizzard associated with DoTA.[118] Blizzard lost its case, and

112 Id.

113 Id.

114 Id.

115 17 U.S.C.A. § 103, 17 USCA § 103 (West).

116 17 U.S.C.A. § 1201, 17 USCA § 1201 (Weast).

117 Notice of Opposition (Valve., Corp. v. Blizzard Ent., Inc.) ESTTA441431 (TTAB 2011), https://ttabvue.uspto.gov/ttabvue/ttabvue-91202572-OPP-1.pdf

118 Orland (2017).

Valve acquired the rights to DoTA. According to both Blizzard's and Valve's websites, the use of the DoTA trademark belongs to Valve, and Blizzard features DoTA on their website through a license obtained from Valve.

In addition to Blizzard and Valve's competition over the trademark, in 2017, Blizzard Entertainment and Valve Corporation were plaintiffs in a motion for summary judgment in a subsequent copyright infringement case, Blizzard Entertainment, Inc. v. Lilith Games (Shanghai) Co. Ltd. In that case, a third-party modifier and one of the original contributors to DoTA, Lilith Games, infringed DoTA's copyrights to create a mobile game, DoTA Legends and Heroes Charge.[119] The defendant in that case was one of the original modifiers of DoTA and argued that its mobile games were separate works and not derivatives of the copyright protected DoTA, which was owned by Valve. Lilith Games argued that Valve had no rights to subsequent works derived from DoTA, i.e.,Lilith's mobile version, and moved for summary judgment. The court held that Valve had validly acquired the rights to DoTA from the original modifiers and "may recover for original expression that [the original modifiers] contributed to their versions of DotA and DotA Allstars, as well as original expression that Valve itself contributed to DotA 2."[120]

DoTA illustrates how complicated creating a successful modification and establishing rights can be. From its inception, Blizzard arguably encouraged and facilitated modifications when it licensed out DoTA to third parties. However, despite coming to a mutual agreement, where Blizzard retained the noncommercial rights to DoTA and Valve retained the commercial rights to the same game, it is unlikely that this was the outcome Blizzard wanted, given its opposition to Valve's application to trademark DoTA. In its opposition to the USPTO, Blizzard argued that allowing Valve to trademark DoTA would essentially be allowing Valve to appropriate Blizzard's goodwill, because DoTA was created from Warcraft III and had gained popularity and association with it for several years.[121] Blizzard further argued that allowing Valve to own the trademark would create a source of confusion for the same reason.[122]

Blizzard's provision of modification tools most likely created the environment that caused Blizzard to lose DoTA to Valve. One of the original developers of DoTA used the Warcraft III editing tool to create DoTA and made his creation available as open-source code. Subsequent modifiers built upon the modification, and Valve later acquired these creators. Ownership of the modification was further exacerbated in Blizzard Entertainment, Inc. v. Lilith Games (Shanghai) Co. Ltd., when one of the original creators, who had already sold his rights, tried to make a mobile DoTA game and reclaim the intellectual property that belonged to Valve. Blizzard has since updated its custom game acceptable use policy, which now reflects a conservative approach to modification. Blizzard's terms state that "ownership [of] custom games are and shall remain the sole and exclusive property of Blizzard."[123] This could possibly be a reflection of its success and loss of DoTA, or purely a preventative measure, edging further away from strong encouragement of third-party end-user modifications.

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119 Blizzard Ent., Inc. v. Lilith Games (Shanghai) Co., No. 3:15-CV-04084-CRB, 2017 WL 2118342, at 8 (N.D. Cal. May 16, 2017).

120 Id. at 11.

121 Notice of Opposition (Valve., Corp. v. Blizzard Ent., Inc.) ESTTA441431 (TTAB 2011), https://ttabvue.uspto.gov/ttabvue/ttabvue-91202572-OPP-1.pdf

122 Id.

123 Blizzard Entertainment Inc. (n.d.). *Custom Game Acceptable Use Policy*. Retrieved March 1, 2022, from https://www.blizzard.com/en-us/legal/2749df07-2b53-4990-b75e-a7cb3610318b/custom-game-acceptable-use-policy

## Conclusion

Modifiers should take into consideration the interests that courts weigh when potential copyright issues arise. The court must balance the interests of the copyright holder, who put their labor, time, and creativity into developing a work, with those of end users, who are the ultimate beneficiaries of the games. It is in the copyright holder's interest to protect their work from copyright infringement in order to allow them to reap the benefit of publishing their work on the market and protect their intellectual property in order to promote the creation of more works. On the other hand, there are the interests of third-party end users, who are the ultimate beneficiaries and may want to alter gameplay to better enjoy it, or to reverse engineer a work to create something entirely new that will also benefit the public.

## References

1. Allamanis, M., Jackson-Flux, H., & Brockschmidt, M. (2021). Self-Supervised bug detection and repair. *NeurIPS*. 1–22.
2. Gans, A.W., Krause, C.F., & Speiser, S.M. (2022). *American law of torts*. Thomson Reuters.
3. Lindstrom, C.O. (2020). Mod money, mod problems: A critique of copyright restrictions on video game modifications and an evaluation of associated monetization regimes. *William & Mary Business Law Review 11*(3), 811–843.
4. Lutten, L.J., & Wilf, F.M. (2021). *Computer software: Protection, liability, law, forms.* Thomson Reuters.
5. Wallace, R. (2014). Modding: Amateur authorship and how the video game industry is actually getting it right. *Brigham Young University Law Review*, 2014(1), 219–256.

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