

Game clones and copyright infringement

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**Game Clones and Copyright Infringement: A
Comparative Study of Judicial Practices in the US,
Japan, and China**

DISSERTATION

To obtain the degree of Doctor

At Maastricht University

On the authority of the Rector Magnificus,

Prof. dr. Pamela Habibovic

In accordance with the decision of the Board of Deans,

To be defended in public

On 17 June 2022, at 10:00 hours

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Chapter 1 Introduction

1.1 Introduction

The development of technology creates new forms of expression that deserve careful examination from the perspective of copyright. This can be found from the emergence of a series of copyrightable subject-matters such as photographs, movies, television formats, computer programs, and digital content. As Professor Paul Goldstein says, “copyright was technology’s child from the start”.¹

Recently, the subject-matter that merits examination from the perspective of copyright is video games. Game clones, which are the near replicas of earlier video games, are proliferating in game markets around the world, especially in the Chinese market. In the Chinese market, game clones have been giving rise to more and more copyright infringement cases. How to handle those cases has become a challenge for Chinese courts. Against the backdrop of those circumstances, this research aims to explore how copyright infringement brought by game clones has been determined by Chinese courts and what improvement the courts can make when compared with the practices in other jurisdictions like the US and Japan.

To start off with, Section 1.2 outlines why this research is necessary. After that, Section 1.3 presents and explains the research question we would like to answer. Section 1.4 explains how we will answer the research question while Section 1.5 briefly introduces what we will do in each chapter.

1.2 Research Background

1.2.1 The Proliferation of Game Clones

Nowadays, video games have become increasingly more important in economics, culture, and society. The video game industry has greater value now to the world economy than ever before. The video game industry in 2018 generated more revenue than the revenue generated by the movie and music industries combined.² Within the video game industry, the development and marketing of video games attract lots

¹ Paul Goldstein, *Copyright's Highway: From the Printing Press to the Cloud* (2nd edn Stanford University Press, Stanford 2019) 17.

² Lpesports, ‘The Video Games’ Industry is Bigger than Hollywood’ <http://lpesports.com/e-sports-news/the-video-games-industry-is-bigger-than-hollywood> accessed 10 May 2022. If not mentioned, the access date of all the websites cited in this research was 10 May 2022.

of investment,³ and many hardware manufacturers are also included in the value chain of this industry.⁴ Besides that, video games are now a medium of culture and art because the “imagined world created in contemporary games offers richly textured, emotional and social experiences that have crossed the boundary into culture and art”.⁵ Different from their ancestors which were considered as non-artistic, like pinball, chess, board games, and card games,⁶ current video games consist of elements that should be qualified as intellectual creations than ever before, making them an important cultural media for a society. Many popular films and books have been adapted into video games and vice versa,⁷ for instance, *Assassin’s Creed*, *Lara Croft: Tomb Rider*, *Warcraft*, and etc. In a word, nowadays video games also contain literary descriptions and stories, just like the artistic forms expressed in films and books.

With the rising importance of video games, more and more “game clones” have been appearing on the game markets in the world.⁸ The term “game clone” means an imitation or near replica of an existing game.⁹ In China, which is the biggest game market in the world,¹⁰ there are large numbers of game clones. For example, *Wolong Legend* imitated *Hearthstone* (Figure 1-1), *Pengu Wars* looks like *Angry Birds* (Figure 1-2), *Flappy Duck* seems like *Flappy Bird* (Figure 1-3). In addition, there are also many games extremely similar or identical to *Pokémon* on the Chinese market (Figure 1-4). Besides their large quantity, starting from 2013, game clones also emerged at a rapid pace soon after a certain video game became popular among players.¹¹ Take a mobile game named *Monument Valley 2* as an example. Since the mobile game named *Monument Valley* became a success on the Chinese market, as a sequel to that game, the mobile game *Monument Valley 2* was displayed at the Apple Worldwide Developers Conference 2017 (WWDC 2017). Right after the appearance of *Monument Valley 2*, at least 3 mobile games called *Monument Valley 2* appeared in China’s App Store, all of which looked similar to *Monument Valley*.¹²

³ Big Fish Games, ‘Mega-Million Dollar Games’ <https://www.bigfishgames.com/blog/stats/mega-million-dollar-games/>.

⁴ Martin, ‘The Gaming Industry: An Introduction’ <https://www.cleverism.com/gaming-industry-introduction/>.

⁵ Catherine Jewell, ‘Video Games: 21st Century Art’ http://www.wipo.int/wipo_magazine/en/2012/04/article_0003.html.

⁶ *American Amusement Mach. Ass’n v. Kendrick*, 115 F.Supp.2d 943 (S.D. Ind. 2000).

⁷ For example, the movie *Warcraft* is adapted from the world-famous video game *Warcraft*. See German Lopez, ‘Warcraft: The Movie, Games, and World behind Them, Explained’ <https://www.vox.com/2016/6/9/11884900/warcraft-movie-world-trailer-review>.

⁸ Christian Katzenbach, Sarah Herweg, Lies van Roessel, ‘Copies, Clones, and Genre Building: Discourses on Imitation and Innovation in Digital Games’ (2016) 10 *International Journal of Communication* 839.

⁹ We will further explain the concept of “game clone” in Section 2.2.2.

¹⁰ In 2020, China had the largest game revenues (USD 44 billion) in the world. See Tom Wijman, ‘Global Game Revenues Up an Extra \$15 Billion This Year as Engagement Skyrockets’ <https://newzoo.com/insights/articles/game-engagement-during-covid-pandemic-adds-15-billion-to-global-games-market-revenue-forecast/>.

¹¹ Renwan Tang, ‘Shanzhai Game: Until now, There is Not a Game That We Dare Not Copy’ (山寨游戏: 至今为止, 还没有哪一款游戏我们不敢抄的) <https://zhuanlan.zhihu.com/p/32337796>.

¹² Yuanyuan Hu, ‘Rampant Piracy of Monument Valley 2 Makes the Audit of App Store Questionable’ (盗版《纪念碑谷 2》猖獗, App Store 审核存疑) <https://www.baijingapp.com/article/11385>.



Figure 1-1 *Hearthstone* (upper) vs. *Wolong Legend* (lower)



Figure 1-2 *Angry Bird* (left) vs. *Pengu Wars* (right)

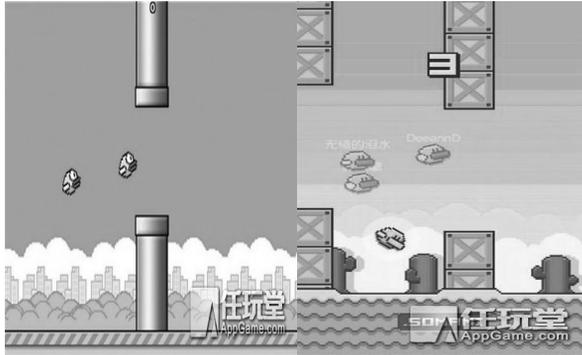


Figure 1-3 *Flappy Bird* (left) vs. *Flappy Duck* (right)



Figure 1-4 Games Clones of *Pokémon* on the Chinese Market

1.2.2 Copyright Infringement and Game Clones

The proliferation of game clones has led to an increasing number of copyright infringement cases. Based on a report released by the Beijing Haidian District People's Court in 2016, 85% of the cases relating to video games concerned copyright infringement (another 15% being trademarks and unfair competition); and that kind of cases increased rapidly (only 49 cases in 2014 while 134 cases in 2015, meaning an annual year-on-year increase of 173.5%).¹³ According to the report, copyright infringement cases regarding video games can be divided into five types: (1) copying of computer programs in an existing video game; (2) uploading an existing video game to the internet, facilitating others to download; (3) copying of characters and game images of an existing video game; (4) adaptation of characters and plots in novels and movies; and (5) disputes between two video game companies on whether one video game has copied or plagiarized a prior video game.¹⁴ Among

¹³ Beijing Haidian District People's Court, 'Investigation Report on the Infringement of Intellectual Property Cases in Online Games' (海淀法院有关网络游戏侵犯知识产权案件的调研报告) <http://news.zhichanli.cn/article/2527.html>.

¹⁴ Beijing Haidian District People's Court, 'Investigation Report on the Infringement of Intellectual Property

those five types listed above, most cases are related to copying or imitation of an existing video game, in other words, related to game clones. That is to say, Chinese courts need to face increasingly more copyright infringement cases relating to game clones.

Considering that China today is the largest producer and consumer of video games as well as game clones, and the fact that most of these cases are adjudicated at a judicial level, how Chinese courts determine copyright infringement regarding game clones is important, and also of great influence, to the interests of video game rights holders, creators of game clones, and the video game industry. For the rights holders, they really need the courts to provide clarity on how their video games will be protected by copyright law, and the lack of clarity on the effective means of enforcement will expose their legitimate interests to great uncertainty and risk. For the creators of game clones, especially for follow-on game designers who not only learn from earlier games but also inject their creativity into the games, they need the courts to provide a proper scope of their freedom to operate, i.e., to learn about and copy unprotectable ideas and expressions from earlier games. For the Chinese video game industry, how the phenomenon of game clones is treated by Chinese courts will send signals to the game market in China, affecting the legal environment and development of the Chinese game industry not only in the short- but also in the long-term.

Considering the interests influenced by game clones, it is a challenge for Chinese courts to handle copyright infringement cases relating to game clones. Since video games are not explicitly enumerated as subject-matters in Chinese copyright law, there are no clear guidelines on the determination of a series of legal issues regarding a video game, such as the copyrightability of a video game, to what extent a video game and its specific contents should be protected, and whether the action of cloning can avoid liability because of copyright exceptions and limitations. In that sense, to see how Chinese courts respond to that challenge, it is necessary to have a close look at the current practice of Chinese courts with regard to game clones. What's more important, considering the determination of copyright infringement caused by game clones is so important to the interests of rights holders, creators of game clones, and the video game industry, the evaluation of that practice and how to make improvements has become a more urgent issue.

1.2.3 Research Gaps and Possible Contribution

The current literature lays a solid foundation for introducing and evaluating the practice of Chinese courts regarding game clones. Discussions from Chinese legal scholars devoted attention to the general issue of how a video game, especially the

Cases in Online Games' (海淀法院有关网络游戏侵犯知识产权案件的调研报告)
<http://news.zhichanli.cn/article/2527.html>.

screen display of a video game, can and should be protected under China's copyright law¹⁵ and the more specific issues like the copyrightability or the scope of protection for the game rules, gameplay, and game effects.¹⁶ However, a research gap exists because those discussions do not comprehensively introduce Chinese judicial practice regarding game clones. For instance, the current discussion rarely comments on how Chinese courts find the copying of protectable expressions between two video games (i.e., the finding of "substantial similarity" in Chinese judicial practice)¹⁷. Another example, the current discussion rarely considers the issue of whether copyright exceptions and limitations are applicable to the action of cloning. That issue is an inevitable part of the comprehensive understanding of how copyright infringement is determined in China because copyright exceptions and limitations can present legal reasons to exemplify the liability of copyright infringement even if protectable expressions in an earlier game have been copied by the action of cloning.

Besides the gap in providing a comprehensive introduction to Chinese judicial practice regarding game clones, another gap exists in evaluating the practice of how a Chinese court determines copyright infringement caused by game clones. The current discussion takes an internal perspective, which concentrates only on Chinese practice, but rarely takes an external perspective, which compares the judicial practice in China with that in other jurisdictions. We found one study that does take an external perspective. In that study, Zihao Li compared the protection modes offered by the courts in the US, UK and China when they handled the phenomenon of reskinning (merely changing or modifying the appearance of characters and/or background).¹⁸ Although that study provides us with insightful views, it is limited to the phenomenon of reskinning, which is only a specific manifestation of game clones. In fact, game clones can also relate to the similarity of other elements in an

¹⁵ Guobin Cui, 'Take the Copyrights in Video Games Seriously' (认真对待游戏著作权) (2016) 2 Intellectual Property 3-18; Yiyi Li, Xuyu Liang, 'Research on the Copyright Issue about the Images of Online Games in China' (我国网络游戏画面版权问题研究) (2017) 3 Journal of Political Science and Law 12-23; Wencong Xiong, 'Legal Definition of "Works" from the Perspective of Online Game Disputes' (从网络游戏纠纷看"作品"的法律界定) (2019) 1 Chinese Entertainment Law Review 66-80; Yongjiang Xie, Yunyun Wang, 'Analysis of Infringement upon Copyright of Cybergames' (网络游戏的著作权侵权分析) (2018) 4 Journal of Beijing University of Technology 74-80; Zongliang Ling, 'Online Game as a Work and Its Ownership of Right' (网络游戏的作品属性及其权利归属) (2016) 5 China Copyright 23-26; Qian Wang, Feng Yuan, 'On Deciding the Subject Matter for an Overall Picture of the Online Game' (论网络游戏整体画面的作品定性) (2016) 4 China Copyright 19-24; Qiang Jiang, 'Why Is It Not Proper to Consider the Video Game as a Cinematographic Work?' (为什么不应将游戏认定为电影类作品) <https://weijwenku.net/d/102123591>.

¹⁶ Guobin Cui (n 15). Xi Zheng, Yonghong Guan, 'Analysis of Copyright Protection on Online Game Rules and Its Path' (网络游戏规则的著作权保护及其路径探微) (2017) 6 Intellectual Property 68-73; Lei Sun, 'Copyright Protection on the User Interface of Online Games' (网络游戏用户界面的著作权法保护) (2017) 2 China Copyright 29-32; Anke Xin, 'Analysis of the Legal Attributes of Skill Special Effects in Online Games' (网络游戏中技能特效的法律属性分析) <http://www.ciplawyer.cn/html/bqllqy/20170313/120846.html?prid=287>; Weijun Zhang, 'The Game Rules Presented in an Audio-visual Work are Still Ideas rather than Expressions—Comments on the Judgments of Several Copyright Infringements Cases Regarding Games' (呈现于视听作品中的游戏规则依然是思想而非表达——对若干游戏著作权侵权纠纷案判决的评述) (2021) 5 Electronic Intellectual Property 72.

¹⁷ We will further introduce that issue in Section 5.3.2.

¹⁸ Zihao Li, 'The Copyright Protection of Video Games from Reskinning in China - A Comparative Study on UK, US and China Approaches' (2019) 11(2) Tsinghua China Law Review 293-340.

earlier game, such as the game rules, stories, and the codes behind the screen display. Besides that, the comparative analysis in Zihao Li's study is still too brief to show the similarities and differences of how copyright infringement relating to video games were actually determined by the courts in the US, UK, and China. For example, the comparison made in Zihao Li's study did not take a close look at the similarities and differences of how those national courts in a practical way interpreted fundamental concepts, such as the requirement of originality and the application of the idea/expression dichotomy, in video game cases. Those concepts decisively affect whether and how copyright infringement will be determined. In a word, it is necessary to make a more in-depth comparative study on how China and other jurisdictions determine copyright infringement caused by game clones.

For the practice of other jurisdictions besides China, the current literature has provided us with abundant materials. Those materials concern the issues below: how a video game is protected in a general sense under different jurisdictions,¹⁹ how a national court determined and should determine copyright infringement relating to game clones in a specific case,²⁰ and how the cases relating to game clones would affect and allocate the balance of interests between creators, rights holders, and follow-on creators.²¹ These materials will deepen our understanding of judicial

¹⁹ Andy Ramos and others, 'The Legal Status of Video Games: Comparative Analysis in National Approaches' <https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN>; Susan Corbett, 'Videogames and Their Clones – How Copyright Law Might Address the Problem' (2016) 32 *Computer Law & Security Review* 615-622.

²⁰ TMS Hennes, 'The Adaptation of Copyright Law to Video Games' (1982-1983) 131 *U. Pa. L. Rev.* 171; TJ Grabowski, 'Copyright Protection for Video Game Programs and Audiovisual Displays; And—Substantial Similarity and the Scope of Audiovisual Copyrights for Video Games' (1983) 3 *Loy. L.A. Ent. L. J.* 139; SG McKnight, 'Substantial Similarity between Video Games: An Old Copyright Problem in a New Medium' (1983) 36 *Vand. L. Rev.* 1277; JB Mahan, 'Federal Copyright Law in the Computer Era: Protection for the Authors of Video Games' (1983-1984) 7 *U. Puget Sound L. Rev.* 425; MP Culler, 'Copyright Protection for Video Games: The Courts in the Pac-Man Maze' (1983-1984) 32 *Clev. St. L. Rev.* 531; AR Glasser, 'Video Voodoo: Copyright in Video Game Computer Programs' 38 (1986-1987) *Fed. Comm. L. J.* 103; LZ Kullby, 'The Copyrightability of Computer Screen Displays' (1987-1988) 10 *CommEnt L. J.* 859; IA Stamatoudi, 'Are Sophisticated Multimedia Works Comparable to Video Games' (2001) 48 *J. Copyright Soc'y U.S.A.* 469-470; IA Stamatoudi, *Copyright and Multimedia Products: A Comparative Analysis* (Cambridge University Press, Cambridge 2002); KR Meyer, 'Doctrine of the Dead: How Capcom v. MKR Exposes the Decreasing Fit between Modern Copyright Analysis and Modern Video Games' (2010) 9 *Chi.-Kent J. Intell. Prop.* 132; YH Lee, 'Play Again? Revisiting the Case for Copyright Protection of Gameplay in Videogames' (2012) 34 *E.I.P.R.* 865-874; Brian Casillas, 'Attack of Clones: Copyright Protection for Video Game Developers' (2012-2013) 33 *Loy. L.A. Ent. L. Rev.* 137; NM Lampros, 'Leveling Pains: Clone Gaming and the Changing Dynamics of an Industry' (2013) 28 *Berkeley Tech. L.J.* 743; Christopher Lunsford, 'Drawing a Line Between Idea and Expression in Videogame Copyright: The Evolution of Substantial Similarity for Videogame Clones' (2013-2014) 18 *Intell. Prop. L. Bull.* 87; DS Dean, 'Hitting Reset: Devising a New Video Game Copyright Regime' (2015-2016) 164 *U. Pa. L. Rev.* 1239; Susan Corbett (n19); John Kuehl, 'Video Games and Intellectual Property: Similarities, Differences, and a New Approach to Protection' (2016) 7 *Cybaris Intell Prop L Rev* 313; Ross Dannenberg, Josh Davenport, 'Top 10 Video Game Cases (US): How Video Game Litigation in the US Has Evolved since the Advent of *Pong*' (2018) 1(2) *Interactive Entertainment Law Review* 89-102; Zihao Li (n18); Emanuele Fava, 'Hyper-Casual Simulation Video Games May Not Be Original Enough to Enjoy Copyright Protection, but Game Cloning Could Still Be Prevented by Relying on Unfair Competition: *Voodoo v Rollic Games and Hero Games*' (Tribunal Judiciaire De Paris, 4 September 2020) (January 4, 2021). *European Intellectual Property Review* (May 2021) <https://ssrn.com/abstract=3759956>.

²¹ Brian Casillas (n 20); NM Lampros (n 20); Christian Katzenbac, Sarah Herweg, and Lies van Roesse, 'Copies, Clones, and Genre Building: Discourses on Imitation and Innovation in Digital Games' (2016) 10 *International Journal of Communication* 838-859; Nathaniel Ng, 'New Castles with Familiar Bricks - Balancing Copyrights, Spiritual Successor Video Games, and Competition' (2018) 58 *IDEA* 337; Joan Colleran, 'Multiplayer Mode: How Balancing the Rights of Video Game Developers and Intellectual Property Owners Will Lead to Growth of the Video Game Industry' (2021) 15 *Ohio St Bus LJ* 265.

practices in other countries and facilitate a comparative study between China and other jurisdictions.

In summary, to fill in the gaps in the current literature, this research aims to provide a comprehensive picture on the judicial practice of how Chinese courts determine copyright infringement caused by game clones. Besides that, this research also presents a comparative study on how national courts in the US and Japan make their decisions on copyright infringement issues regarding game clones.²² By comparing the judicial practice in China with those in the US and Japan, this research wants to evaluate the different approaches pursued by those jurisdictions. Based on that, this research will see what improvements can be made for Chinese courts when handling copyright issues relating to game clones. Moreover, it is expected that insights gained in this research will help other jurisdictions face the challenges posed by game clones.

1.3 Research Question

This research aims to answer the question: *When determining copyright infringement caused by game clones, how should Chinese courts, compared with the legal experiences in the US and Japan, improve their judicial practice on handling the three core issues, including the copyrightability of a video game, the copying of protectable expressions between disputed video games, and the applicability of copyright exceptions and limitations?* This research question can be further divided into four sub-questions:

- (1) How can the three core issues for determining copyright infringement caused by game clones, which include the copyrightability of a video game, the copying of protectable expressions between disputed video games, and the applicability of copyright exceptions and limitations to game clones, be understood, especially under the framework of international treaties that set general norms for national courts in the US, Japan, and China? (Chapter 2)
- (2) What is the experience of US judicial practice in handling those three core issues? (Chapter 3)
- (3) What is the experience of Japanese judicial practice in handling those three core issues? (Chapter 4)
- (4) How are those three core issues handled under Chinese judicial practice, what are the similarities and differences between Chinese judicial practice and those in the US and Japan, and what improvements can national courts, especially Chinese courts, make in solving the problems of their decision-making? (Chapter 5)

²² *Infra* Section 1.4 explains why we chose judicial practices in the US and Japan for comparison.

1.4 Methodology

To answer the research question, this research mainly adopts the comparative method. The comparative method can be divided into the macro comparison and the micro comparison. The macro comparison is to compare the spirit or style of different legal systems, and the micro comparison is to compare the solutions of comparable legal problems in different legal systems.²³ This research uses the comparative method in the latter sense, i.e., the micro comparison. More specifically, this research will compare the solutions provided by different jurisdictions in determining copyright infringement relating to game clones. Since China is now the largest game market in the world, it is necessary for Chinese courts to know how video games are protected and how infringement cases regarding video games are decided in other important video game markets. Only by doing this can the Chinese video game market provide a legal-friendly environment for not only domestic but also foreign game developers and companies, assuring a sustainable development of the Chinese video game industry in the future.

This research has chosen the US and Japan as the jurisdictions to compare with China. The US and Japan are important video game markets in the world because they have contributed the most advanced players and the leading creators of original contents in the game industry. In those two countries, judicial practices are abundant on how to protect video games and rule on infringement cases relating to game clones, which are helpful references for the judicial practice in China. Besides that, since the US emphasizes the utilitarian aspect of copyright protection (i.e., the copyright tradition) and Japan is more aligned with the *droit d'auteur* tradition (the author's tradition),²⁴ a comparison with the US and Japan can provide China, which also follows the author's rights tradition,²⁵ with a comprehensive insight into how to improve its judicial performance on coping with the legal issues brought by game clones.

Besides the comparative method, this research also adopts the doctrinal method. The aim of the doctrinal method is to identify, analyse and synthesize the content of law,²⁶ to gather, organize and describe legal rules, and to offer commentary on the emergence and significance of authoritative legal sources that contain these rules, especially the cases.²⁷ This research will adopt the doctrinal method on both the

²³ Konrad Zweigert, Hein Kotz, (Tony Weir translates) *An Introduction to Comparative Law, Volume 1: The Framework* (North-Holland Publishing Company, New York 1977) 4.

²⁴ Hiroshi Saito, Shinichi Isa, 'Chapter II General Introduction' in Peter Ganeva, Christopher Heath, and Hiroshi Saitō (eds), *Japanese Copyright Law: Writings in Honour of Gerhard Schriker* (Kluwer Law International, Amsterdam 2005) 12.

²⁵ Chuntian Liu, 'Some Thoughts on Copyright Legislation in China' (关于我国著作权立法的若干思考) (1989) 4 *China Legal Science* 47.

²⁶ Terry Hutchinson, 'Doctrinal Research: Researching the Jury' in Dawn Watkins and Mandy Burton (eds), *Research Methods in Law* (2nd edn Routledge, Abingdon 2018) 13.

²⁷ Michael Salter, Julie Mason, *Writing Law Dissertations: An Introduction and Guide to the Conduct of Legal Research* (Pearson Education, London 2007) 48.

international and the national level. On the international level, the doctrinal method is used to show what guidance or obligations can be found in the international treaties that the US, Japan and China should follow or not violate. Those treaties include the Berne Convention (The Berne Convention for the Protection of Literary and Artistic Works, the Paris Act, 1971); TRIPS (The Agreement on Trade-Related Aspects of Intellectual Property Rights), WCT (WIPO Copyright Treaty); and WPPT (WIPO Performances and Phonograms Treaty). They provide the US, Japan, and China with an initial and general framework on how to determine copyright infringement caused by game clones. On the national level, the doctrinal method is used to determine the content of laws behind specific judgments in different cases regarding video games. More specifically, since video games are not enumerated as subject-matters in the national copyright laws in the US, Japan, and China, it is necessary to comb the *ratio decidendi* in the relevant cases, interpret the legislation, and assess the doctrinal issues²⁸ to facilitate our understanding of how national courts in the US, Japan, and China determine copyright infringement relating to game clones.

1.5 The Structure of This Research

There are six chapters in this research. Chapter 2 addresses sub-question (1) by answering how to understand the three core issues, which include the copyrightability of a video game, the copying of protectable expressions between disputed video games, and the applicability of copyright exceptions and limitations from the international framework. Before unfolding the answer, this chapter introduces the basic concepts for this research: video games and game clones. By introducing those concepts from a factual perspective, we hope they can facilitate our follow-on legal analysis of video games.

Chapter 3 introduces legal experiences from US judicial practice. In Chapter 3, we rely on case law and related academic opinions to draw a comprehensive picture of how US courts handle those three core issues we mentioned in Chapter 2.

Chapter 4 examines legal experiences in Japan. As a country following the civil law tradition and the author's right tradition, Japan presents a different picture from the US on handling the three core issues related to game clones. Chapter 4 examines that picture by introducing mainstream legal theories, academic opinions, and judicial practice in Japan. By doing that, Chapter 4 presents a more in-depth introduction to how Japanese courts respond to copyright infringement caused by game clones.

Chapter 5 turns to judicial practice in China. Similar to what we have done in Chapters 3 and 4, Chapter 5 introduces how Chinese courts handle the three core

²⁸ Ronan Kennedy, 'Doctrinal Analysis: The Real "Law in Action"' in Laura Cahillane, Jennifer Schweppe (eds), *Legal Research and Methods: Principles and Practicalities* (Clarus Press, Dublin 2016) 33.

issues. Then, the judicial practices in the US, Japan, and China will be compared to determine their similarities and differences in coping with those three issues. Through the comparison, we identify a problem that exists in all three jurisdictions. As an attempt to solve that problem, recommendations are provided. Although those recommendations are mainly addressed to Chinese courts, we hope they can also be helpful for courts in other jurisdictions facing the challenges posed by game clones.

Chapter 6 provides the final conclusion of this research. The findings of this research are summarized first, followed by mention of contributions to the current literature. In closing, future research challenges are proposed.

Chapter 2 Three Core Issues for Determining Copyright Infringement Regarding Game Clones under the International Framework

2.1 Introduction

This chapter interprets within the framework of international treaties the three core issues for determining copyright infringement caused by game clones, which include: (1) the copyrightability of a video game, (2) the copying of protectable expressions between disputed video games, and (3) the applicability of copyright exceptions and limitations to game clones. As an initial step for adopting the comparative method, more exactly, the micro comparison as we have introduced,¹ this chapter introduces the international institutional environment for the jurisdictions (the US, Japan, and China) we compare in the following chapters (Chapters 3, 4, and 5). More specifically, since the US, Japan, and China are all contractual parties to a series of international treaties for copyright protection, the framework built by those treaties actually set general norms on how national courts can handle the core issues caused by game clones in a general sense. The norms from the international framework are the premise of, and lay the foundation for, the micro comparison made among different jurisdictions in the following chapters. In addition, before examining how to understand the core issues under the international framework, this chapter first explains the basic concepts that relate to this research: video games and game clones.

This chapter has four sections. Besides this introductory section, Section 2.2 introduces the concepts of a video game and a game clone. After that, Section 2.3 explains the three core issues when a court determines copyright infringement relating to game clones, and makes an initial observation on what guidance international treaties can provide for handling those core issues. Section 2.4 summarizes the findings of this chapter.

2.2 Basic Concepts: Video Games and Game Clones

Since a game clone is essentially a phenomenon closely related to a video game, this section first provides a picture on how to understand the concept of a video game, then turns to explain how to understand the concept of a game clone.

¹ *Supra* Section 1.4, p. 9.

2.2.1 Video Games

This section introduces the concept of a video game from three aspects. The first aspect concerns its concept and characteristics, especially how to understand interactivity provided by a video game. The second aspect shows the inter-related elements that go into building a video game. The third aspect explains the relationship between video game software and its screen display.

2.2.1.1 The Concept and Characteristics of Video Games

The concept of a video game can be defined from both external and internal perspectives. The external perspective sees a video game as a medium which provides an experience to its players through interactivity.² Interactivity is the prominent characteristic of a video game. Interactivity makes it possible for players to have active experience of freedom through making choices.³ That kind of experience is different from that which an audience can feel from reading books, watching movies and listening to music because the latter is passive. However, the active experience of freedom provided by interactivity does not mean a player can create something that is not initially included in a video game. In fact, although certain video games, such as the *god game* in which the “players assume an explicitly divine role in the emergent growth and development of a simulated life-system”, seem to allow players to “create” something through interactivity,⁴ which is just an illusion. To explain that, we need to understand the concept of a video game from the internal perspective.

The internal perspective defines a video game as a system which provides players with an artificial conflict defined by rules and resulting in a quantifiable outcome; and that system is essentially shaped by its digital medium.⁵ The digital medium has four traits that decide the interactivity in a video game does not mean a player can create something that does not exist by playing the game. Before explaining that further, we first need to know the contents of those four traits. The first trait of the digital medium is its *immediate but narrow interactivity* with the players, which means a video game can seamlessly respond to a player’s input, but the form of that response is greatly limited by the devices. For example, in a computer game, the keyboard and mouse set limits on how the game can interact with a player; and in a console game, the joysticks narrow the space for how a player can interact with the game. The second trait is *information manipulation*. A video game manipulates a lot

² Jesse Schell, *The Art of Game Design: A Book of Lenses* (2nd edn CRC Press, Boca Raton 2014) 12.

³ Jesse Schell (n2).

⁴ The most representative example of that kind of games is the *SimCity* in which a player can build cities by following his wish just like a god. See Mark Hayas, ‘God Games’ in MJP Wolf (ed), *Encyclopedia of Video Games: The Culture, Technology, and Art of Gaming* (Greenwood, Westport 2012) 264.

⁵ Katie Salen, Eric Zimmerman, *Rules of Play: Game Design Fundamentals* (The MIT Press, Cambridge 2004) 80, 87.

of information, such as the graphics, audio, internal logic, mechanics, and storage management. This kind of manipulation is different from non-digital games because the information in video games will be presented to or perceived by players in the process of playing, while the information in non-digital games is clearly known by the players before they play. The third trait is *automated complex systems*. A video game can automate complicated procedures and facilitate the play of games that would be too complicated in a non-computerized game. In most non-computerized games, the players have to move the games forward at every step, by manipulating pieces or behaving according to explicit instructions outlined by the rules. The fourth trait is *networked communication*, which means many (but not all) video games can facilitate communication between players.⁶

Since we have now outlined the four traits of the digital medium, it is time to explain why we hold the opinion that those traits actually decide that the interactivity of a video game does not mean a player can create something that does not initially exist through playing the game. Some may wonder that the trait of “immediate but narrow interactivity” has already shown that a player’s interactivity will affect and even create the contents shown in a game. However, that is a misunderstanding because that trait only says how the nature of the game device will affect the player’s interactivity with the video game. In other words, that trait cannot be interpreted as support of our opinion. In fact, the decisive evidence that supports our opinion are the traits of “information manipulation” and “automated complex systems”. Those two traits imply that: what the players do in a video game (such as the god game) is to learn just the information and adapt to the automated complex systems that have been pre-set by game designers. In that sense, the so-called “creation” resulting from a player’s interactivity with the god game does not mean the player creates something that does not initially exist, because the player is essentially restricted by the information and automated systems provided by the designers.

In addition, there is also a counter-example to show why interactivity does not enable a player to bring something new to a game. The counter-example is the mod game. This kind of game, by altering or creating files for the game engine of an existing video game, modifies the gameplay style, graphics, environments, and models of that video game.⁷ That is to say, the mod game gives players an experience different (perhaps even totally different) from an existing game. In fact, a total-conversion modified video game is actually a new game when seen from the legal perspective. For example, a mod game is considered as a non-derivative work or fair use of an existing game.⁸ So, it is the act of modifying the elements of an existing game, rather than the player’s interactivity with a video game, that can add something new to a video game.

⁶ Katie Salen, Eric Zimmerman (n5) 87-90.

⁷ Valve Developer Community, ‘Modification’, <https://developer.valvesoftware.com/wiki/Modification>.

⁸ ——— ‘Spare the Mod: In Support of Total-Conversion Modified Video Games’ (2012) 125 Harv. L. Rev. 789.

In summary, a video game is a system which can provide players with active experiences enabled by interactivity. That system has four traits: (1) immediate but narrow interactivity, (2) information manipulation, (3) automated complex systems, and (4) networked communication. Those four traits determine that the interactivity between a player and a video game cannot create something that does not initially exist in that game. Instead, the act that can bring something new to a video game is to change the elements in that video game. So, following section introduces the elements of a video game.

2.2.1.2 Inter-related Elements in Video Games

In the process of game design, the elements of a video game are built with the aim of solving problems raised in the “Problem Statement” of a video game. So, before further introducing the elements of a video game, we first will take a look at the Problem Statement.

As the starting point of game design, a Problem Statement, which is usually in the form of a file or a document, defines a concrete design goal and the constraints of the game, and reflects the idea of a video game.⁹ A Problem Statement is usually defined by the game designers in two ways. One way to define the Problem Statement is to describe the theme of the video game. An example of this kind of Problem Statement can be like this: how to make a board game that has a theme similar to Rampage (a classic arcade game in which players take control of a trio of gigantic monsters trying to survive against onslaughts of military forces). Another way to define the Problem Statement is to describe the mechanics a video game wants to present. An example of this type of Problem Statement can be like this: how to build a game that seven players can play.¹⁰

To realize the goal set by the Problem Statement, designers consider four elements: *mechanics*, *story*, *aesthetics* and *technology*. Figure 2-1 shows their relationship and visibility in a video game. To further explain that, we outline these four elements and their relationship below.

⁹ Jesse Schell (n2) 74. Also see, Zack Hiwiler, *Players Making Decisions: Game Design Essentials and the Art of Understanding Your Players* (New Riders, Indianapolis 2015) 22.

¹⁰ Zack Hiwiler (n9) 41.

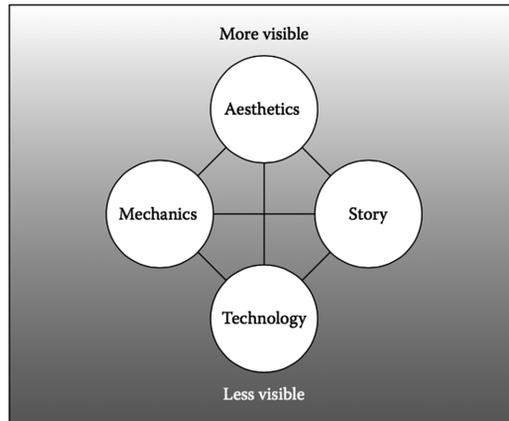


Figure 2-1 Elements and Their Interaction Inside a Video Game¹¹

Mechanics define the procedures and rules of a game, which are the interactions and relationships left when all the other elements are stripped away.¹² More specifically, the mechanics can be further divided into a series of factors in the most abstract manner, including rules (the core of the mechanics and serves the goal of the video game), space (the mathematical construct defining the various places and their relationships in a video game), time, objects (and their attributes and states in an abstract manner), actions (the basic and strategic actions a player can take in a video game), skills (physical, mental, and social skills of a player), and chance (the probability setting that brings uncertainty and surprise to a video game).

Story is the sequence of events that unfolds in the game, including the factors of structure (how a story is unfolded with the interaction of a player), character (presented through its actions and outer appearance), and space (more fleshed-out than the factor of space in the “mechanics”). To tell a story through a game, a designer needs to choose the mechanics which can match the story, to choose the aesthetics that help reinforce that story, and to choose the technology that best highlights that story.¹³

Aesthetics define how the game looks, sounds, and feels. A designer needs to choose proper aesthetics that are suitable to the mechanics, achievable by the technology, and parallel with the story.¹⁴

Technology is the medium of the game and the physical objects that make the game possible. More specifically, it refers to computer programs and the physical objects including the computer, the screen and other input devices.¹⁵ This element can be

¹¹ Source: *Jesse Schell* (n2) 51.

¹² *Jesse Schell* (n2) 52.

¹³ *Jesse Schell* (n2).

¹⁴ *Jesse Schell* (n2).

¹⁵ *Jesse Schell* (n2).

further divided into two kinds: one is the fundamental technology which makes the video game possible, and the other is the decorative technology which provides better game experiences to players.

As a summary of the elements of a video game, Figure 2-2 below shows the specific connotation of those elements in detail.

Mechanics	<p>Interactions and relationships after stripping away all the other elements, including:</p> <ul style="list-style-type: none"> • Space (mathematical construct defining various places and their relationships in a game) • Time • Objects, their attributes and states • Actions (basic and strategic actions a player can take in a game) • Rules (the most fundamental mechanics, which add the most crucial thing that makes a game a game: goals) • Skills (requirements for a player to exercise a game, including physical, mental and social skills) • Chance (the probability setting that brings uncertainty and surprise to a game)
Story	<ul style="list-style-type: none"> • Structure (how the story unfolds by interacting with player, but usually there are not too many choices in the interaction; multiple endings will be avoided) • Character (when compared with the characters in a novel, the character in a video game is expressed through physical actions, more fantasy, and more straightforward) • Space (the architectures and their places in the world game, which are more fleshed-out than the “space” in mechanics)
Aesthetics	The look and feel of a game through visuals (moving pictures and other effects) and audio (music).
Technology	<p>The medium containing all the other elements, including:</p> <ul style="list-style-type: none"> • Foundational technologies providing basic game experience) • Decorative technologies providing better game experience)

Figure 2-2 Elements and Sub-elements of a Video Game¹⁶

2.2.1.3 How a Video Game is Built in Practice: Complex Interaction between Video Game Software and Its Screen Display

After highlighting the elements inside a video game, we now further explain how a

¹⁶ This figure is developed by the author based on the summary of related contents from Chapters 12 to 28 in Jesse Schell's book *The Art of Game Design: A Book of Lenses* (2nd edn CRC Press, Boca Raton 2014).

video game is built in practice by showing the complex interaction between video game software and its screen display.

In the view of game designers, a video game screen display, called the *virtual interface* which contains both *input elements* (such as a virtual menu where a player makes a selection) and *output elements* (such as a score display), is a medium that connects a player with the game world.¹⁷ From Figure 2-3, which shows how a virtual interface interacts with the physical input, the physical output, and the game world, it is fair to say that the virtual interface, i.e., the video game screen display, actually reflects the interaction of all the four elements inside a video game. For example, arrows 3 and 6 in Figure 2-3 show how the physical input and the physical output should interact with the interface, which concerns the element of *technology*. Arrows 4 and 5 in Figure 2-3 show the relationship between the virtual interface and the desired look and feel of the game world. This needs the cooperation of the elements such as the *mechanics*, *story* and *aesthetics*.

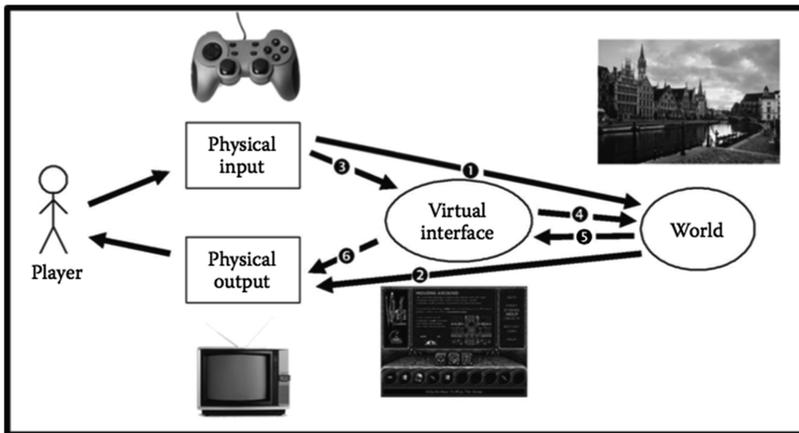


Figure 2-3 How a Player Interacts with the Game World¹⁸

As we have shown, the element of *technology* in a video game includes but is not limited to software. The fact that a video game screen display actually comprises all of the four elements referred to above demonstrates that video game software plays a notable role in how the video game screen display appears in front of a player.

In fact, video game software and its screen display are interdependent. The interaction between *technology* and *aesthetics* in the practice of game design can help explain that. When designing a video game, designers always need to strike a balance between the elements of *aesthetics* and *technology*. On the one hand, *aesthetics* sets the objective for *technology* because designers need to make use of

¹⁷ Jesse Schell (n2) 256.

¹⁸ Source: Jesse Schell (n2) 257.

existing technologies to realize the desired look and feel of a video game. On the other hand, *technology* also reversely limits or restricts *aesthetics* because if no technology can achieve the desired target of *aesthetics*, designers will have to replace that target with something more achievable with the current technological level.¹⁹

Besides their interdependence, video game software and its screen display, interestingly enough, are also somewhat independent. This independence is determined by the product/vehicle dichotomy²⁰ inherent to software. That dichotomy means that software is a product which may contain other kinds of products or deliver information that is in a different form than the software itself.²¹ For example, software is a product consisting of codes, and those codes are actually the carrier of music, images and stories which are products or information independent from software itself. In that sense, software is not only a product but also a vehicle that delivers other products like music and images. This well reflects the relationship between video game software and its screen display. Video game software is a holistic product in the form of codes, and at the same time, it also delivers images, music, and perhaps stories through its screen display. In that sense, video game software and its screen display should be identified as independent.

What's more, the practice of how a video game screen display is created also shows that the video game screen display is relatively independent from video game software. The creation of the video game screen display contains two relatively independent works. One is the code-written work completed by software engineers; the other is the image-drawn work completed by artists.²² Although those two kinds of works should be coordinated to ensure that software technology can realize the aesthetic goals planned, they are relatively independent because they need different skills and reflect different creativities from software engineers and artists.

¹⁹ Jesse Schell (n2) 390-391.

²⁰ "Today, software takes on a dual role. It is a product, and at the same time, the vehicle for delivering a product. As a product, it delivers the computing potential embodied by computer hardware or more broadly, by a network of computers that are accessible by local hardware. Whether it resides within a mobile phone, a hand-held tablet, on the desktop, or within a mainframe computer, software is an information transformer—producing, managing, acquiring, modifying, displaying, or transmitting information that can be as simple as a single bit or as complex as a multimedia presentation derived from data acquired from dozens of independent sources. As the vehicle used to deliver the product, software acts as the basis for the control of the computer (operating systems), the communication of information (networks), and the creation and control of other programs (software tools and environments)." See RS Pressman, BR Maxim, *Software Engineering – A Practitioner's Approach* (8th edn McGraw-Hill Education, New York 2015) 4.

²¹ Ian Sommerville, *Software Engineering* (10th edn Pearson Education, London 2016) 20.

²² The work of software engineering is done by the Chief Engineer who assures that all the necessary programming codes for each gaming feature are developed on time and work smoothly by the Software Engineer. And the work of creating art on the screen display is done through the corporation of a team of artists: the Art Director assures the coherence of the look and style of all the characters, environments and props on the screen; the Concept Artist draws the concepts of characters, creatures, environment, and objects that lay the foundation for following artistic creation done by the Environment Artist and Character Artist; the Character Animator makes the character move and the FX Animator creates special effects for a game; the User Interface Artist works with UI engineers to allow players to navigate through the setup screens and also creates the vital icons and meters that feed a player important information during gameplay. See SR Kennedy, *How to Become a Video Game Artist* (kindle edn Watson-Guptill, New York 2013) 36-39.

2.2.2 Game Clones

With this knowledge of video games, we now turn to the concept of “game clone”. In the field of game development, game designers provide us with two different definitions of what a game clone is. One opinion views game clone as an exact or near replica of an existing game, and the term “near replica” means a game that looks like or plays in a similar way to an earlier game.²³ In another opinion from game designers, game clones are defined as “games with identical play mechanics and nothing but some new graphics slapped on”.²⁴ From those two definitions, a game clone can be described as either an exact replica of an existing game or a near replica which, when compared with an earlier game, may have the same or similar mechanics and different graphics.

For the exact replica of an existing game, since it is a literal copying of that existing video game, it definitely commits copyright infringement if that existing video game is copyrightable. In fact, this kind of game is called a pirated game, which can be found in tangible CD-ROMs and cartridges or downloaded from unlicensed game websites.²⁵ This research does not use the concept of “game clone” in the sense of a pirated game because it is not problematic for any national court to determine the piracy of copyrightable video games as infringement.

Based on that, the concept of *game clone* in this research will be interpreted as referring to *the near replica of an existing game*. Here, we need to further explain what is a “near replica” of an existing video game. From the two definitions we have mentioned above, the concept of “near replica” refers to two things. The first is that the mechanics between two video games are similar or the same, and the second is that the graphics between two games are different. However, that description of a “near replica” is not accurate because it ignores that, as we have introduced, a video game consists of four interactive elements. Since the element “*mechanics*” contains a series of abstract factors such as rules, objects, space, and so on, it is not practical to give an objective evaluation on whether the mechanics of two games are similar or the same. What’s more, as we have also introduced, since *mechanics* interact with *story*, *aesthetics*, and *technology*, it is not accurate to claim that the identicalness or similarity originates just from *mechanics*. That is also the situation for graphics. Since graphics actually refer to the screen display of a video game, according to our introduction, the screen display contains all the elements of a video game and reflects the interaction of those elements. So, when we say the graphics of two games are the same or different, the reasons of why we come to that conclusion may

²³ Porter, ‘The Difference between a Blatant Clone and Building on a Proven Game’ <https://gamedevelopment.tutsplus.com/articles/the-difference-between-a-blatant-clone-and-building-on-a-proven-game--gamedev-14363>.

²⁴ Ernest Adams, *Break into the Game Industry: How to Get a Job Making Video Games* (McGraw-Hill/Osborne, New York 2003) 51.

²⁵ BW Ng, ‘China’ in MJP Wolf (ed), *Encyclopedia of Video Games: The Culture, Technology, and Art of Gaming* (Greenwood, Westport 2012) 108.

originate from any or all of the four elements. In other words, since a video game is a system consisting of four inter-related elements, the game experience, which the graphics provide to us, are actually a combined result of those four elements, rather than the result of only one or two elements.

Therefore, when we say one game is a near replica of an earlier game, or one game looks like or provides us with a similar game experience to an earlier game, it is not accurate to ascribe the identicalness or similarity of two video games to identical or similar mechanics or graphics. And vice versa, when two video games are not similar at all in their graphics, it is not safe to conclude that they are totally different because, considering the complexity and interaction of the elements in a video game, it is unknown whether certain elements are similar just from the outer appearance of the video game. So, an accurate way to say one game is a near replica of another game is to say that the elements, shown in Figure 2-2, of one game are similar to or the same as those in an earlier game. In that sense, to determine copyright infringement caused by a game clone is to determine whether the elements in the game clone, which are similar to or the same as an earlier game, should be considered as an infringement of copyright.

2.3 Three Core Issues: An Initial Observation from International Treaties

When determining whether one work infringes the copyright of another work, a national court will usually focus on three core issues: (1) the subsistence of copyright in the claimant's work, (2) the defendant's work is copied from that of the claimant, and (3) the defendant's plea that certain exceptions and limitations to copyright may be applicable to exemplify the liability for copying.²⁶

A game clone can be understood as a video game that contains some elements similar or identical to an earlier video game. To determine copyright infringement caused by a game clone, the three core issues mentioned above can be specifically interpreted as: (1) the copyrightability of the earlier video game, (2) whether similar or identical elements in the game clone can be considered as copying of protectable expressions of the earlier game, and (3) whether any exceptions and limitations (E&L) are available. These are the three core issues that a national court needs to assess whether a copyright has been infringed by a game clone. Since international treaties set general rules and principles on how to handle the three issues referred to above, as a premise of the introduction to national practice, this section will provide an initial observation from the perspective of international norms.

²⁶ JAL Sterling, *Sterling on World Copyright Law* (4th edn Sweet & Maxwell, London 2003) 646, 648.

2.3.1 Copyrightability of Video Games

The issue of copyrightability concerns whether a video game or its certain content can be protected under copyright law. When deciding whether the creator of a game clone commits copyright infringement, the issue of copyrightability is fundamental because if the existing video game or its certain content is not protectable at all, then no matter whether similarity exists between the game clone and the existing game, there will be no infringement under copyright law. For the copyrightability of a video game, international norms set rules in two aspects: what can be protected and what cannot.

2.3.1.1 What Can Be Protected: Literary and Artistic Works

2.3.1.1.1 Literary and Artistic Works

What can be protected under international treaties are called “literary and artistic works”. According to Article 2(1) of the Berne Convention, literary and artistic works “shall include every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression.”²⁷ That definition conveys the information in two aspects. First, literary and artistic works include “every production in the literary, scientific and artistic domain”. The “production”, according to Professors Ricketson and Ginsburg, means a personal creation or intellectual creation once it was realized or brought into existence.²⁸ The adjective “literary” refers to the written or printed compositions, and “artistic” refers to not only works of the visual arts but also “the wider sense of pertaining to the arts in general, including here music, drama, and literature, as well as literary fine art”.²⁹ The term “scientific” is superfluous because scientific discoveries will not be protected by the Berne Convention and scientific writings will be classified as either literary or artistic productions.³⁰ So, the sentence that “every production in the literary, scientific and artistic domain” means that the international treaties provide an “all-embracing protection” for all the intellectual creations that we know.³¹ Second, the sentence “whatever may be the mode or form of its expression” indicates that the mode or form of how a work is expressed is irrelevant to whether a work should be protected under the international treaties.³² This further confirms the all-embracing protection for intellectual creations. In addition, this sentence also

²⁷ Article 2(1), Berne Convention.

²⁸ Sam Ricketson, JC Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond* (2nd edn Oxford University Press, Oxford 2006) 403.

²⁹ Sam Ricketson, JC Ginsburg (n28) 406.

³⁰ Sam Ricketson, JC Ginsburg (n28) 406. Also see, Tanya Aplin, ‘Subject Matter’ in Estelle Derclaye (ed), *Research Handbook on The Future of EU Copyright* (Edward Elgar, Cheltenham 2009) 50.

³¹ Claude Masouyé, *Guide to the Berne Convention for the Protection of Literary and Artistic Works (Paris Act, 1971)* (WIPO Publication, Geneva 1978) 13.

³² Sam Ricketson, JC Ginsburg (n28) 407.

implies that the Berne Convention takes a technology neutral approach to how a work is expressed and protects the expressions rather than the ideas embodied in a work.³³ In a word, what the international treaties protect are “literary and artistic works” which include all intellectual creations and expressions regardless of what forms, modes, or technologies they have used.

Besides the definition of “literary and artistic works” stipulated in the first half part of Article 2(1) of the Berne Convention, specific subject-matters are also enumerated as below:

books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or “dramatico-musical” works; choreographic works and entertainment in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science.³⁴

Translations, adaptations, arrangements of music and other alterations of a literary or artistic work shall be protected as original works without prejudice to the copyright in the original work.³⁵

Collections of literary or artistic works such as encyclopaedias and anthologies which, by reason of the selection and arrangement of their contents, constitute intellectual creations shall be protected as such, without prejudice to the copyright in each of the works forming part of such collections.³⁶

It is worth noting that, since the form of expression is not relevant to recognize protection, why does the Berne Convention enumerate the subject-matters above? We can find reasons from its history. Before the emergence of the Berne Convention, since the international piracy of works became a problem and protecting foreign works by national laws became an urgent issue, a lot of countries signed bilateral agreements to provide copyright protection for foreign works.³⁷ Since the network of bilateral agreements became more and more complicated, many countries found it necessary to construct a uniform and international protection for copyright.³⁸ The

³³ Tanya Aplin (n30).

³⁴ Article 2(1), Berne Convention.

³⁵ Article 2(3), Berne Convention.

³⁶ Article 2(5), Berne Convention.

³⁷ *Sam Ricketson, JC Ginsburg* (n28) 19-27.

³⁸ *Sam Ricketson, JC Ginsburg* (n28) 42.

1886 version of the Berne Convention had already contained half of the enumerated works in the current Article 2(1) of the 1979 Paris Act, and most of those works were taken over from earlier bilateral treaties. Then more works came into catalogue through the 1908 Berlin Act, the 1928 Rome Act and the 1948 Brussels Act, covering the most commonly protectable works.³⁹ From the introduction above, the subject-matters enumerated in the Berne Convention now (i.e., the 1979 Paris Act) are inherited from earlier bilateral treaties and agreements, reflecting the contracting parties' considerations, consensuses, and compromises on what they wanted copyright law to protect. What's more important, for national lawmakers, these subject-matters also function as guidance which serves the goal of the Berne Convention for building a uniform and international copyright protection.

So, as a guidance for the national lawmakers, what do those subject-matters mean? The definitions of the subject-matters enumerated are not provided by the Berne Convention but left to national lawmakers to decide.⁴⁰ Even so, there is actually a reasonable unanimity between national lawmakers on the definition of these subject-matters because "states usually enter international arrangements only if they share a common set of assumptions about the goals that they wish to achieve together with their treaty partners. If there are real differences between the parties as to these goals, they will not proceed with their agreement, or they will modify its terms explicitly to take account of these differences."⁴¹ In addition, we can also interpret the definition of those subject-matters by following the general rule for interpretation in Article 31 of the Vienna Convention: "a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its objects and purpose."⁴² Therefore, in Figure 2-4, we summarize the ordinary definitions and meanings of the subject-matters enumerated in the international treaties by taking legal scholars' opinions as references.⁴³

The Subject-Matters Enumerated	Their Ordinary Meanings
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³⁹ Silke von Lewinski, *International Copyright Law and Policy* (Oxford University Press, Oxford 2008) 125.

⁴⁰ *Sam Ricketson, JC Ginsburg* (n28) 411.

⁴¹ *Sam Ricketson, JC Ginsburg* (n28) 411.

⁴² Article 31, Vienna Convention.

⁴³ The ordinary meanings summarized in Figure 2-4 take the following materials as references: *Claude Masouyé* (n31); WIPO, *Implications of the TRIPS Agreement* (Geneva, 1996); Wilhelm Nordemann and others, *International Copyright and Neighbouring Rights Law: Commentary with special emphasis on the European Community* (Wiley-VCH, Weinheim 1990); *JAL Sterling* (n26); *Sam Ricketson, JC Ginsburg* (n28); *Silke von Lewinski* (n39); Paul Goldstein, PB Hugenholtz, *International Copyright: Principles, Law, and Practice* (Oxford University Press, Oxford 2013); Jorg Reinbothe, Silke von Lewinski, *The WIPO Treaties on Copyright: A Commentary on the WCT, the WPPT, and the BTAP* (2nd edn Oxford University Press, Oxford 2015).

Books, pamphlets and other writings (Including computer programs ⁴⁴)	All kinds of writings no matter how they are bound together, the subject-matter, and whether they can be understood by people or machines
Lectures, addresses, sermons and other works of the same nature	Created orally and not in writing
Dramatic or “dramatico-musical” works; choreographic works and entertainment in dumb show	Stage presentation
Musical compositions with or without words	Fixed in musical notation and their accompanying text in writing
Cinematographic works to which are assimilated works by a process analogous to cinematography	Visual works with or without audio elements
Works of drawing, painting, sculpture, engraving and lithography	Works of fine art, a great variety of ways and means for the creation expressed in lines, colours and forms
Works of architecture	The artistic aspect of technical constructions which serve a utilitarian purpose
Photographic works to which are assimilated works expressed by a process analogous to photography	All photography regardless of subject (portraits, landscapes, current events, etc.) and purpose (amateur or professional photographs, artistry or advertising)
Works of applied art	Artistic contributions of the makers of knick-knacks, jewellery, gold and silverware, furniture, wallpaper, ornaments, clothing, etc.
Illustrations, maps, plans, sketches and three-dimensional works relative to topography, architecture or science	Self-explanatory

Figure 2-4 Ordinary Meanings of Subject-Matters Enumerated under International Treaties

⁴⁴ Although the computer programs are not subject-matters enumerated in the Berne Convention, Article 10 of TRIPS contains an interpretive provision stating that computer programs, whether in source or object code, shall be protected by the Berne Convention. And Article 4 of WCT includes the same clarification in very similar wording.

Besides providing guidance on what national laws should protect, the use of “such as” in Article 2(1) also tells us that those subject-matters are non-exhaustive, reserving a space for the protection of other literary and artistic works not mentioned.⁴⁵ More specifically, the space is reserved for some works that need protection on a national level but do not exist in other countries. For example, China’s copyright law stipulates the protection of “*qu yi* works” because this kind of work contains many traditional Chinese forms of expression, including “*xiang sheng*” (the cross talk), “*kuai shu*” (the clapper talk), “*da gu*” (ballad singing with drum accompaniment) and “*ping shu*” (story-telling based on novels), which are mainly performed by recitation or singing, or by both.⁴⁶ At the national level, *qu yi* works should be considered as falling under the scope of literary and artistic works stipulated by the Berne Convention. While on the international level, since *qu yi* works exist mainly in China, it is not necessary for other countries to protect them as an international obligation.

What’s more, the non-exhaustive list of protectable subject-matters also facilitates introducing new categories of works into the enumeration within the international framework. Although the possibility of introducing new kinds of works is higher in theory than that in practice,⁴⁷ in history the introduction of new categories of works is not rare. The 1908 Berlin Act introduced choreographic works and pantomime, works of architecture, photographic works, and works of applied art; the 1928 Rome Act introduced the lecture and other oral works; and the 1948 Brussels Act introduced cinematographic work.⁴⁸ A more recent example is the introduction of computer programs. The protection of computer programs became a consensus among the contracting parties when more and more countries granted copyright protection to them.⁴⁹ As a result, in 1994, the TRIPS confirmed this consensus by including computer programs as a protectable subject-matter under the label of “literary works”.⁵⁰

In summary, the literary and artistic works protected by international treaties have three characteristics. First, they include all types of intellectual creation and expression whatever the form and mode they take. Second, specific subject-matters of literary and artistic works are enumerated to guide national lawmakers, serving the final goal of constructing uniform and international copyright protection. Third, since the list of subject-matters is non-exhaustive, when necessary, national lawmakers can choose to consider new subject-matters as falling under the concept of “literary and artistic works”, and it is also possible in theory that the contracting parties to a treaty can have those new subject-matters included in the Berne Convention.

⁴⁵ Sam Ricketson, *JC Ginsburg* (n28) 409.

⁴⁶ Article 4(5), Regulations for the Implementation of Copyright Law of PRC.

⁴⁷ Sam Ricketson, *JC Ginsburg* (n28) 409-10.

⁴⁸ *Silke von Lewinski* (n39).

⁴⁹ CM Correa, *Trade Related Aspects of Intellectual Property Rights: A Commentary on the TRIPS Agreement* (Oxford University Press, Oxford 2007) 123-24.

⁵⁰ Article 10(1), TRIPS.

2.3.1.1.2 Subject-Matters (or Subject-Matter) in a Video Game

Based on the characteristics of literary and artistic works and the introduction to video games from a factual perspective,⁵¹ there is no doubt that a video game is a type of literary and artistic work. The problem is: since the list of subject-matters do not mention video games, how to determine the subject-matter of a video game according to international treaties? In theory, there are two ways to determine the subject-matter of a video game.

The first way is to protect the different contents of a video game separately as different subject-matters enumerated in international treaties, which is called “distributive classification”.⁵² Under this approach, according to Figure 2-4, we can find many forms of content that are qualified as protectable, and here we just list some obvious examples. Video game software can be protected as “computer programs”. Inside a video game screen display, the static pictures shown on the screen can be protected under the label of “works of drawing, painting, sculpture, engraving and lithography”, the dynamic presentation of the screen display as a whole can be protected under the label of “cinematographic works to which are assimilated works by a process analogous to cinematography”, and the words and descriptions appearing on the screen may also be protected under the label of writings. Considering the relatively independent relationship between video game software and its screen display as we have described above, the atomistic approach is generally justified from a factual perspective because the different contents in a video game, especially the software and the screen display, contain different skills and creativity originating from different creators (i.e., different teams of software engineers and artists).⁵³

In contrast to the distributive classification, the second way is to protect a video game as a whole, i.e., to protect a video game under a single subject-matter. That subject-matter cannot be any subject matter enumerated in international treaties because it is not possible to justify why the relatively independent video game software and its screen display should be protected as one thing. So, it has to be the subject-matter that has not been enumerated in international treaties. Some scholars have proposed to use the concept of *multimedia work* as the single subject-matter under which a video game can be categorized. Let’s take a close look at that proposal.

A multimedia work is defined as a work which combines more than one different

⁵¹ *Supra* Section 2.2.1.3.

⁵² Andy Ramos and others, ‘The Legal Status of Video Games: Comparative Analysis in National Approaches’ <https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN>.

⁵³ *Supra* Section 2.2.1.3, p. 20.

kind of expression in an integrated digital format on a single medium, and which allow their users, with the aid of a software tool, to manipulate the contents of the work with a substantial degree of interactivity.⁵⁴ From that definition, two characteristics make the multimedia work distinguishable from the subject-matters enumerated in the treaties. One is the indistinguishable integration of different kinds of work or expression. This means, in a multimedia work, different forms of expression are combined with each other to such an extent that any distinction or any attempt at distinguishing between those various expressions or elements initially existing is either impossible or makes no sense.⁵⁵ Another characteristic is a substantial degree of interactivity. This means, when interacting with a multimedia work, besides simply giving instructions to the machine or choosing a limited number of available pathways, the users can morph and blur the materials in the work by manipulation and interfering with those materials.⁵⁶

However, a video game cannot fall under the scope of multimedia work because it does not satisfy the two characteristics of that kind of work. First, different from the multimedia work which requires an indistinguishable integration of different works and expressions, the distinction of various expressions in a video game is clearly possible and meaningful. As we have introduced, in a general sense, video game software and its screen display, which are definitely two kinds of different expressions, are relatively independent and thus distinguishable. It is possible for ordinary people to identify the contents we have listed when talking about the approach of distributive classification, such as static pictures, dynamic display, and writings. And the distinction of those contents is also meaningful because those contents are usually created by different subjects whose economic interests and benefits are not the same. Second, different from the multimedia work which requires a substantial degree of interactivity, the interactivity in a video game cannot enable the players to morph or blur the existing materials inside that video game. As we have already explained, a player's interactivity with the video game is restricted by the information and automated systems pre-set by the designers, and the interactivity should not be considered as creating something that does not initially exist in that game.⁵⁷ In that sense, it is not accurate to say that a player, through interactivity, can morph and blur the materials in the video game. In other words, a video game does not contain a substantial degree of interactivity required by a multimedia work (in fact, we cannot find or imagine any work that can meet that requirement). In summary, the nature of a video game does not support the proposal

⁵⁴ IA Stamatoudi, 'Are Sophisticated Multimedia Works Comparable to Video Games' (2001) 48 J. Copyright Soc'y U.S.A 469-470.

⁵⁵ IA Stamatoudi, *Copyright and Multimedia Products: A Comparative Analysis* (Cambridge University Press, Cambridge 2002) 21. Another scholar held a similar opinion: "multimedia works combine text, images (still and moving), sound (in the form of music and speech), computer software, and associated computer hardware to create something new", see MD Scott, JL Talbott, 'Interactive Multimedia: What Is It, Why Is It Important and What Does One Need to Know About It?' (1993) 15 E.I.P.R. 284-88.

⁵⁶ IA Stamatoudi (n54); "user interactivity" is also explained by another scholar as the characteristic of multimedia work, see Tanya Aplin, 'Not in Our Galaxy: Why "Film" Won't Rescue Multimedia' (1999) 21 E.I.P.R. 633-40.

⁵⁷ *Supra* Section 2.2.1.1, p. 15.

of protection under a single subject-matter named multimedia work that is not enumerated under international treaties.

Based on the analysis above, under international treaties, a video game can be protected because it belongs to literary and artistic works, and its different parts can be protected as different subject-matters enumerated in those treaties (called the distributive classification). On the contrary, it is not optimistic to protect a video game as a single subject-matter, either as enumerated or non-enumerated (such as a multimedia work) in the treaties.

2.3.1.2 What Cannot Be Protected: The Idea/Expression Dichotomy

Besides describing the concept of “literary and artistic works” to present what can be protected, international treaties also stipulate the idea/expression dichotomy as a principle to exclude what cannot be protected. This section introduces this dichotomy and explains what dichotomy means to the copyrightability of a video game.

2.3.1.2.1 The Idea/Expression Dichotomy

The idea/expression dichotomy regulates that copyright protection extends to forms of expression and not to ideas, procedures, methods of operation or mathematical concepts. That dichotomy already existed in national laws and bilateral treaties before the emergence of the Berne Convention, and it was explicitly laid down in Article 9(2) of TRIPS⁵⁸ and reappeared in Article 2 of WCT. In the Berne Convention, the sentence “whatever may be the mode or form of its expression” in Article 2(1) implies that it is the expression, or more exactly, the form of expression, not the idea that should be protected.⁵⁹

The idea/expression dichotomy precludes the protection of ideas for a significant reason: the public good. The public good can be summarized in three aspects. First, considering ideas as basic elements of creative endeavours, copyright protection should avoid conferring monopoly rights on them and avoiding their being a hindrance to the creation of works from future authors.⁶⁰ Second, since patent protection has stricter requirements than copyright protection, it is necessary to prevent attempts at seeking copyright protection for the ideas and concepts explained in works.⁶¹ Third, copyright protection should pay attention to the public interest in facilitating free speech by exempting the fear of liability in anyone who wants to

⁵⁸ *Silke von Lewinski* (n39) 123.

⁵⁹ *Sam Ricketson, JC Ginsburg*, (n28) 407; *Tanya Aplin* (n30) 50; and *Claude Masouyé* (n31) 12.

⁶⁰ UNCTAD-ICTSD, *Resource Book on TRIPS and Development* (Cambridge University Press, Cambridge 2005), 139-40.

⁶¹ *Jay Dratler, Intellectual Property Law: Commercial, Creative and Industrial Property* (Law Journal Press, New York 1996), paras. 1A-52-1A-53.

repeat others' ideas and facts in different words.⁶²

For what should be considered as an idea under the idea/expression dichotomy, Article 9(2) of TRIPS provides us with some examples: procedures, methods of operation, and mathematical concepts. "Procedures" and "methods of operation" refer to steps to produce a work rather than the work that contains the intellectual creation of an author, and they could at best be protected under the patent law.⁶³ "Mathematical concepts" are the refinement or discovery of a scientific rule, rather than intellectual creation.⁶⁴ The lack of intellectual creation in mathematical concepts also explains why the news and facts in Article 2(8) of the Berne Convention have been excluded from copyright protection.⁶⁵ From the examples above, the characteristic of an idea is its lack of intellectual creation.

After introducing "idea" in the dichotomy, we now turn to the "expression" side. Although Article 9(2) of TRIPS broadly mentions the concept of "expression", its meaning and qualification is not explicitly explained under international norms.⁶⁶ Since Article 9(2) of TRIPS is considered as providing a substantive definition of what can be protected by national copyright law and delineating the scope of "literary and artistic work" in Article 2 of the Berne Convention,⁶⁷ it is fair to say that the meaning of expression connects with protectable works under copyright law and indicates the scope of protection of those works. The qualification of "expression", i.e., the requirement of originality, is not mentioned by international treaties and should be considered as an issue left to national decisions.⁶⁸ In other words, a national law can decide the standard of originality required for a protectable "expression" in its domestic works. From the introduction above, we can find flexibility or even uncertainty prevails in confirming the meaning of expressions.

Based on the analysis above, the idea/expression dichotomy stipulated by international treaties sets a principle that precludes the protection of something that lacks intellectual creation and leaves a flexible scope of what can be protected. In that sense, the dichotomy should be interpreted as symbolic and would need to be further embodied *ad hoc* by national practice.

2.3.1.2.2 The Implication of the Idea/Expression Dichotomy for a Video Game

When coming to the copyrightability of a video game, the idea/expression

⁶² Jay Dratler (n61).

⁶³ Peter-Tobias Stoll, Jan Busche, and Katrin Arend (ed), *WTO – Trade-Related Aspects of Intellectual Property Rights* (Martinus Nijhoff Publishers, Leiden 2009) 252.

⁶⁴ Peter-Tobias Stoll, Jan Busche, and Katrin Arend (n63).

⁶⁵ Claude Masouyé (n31) 23.

⁶⁶ CM Correa (n49) 212.

⁶⁷ Daniel Gervais, *The TRIPS Agreement: Drafting History and Analysis* (3rd edn Sweet &Maxwell, London 2008), 220-21.

⁶⁸ CM Correa (n49).

dichotomy implies two things. First, the identification of idea and expression in a video game is a difficult issue for a court when determining the copyrightability of a video game. The difficulty originates from two aspects. On the one hand, considering the idea/expression dichotomy is just a principle and only serves a symbolic significance, the line between idea and expression will not be clear-cut in all practical circumstances, making it a difficult issue for a national court to separate the idea and expression for concrete objects in specific cases.⁶⁹ On the other hand, the complexity of a video game and the inter-related elements of a video game further increase the difficulty in drawing a line between idea and expression. When a national court faces the issue of whether a certain content, let's say, the gameplay, of a claimant's video game should be considered as expression under the idea/expression dichotomy, that court needs to understand the gameplay as a factual matter in the first place (especially its relationship between the element of *mechanics* as we have introduced⁷⁰), and it then needs to measure whether other inter-related factors or elements in a video game will substantially affect the final conclusion on the protection of that gameplay. That is a procedure full of difficulties, both factual and legal.

Second, the idea/expression dichotomy actually implies an overlap between the issue of copyrightability and the issue of finding copying of protectable expressions. On the one hand, the dichotomy shows that, if an object falls into the examples that should be considered as "idea", it will be precluded directly as a copyrightability issue. While on the other hand, as a principle, the dichotomy does not draw a clear line between idea and expression, leaving the copyright protection as something that needs to be further embodied by national courts. In that sense, the copyright protection is not only an issue of what to protect but also that of the extent of the protection. For the latter, it points to the issue of how to find copying of protectable expressions, which we will talk about in the next section.

2.3.2 Copying of Protectable Expressions in an Existing Video Game

After confirming the subsistence of copyright, i.e., the copyrightability of the claimant's video game, as the second core issue, a national court needs to further decide whether the claimant's copyright has been infringed by the defendant's action of cloning. To make its decision, a national court would need to consider two things. First, since copyright consists of a bundle of exclusive rights that control different ways of actions regarding a video game, it would need to determine whether the defendant's action of cloning falls under the scope of a certain exclusive right. Second, it would need to confirm whether the copying from the game clone falls under the scope of protection for the claimant's video game. This section will show how international norms can contribute to determining the two things mentioned

⁶⁹ *CM Correa* (n49).

⁷⁰ *Supra* Section 2.2.1.2, p. 17.

above.

2.3.2.1 Exclusive Rights Pertaining to Game Clones

2.3.2.1.1 Exclusive Rights in International Treaties

In international treaties, copyright consists of a bundle of different exclusive rights. Those rights can be categorized into economic rights and moral rights. Economic rights include reproduction right, adaptation right, the rights pertaining to physical copy, the right of public performance, and the right of communication to the public by transmission. (1) *Reproduction right* is fundamental in copyright and applicable to all literary and artistic works. It relates to the matter of fixing a work in some material form⁷¹ and covers any method of how a work is fixed and transferred from one support to another,⁷² such as digital forms or storage mentioned in the Berne Convention and WCT⁷³. (2) *Adaptation right* concerns the alteration of an original work.⁷⁴ Three ways of alteration are controlled by this right. The first is called “adaptation”, which means the recasting or remodelling of a work into another form.⁷⁵ The second is called “arrangement”, which means the change within the same format.⁷⁶ The third is called “other alternation”, which is a residual category including all the other changes that may not fit for the two ways above, such as abridgements, parodies, burlesques, and caricatures.⁷⁷ (3) *Rights pertaining to physical copy* include distribution right, rental right and *droit de suite*. Distribution right exists in all the literary and artistic works stipulated in the treaties⁷⁸ and controls the act that makes the original works and their copies available on the market or puts them into circulation.⁷⁹ The terms “original works and their copies” refer to fixed copies that can be put into circulation as tangible objects.⁸⁰ A rental right only exists in computer programs, cinematographic works and works embodied in phonograms.⁸¹ *Droit de suite* refers to the right of sharing the interests from the proceeds of subsequent sales of the physical form a work originally embodied.⁸² The right of public performance controls the act of public performance and public recitation,⁸³ interpreted as “the performance by a musician in concert, by an opera singer or a theatre actor on stage or the public reading of literary works by the author

⁷¹ Claude Masouyé (n31) 54.

⁷² S. Stewart, *International Copyright and Neighbouring Rights* (2nd edn Butterworths, London 1989) 121.

⁷³ Article 10(1) of the Berne Convention, and Agreed Statement to Article 1(4) of WCT.

⁷⁴ S. Stewart (n72) 126.

⁷⁵ See Sam Ricketson, *JC Ginsburg* (n28) 652; and Paul Goldstein, *PB Hugenholtz* (n43) 322.

⁷⁶ Paul Goldstein, *PB Hugenholtz* (n43) 322.

⁷⁷ Sam Ricketson, *JC Ginsburg* (n28) 652.

⁷⁸ Article 6(1) of WCT, and Article 14(1)(i) of the Berne Convention.

⁷⁹ Articles 6 and 7 of WCT, Agreed Statement Concerning Articles 6 and 7 of WCT.

⁸⁰ Agreed Statement Concerning Articles 6 and 7 of WCT. Also see *Silke von Lewinski* (n39) 451.

⁸¹ Articles 11 and 14 of TRIPS, Article 7 of WCT.

⁸² Sam Ricketson, *JC Ginsburg* (n28) 669.

⁸³ Articles 11, 11^{ter} and 14 of the Berne Convention.

or an actor.”⁸⁴ And the word “public” here means the live audience who can be seen by the performers.⁸⁵ (4) *Right of communication to the public by transmission* controls the act of disseminating literary and artistic works through wire or wireless ways to the public in a remote place.⁸⁶

Moral rights concern the relationship of authors and their works⁸⁷ and include the right to claim authorship and the right of integrity. (1) *Right to claim authorship*, also called right of paternity,⁸⁸ requires the mention of the author’s name on the original or copies of a work and facilitates the public to identify the author without a major effort.⁸⁹ (2) *Right of integrity* controls actions such as distortion, mutilation, other modification and other derogatory action that will prejudice an author’s honour or reputation.⁹⁰ It is worth noting that, different from the economic rights whose beneficiaries can be both natural and legal persons, the beneficiaries of moral rights are limited to natural persons. That conclusion is supported by the Berne Convention in three aspects. First, by using the word “author” rather than other words such as “producer”, the Berne Convention implies a natural person. Second, the intellectual creation mentioned in the Berne Convention can only come from a physical person having a mind or intelligence. Third, when stipulating the duration of copyright, the word “death” used by the Berne Convention refers to an event that only occurs to a natural person.⁹¹

2.3.2.1.2 Reproduction Right: Most Related to Game Clones

Among all the rights mentioned above, reproduction right has the closest connection with game clones when compared with other economic rights and the moral rights. This is decided by the nature of the action of cloning an existing video game. As we have already discussed, a game clone contains elements that are similar or identical to those in an existing game, meaning that some materials fixed in the existing game are copied literally or non-literally by the game clone. In that sense, the action of cloning will directly pertain to the reproduction right enjoyed by the right holder of the existing game.

For an adaptation right, its relationship to a game clone is secondary when compared with the reproduction right. To explain that, first we need to draw a boundary between a reproduction right and an adaptation right. Fairly speaking, that boundary

⁸⁴ *Silke von Lewinski* (n39) 149.

⁸⁵ *Sam Ricketson, JC Ginsburg* (n28) 706.

⁸⁶ *Silke von Lewinski* (n39) 148; *Sam Ricketson, JC Ginsburg* (n28) 704.

⁸⁷ *Sam Ricketson, JC Ginsburg* (n28) 587.

⁸⁸ *Claude Masouyé* (n31) 44.

⁸⁹ *Silke von Lewinski* (n39) 134.

⁹⁰ Article 6^{bis}(1) of the Berne Convention.

⁹¹ See *Silke von Lewinski* (n39) 129; *Sam Ricketson, ‘The 1992 Horace S. Manges Lecture – People or Machines: The Berne Convention and the Changing Concept of Authorship’* (1991) 16 *Colum.-VLA J.L. & Arts.*; and *Paul Goldstein, PB Hugenholtz* (n43) Chapter 6.

is not clear-cut. Ambiguities exist as to whether adaptation or other transformations of works should be considered as forms of reproduction or as the subject of a separate right. In fact, both approaches can be found in national laws: France treats adaptation as a form of reproduction, while the US, the UK, and Germany treat adaptation as the subject of a separate right.⁹² In spite of the different approaches in national laws, we can confirm one thing at least: new forms of the substance of the original work should exist in the action of adaptation regardless of whether or not we consider it as a form of reproduction.⁹³ That issue is crucial to understand why an adaptation right is secondary when a court considers the infringement committed by the game clone. As to a game clone, it may or may not relate to the issue of whether it contains new forms of the substance of an earlier game, but it will inevitably relate to the issue of whether similar contents in the game clone should be interpreted as the reproduction of the earlier game. In that sense, an adaptation right only has a secondary connection with a game clone when compared with reproduction right.

Similar to an adaptation right, the rights pertaining to physical copy and right of communication to the public by transmission also have a secondary connection with a game clone; even weaker in fact than the connection between an adaptation right and a game clone. The connection will only emerge after certain contents of a game clone have been confirmed as reproductions of an existing game since only under that situation can the distribution of the game clone be interpreted as the action of distributing protectable contents in the existing game.

For moral rights, although copying of an existing video game may perhaps damage the relationship between that video game and its creator, that kind of rights will pertain to the game clone only when the beneficiary of the existing game is a natural person. As we have discussed, under international treaties, moral rights are attributable only to natural persons, not legal persons. However, the practice of the worldwide video game industry shows that the beneficiary of a video game is always a legal person rather than and rarely a natural person.⁹⁴ In that sense, the connection between the moral rights and a game clone will be rather weak in practice.

In summary, since a reproduction right has the strongest connection with a game clone, a court's decision on copyright infringement is actually a decision on whether the reproduction right has been infringed.

⁹² *Sam Ricketson, JC Ginsburg* (n28) 645-46.

⁹³ *Claude Masouyé* (n31) 77, and also *see S. Stewart* (n72) 126 ("minor alterations can be disregarded provided they do not affect the moral rights of the author and only alterations that amount to something of the kind of an adaptation or an arrangement need the permission of the author").

⁹⁴ Inside the video game industry, game developers are usually the companies in three types: one type is the first-party developers who are wholly owned by a publishing company; another type is the second-party developers who are independent companies and contracted to create games from the concepts put forward by a publisher; the last type is the third-party developers who work on their own projects, or called as independent development houses. From that, it is clear to find that the right holder or beneficiary of a video game is usually in the form of a company that belongs to a legal person from a legal perspective. *See* Aphra Kerr, 'The Business of Making Digital Game', in Jason Rutter and Jo Bryce, *Understanding Digital Games* (SAGE Publications Ltd., London 2006) 41.

2.3.2.2 Copying of Protectable Expressions in an Existing Video Game

When determining whether a reproduction right has been infringed, the copying of protectable expressions from an existing work is crucial. To achieve that, a national court would need to confirm to what extent the protectable expressions, which have been copied, can be protected. In fact, that concerns the scope of protection for those expressions. Under international treaties, we cannot find specific guidance on how to confirm the scope of protection for certain contents because it has to rely on the determination of national courts in concrete cases. But still, as we have explained, the idea/expression dichotomy actually implies that the protection of an object is not simply a black-or-white problem, but also needs a national court to further discuss the extent to which that protection should reach.⁹⁵ In that sense, the idea/expression dichotomy connects with the confirmation of the scope of protection for a certain object. Based on that, when determining copying of protectable expressions of an existing video game by a game clone, we need to focus on how the idea/expressions dichotomy is in practice used by national courts.

2.3.3 Exceptions and Limitations to Copyright and Game Clones

After confirming the copyrightability of a claimant's video game and determining copying of protectable expressions, the latter is the issue of whether exceptions and limitations to copyright can be applicable to the use of protectable expressions by the creator of a game clone. As the most important legal instrument for reconciling copyright with individual and collective interests of the public,⁹⁶ exceptions and limitations to copyright are stipulated in two aspects under international treaties. One relates to concrete situations shown in the Berne Convention,⁹⁷ and the other concerns the three-step test which appears in the Berne Convention, TRIPS, and WCT.⁹⁸

Figure 2-5 shows the concrete situations for the exceptions and limitations to copyright. Those situations can be divided into uncompensated limitations and compensated limitations (statutory licences), and spaces have been reserved for the implementation of those situations under national practice.⁹⁹

	Article 2 ^{bis} (2)	Press dissemination of public speeches
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⁹⁵ *Supra* Section 2.3.1.2.2, p. 32.

⁹⁶ Christophe Geiger and others, 'Declaration a Balanced Interpretation of the "Three-Step Test" in Copyright Law' (2010) 1 JIPITEC 119 para 1. Also see *Jorg Reinbothe, Silke von Lewinski* (n43) 54.

⁹⁷ *Paul Goldstein, PB Hugenholtz* (n43) 372-73; also see *Sam Ricketson, JC Ginsburg* (n28) 783.

⁹⁸ *Paul Goldstein, PB Hugenholtz* (n43) 379-80.

⁹⁹ *Paul Goldstein, PB Hugenholtz* (n43) 372-73.

Uncompensated Limitations	Article 10(1)	Quotations
	Article 10(2)	Uses for teaching purposes
	Article 10 ^{bis} (1)	Press usage
	Article 10 ^{bis} (2)	Reporting of current events
	Article 11 ^{bis} (3)	Ephemeral recordings by broadcasting organizations
Compensated Limitations	Article 11 ^{bis} (2)	Rebroadcasting and cable retransmission
	Article 13	Mechanical recording of musical works
	Appendix	Compulsory licensing for developing nations

Figure 2-5 Specific Situations for Exceptions and Limitations to Copyright in the Berne Convention

The three-step test appears in Article 9(2) of the Berne Convention, Article 13 of TRIPS, and Article 10 of WCT. This test consists of three steps: *certain special cases* (Step 1), *does not conflict with a normal exploitation of the work* (Step 2), and *does not unreasonably prejudice the legitimate interests of the author* (Step 3).

Step 1 provides a threshold requirement for considering the real normative issues under the second and third steps.¹⁰⁰ Here, the word *certain* means exceptions and limitations should be distinguishable from each other but not be “incalculable, shapeless provisions exempting a wide variety of different uses”.¹⁰¹ The adjective *special* means that the cases should be explained narrowly in both a quantitative sense (a limited number of privileged uses) and a qualitative sense (a sufficiently strong justification for a limitation),¹⁰² serving either the large or small goals a national copyright law aims to achieve.¹⁰³

Step 2 can be understood from both economic and non-economic normative perspectives. From an economic perspective, the word *conflict* means the act of exploiting a work that will compete with the ways of how the right holders extract economic value and deprive them of commercial gains.¹⁰⁴ From a non-economic normative perspective, a series of acts which serve the public interest, such as free speech, scholarship, and education, should not be considered as conflicting with a

¹⁰⁰ Sam Ricketson, *JC Ginsburg* (n28) 767.

¹⁰¹ MRF Senftleben, *Copyright, Limitations and the Three-Step Test: An Analysis of the Three-Step Test in International and EC Copyright Law* (Kluwer Law International, The Hague 2004) 137.

¹⁰² In fact, a scholar opposed the quantitative sense when interpreting the meaning of the word *special*, see MRF Senftleben (n101) 152.

¹⁰³ See Paul Goldstein, *PB Hugenoltz* (n43) 378, and WTO Panel Report on United States-Section 110(5) of the US Copyright Act (called WTO Panel Report thereafter), WT/DS160/R (15 June 15, 2000), para. 6.103-6.104.

¹⁰⁴ WTO Panel Report, para 6.183. Also see, Mihaly Ficsor, *The Law of Copyright and the Internet: The 1996 WIPO Treaties, the Interpretation and Implementation* (Oxford University Press, Oxford 2002) 285.

normal exploitation of the work.¹⁰⁵

The meaning of Step 3 is rather clear. The legitimate interests of the author refer to copyright. The word *prejudice* should be interpreted as the result of the behaviour which conflicts with the normal exploitation of a work.¹⁰⁶ The adjective phrase *not unreasonably* justifies the prejudice suffered by an author under certain circumstances, reflecting an interest balance between the author of a work and the user of that work.¹⁰⁷

Based on the discussion above, we discern the meanings of the terms and concepts related to the exceptions and limitations to copyright under an international context. In the chapters that follow, we will further explore how those terms and concepts are interpreted and used in practice in a national context.

2.4 Conclusion

A video game is a system that provides experiences to its players through interactivity. The interactivity provided by a video game does not mean the players can bring something that does not initially exist in the game. Inside a video game, there are four inter-related elements: mechanics, story, aesthetics, and technology. The interaction of those elements can be found from the complex relationship between the video game software and its screen display: they are both interdependent and relatively independent. The concept of “game clone”, which is essentially related to the concept of “video game”, means one game is a near replica of another game. The term “a near replica” means the elements (mechanics, story, aesthetics, and technology) of one game are similar or identical to those of an earlier game.

When seen from a legal perspective, three core issues are critical when determining copyright infringement caused by game clones: the copyrightability of a video game, copying of protectable expressions in an existing video game, and the issue of whether exceptions and limitations to copyright are applicable to a game clone. We provide an initial observation on those core issues from the perspective of international treaties.

For the first core issue, the copyrightability of a video game, it concerns the issue of whether a video game or its certain content can be protected under copyright law. Under international treaties, a video game can be protected because it accords with the characteristics of “literary and artistic works”, and the protection of a video game can follow the approach of distributive classification, which means different contents

¹⁰⁵ Sam Ricketson, *JC Ginsburg* (n28) 772-73.

¹⁰⁶ WTO Panel Report, para. 6.183.

¹⁰⁷ *Daniel Gervais* (n67) 214.

of the video game can be protected as different subject-matters enumerated in international treaties. However, it is not optimistic to protect a video game as a single subject-matter, because it fails to identify the video game as either enumerated or non-enumerated (such as multimedia work). Besides the subject-matter of a video game, international treaties also stipulate the principle of the idea/expression dichotomy. Under that dichotomy, the “idea”, which refers to but is not limited to a series of examples that lack intellectual creation, of a video game should not be protected. In contrast, only the “expression”, which is a flexible concept and should be further embodied by national practice, of a video game should be protected.

After confirming that an existing video game is protectable under copyright law, the second core issue is the finding of copying of protectable expressions. For that issue, a court would need to decide whether the creator of a game clone has infringed copyright. Among the bundle of rights that a copyright consists of, a game clone has the strongest connection with reproduction right. So, a court would need to consider whether the action of cloning an existing video game fall under the scope controlled by reproduction right, which relates to the issue of whether protectable contents of an existing game have been copied by the game clone. The idea/expression dichotomy is an important tool to handle that issue because, besides providing a qualitative perspective of what should be protected, the dichotomy also provides a quantitative perspective of the scope of the protection for the existing video game. In other words, national courts, by wielding the idea/expression dichotomy as a tool, can confirm to what extent a video game or its certain contents should be protected.

After determining the copying of protectable contents from the action of cloning, the third core issue concerns whether the use of protectable contents in an existing video game can be exemplified with legal reasons. The term “legal reasons” here means the exceptions and limitations to copyright. For that issue, international treaties not only provide a series of concrete situations that can exemplify the liability of the use of a protectable work, but also establish the three-step test as a general norm for national lawmakers to stipulate their own exceptions and limitations to copyright under national laws. Since it is not clear how those specific situations and the three-step test will in practice connect with a game clone, further observations on concrete legislation and cases on a national level are needed.

This chapter delineates three core issues for a court to determine whether a game clone infringes the copyright of an existing video game. International treaties have provided us with general principles and norms on those issues, but how those issues are in practice handled still needs further discussion at a national level. Based on a general reference to the core issues provided by this chapter, the following chapters explore how copyright infringement regarding game clones is determined by national courts in the US, Japan, and China.

Chapter 3 Legal Experiences from Judicial Practice in the US

3.1 Introduction

This chapter responds to sub-question (2) by providing an in-depth explanation of how US judicial practice determines copyright infringement caused by game clones. As an important game market in the world, the US, like today's China, has also witnessed the rising phenomenon of game clones since the 1980s. Many US cases relating to game clones first emerged in the 1980s.¹ That means US courts have a rich experience in determining copyright infringement caused by game clones. In that sense, US judicial practice is an attractive reference for China. It is worth noting that US legal experiences with game clones should not be imitated directly by China because there are numerous differences between these two countries, in view of economic, legal, and political realities. However, those differences should not be overstated. Since both the US and China protect copyright by following the same international norms, and both are international markets for video games, for China, US judicial practice can serve as an optional choice and perhaps a good model for Chinese courts to improve their judicial performance regarding game clones. So, US legal experiences with game clones should be examined in depth.

To examine US legal experiences, this chapter focuses on the core issues introduced in Chapter 2. Section 3.2 discusses the copyrightability of a video game under US judicial practice. Section 3.3 then examines how US courts determine copying of protectable expressions between a game clone and a video game that has been copied. Section 3.4 goes on to explore whether the exceptions and limitations to copyright (the fair use clause) are applicable to game clones in US cases. Section 3.5 then summarizes the conclusions reached in Chapter 3.

3.2 Copyrightability of a Video Game

According to Article 102(a) of the US Copyright Act, copyright protection exists in "original works of authorship fixed in any tangible medium of expression". From that definition, there are three requirements for determining the copyrightability of a work. The first requirement is that a copyrighted work should be original and be created independently by an author but not from another source, which refers to a requirement of originality. The second requirement is that the work should be fixed in any tangible medium now known or later developed, which refers to a requirement of fixation. More specifically, according to Article 102(a) of the US

¹ When compared with the cases decided more recently, a great proportion of the cases relating to game clones were tried in the 1980s; many of the cases introduced and discussed in this chapter were decided during that period.

Copyright Act, the fixation of a work can be confirmed if it can “be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.” The third requirement is that the work should be an expression but not an idea under the idea/expression dichotomy. This section examines how US courts have applied these three requirements to video games.

3.2.1 The Requirement of Originality

Although Article 102(a) of the US Copyright Act stipulates the requirement of originality, it does not explain how that requirement should be applied in concrete cases.² So, we turn to US judicial practice. In the landmark case *Feist Publications v. Rural Telephone Service*, the requirement of originality was interpreted by the US Supreme Court as “the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity”.³ From that, the requirement of originality includes “independent creation” plus “a modicum of creativity”.⁴ The phrase “independent creation” means the work is not an author’s copying from other works.⁵ The phrase “a modicum of creativity” means “a low threshold” for the requirement of originality⁶ and “any ‘distinguishable variation’ from a previous work will constitute sufficient originality to support a copyright if such variation...is more than merely trivial.”⁷

In practice, when confirming a work’s originality, usually US courts will not decide, from a perspective of substantive law, on whether that work meets the requirement of originality. Instead, they decide, from a perspective of procedural law, by relying on the certificate of registration of that work. According to the US Supreme Court, a copyrighted work must be registered with the Copyright Office before the copyright owner may sue for infringement of the work.⁸ The certificate of registration of an author’s work, when meeting the requirement in Section 104(c) of the US Copyright Act, provides *prima facie* evidence of the validity of a copyright.⁹ Since originality is an element in deciding copyright validity, the registration actually provides *prima facie* evidence of the issue of originality.¹⁰ To deny *prima facie* evidence, the

² H.R. Rep. No. 94-1476 (1976), at 51-52.

³ *Feist Publications v. Rural Telephone Service*, 499 U.S. 340 (1991).

⁴ MA Lemley, PS Menell, and RP Merges, *Intellectual Property in the New Technological Age: 2016* (Clause 8 Publishing, Berkeley 2016) IV-14; MB Nimmer, David Nimmer, *Nimmer on Copyright* (Matthew Bender & Company, Inc., Newark 2009) § 2.01[A] and [B]; Paul Goldstein, *Goldstein on Copyright* (3rd edn Wolters Kluwer, Philadelphia 2007) § 2.2.1; Alan Latman, RA Gorman, and JC Ginsburg, *Copyright for the Nineties: Cases and Materials* (3rd edn The Michie Company, Charlottesville 1989).

⁵ *Feist Publications v. Rural Telephone Service*, 499 U.S. 340 (1991).

⁶ Alan Latman, RA Gorman, and JC Ginsburg (n4) 80.

⁷ MB Nimmer, David Nimmer (n4) § 2.01[B] 2-12; Benjamin Kaplan, *An Unhurried View of Copyright* (Columbia University Press, New York 1967) 45-46.

⁸ *Fourth Estate Public Benefit Corp. v. Wall-Street.com*, 586 U.S. ___, 139 S. Ct. 881, 203 L. Ed. 2d 147 (2019). In fact, according to Article 5 of the Berne Convention, formalities should not be imposed for copyright protection of a work. However, the US Supreme Court still made registration a prerequisite for filing infringement suits.

⁹ 17 U.S.C. §104(c).

¹⁰ *Stretchborneo v. Arc Music Corp.*, 357 F. Supp. 1393 (S.D.N.Y. 1973) 1399, note. 6; also see, *MB Nimmer*,

defendant needs to show that the claimant's work is a result of copying from a pre-existing work.¹¹ Only at that time does a US court need to directly address the issue of whether the claimant's work satisfies the requirement of originality. It is worth noting that, since the original contribution a creator makes varies with different works belonging to different subject-matters, the issue of subject-matter is a factor considered in the requirement of originality.¹² Since US courts usually protect video game software and its screen display separately under the labels of computer programs and audio-visual works, we will now examine how originality was confirmed in those two kinds of works through case law.

3.2.1.1 Originality of Video Game Software

Video game software is protected as a computer program which is "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result" under the category of literary works.¹³ For its originality, it is not a hard issue for US courts to admit its existence because US courts usually refer to a certificate of copyright as *prima facie* evidence to confirm the validity of copyright. In that sense, we can rarely find case law that provides a detailed analysis of whether video game software should be considered as original. We have only found three cases that are related to our discussion here: one is more recent and the other two are much older. In the more recent case *Lilith Games (Shanghai) Co. Ltd. v. UCool, Inc.*,¹⁴ considering the claimant held a valid copyright registration for its video game software and the defendant did not question that registration, the Northern District Court of California confirmed that the claimant had provided *prima facie* evidence of copyright ownership. In one older case *Midway Mfg. Co. v. Strohon*,¹⁵ the Northern District Court of Illinois did not discuss the copyrightability of the claimant's video game software at all, making it an issue that was self-explanatory. Different from the two cases above, although very rare in US case law, there is still one old case that needed the court to determine the originality of video game software directly. In *M. Kramer Mfg. Co., Inc. v. Andrews*,¹⁶ although the claimant provided the certificate of copyright, the defendant opposed the validity of the certificate. Under that circumstance, the Fourth Circuit provided its analysis of whether the claimant's software meet the originality requirement and found that there was creativity in the claimant's software:

the changes, additions, and modifications, which resulted in the Hi-Lo feature and which represented Kramer's additions to the underlying works,

David Nimmer (n4) § 12.11[B][1] 2-204.

¹¹ *MB Nimmer, David Nimmer* (n4) § 12.11[B][2] 2-204.4.

¹² *Paul Goldstein* (n4) § 2.3.1, 2:29.

¹³ 17 U.S.C. § 102(a)(1).

¹⁴ *Lilith Games (Shanghai) Co. Ltd. v. UCool, Inc.*, 2015 WL 5591612 (N.D. California 2015).

¹⁵ *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741 (N.D. Ill. 1983).

¹⁶ *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421 (4th Cir. 1986).

introduced a completely separate game, adding the flashing card feature in the play mode, which is a series of card faces with suits and symbols flashing rapidly in succession, and modifying the screen display, resulting in a split screen showing both the poker hand being played and the options available.¹⁷

That decision is in line with our brief introduction above to the originality requirement that only needs more than a trivial or a distinguishable variation from a pre-existing work.¹⁸ From both the recent and older cases we have introduced above, it is fair to say that the requirement of originality is so low that it does not hinder US courts from confirming the existence of originality in video game software.

3.2.1.2 Originality of a Video Game Screen Display

A video game screen display is protected as an audio-visual work “that consists of a series of related images which are intrinsically intended to be shown by the use of machines or devices, ... together with accompanying sounds, if any, regardless of the nature of material objects, such as films or tapes, on which the works are stored”.¹⁹ Considering the rather low requirement of originality, usually it will not be a difficult issue for a US court to confirm the originality of a video game screen display.

However, a dispute existed at one time because some doubted whether a video game screen display could independently show originality that could be separable from its software. US courts had already responded affirmatively to that dispute. The Eastern District Court of New York’s decision in *Stern Electronics Inc. v. Kaufman* was the origin of the rule that visual presentation should be protected as an original work.²⁰ Then a series of US courts supported and followed that decision. The District Court of Maryland in *Atari, Inc. v. Amusement World, Inc.* confirmed that a video game screen display could be protected as an audio-visual work.²¹ Besides that, according to the Second Circuit in *Stern Electronics Inc. v. Kaufman*, since different computer programs can produce the same display, the screen display should be considered as separable from its programs.²² More specifically, as the Second Circuit held: “visual and aural features of the audio-visual display are plainly original variations sufficient to render the display copyrightable even though the underlying written program has an independent existence and is itself eligible for copyright”.²³ In other words, as the District of Columbia Circuit pointed out in *Atari Games Corp. v. Oman*, to protect the programs alone does not mean to protect the display.²⁴ In a more recent

¹⁷ *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421 (4th Cir. 1986), at 440.

¹⁸ See note 8 and accompanying text.

¹⁹ 17 U.S.C. § 101.

²⁰ *Stern Electronics, Inc. v. Kaufman, et al.*, 523 F.Supp. 635 (E.D.N.Y., 1981).

²¹ *Atari, Inc. v. Amusement World, Inc.*, 547 F.Supp. 222 (D. Md. 1981).

²² *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982), at 855.

²³ *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982), at 855.

²⁴ *Atari Games Corp. v. Oman*, 888 F.2d 878 (D.C. Cir. 1989), at 885-886.

case *Lilith Games (Shanghai) Co. Ltd. v. UCool, Inc.*,²⁵ the rule of separate protection between video game software and its screen display was still followed, and the Northern District Court of California claimed that the user interface of a computer game could be protected independently as an audio-visual work.

In fact, the core issue disputed in the cases above is whether the video game screen display should be considered as an independent work from its software. As we have commented on from a factual perspective, video game software and its screen display are relatively independent.²⁶ It is fair to say that US courts had correctly pointed out the relationship between video game software and its screen display. In that sense, both of them can be protected under a rather low requirement of originality in the US. However, as we will see in the following section, the copyrightability of a video game screen display, or more specifically, the separate protection for it, was also called into question at one time because of the fixation requirement.

3.2.2 The Requirement of Fixation

As a subject-matter confirmed at the international level,²⁷ no one would question computer software is fixed on a tangible medium. And that is also the case for video game software. However, in US judicial practice, whether a video game screen display satisfied the requirement of fixation was questioned at one time.

In *Stern Electronics, Inc. v. Kaufman*, the defendant denied the fixation of screen display with the reasoning that the sequence of the images appearing on the screen during each play of the game would vary depending upon the actions taken by the player.²⁸ However, the Second Circuit disagreed with that because many aspects of the sights and sequence of their appearance, such as appearances of characters and background settings, remained constant during each play of the game.²⁹ One year later, in *Midway Mfg. Co. v. Artic Intern., Inc.*, the Seventh Circuit confirmed the fixation of the general sequence of a screen display because it held that the player had no control over the sequence of the images appearing on the screen, and the player could not create any sequence out of the images stored in a game's circuit board, but just to choose from a limited number of sequences the game allowed.³⁰

From the cases above, the issue has been put forward that whether the interactivity between a video game and its players will affect or deny the fixation of a video game screen display. As we have discussed, that interactivity does not mean a player can

²⁵ *Lilith Games (Shanghai) Co. Ltd. v. UCool, Inc.*, 2015 WL 5591612 (N.D. California 2015).

²⁶ *Supra* Section 2.2.1.3, p. 20.

²⁷ Article 10 of TRIPS, Article 4 of WCT.

²⁸ *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982), at 855.

²⁹ *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982), at 856.

³⁰ *Midway Mfg. Co. v. Artic Intern., Inc.*, 704 F.2d 1009 (7th Cir. 1983), at 1012.

create anything that does not initially exist in a video game.³¹ Instead, it means when the creation of a video game is finished, all the elements in video game have been fixed in a medium, such as computer software, DVD, and cartridge, that can be perceived, reproduced, and communicated by a machine or device. In that sense, the Seventh Circuit in *Midway Mfg. Co. v. Artic Intern., Inc.* had correctly pointed that out and reasoned convincingly why a video game screen display meets the requirement of fixation.

3.2.3 The Idea/Expression Dichotomy

The idea/expression dichotomy is stipulated in Article 102(b) of the US Copyright Act. That Article reads:

In no case does copyright protection for an original work of authorship extend to 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.³²

In fact, when compared with Article 9(2) of TRIPS, Article 102(b) of the US Copyright Act provides us with more examples that should be considered as something not qualified for copyright protection. The idea, concept and principle pertain to high-level abstractions, and other examples like the procedure, process, system, method of operation and discovery all refer to more complex, detailed, and functional information innovation which are more appropriately protected by the patent system.³³

Besides the examples listed in Article 102(b) of the US Copyright Act, more examples are provided by the *Compendium of US Copyright Office Practices* (“Compendium”).³⁴ The Compendium provides several types of works that cannot be registered (Figure 3-1).³⁵ Since the registration of a work provides *prima facie* evidence of copyrightability,³⁶ the works that cannot be registered under the Compendium can be reasonably speculated as something that should not be protected by US copyright law. In that sense, we can interpret those works as examples of the “idea” under the idea/expression dichotomy. However, the guidance from those works is not accurate enough. For example, although “ideas, methods, and systems” are not registerable, it is also said that the copyright office can register

³¹ *Supra* Section 2.2.1.1, p. 15.

³² 17 U.S.C. §102(b).

³³ Pamela Samuelson, ‘Why Copyright Law Excludes Systems and Processes from the Scope of Its Protection’ (2006-2007) 85 Tex. L. Rev. 1951-52.

³⁴ *Compendium of U.S. Copyright Office Practices* is the administrative manual of the Register of Copyrights concerning Title 17 of the United States Code and Chapter 37 of the Code of Federal Regulations. It provides instruction to agency staff regarding their statutory duties and provides expert guidance to copyright applicants, practitioners, scholars, the courts, and members of the general public regarding institutional practices and related principles of law <https://www.copyright.gov/comp3/docs/compendium.pdf>.

³⁵ U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* (3rd edn 2017) § 313.3.

³⁶ *Supra* Section 3.2.1, p. 42-43.

“a literary, graphic, or artistic description, explanation, or illustration of an idea, procedure, process, system, or method of operation, provided that work contains a sufficient amount of original authorship”³⁷ Moreover, specific content related to “layout and design”, “blank forms”, and “familiar symbols and designs” can all be protected if they reflect a sufficient amount of creative expression or manner.³⁸ Therefore, although the non-registerable works listed in the Compendium provide initial guidance on what may be considered as something unprotectable, they cannot indicate a clearer line between idea and expression in a certain work.

Non-Registerable Works	Explanation and Examples
ideas, methods and systems	inventions and recipes are especially pointed out
names, titles, short phrases	containing an insufficient amount of authorship, including the name of an individual, the name, title or subtitle of a work, the name of a business or organization, the name of a band or performing group, the name of a product or service, a domain name or URL, the name of a character, mottos, slogans and other short expressions
typeface, fonts, and lettering	the building blocks of expression that are used to create works of authorship
layout and design	the general layout or format of a book, page, book cover, slide presentation, web page, poster, or form
blank forms	containing empty fields or lined spaces as well as words or short phrases that identify the content that should be recorded in each field or space; including time cards, graph paper, account books, diaries, bank checks, scorecards and so on
familiar symbols and designs, or a simple combination of a few familiar symbols or designs	included but not limited to letters, punctuation, or symbols on a keyboard, abbreviations, musical notations, numbers and mathematical and currency symbols, and so on

Figure 3-1 Non-Registrable Works in the *Compendium of US Copyright Office Practices*

In fact, that problem reflects reality when US courts apply the idea/expression dichotomy. From Article 102(b) of the US Copyright Act and the Compendium, although a US court can find a series of examples that should be precluded from copyright protection, guidance from those examples is rather limited and non-specific. Take a video game as an example. Since a video game consists of four inter-related elements, it is usually not possible for a court to find a certain content of

³⁷ U.S. Copyright Office (n35).

³⁸ U.S. Copyright Office (n35).

a claimant's video game as perfectly fitting the examples listed in Article 102(b) of the US Copyright Act or the Compendium because those examples need to be further embodied before they can match the specific contents of the video game. In that sense, under the issue of copyrightability of a video game, the idea/expression dichotomy will be useful when certain contents in a video game perfectly fit the listed examples of "idea", otherwise the dichotomy will mainly function as a principle in which all the listed examples of "idea" need to be further embodied in concrete cases, and whether certain contents of a claimant's video game should be protected has to be determined *ad hoc*. Because of that, for US courts, the idea/expression dichotomy, or more exactly, how to apply that dichotomy to specific contents of a video game, is an issue more related to the finding of copying of protectable expressions rather than the copyrightability of a video game.³⁹

3.2.4 Comments

For the copyrightability of a video game, because of a rather low standard for originality, it is not hard for US courts to confirm its existence, especially with the assistance of a registration and certificate of copyright. Since both video game software and its screen display can meet the requirements for copyrightability, they are admitted by US courts as two different works: computer programs and audio-visual works. In that sense, US courts adhere to the approach of distributive classification to determine subject-matters in a video game.

However, a phenomenon is worth noting: a video game screen display, which contains various kinds of relatively independent content, such as words, characters, pictures, or graphics in a more general sense, is mainly protected as an audio-visual work in the US. Since those different forms of content in a video game screen display can all be protected separately as different subject-matters, such as written works, fine art works, and so on,⁴⁰ why do the cases we have found all attest to protection as audio-visual works? Although US courts correctly explain why a video game screen display can be protected separately from its software, they do not state why to protect a screen display holistically as an audio-visual work in the first place. We speculate that the path of reliance may be the reason for that. As we have mentioned before, since the Eastern District Court of New York's decision in *Stern Electronics Inc. v. Kaufman* originated the rule that visual presentation of a video game could be protected as an original work separately from video game software, that way of protection has been confirmed and widely accepted by other US courts in later cases.⁴¹ That gives video game right holders the impression that it has become a trend for US courts to protect a video game screen display as an audio-visual work. Under that circumstance, right holders tend to ask for protection as an audio-visual

³⁹ Paul Goldstein (n4) § 2.3, 2:28.

⁴⁰ *Supra* Section 2.3.1.1.2, p. 29.

⁴¹ *Supra* Section 3.2.1.2, p. 44.

work, further enhancing that way of protection as mainstream in US judicial practice.

3.3 Copying of Protectable Expressions in Video Games

In a general sense, when deciding copyright infringement, US courts need to confirm (1) ownership of copyright by a claimant, and (2) copying by a defendant. Since ownership of copyright mainly concerns the copyrightability of claimant's work, as have explained that in the former section, this section will show how US courts find copying by the defendant in copyright infringement cases caused by game clones. To begin, this section will introduce how US courts find copying by a defendant in a general sense, then turn to the field of cases involving video games.

3.3.1 How to Find Copying: A General Introduction

To find copying by a defendant, US courts need to confirm the existence of two elements as established by the Second Circuit in *Arnstein v. Porter*: "copying" and "improper appropriation".⁴² Further explained by the US Supreme Court in *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, "copying" means the defendant has copied the claimant's work as a factual matter, and "improper appropriation", which is a legal matter, means what has been copied are protectable contents.⁴³

These two elements have a close connection with the concept of "substantial similarity" in US case law. According to the District Court of New Jersey, the term "substantial similarity" can be understood in two forms:

The chief difference between the two forms of substantial similarity appears to be the type of inquiry permissible to each. Dissection (i.e., a detailed analysis of the two works) and expert testimony are proper in establishing substantial similarity to show copying and access ... When attempting to demonstrate improper appropriation via the second form of substantial similarity, however, dissection and expert testimony are irrelevant; rather than a detailed analysis of the work, the court should 'record (its) impressions as they would appear to a layman viewing the (works) side by side ... (and) concentrate upon the gross features rather than an examination of minutiae....'⁴⁴

⁴² *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946).

⁴³ *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991), at 361.

⁴⁴ *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982), at 138. Similar to that opinion, scholars also pointed out the difference between proving copying and proving infringement, see *Alan Latman, RA Gorman, and JC Ginsburg* (n4) 408.

From the excerpt above, the “copying” element, as a factual matter, actually refers to the first form of “substantial similarity”, and the “improper appropriation” element, as a legal matter, refers to the second form. To avoid possible confusion between these two forms of “substantial similarity”, Professor Chafee calls the first form “probative similarity”.⁴⁵ According to the interpretations above, what a US court does in finding copying is actually to find probative similarity as a factual matter and substantial similarity as a legal matter.

3.3.1.1 Probative Similarity: Copying as a Factual Matter

When a US court finds probative similarity, direct evidence is rare because usually there is no witness supervising the creating process of a defendant’s work and no objective physical manifestation directly showing the act of copying, so indirect evidence is widely admitted in legal practice.⁴⁶ For indirect evidence, it requires “access” plus “similarity”.⁴⁷ In US case law, “access” can be proven by showing an actual viewing and knowledge of the claimant’s work by the person who composed a defendant’s work,⁴⁸ including the situations that the defendant had at some point encountered the claimant’s work and the widespread dissemination of the claimant’s work.⁴⁹ “Similarity”, as a factual issue, can be found either through a dissection of disputed works or by expert testimony.⁵⁰ Furthermore, if a court finds the similarities between disputed works are so “striking” that must be “copying rather than ... coincidence, independent creation, or prior common source”, then evidence of “similarity” alone is sufficient to prove probative similarity, meaning that evidence of “access” is no longer needed.⁵¹

3.3.1.2 Substantial Similarity: Misappropriation as a Legal Matter

To find substantial similarity as a legal matter, it is a difficult issue for a US court to define to what extent a similarity can be considered as “substantial”. The idea/expression dichotomy is a decisive tool for handling that issue. As a fundamental principle for copyright law, the idea/expression dichotomy decides that copyright law protects the expression of an idea. In that sense, when probative similarity has been found, the finding of substantial similarity will totally depend on a court’s decision as to whether the contents copied by a defendant should be considered as merely the idea or as the expression of that idea. If what has been copied is considered as merely an idea, then no substantial similarity will be found. If considered as an expression of an idea, then substantial similarity will be found.⁵²

⁴⁵ ZJ Chafee, ‘Reflections on the Law of Copyright: I’ (1945) 45 Colum. L. Rev. 503.

⁴⁶ Paul Goldstein (n4) § 9.2.1, 9:7-10; also see, *MB Nimmer, David Nimmer* (n4) § 13.01[B], 13-11, 12.

⁴⁷ *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946).

⁴⁸ *MB Nimmer, David Nimmer* (n4) § 13.02[A], 13-15.

⁴⁹ Paul Goldstein (n4) § 9.2.1.1, 9:14.

⁵⁰ *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982), at 138.

⁵¹ *MB Nimmer, David Nimmer* (n4) § 13.02[B], 13-28.1; also see, *Alan Latman, RA Gorman, and JC Ginsburg* (n4) 408.

⁵² *MB Nimmer, David Nimmer* (n4) § 13.03[A][1][a], 13-39, 13-40. Also see, *Paul Goldstein* (n4) § 2.2.3, 2:29;

So, the finding of substantial similarity turns to an issue of how to apply the idea/expression dichotomy in practice to concrete objects in a case.

When talking about the application of the idea/expression dichotomy, the US Supreme Court's decision in *Baker v. Selden*⁵³ is often cited for its position that copyright law protects expression rather than idea.⁵⁴ After that case, US courts have further developed the *abstraction test* to help separate idea and expression in a work. That test is described by Judge Hand in *Nichols v. Universal Pictures Co.*:

Upon any work and especially upon a play a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may perhaps be no more than the most general statement of what the play is about and at times consist of only its title, but there is a point in this series of abstraction where they are no longer protected since otherwise the playwright could prevent the use of his idea to which apart from their expression his property is never extended.⁵⁵

The *pattern test* further explains the “patterns” mentioned in the abstraction test:

No doubt the line does lie somewhere between the author's idea and the precise form in which he wrote it down. I like to say that the protection covers the ‘pattern’ of the work...the sequence of events, and the development of the interplay of characters.⁵⁶

The abstraction test and the pattern test are significant because they explain why copyright protection should be not only against literal copying but also non-literal copying.⁵⁷

However, the abstraction test only describes the “nature of the quest for ‘the expression of an idea’”⁵⁸ but does not give any advice on how to decide the *point* where certain contents in a work cannot be protected any more.⁵⁹ Even Judge Hand himself recognized that problem in *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*: “Obviously, no principle can be stated as to when an imitator has gone beyond the ‘idea’ and has borrowed its ‘expression’. Decisions must therefore inevitably be ad hoc.”⁶⁰ So, although having known about the existence of the line between idea and expression, the courts would need to decide the exact location of that line according to different subject-matters in different cases.

MA Lemley, PS Menell, and RP Merges (n4) IV-142.

⁵³ *Baker v. Selden*, 101 U.S. 99 (1880).

⁵⁴ Pamela Samuelson (n33) 1924.

⁵⁵ *Nichols v. Universal Pictures Co.*, 45 F.2d 119 (2d Cir. 1930), at 121.

⁵⁶ ZJ Chafee (n45) 513.

⁵⁷ Edward Samuels, ‘The Idea-Expression Dichotomy in Copyright Law’, (1988-1989) 56 Tenn. L. Rev. 339-47.

⁵⁸ *MB Nimmer, David Nimmer* (n4) § 13.03[A][1][a], 13-38.

⁵⁹ This opinion can be found in the following materials: DM Tamura, ‘Copyright Infringement: An Argument for the Elimination of the Scenes a Faire Doctrine’ (1982) 5 Comm/Ent L.S. 170; RH Jones, ‘The Myth of the Idea/Expression Dichotomy in Copyright Law’ (1990) 10 Pace L. Rev. 551; ML Sharb, ‘Getting A “Total Concept and Feel” of Copyright Infringement’ (1993) 64 U. Colo. L. Rev. 903; BM Stanfield, ‘Finding the Fact of Familiarity: Assessing Judicial Similarity Tests in Copyright Infringement Cases’ (2000-2001) 49 Drake L. Rev. 489.

⁶⁰ *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487 (2d Cir. 1960), at 489.

Furthermore, when applying the idea/expression dichotomy, a court should not only find the idea and expression in a work but also preclude the protection of certain expressions by applying the two doctrines below. The first is the *merger doctrine* described by the Ninth Circuit in *Herbert Rosenthal Jewelry Corp. v. Kalpakian*: “When the ‘idea’ and ‘expression’ are thus inseparable, copying the ‘expression’ will not be barred, since protecting the ‘expression’ in such circumstances would confer a monopoly of the ‘idea’ upon the copyright owner free of the conditions and limitations imposed by the patent law.”⁶¹ The second is the *scenes-a-faire*⁶² doctrine put forward by Judge Yankwich in *Cain v. University Pictures Co.*,⁶³ and it is usually adopted to preclude the copyright protection of “incidents, characters, or settings which are as a practical matter indispensable, or at least standard, in the treatment of a given topic”.⁶⁴ The term “indispensable” describes the unavoidable employment of certain “stock” or standard literary devices when writing about a particular historical era or fictional theme.⁶⁵ And the term “standard” means that there is no other equally satisfactory way to do it rather than there is no other way to do it.⁶⁶

When applying the merger doctrine and the scenes-a-faire doctrine, US courts have also noted the volatility of both doctrines, which means the “limited” ways of expression and the “standard” expression change during the life of a copyrighted work as the use and role of that work changes in our society.⁶⁷ The volatility of both doctrines is explicitly shown in the “de facto standard” of the merger doctrine and “stock scenes a faire”. The “de facto standard” means that at the time when a work was first created, there were actually no limitations on the ways to express the idea of that work, but after that, like the application of the QWERTY keyboard,⁶⁸ limitations emerge because of the considerations of effectiveness and customers’ habits.⁶⁹ That is to say, de facto standardisation has occurred. Considering the de facto standard, the application of the merger doctrine should reflect that dynamic process. In other words, the scope of protection for a copyrighted work decreases when the available way of communicating an idea is diminishing or vice versa,

⁶¹ *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738 (9th Cir. 1971), at 742.

⁶² It needs to be explained that the term “scenes-a-faire” used here originates from the French term “scène à faire” which literally means “scene to make” and whose plural form is “scènes à faire”. The term “scenes-a-faire”, which is widely used in the US, is used in this research for convenience.

⁶³ *Cain v. University Pictures Co.*, 47 F. Supp. 1013 (S.D. Cal. 1942), at 1017.

⁶⁴ *Alexander v. Haley*, 460 F. Supp. 40 (S.D.N.Y. 1978), at 45.

⁶⁵ *Hoehling v. University City Studio, Inc.*, 618 F.2d 972 (2d Cir. 1980), at 979.

⁶⁶ LA Kurtz, ‘Copyright: The Scenes a Faire Doctrine’ (1989) 41 Fla. L. Rev 95.

⁶⁷ Jamie Lund, ‘Copyright Genericide’ (2009) 42 Creighton L. Rev. 139.

⁶⁸ The QWERTY keyboard was invented by Christopher Latham Sholes to address a technical problem in the design of typewriters in the 1880s. That problem is: if the typist proceeds with typing too quickly and presses the keys too rapidly, an engaged typebar will tend to encounter other arching typebars sporting their respective, embossed type-letters, resulting in the typebars clashing and jamming together. Although the QWERTY keyboard is one of many technical solutions for that problem and has been criticized as increasingly inefficient and suboptimal as time goes on, it is still a world standard because of the reason which is called “path dependence”. For more details, see John Hall, ID Lacasa, and Jutta Günther, ‘Path Dependence and QWERTY’s Lock-In: Toward a Veblenian Interpretation’ (2011) 45 Journal of Economic Issues 459.

⁶⁹ *Paul Goldstein* (n4) § 2.3.2, 2:39.

which is called “copyright genericide”.⁷⁰ In contrast with the ordinary scenes-a-faire doctrine, which means the situations and incidents flowing naturally from a basic plot premise,⁷¹ this concept of “stock scenes a faire” refers to the condition that the initially creative and expressive elements become so popular that they become the standard for a certain genre, such as the once highly original plot, in which a damsel is tied to the train tracks only to be rescued at the last minute, has now become a cliché.⁷²

To embrace the volatility of both doctrines, from the perspective of law and economics, US courts offer four factors to dynamically discern whether some expressions can be interpreted either as having limited forms or as the standard.⁷³ The four factors and their main concern are listed below. (1) Balance of cost: If a court finds a disparity between the cost of creation and the cost of copying, then it will be more likely to suspect the existence of free-riding behaviour. In that sense, the disputed expressions are less likely to be considered as emerging with ideas or standard. (2) Ability to recoup costs: To what extent should the original creator count on recouping costs already expended in the creation and distribution of any given work (the sunk cost). If the creator’s recoup ability is poor, a court will not tend to declare a merger. (3) Method of operation: A court will heighten its scrutiny when the article under examination exhibits some indications of utility, and the nature of utility is always found in efficiency concerns and the subject-matter known as factual compilations. (4) Scope of affected marketplace: considering copyright law’s regulatory impact on the marketplace, when the scope of a market is broadened, a court will be inclined to maintain the status quo through a finding of no liability, while for a smaller or more specialized marketplace, a more localized regulatory impact will lead the court to find liability for infringement. According to those four factors, in US judicial practice, to apply the scenes-a-faire doctrine and merger doctrine means to make a calculation from either an economic perspective or a technical one with the goal of balancing the interests between right holders and the public.

From the discussion above, since the finding of probative similarity is a factual matter that can be easily confirmed, US courts need to focus on handling the legal issue of how to find substantial similarity as a legal matter. To find substantial similarity, US courts will rely on the idea/expression dichotomy to detect whether protectable expressions have been copied. When examining the dichotomy, US courts need to not only separate the idea from expression in a work but also preclude the protection of certain expressions under the merger and scene-a-faire doctrines. When applying those doctrines, US courts will note their nature of volatility. Since video game software and its screen display are protected separately as different

⁷⁰ Jamie Lund (n67) 154.

⁷¹ *Berkic v. Crichton*, 761 F.2d 1289 (9th Cir. 1985), at 1293-1294.

⁷² Jamie Lund (n67) 136.

⁷³ Scott Abrahamson, ‘Seen One, Seen Them All – Making Sense of the Copyright Merger Doctrine’ (1998) 45 UCLA L. Rev. 1125.

subject-matters under the US Copyright Act, the following sections will introduce how substantial similarity is found in each of them.

3.3.2 Substantial Similarity between Video Game Software

Since a video game is described by the Second Circuit as “computers programmed to create television screen cartoons in which some of the action is controlled by the player”,⁷⁴ US courts treat video game software in much the same way as ordinary computer programs.

3.3.2.1 Ordinary Computer Programs

When finding substantial similarity between computer programs, US courts are cautious to avoid the protection of what should be considered as unprotectable idea under the idea/expression dichotomy. This is decided by the functional nature of a computer program. Since a computer program always uses processes, schemes or plans to achieve a functional goal, it is deemed as closely relating to the listed examples of the “idea” in Article 102(b) of the US Copyright Act, i.e., procedure, process, system, and method of operation. This has caused some worries about the possibility of providing computer programs with a patent-like protection under the guise of copyright, which can be found in the expression of the U.S. House of Representatives’ Report:

Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than merely to the “writing” expressing his ideas. Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law.⁷⁵

Although the rule of avoiding over-protection to the functional computer programs seems clear, its application to concrete cases is difficult. The difficulty lies in the issue of whether the non-literal elements, such as the structure, sequence, organization (“SSO”), and the look and feel of computer programs, should be protectable.

For that issue, the Third Circuit responded affirmatively in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*⁷⁶ In that case, the claimant developed a program

⁷⁴ *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982).

⁷⁵ H.R. Rep. No. 94-1476 (1976), at 57.

⁷⁶ *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986).

which could automate common bookkeeping and administrative functions of dental laboratories, and the defendant copied the overall SSO of the claimant's program. The Third Circuit confirmed the protectability of the SSO with three reasons. First, the court noted a general standard to draw a line between idea and expression in a functional work: "the purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of that idea."⁷⁷ Second, since the function of the claimant's program could be achieved with the programs that did not have the same structure as the claimant's program, the structure of the claimant's program should be deemed as expression rather than idea. Third, the economic value of the program structure decided that denying the protection of that structure would lead to insufficient incentive for investments in program development. Based on the reasons above, the Third Circuit included the SSO of a program into the scope of copyright protection. Also in this case, the Third Circuit concluded that "the ordinary observer test is not useful and is potentially misleading when the subjects of the copyright are particularly complex, such as computer programs."⁷⁸ After that, expert testimony becomes essential in infringement actions regarding computer programs.⁷⁹

The *Whelan Associates* approach to justify the copyright protection of SSO also appeared in *Lotus Development Corp. v. Paperback Software International*.⁸⁰ In that case, the disputed object was the structure of the menu command system named Lotus 1-2-3. The command terms in Lotus 1-2-3 could facilitate consumers to construct macro programs to carry out frequently performed sequences of functions. And macros constructed in Lotus 1-2-3 could not be executed in an alternative spreadsheet program unless the other program had exactly the same menu of commands as Lotus 1-2-3. In that sense, the defendant argued that specific expressions presented in the structure of Lotus 1-2-3 were essential to the idea of an electronic spreadsheet and should not be protected. However, the District Court of Massachusetts denied that by following the *Whelan Associates* approach. It held that the structure of Lotus 1-2-3 was copyrightable expression because the function that structure served by Lotus 1-2-3 could also be accomplished by alternative arrangements in other programs.

However, the *Whelan Associates* approach was challenged in *Computer Associates International, Inc. v. Altai, Inc.*⁸¹ That case concerned a particular program SSO in which the parameters enabled programs or program modules to exchange information. The claimant claimed that, according to *Whelan Associates*, the parameter list, which belonged to the structure of a program, should be protected. The Second Circuit did not support that claim. Instead, it criticised *Whelan*

⁷⁷ *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986), at 1236.

⁷⁸ *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986), at 1233.

⁷⁹ DS Chisum and others, 'Last Frontier Conference Report on Copyright Protection of Computer Software' (1989-1990) 30 *Jurimetrics J.* 22-23.

⁸⁰ *Lotus Development Corp. v. Paperback Software International*, 740 F. Supp. 37 (D. Mass. 1990).

⁸¹ *Computer Associates International, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992).

Associates for providing an overly broad scope of protection to a program. That reflected legal scholars' opinions. In the scholars' opinions, *Whelan Associates* conceived of programs, no matter how complex they were, as having one abstract idea each; and the protection of the overall structure of a program would also lead to a wrong protection of the structural elements mainly serving the functional goals.⁸² Insisting that functional aspects of a work are not protected, the Second Circuit in *Computer Associates International, Inc. v. Altai, Inc.* put forward the *abstraction-filtration-comparison test* ("AFC test") to avoid over-protection of computer programs. There are three steps in the AFC test: the first step is to build a hierarchy of abstractions for the claimant's program; the second step is to filter out non-literal elements that are limited by external factors, that are dictated by efficiency considerations, and that should be considered as embodied standard programming techniques or public domain elements; and the third step is the comparison that not only ensures what has been copied are protectable non-literal elements but also assesses the copied portion's relative importance with respect to the claimant's overall program.⁸³ With the AFC test, *Computer Associates* has become "the standard case on the proper scope of copyright protection for computer programs."⁸⁴

Besides the AFC test, *Computer Associates* also informs us of two things of how a US court finds copying between computer programs. First, the Second Circuit claimed again in the computer-program case that software and its screen display should be treated as separate because "if a computer audio-visual display is copyrighted separately as an audio-visual work, apart from the literary work that generates it, the display may be protectable regardless of the underlying program's copyright status."⁸⁵ In that sense, a court should focus on whether substantial similarity exists between disputed programs and should not consider a screen display as the non-literal element of a computer program. Second, the Second Circuit justified the use of expert opinion in determining substantial similarity between computer programs. Rather than the traditional way of relying on an ordinary observer's opinion, the use of expert evidence in the comparison was considered as appropriate because "computer programs are likely to be somewhat impenetrable by lay observers" and an ordinary observer's opinion is more suitable for artistic and literary works than for highly complicated and technical subject-matter like a computer program.⁸⁶

⁸² Pamela Samuelson (n33) 1967. Also see: DS Chisum and others (n79); David Nimmer and others, 'A Structured Approach to Analyzing the Substantial Similarity of Computer Software in Copyright Infringement Cases' (1988) 20 *Ariz. St. L.J.* 629-30; Pamela Samuelson, 'Reflections on the State of American Software Copyright Law and the Perils of Teaching It' (1988) 13 *Colum.-VLA J.L. & Arts* 63; MJ Fortnow, 'Why the Look and Feel of Computer Software Should Not Receive Copyright Protection' (1992) 14 *Cardozo L. Rev.* 447.

⁸³ *Computer Associates International, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992), at 706-712.

⁸⁴ Pamela Samuelson (n33) 1970.

⁸⁵ *Computer Associates International, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992), at 703.

⁸⁶ *Computer Associates International, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992), at 713.

3.3.2.2 Video Game Software

After examining how substantial similarity is found between ordinary computer programs, we will turn to how the AFC test has been in practice applied to video game software. From the current cases, there is no essential difference between how ordinary and video game software are treated by US courts.

In *Pepper v. International Gaming Systems*, the Northern District Court of Mississippi applied the AFC test to video game software. For the “abstraction” step, the court “first divided the copyrighted computer program segments into layers of abstraction and determined whether the contents of that segment depict an idea, process or method, which is inseparable from its expression by other means and therefore not copyrightable”.⁸⁷ Considering John W.L. Ogilvie’s proposal of a six-level hierarchy of abstraction of a computer program, which includes: (1) main purpose, (2) system architecture, (3) abstract data types, (4) algorithms and data structures, (5) source code, and (6) object code,⁸⁸ as “well-reasoned”, the Northern District Court of Mississippi adopted that proposal in the abstraction step.⁸⁹ For the “filtration” step, the court sought “to isolate noncopyrightable elements from each particular level of a program...” and those elements include ideas, information, methods, scientific discoveries, facts, information in the public domain, expressions that should be considered as “scènes a faire” or inseparable from the idea.⁹⁰ In particular, the court pointed out that the “scènes a faire” in a computer program refer to external factors like hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, target industry practices and demands, and computer industry program practices.⁹¹ After filtering the unprotectable elements, “source code and file layouts” are the remaining protectable expressions in a computer program.⁹² For the “comparison” step, rather than depending on the perspective of lay observers, since the comparison between computer programs is far more complex than a simple side-by-side comparison, the court claimed that it should be made by relying on “expert knowledge in the area of computer programming—a level of knowledge that the Court believes requires a fundamental understanding of computer programming”.⁹³

Furthermore, in *Accolade, Inc. v. Distinctive Software, Inc.*,⁹⁴ the Northern District Court of California identified whether expert opinion was reliable in the process of finding substantial similarity. In that case, as a matter of fact, some underlying codes

⁸⁷ *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 859.

⁸⁸ JWL Ogilvie, ‘Defining Computer Program Parts under Learned Hand’s Abstractions Test in Software Copyright Infringement Case’ (1992) 91 Michigan Law Review 526.

⁸⁹ *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 860.

⁹⁰ *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 859.

⁹¹ *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 860.

⁹² *Computer Management Assistance Company v. Robert F. DeCastro, Inc.*, 220 F.3d 396 (5th Cir. 2000), at 400; cited by *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 860.

⁹³ *Pepper v. International Gaming Systems, LLC*, 312 F.Supp.2d 853 (N.D. Miss. 2004), at 861.

⁹⁴ *Accolade, Inc. v. Distinctive Software, Inc.*, 1990 WL 180239 (N.D. Cal. 1990).

of two video games were found to overlap. The nature of those overlapping codes became a problem. The parties' experts provided contrasting interpretations of the overlapping codes. Based on the opinion of the claimant's expert, the number of those overlapping codes was sufficient to establish substantial similarity. While the opinion of the defendant's expert attested the overlap came from duplication of generic library codes that should not be protected. The court in this situation upheld the defendant's position because it thought that those overlapping codes were routine commands rather than more game-specific features. From that we learn, although a court needs to rely on expert opinions when determining substantial similarity between video game software, it is also a court's task to cautiously identify the reliability of expert opinions, especially when two expert opinions are contradictory.

In summary, for video game software, similar to ordinary computer programs, US courts use the AFC test to find substantial similarity. After the steps of "abstraction" and "filtration", in a general sense, protectable expressions in a video game computer program can be summarized as source code, file layouts and codes for more game-specific features. For the step of "comparison", US courts rely on expert opinion, but they do not omit to check out its reliability and whether it can help find whether protected contents have been copied.

It is worth noting that, one recent case was so different to other cases in the approach of how substantial similarity between video game software was determined. That case was *Antonick v. Electronic Arts*, decided by the Ninth Circuit.⁹⁵ In that case, the claimant asserted that the defendant's video game was a derivative of its game. When compared with another case regarding video game software, this case shows three differences. First of all, the Ninth Circuit did not adopt the AFC test but the extrinsic/intrinsic test. The latter test is usually used for finding substantial similarity between artistic or literary works rather than functional and technological computer programs.⁹⁶ Second, holding that the intrinsic test was not related to the expert testimony, the court ignored the claimant's expert opinion which provided a detailed analysis to prove that, in the defendant's video game software, compilation of features, as well as sub-feature design, choice, and particular code elements, were substantially similar to the claimant's video game software. Third, the court overturned the jury's verdict which found the existence of substantial similarity between the disputed video game software.

Those differences in the judgment of *Antonick* were fiercely criticized by scholars. The main critique was that, unlike most US courts, the Ninth Circuit did not adopt the AFC test and excluded expert testimony in the infringement cases regarding software.⁹⁷ That critique informs us that, in the judicial practice in the US, the AFC

⁹⁵ *Antonick v. Electronic Arts*, 841 F.3d 1062 (9th Cir. 2016).

⁹⁶ This is another mainstream approach for finding substantial similarity in US case law. We will introduce that approach in Section 3.3.3.1.

⁹⁷ Shyamkrishna Balganes, PS Menell, 'The Use of Technical Experts in Software Copyright Cases: Rectifying the Ninth Circuit's "Natty" Rule' (2020) Faculty Scholarship at Penn Law 2222. Also see Ran Duan, 'Antonick v.

test and the reliance on expert opinions are and should be still the mainstream approach to the determination of copyright infringement relating to software. And that is also the case for video game software.

3.3.3 Substantial Similarity between Video Game Screen Displays

Since video game screen display is protected as an audio-visual work under the US Copyright Act, unlike the AFC test used in cases regarding computer programs, the extrinsic/intrinsic test is widely adopted in cases regarding video game screen displays.⁹⁸ The following section first explains the extrinsic/intrinsic test, followed by a discussion on its application.

3.3.3.1 A General Introduction to the Extrinsic/Intrinsic Test

The extrinsic/intrinsic test was put forward by the Ninth Circuit in *Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp.*, which concerns the dispute on the infringement of television programs,⁹⁹ as a way to discover substantial similarity.

In the extrinsic test, a court needs to identify similarity in general ideas of disputed works. However, since it is claimed that the general idea of a work is not protectable and should not be included in a comparison, the Ninth Circuit in *Shaw v. Lindheim* (which relates to the infringement of scripts) reformulated the extrinsic test by replacing the aim of finding similar ideas with that of finding similarity of protectable expressions, and adopted expert testimony and analytic dissection in this test.¹⁰⁰ As a result, the extrinsic test aims to identify protectable expressions in the allegedly infringed work.

In the intrinsic test, a court needs to determine substantial similarity through a comparison made by relying on the response of an ordinary reasonable person. When compared with the extrinsic text, the intrinsic test is subjective because more objective measures like expert testimony and analytic dissection are precluded from this test. The intrinsic test originates from “the audience test” in US case law. At first,

Electronic Arts: Expert Witnesses and Software Copyright Infringement' (2018) 33 Berkeley Tech LJ 1147 (excluding expert testimony in determining substantial similarity would lead to an elevated infringement standard; Moreover, excluding expert testimony would also promote uncertainty in copyright litigation outcomes).

⁹⁸ We can find lots of cases which apply the extrinsic/intrinsic test to the video game screen display: *Frybarger v. International Business Machines Corp.*, 812 F.2d 525 (9th Cir. 1987); *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988); *Accolade, Inc. v. Distinctive Software, Inc.*, 1990 WL 180239 (N.D. Cal. 1990); *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993); *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994); *Interactive Network, Inc. v. NTN Communications, Inc.*, 875 F.Supp. 1398 (N.D. Cal. 1995); *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012).

⁹⁹ *Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp.*, 562 F.2d 1157 (9th Cir. 1977).

¹⁰⁰ *Shaw v. Lindheim*, 919 F.2d 1353 (9th Cir. 1990).

the Ninth Circuit in *Harold Lloyd Corp. v. Witwer* (which relates to the infringement of a story) carried out the audience test by using the immediate and spontaneous reaction of the average reasonable man as the standard of comparison to find substantial similarity.¹⁰¹ This standard then becomes “the ordinary observer test”.¹⁰² In *Arnstein v. Porter* (which concerns the infringement of musical works), considering that a claimant’s interests and reputation all come from the lay public’s approbation of his efforts, the Second Circuit considered it reasonable for an ordinary observer to determine substantial similarity,¹⁰³ and the dissection analysis of the claimant’s work and experts’ opinions were precluded from that process.¹⁰⁴ Then, in *Roth Greeting Cards v. United Card Co.* (involving the infringement of greeting cards), the Ninth Circuit held that the ordinary observer test should focus on an ordinary observer’s “total concept and feel” towards the disputed works.¹⁰⁵ After that, in *Dawson v. Hinshaw Music Inc.* (which relates to the infringement of the arrangement of a spiritual), the Fourth Circuit defined an ordinary observer as an “intended audience” by saying that “lay public fairly represents the intended audience, the court should apply the lay observer formulation of the ordinary observer test”.¹⁰⁶ In a word, the intrinsic test adopted by US courts is in essence a subjective comparison, made by ordinary persons (regardless of whether they are called audiences, ordinary observers, or intended audiences), between total concept and feel of disputed works.

3.3.3.2 Application of the Extrinsic Test

According to case law, two steps can be found when US courts apply the extrinsic test to video game screen displays. The first step is to abstract the idea of a video game. Based on that, the second step is to identify protectable expressions by considering a series of parameters including the scenes-a-faire doctrine, the merger doctrine, and functional consideration.

3.3.3.2.1 Abstracting the Idea of a Video Game: Game Rules with Fairly Abstract Terms

When applying the extrinsic test, as a starting point, US courts abstract the idea of a game and then use it as a benchmark to draw a line between idea and expression in a video game screen display. This practice originated in *Atari, Inc. v. North American*

¹⁰¹ *Harold Lloyd Corp. v. Witwer*, 65 F.2d 1 (9th Cir. 1933). (The question really involved in such comparison is to ascertain the effect of the alleged infringing play upon the public, that is, upon the average reasonable man. If an ordinary person who has recently read the story sits through the presentation of the picture, if there had been literary piracy of the story, he should detect that fact without any aid or suggestion or critical analysis by others. The reaction of the public to the matter should be spontaneous and immediate.)

¹⁰² See the cases listed in *MB Nimmer, David Nimmer* (n4) § 13.03[E][1][a], fn. 200, 13-93.

¹⁰³ *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946).

¹⁰⁴ *Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946).

¹⁰⁵ *Roth Greeting Cards v. United Card Co.*, 429 F.2d 1106 (9th Cir. 1970).

¹⁰⁶ *Dawson v. Hinshaw Music Inc.*, 905 F.2d 731 (4th Cir. 1990), at 736.

Philips Consumer Electronics Corp. in 1982. In order to confirm the scope of protection for a video game screen display, the Seventh Circuit described a spectrum of protection as the standard:

As a work embodied more in the way of particularized expression, it moves farther away from the bee pin in *Kalpakian* and receives broader copyright protection. At the opposite end of the spectrum lie the “strongest” works in which fairly complex and fanciful artistic expressions predominate over relatively simplistic themes and which are almost entirely products of the author’s creativity rather than concomitants of those themes.¹⁰⁷

When applying this spectrum to a video game, affected by Professor Nimmer’s opinion that a game deserves rather limited protection because of its “relatively minimal artistic expression”,¹⁰⁸ the Seventh Circuit started its reasoning from a belief that a video game screen display as an audio-visual work was basically unprotectable, but only extended copyright protection to a situation that certain expressions (such as shapes, sizes, colours, sequences, arrangements, and sounds) provided something new over the idea.¹⁰⁹ Based on that, following the *abstraction test*,¹¹⁰ the court found that the idea of a game should “be described accurately in fairly abstract terms, much in the same way as one would articulate the rules to such a game”, and the audio component and concrete details of visual presentation were expressions of that idea.¹¹¹ It is worth noting that, as the Seventh Circuit explicitly admitted, “necessary subjectivity” does exist in the attempt at drawing a line between idea and expression in a video game because “there is no litmus paper test by which to apply the idea-expression distinction”.¹¹²

In *Midway Mfg. Co. v. Bandai-America, Inc.*, the District Court of New Jersey explained why the idea of a video game should be described in fairly abstract terms rather than in great detail. When the defendant claimed that similarities between disputed video games all came from an “inevitable connection between the expressions and the similarities in the underlying unprotectable ideas”, the District Court of New Jersey denied that opinion by stating:

If such reasoning were accepted, a copyright defendant could always avoid liability merely by describing a plaintiff’s work in great detail and then labelling that description the ‘idea’ of a plaintiff’s work. The ‘idea’ of any work could always be defined in such detail that the description of the expression would add nothing to the ‘idea’, thus allowing a defendant to engage in all but verbatim copying. Such a ploy cannot be allowed.¹¹³

¹⁰⁷ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 617.

¹⁰⁸ *MB Nimmer; David Nimmer* (n4) § 2.18[H][3][a], 2-204.15.

¹⁰⁹ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 617.

¹¹⁰ *Supra* Section 3.3.1.2, p. 51.

¹¹¹ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 617.

¹¹² *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 615.

¹¹³ *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982), at 148.

From that, the idea of a video game should not be described in great detail because this kind of practice will expand the scope of “idea” for a video game screen display to an unreasonable extent that facilitates non-literal copying. Here, we can find an important difference from the *Atari* case mentioned above. In the *Atari* case, the Seventh Circuit was greatly affected by the impression of traditional games such as chess or other board games which consist totally of game rules and gameplay, thus holding the view that a video game does not go too far away from those traditional games and contains very limited artistic expressions. Guided by this opinion, the court tended to avoid over-protection by providing a rather limited scope of protection for a video game. While in the *Midway* case, in a general sense, by considering the situation of non-literal copying, the District Court of New Jersey expanded the rather limited scope of protection to a relatively broader one. This opinion is supported by the following cases¹¹⁴ and has become common practice for US courts to define the idea of a video game since then. In fact, as we will introduce in the following section, the scope of protection for a video game screen display has expanded in recent cases when US courts identify protectable expressions.

3.3.3.2.2 Protectable Expressions in a Video Game Screen Display

When confirming protectable expressions in a video game screen display, US courts provide detailed analyses: they first identify the expressions in the display and then preclude the unprotectable expressions. From their analyses, we find that the scope of protection for a video game screen display is expanding. While at the same time, we also see their divergence of opinion on the scope of protection for characters (items) and the dimension of playing fields.

Identifying Expressions: Characters (Items), Playing Fields, Settings, Sound and Musical Effects

Since the idea of a video game has been described using fairly abstract terms as game rules, the next step for US courts was to find expressions in a video game screen display. In *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, the Seventh Circuit pointed out that the expression of a video game can be found in the forms including shapes, sizes, colours, sequences, arrangements, and sounds.¹¹⁵ It is fair to say that all the expressions found by US courts in the following cases more or less relate to the forms of expression mentioned in this *Atari* case.

More specifically, summarized from existing cases, four kinds of contents are confirmed by US courts as expressions in a video game screen display. The first is

¹¹⁴ *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994), at 10; *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012), at 408.

¹¹⁵ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 617.

characters (items). Most US courts pay attention to the characters (items) in the display, especially the characters' (items') visual appearance, including the shape, colour and movement and so on.¹¹⁶ The second concerns playing fields, such as dimensions of a playing field, the place and location of how characters are presented inside a playing field.¹¹⁷ The third kind is settings presented on the screen display. Expressions can be found in both general settings, such as the sequences of a game¹¹⁸ and the game mode,¹¹⁹ and other specified settings, such as the smoke screen mechanism¹²⁰ and the cartoon-style speech balloon.¹²¹ The fourth and last kind includes sounds or music effects in a screen display, and this kind of contents is usually considered as expressions without doubt.¹²²

Precluding Unprotectable Expressions

Although characters (items), the playing field, settings, and sounds are considered as expressions in a video game screen display, US courts do not stop there but give detailed analyses on whether copyright protection of those expressions should be precluded. More specifically, they consider a series of parameters such as the scenes-a-faire doctrine, the merger doctrine, and functional consideration.

The scenes-a-faire doctrine is applied when a court finds that expressions in a video

¹¹⁶ The characters and their manners presented in the video game screen display was discussed in the following cases: *Atari, Inc. v. Amusement World, Inc.*, 547 F.Supp. 222 (D. Md. 1981) (the rocks and spaceships); *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982) (the "gobbler" and "ghost monsters"); *Midway Mfg. Co. v. Dirkschneider*, 543 F.Supp. 466 (D. Neb. 1981) (the "aliens"); *Nintendo of America, Inc. v. Elcon Industries, Inc.*, 564 F.Supp. 937 (E.D. Mich. 1982) (the "gobbler" and "ghost monsters"); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982) (the "gobbler" and "ghost monsters"); *Frybarger v. International Business Machines Corp.*, 812 F.2d 525 (9th Cir. 1987) (the protagonist and the antagonist); *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994) (the fighters); *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012) (bears and yetis); *Blizzard Entertainment, Inc v. Lilith Games (Shanghai) Co. Ltd.*, 2018 WL 1242053 (N.D. California. 2018) (the depiction of the character "Illidan Stormrage").

¹¹⁷ The playing field was discussed in the following cases: *Atari, Inc. v. Amusement World, Inc.*, 547 F.Supp. 222 (D. Md. 1981) (the location of the score board); *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982) (fixed maze and dots in that maze); *Nintendo of America, Inc. v. Elcon Industries, Inc.*, 564 F.Supp. 937 (E.D. Mich. 1982) (background of the game); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982) (the game board); *Williams Electronics, Inc. v. Bally Mfg. Corp.*, 568 F.Supp. 1274 (N.D. Ill. 1983) (settings of the playing field); and *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012) (the playing field including its dimensions and the display of garbage lines); *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012) (dimensions of the game grid).

¹¹⁸ Sequence of the video game was discussed in the following cases: *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982) (the general sequence of the game); *Midway Mfg. Co. v. Dirkschneider*, 543 F.Supp. 466 (D. Neb. 1981) (pace and progression of the play); *Nintendo of America, Inc. v. Elcon Industries, Inc.*, 564 F.Supp. 937 (E.D. Mich. 1982) (the sequence of play of the game); *Frybarger v. International Business Machines Corp.*, 812 F.2d 525 (9th Cir. 1987) (increasing speed in the progression of the game); *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994) (flow of the game); *Interactive Network, Inc. v. NTN Communications, Inc.*, 875 F.Supp. 1398 (N.D. Cal. 1995) (the open animation sequence).

¹¹⁹ Game mode was discussed in the following cases: *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982) (the interlude containing the cartoon sequences for a few seconds); *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988) (one-player and two-player options); *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994) (attract mode of the game).

¹²⁰ *Midway Mfg. Co. v. Dirkschneider*, 543 F.Supp. 466 (D. Neb. 1981) and 571 F.Supp. 282 (D. Neb. 1983).

¹²¹ *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988).

¹²² *Atari, Inc. v. Amusement World, Inc.*, 547 F.Supp. 222 (D. Md. 1981) (two-tone beeping noise); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982) (musical sounds).

game screen display should be considered as standard. In existing cases, standard or common expressions are usually found in video games regarding selected real-world topics, such as golf,¹²³ karate,¹²⁴ and horse racing,¹²⁵ but not applied to expressions that are divorced from any real-world presentation, i.e., expressions belonging to fanciful creations without reference to the real world.¹²⁶ For example, in *Capcom U.S.A., Inc. v. Data East Corp.*, the Northern District Court of California precluded copyright protection of standard or common expressions that closely related to a real-world topic, i.e., the karate martial arts.¹²⁷ Moreover, when US courts apply the scenes-a-faire doctrine, there is a divergence of opinion on how to treat standard or common expressions. Some courts directly denied the protection of them under the scenes-a-faire doctrine,¹²⁸ while other courts limited the scope of protection to just against virtually identical copying.¹²⁹ However, that divergence has no effect on final decisions on infringement because these cases all related to non-literal copying rather than literal copying.

The merger doctrine is applied when a court needs to determine whether there are various ways of achieving the goal or function in the process of designing a video game or presenting a screen display.¹³⁰ However, we cannot find a clear boundary between the merger doctrine and the scenes-a-faire doctrine in certain cases. For example, in *Rodesh v. Discronics, Inc.*, the Ninth Circuit called certain expressions “scenes a faire” because they were inseparably linked to the idea,¹³¹ implying that the merger doctrine and scenes-a-faire doctrine are the same. In addition, similar to the scenes-a-faire doctrine, since it is rather difficult to see the cases caused by literal copying of a video game, although divergence of opinion exists on whether expressions considered as inseparable to an idea are unprotectable or only against

¹²³ *Incredible Technologies, Inc. v. Virtual Technologies, Inc.*, 400 F.3d 1007 (7th Cir. 2005) (the display of the game was considered by the court as scenes a faire of the sport of golf).

¹²⁴ *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988) (expression constrained by topic of the karate martial arts); *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994) (some characters, fighting style, special moves and combination attacks are considered as standard under the situation of fight).

¹²⁵ *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993) (expression constrained by the sport of horse racing).

¹²⁶ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 618. Also see *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012), at 408 (“Tetris is a purely fanciful game, meaning it has no grounding in the real world, unlike a video game simulate a karate match or a golf game” and “scenes a faire doctrine has little weight in instances such as this because there are no expressive elements ‘standard, stock, or common’ to a unique puzzle game that is divorced from any real world representation.”)

¹²⁷ *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994), at 7.

¹²⁸ *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988), at 208. Also see *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012), at 4.

¹²⁹ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 617. That opinion is also supported in following cases: *Frybarger v. International Business Machines Corp.*, 812 F.2d 525 (9th Cir. 1987), at 530; *Atari Games Corp. v. Oman*, 888 F.2d 878 (D.C. Cir. 1989), at 886; *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993), at 2; *Team Play, Inc. v. Boyer*, 391 F.Supp.2d 695 (N.D. Ill. 2005), at 702.

¹³⁰ *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421 (4th Cir. 1986), at 436 (If there is only one way to express the idea, “idea” and “expression” merge and there is no copyrightable material). *Atari Games Corp. v. Oman*, 888 F.2d 878 (D.C. Cir. 1989), at 886 (the variety of ways to perform the same function sustains the classification of such works as expression); *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012), at 411 (“a game designer could design the playing pieces for a video game in an almost unlimited numbers of ways” and the special Tetris pieces are “not necessary...to design a puzzle video game”).

¹³¹ *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993), at 2.

verbatim copying, there is no difference to final decisions on copyright infringement.¹³²

Functional consideration is also included as a parameter. It means US courts will exclude copyright protection of expressions dictated by functional consideration relating to a video game or its screen display. From existing cases, functional consideration usually relates to the medium of a video game, such as a computer and joysticks. In *Data East USA, Inc. v. Epyx, Inc.*, the Ninth Circuit pointed out that a computer will constrain the features, especially colours, of a video game screen display.¹³³ In *Capcom U.S.A., Inc. v. Data East Corp.*, the Northern District Court of California precluded the protection of control sequences in a video game because of the functionally-restricted use of a joystick.¹³⁴

Expanded Scope of Protection for a Video Game Screen Display

When comparing recent video game cases with the 1980s' cases in the US, many scholars identified a trend that US courts were more and more likely to provide a broader scope of protection for a video game screen display by restrictively applying the merger doctrine and scenes-a-faire doctrine. More specifically, in early cases, US courts found substantial similarity in a video game's specific characteristics, while in recent cases copyright protection is expanded to the look and feel of a video game's interface, its mechanics and art assets.¹³⁵

Two reasons support a restrictive application of both the merger and the scenes-a-faire doctrine. First, since nowadays advanced technologies give game developers stronger capabilities of presenting a fictional world on a screen display than ever before,¹³⁶ expanded forms of expression resulting from stronger graphical capabilities of computers should narrow the scope where both doctrines are applicable.¹³⁷ Second, a more radical opinion claims that both doctrines are not suitable anymore for visual works (including photographs, pictures that portray or depict natural objects, motion pictures and television, and so on) because, in those works, a certain idea can be depicted in innumerable ways, resulting in no standard images that must be copied when depicting that idea.¹³⁸ In fact, that opinion actually

¹³² *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993), at 2. Also see *Interactive Network, Inc. v. NTN Communications, Inc.*, 875 F.Supp. 1398 (N.D. Cal. 1995), at 1403.

¹³³ *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988), at 209. ("The use of the Commodore computer for a karate game intended for home consumption is subject to various constraints inherent in the use of that computer. Among the constraints are the use of sprites, and a somewhat limited access to colour, together with limitations upon the use of multiple colours in one visual image.")

¹³⁴ *Capcom U.S.A., Inc. v. Data East Corp.*, 1994 WL 1751482 (N.D. Cal. 1994) at 7

¹³⁵ This opinion is shown in the following articles: DS Dean, 'Hitting Reset: Devising a New Video Game Copyright Regime' (2015-2016) 164 U. Pa. L. Rev. 1239; Christopher Lunsford, 'Drawing a Line Between Idea and Expression in Videogame Copyright: The Evolution of Substantial Similarity for Videogame Clones' (2013-2014) 18 Intell. Prop. L. Bull. 87; Brian Casillas, 'Attack of Clones: Copyright Protection for Video Game Developers' (2012-2013) 33 Loy. L.A. Ent. L. Rev. 137.

¹³⁶ Jesper Juul, *Half-Real: Video Games between Real Rules and Fictional Worlds* (MIT Press, Cambridge 2011) 129-30.

¹³⁷ DS Dean (n135).

¹³⁸ MD Murray, 'Copyright, Originality, and the End of the Scenes a Faire and Merger Doctrines for Visual

recommends eliminating application of both doctrines to visual works, of course including video game screen displays.

However, the reasons above are not at all persuasive. First, although nowadays there are more ways to create fictional worlds in video games, they do not definitely mean a narrower scope of where both doctrines are applicable. Even if more than one certain expression can be used to communicate an idea, alternative expressions may be less efficient, impractical, unreasonable, illogical, or contrary to industry expectations, meaning that those alternative expressions are inferior to or just needless variables of that certain expression.¹³⁹ In that sense, certain expressions will always become common and standard for a video game screen display. Under that circumstance, it is not accurate to say the scope of application of both doctrines will become narrower.

Second, the visual-work nature of a video game screen display does not mean innumerable ways of expression and the non-existence of standard images that must be copied. On the contrary, according to US courts' practice of how they identify protectable expressions, expressions presented by a video game screen display are restricted by three factors at least. The first factor is a certain real-world topic that a video game wants to present. In that sense, expressions shown on a screen display have to be restricted so that they can conform to the reality of that topic to a minimum degree. The second factor is the medium where a video game is operated, such as a computer and game devices. The medium will limit, from a technological perspective, the expressions presented on a screen. The third factor is video game software. The discussion above of the relationship between video game software and its screen display has shown that the interaction between "technology" and "aesthetics" will essentially affect how a screen display is expressed.¹⁴⁰ In a word, since a screen display is in essence the look and feel of a computer program, utilitarian considerations rooted in the nature of a computer program will also be reflected in its screen display.¹⁴¹

The broader scope of protection for a video game screen display should not be interpreted as a restrictive application of the merger and the scenes-a-faire doctrine. Instead, it should be understood from a factual perspective that with the development of technology, more and more artistic and creative elements can be realized and presented on a video game screen display, making more and more expressions able to be protected by copyright law.

Divergence of Opinion on Protecting the Dimensions of Playing Fields

Works' (2006) 58 Baylor L. Rev. 779.

¹³⁹ Pamela Samuelson, 'Reconceptualizing Copyright's Merger Doctrine' (2016) 63 J. Copyright Soc'y U.S.A. 417.

¹⁴⁰ *Supra* Section 2.2.1.3, p. 19-20.

¹⁴¹ JM Walker and others, 'Copyright Protection: Has Look & (and) Feel Crashed?' (1993) 11 Cardozo Arts & Ent. L.J. 724.

It is worth noting that, two cases show differing opinions on the protection for dimensions of playing fields in a video game screen display. In *Tetris Holding, LLC v. Xio Interactive, Inc.*,¹⁴² the District Court of New Jersey confirmed the protection of the dimension of a playing field (20 units high by 10 units wide) in the claimant's video game. The court explained that, since it was not a rule for a playing field to be 20 units high by 10 units wide, there was "an almost unlimited number of ways" to design a playing field.¹⁴³ In that sense, the dimension of the playing field in the claimant's video game was an expression of an idea and was protectable. However, in *Spry Fox LLC v. LOLApps Inc.*, the Western District Court of Washington denied the protection of the dimension of a playing field (a six-by-six game grid) in the claimant's video game. The court held that a playing field was "a functionally-dictated choice" because a grid that was too small would make the game trivial, and too large would make it pointless.¹⁴⁴

From the two cases above, both courts were reasonable to some extent. On the one hand, it is true that a playing field does not have to be 20 units high by 10 units wide, and that choice is indeed an expression of idea. On the other hand, a six-by-six game grid may also include some functional considerations from the game designer, making it unprotectable to some extent. In that sense, whether the dimension of a playing field in a video game screen display should be protected is a difficult issue because a court needs to weigh both the expressional and the functional aspects. Obviously, the courts in the two cases above did not reach an agreement on that difficult issue. As that disagreement shows, there still be a long way before the emergence of a consensus on the scope of protection for a video game screen display among US courts.

3.3.3.3 Application of the Intrinsic Test

US courts apply the intrinsic test by comparing the "total concept and feel" of video game screen displays from a perspective of an ordinary observer or intended audience. As its most impressive characteristic, this test prefers a "total concept and feel" comparison to an "element by element" one. Two reasons have been put forward to justify this practice. First, according to the Seventh Circuit, when comparing screen displays of two video games, players focus more on the general style of the display than on the minutiae, implying that an element-by-element comparison is unnecessary.¹⁴⁵ Second, as the Ninth Circuit reasoned, when certain

¹⁴² *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012).

¹⁴³ *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012), at 414.

¹⁴⁴ *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012).

¹⁴⁵ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 619. (Video games, unlike an artist's painting or even other audiovisual works, appeal to an audience that is fairly indiscriminating insofar as their concern about more subtle differences in artistic expression. The main attraction of a game such as PAC-MAN lies in the stimulation provided by the intensity of the competition. A person who is entranced by the play of the game "would be disposed to overlook" many of the minor differences in detail and

elements in a video game screen display have been determined as unprotectable, the focus on the total concept and feel may reveal the protectable arrangement of these elements.¹⁴⁶ In a word, US courts adopt the intrinsic test to find protectable expressions, which may be omitted in the analytic dissection, in the arrangement of elements in a display.

Prohibiting an analytic dissection in the process of comparison, the intrinsic test requires US courts to make a visual comparison from a perspective of an ordinary observer or intended audience.¹⁴⁷ In fact, the “total concept and feel” of an ordinary observer or intended audience is usually a court’s speculation on how an ordinary observer and intended audience will think. We can always find sentences such as “the present case involves two games which a reasonable jury could find contain substantial similarity among protectable elements”¹⁴⁸ or “based upon these two features, a discerning 17.5-year-old boy could not regard the works as substantially similar”.¹⁴⁹ In those sentences, the subjunctive mood used by US courts implies that their conclusions are in essence speculation.

That is an important difference from the comparison between video game software. When comparing video game software in the comparison step, US courts rely heavily on expert opinions. Different from expert opinions which provide a relatively objective and solid basis for a comparison between video game software, for video game screen displays, a comparison based on “total concept and feel” of ordinary observers, or of a court’s speculation, may lead to uncertainty and subjectivity. What’s worse, the practice of relying on the ordinary observer’s or intended audience’s total concept and feel has long been criticized for being unable to distinguish the ideas and expressions in the works it compares.¹⁵⁰ Thus, the scope of protection for a work becomes volatile when we cannot know what contents

“regard their aesthetic appeal as the same.”)

¹⁴⁶ *Rodesh v. Discronics, Inc.*, 8 F.3d 29 (9th Cir. 1993), at 3. (The reason for this rule [total concept and feel] is common-sense and sound: part of what makes a work uniquely the author’s own is how she or he arranges the materials within it. A work’s originality can stem as much from an author’s arrangement of component pieces as from the originality of the pieces themselves. It is for precisely this reason that the intrinsic, total concept and feel test forbids element-by-element comparison...Accordingly, while it was proper to use analytic dissection to factor out the scenes a faire in Rodesh’s disc, the remainder of the work must be composed as a whole even if comprised of individually uncopyrightable elements.)

¹⁴⁷ *Atari, Inc. v. North American Philips Consumer Electronics Corp.*, 672 F.2d 607 (7th Cir. 1982), at 610; also see *Atari, Inc. v. Amusement World, Inc.*, 547 F.Supp. 222 (D. Md. 1981); *Midway Mfg. Co. v. Dirkschneider*, 543 F.Supp. 466 (D. Neb. 1981); *Midway Mfg. Co. v. Artic Intern., Inc.*, 547 F.Supp. 999 (N.D. Ill. 1982); *Nintendo of America, Inc. v. Elcon Industries, Inc.*, 564 F.Supp. 937 (E.D. Mich. 1982); *Midway Mfg. Co. v. Bandai-America, Inc.*, 546 F.Supp. 125 (D.N.J. 1982); *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421 (4th Cir. 1986); *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988); *Incredible Technologies, Inc. v. Virtual Technologies, Inc.*, 400 F.3d 1007 (7th Cir. 2005); *Spry Fox LLC v. LOLApps Inc.*, 2012 WL 5290158 (W.D. Wash. 2012)

¹⁴⁸ *Interactive Network, Inc. v. NTN Communications, Inc.*, 875 F.Supp. 1398 (N.D. Cal. 1995), at 1405.

¹⁴⁹ *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988), at 209-210.

¹⁵⁰ Many scholars held that view, see *MB Nimmer, David Nimmer* (n4) § 13.03[E][1][b], 13-96; AB Cohen, ‘Masking Copyright Decisionmaking: The Meaninglessness of Substantial Similarity’ (1986-1987) 20 U.C. Davis L. Rev. 739-40; AM Broadus, ‘Eliminating the Confusion: A Restatement of the Test for Copyright Infringement’ (1994-1995) 5 DePaul-LCA J. Art & Ent. L. 58; JR Busek, ‘Copyright Infringement: A Proposal for a New Standard for Substantial Similarity Based on the Degree of Possible Expressive Variation’ (1997-1998) 45 UCLA L. Rev. 1791; JM Mohler, ‘Toward a Better Understanding of Substantial Similarity in Copyright Infringement Cases’ (1999-2000) 68 U. Cin. L. Rev. 986; BM Stanfield, ‘Finding the Fact of Familiarity: Assessing Judicial Similarity Tests in Copyright Infringement Cases’ (2000-2001) 49 Drake L. Rev. 505.

(perhaps copyrightable and perhaps not) have been compared. This defect has been noted by US courts, and some courts have adopted a “more discerning ordinary observer” test in which an ordinary observer will be assisted by both expert opinions of probative similarities and courts’ opinions of protectable expressions.¹⁵¹ However, this attempt does not successfully avoid the defect. In an empirical study on the reaction of lay listeners in copyright cases relating to music composition, jurors, who were lay listeners, were required to make a comparison between disputed music by hearing sound recordings, but they wrongly compared the performances instead of the compositions, and that effect was not entirely mitigated with the instruction telling them to focus on protected expressions; besides that, those lay listeners made different decisions on substantial similarity when they heard different editions of the same song, showing that uncertainty of decisions resulting from the perspective of ordinary observers did exist.¹⁵² As the empirical study relating to music composition shows, uncertainty and subjectivity prevail in a comparison relying on the total concept and feel of ordinary observers. When coming to the case of video game, that kind of comparison will lead to a volatile scope of protection.

In a word, it is fair to say that the intrinsic test for comparing video game screen displays is more subjective and contains more uncertainty than the comparison step of the AFC test for comparing video game software.

3.3.3.4 Comments

When compared with how US courts find substantial similarity regarding video game software, the most obvious impression of the practice regarding video game screen display is its subjectivity. When adapting the AFC test to computer programs, US courts, with the assistance of expert opinion, provide a rather objective analysis of computer programs in not only the factual but also the legal issue. For the factual issue, expert opinion provides a court with professional knowledge about computer programs. For legal issues, a clear understanding of computer programs by learning from professional knowledge helps a court to abstract the idea and expression of a computer program, to filter out unprotectable expressions, and to decide whether something copied by the defendant should be considered as substantial to a claimant’s software.

However, it is a totally different story when US courts adapt the extrinsic/intrinsic test to video game screen displays: subjectivity prevails in three aspects. The first aspect concerns the abstraction of the idea of a video game. Although a court abstracts the idea of a game by describing its game rules with fairly abstract terms, it

¹⁵¹ Eric Rogers, ‘Substantially Unfair: An Empirical Examination of Copyright Substantial Similarity Analysis Among the Federal Circuits’ (2013) 2013 Mich. St. L. Rev. 904-06.

¹⁵² Jamie Lund, ‘An Empirical Examination of the Lay Listener Test in Music Composition Copyright Infringement’ (2011) 11 Va. Sports & Ent. L.J. 137.

admits that the distinction between idea and expression is necessarily subjective. The second aspect lies in the scope of protection of a video game screen display. Since the divergence of opinion exists on whether certain expressions (i.e., characters and dimensions of the playing field) in a video game screen display are protectable, uncertainty or subjectivity will still exist before a consensus or general rule on the scope of protection has been reached among US courts. The third aspect relates to the intrinsic test. That test is subjective in not only its methodology of relying on the “total concept and feel” of ordinary observers, but also how the test is in practice applied by US courts, which relies on speculation.

3.4 Copyright Exceptions and Limitations and Game Clones

Exceptions and limitations to copyright in the US can be found in Articles 107 to 118 of the US Copyright Act. Article 107 stipulates the fair use doctrine as a general clause for limitations on exclusive rights. In a specific and even trivial manner, Articles 108 to 118 regulate issues regarding statutory licences, compulsory licences, and limitations and scopes of exclusive rights. Among copyright infringement cases caused by game clones in the US, we only find in *Tetris Holding, LLC v. Xio Interactive, Inc.* that the fair use doctrine was put forward by the defendant as a defence for its copying of the claimant’s video game screen displays. For video game software, although there are no cases directly showing how clones of video game software can relate to fair use,¹⁵³ considering US courts treat video game software and ordinary computer programs as the same, the recent *Google LLC, v. Oracle America Inc.* case, which shows whether copying of functional contents in computer programs can be considered as fair use, can give clues as to the situation where cloning of video game software will be qualified for the fair use defence.

This section will first give a general introduction to the fair use doctrine, then provide a close look at how that doctrine was applied in practice in the *Tetris* case, and give an analysis of why a defence of fair use is difficult to be established for the cloning of video game screen displays. After that, this section will turn to video game software. By taking a close look at the *Google* case, this section will explain

¹⁵³ The issue of whether the copying of computer programs during the process of reverse engineering constitutes copyright infringement had been discussed in many cases. For example, in *Sega Enterprise Ltd. v. Accolade, Inc.*, for the purpose of discovering functional requirements for compatibility with the claimant’s game console, in the process of reverse engineering, the defendant dissembled the claimant’s entire video game programs. Although copying some programs, the defendant did not use them directly in its own programs. The Ninth Circuit gave an analysis on the four factors of fair use and came to the conclusion that the use of copyrighted computer programs to gain an understanding of unprotected functional elements was a fair use. That conclusion echoes the result of a landmark case *Sony Computer Entertainment, Inc. v. Connectix Corp.* also handled by the Ninth Circuit. In the *Sony* case, the Ninth Circuit claimed that the reverse engineering of software to gain access to its functional elements was a fair use. However, although the conclusions in *Sega* and *Sony* show how the fair use defence can relate to reverse engineering of software, a reverse engineering itself does not definitely relate to the cloning of software because, as shown in *Sony* and *Sega*, what had been copied by the defendant during the process of reverse engineering did not have to be used in that defendant’s software. See *Sega Enterprise Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992) and *Sony Computer Entertainment Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

under what circumstances cloning of video game software can be considered as fair use.

3.4.1 A General Introduction to Fair Use

In a copyright infringement case, even if admitting copying of the claimant's work, the defendant can avoid liability if it can prove that the copying is a fair use.¹⁵⁴ When seen from a procedural perspective, according to the US Supreme Court, fair use is an affirmative defence which requires its proponent, usually a defendant, to bear the burden of proof.¹⁵⁵

To confirm whether a defence of fair use has been established by the defendant, according to Articles 107 of the US Copyright Act, there are four factors for a court to consider: (1) purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) nature of the copyrighted work; (3) amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) effect of the use upon the potential market for or value of the copyrighted work.

The first factor asks the purpose and character of the use. According to the US Supreme Court, since the commercial or non-profit educational purpose of a work is only one element in this factor, the aim of this factor is to inquire "whether and to what extent the new work is transformative".¹⁵⁶ A transformative work "adds something new, with a further purpose or different character, alter the first with new expression, meaning, or message" rather than "merely supersedes the objects of the original creation".¹⁵⁷ Based on that interpretation, the Ninth Circuit further explained the transformative use of a work as including: (1) the creation of new information, new aesthetics, new insights and understanding, (2) the addition of value to the original, and (3) the use of quoted matter as raw material rather than repackaging it.¹⁵⁸ It is worth noting that, the first factor has a heightened significance because it greatly influences the considerations of the third and fourth factors of the fair use doctrine.¹⁵⁹

The second factor examines the nature of the copyrighted work. More specifically, this factor requires a court to examine to what extent the use of a work relates to copyright's purpose of encouraging creative expression, and the use of creative or imaginative works will be harder than the use of informational or functional works

¹⁵⁴ *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146 (9th Cir. 2007).

¹⁵⁵ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 590.

¹⁵⁶ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 579.

¹⁵⁷ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 579.

¹⁵⁸ *Seltzer v. Green Day, Inc.*, 725 F.3d 1170 (9th Cir. 2013), at 1176.

¹⁵⁹ *Dr. Seuss Enters., L.P. v. ComicMix LLC*, 983 F.3d 443 (9th Cir. 2020), at 451.

to establish fair use.¹⁶⁰ Also, the use of unpublished work will have a great chance of leading a court to deny a defence of fair use.¹⁶¹ When compared with other factors of fair use, the second factor usually does not have a terrible significance.¹⁶²

The third factor concerns the amount and substantiality of the use. The expression “amount and substantiality” mean the quantitative amount and qualitative value of what has been used.¹⁶³ Decisions on this factor closely relate to the first factor because “the extent of permissible copying varies with the purpose and character of the use.”¹⁶⁴

The fourth factor considers the effect of the use on the potential market for or value of the copyrighted work that has been used. According to the US Supreme Court, this factor requires a court to not only address the extent of market harm caused by the defendant’s use, but also confirm whether unrestricted and widespread conduct of that kind of use would result in a substantially adverse impact on the potential market and the market for derivative works.¹⁶⁵ It is worth noting that, since fair use is an affirmative defence, it has been emphasized that the proponent of fair use defence, i.e., the defendant, should “bring forward favourable evidence about relevant markets”.¹⁶⁶

After outlining how to understand the four factors of the defence of fair use in a general sense, the following sections discuss how the defence of fair use relates to the action of cloning video game software and its screen display by examining concrete cases.

3.4.2 Fair Use and Video Game Screen Displays: The *Tetris* Case

In *Tetris Holding, LLC v. Xio Interactive, Inc.*, the defendant raised a fair use defence by claiming that it only used a very small portion of the overall copyrighted video game screen display. From that, the defendant asserted only the third factor (i.e., the amount and substantiality of the use) was in favour of it and conceded all the other three factors, implying that the defendant was not so confident to establish a fair use. Not surprisingly, the District Court of New Jersey denied that defence by holding that the defendant’s copying had reached a substantial amount of the claimant’s copyrighted screen display.¹⁶⁷

In fact, the defendant in *Tetris* devoted nearly all its energy on demonstrating that the

¹⁶⁰ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 586.

¹⁶¹ *Harper & Row, Publishers Inc. v. Nation Enter.*, 471 U.S. 539 (1985), at 554-55.

¹⁶² *Dr. Seuss Enters., LP v. Penguin Books USA, Inc.*, 109 F.3d 1394 (9th Cir. 1997), at 1402.

¹⁶³ *Seltzer v. Green Day, Inc.*, 725 F.3d 1170 (9th Cir. 2013), at 1178.

¹⁶⁴ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 586-87.

¹⁶⁵ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994), at 590.

¹⁶⁶ *Dr. Seuss Enters., LP v. Penguin Books USA, Inc.*, 109 F.3d 1394 (9th Cir. 1997), at 1403.

¹⁶⁷ *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012), at 414-15.

elements it had copied from the claimant's video game screen display were not copyrightable, and thus its copying did not result in substantial similarity. That is to say, the fair use defence was a secondary choice, or even a sort of expediency, for the defendant. It is worth noting that, besides this case, we cannot find any other video game cases in which the fair use defence was advanced. So, perhaps it is fair to say that defendants in the US are reluctant to raise a fair use defence for their use of a claimant's video game screen display.

In fact, we speculate that this phenomenon originates from the difficulty of establishing the defence of fair use in relation to video game screen displays. Here we will give a theoretical analysis to show why it is difficult for a defendant to establish its cloning of a video game screen display as fair use.

For the first factor (the purpose and character of the use), a defendant needs to demonstrate that its cloning is a transformative use. It will be difficult for a defendant to prove that the cloning of certain elements is not a repackaging or does not merely supersede the objects of the original screen display. To demonstrate that, for example, a defendant may need to show that the topics, genres, and targeted players of two video games are different.

The second factor (the nature of the copyrighted work) will be very unfriendly to the proponent of a fair use defence. Since a court will no doubt consider video game screen displays as imaginative works worthy of a relatively higher degree of copyright protection than that for functional works, there is nearly no chance for the creator of a game clone to convince a court in this factor.

The third and fourth factors (the amount and substantiality of the use, and the effect of the use on the potential market for or value of the copyrighted work) closely relate to the first factor. That is to say, if a defendant is unsuccessful concerning the first factor, then it will face great difficulty in convincing a court in the third and fourth factors. Besides that, the fourth factor will also be a very difficult issue for the defendant because, unless significant differences can be found in the following aspects such as themes, genres, targeted players, etc., no favourable evidence can convince a court that relevant markets will not be negatively influenced by a defendant's use.

From the analysis above, we think the reason why it is rare to see a defendant raise that kind of defence in the cases regarding clones of video game screen displays lies in the difficulty for a defendant to establish the fair use defence.

3.4.3 Fair Use and Video Game Software: Clues from the *Google* Case

In *Google LLC, v. Oracle America Inc.*,¹⁶⁸ Google copied codes from a copyrighted computer program. Those copied codes are a part of a tool called an Application Programming Interface (API) which allows programmers to call on prewritten computing tasks for use in their own programs. Google raised a fair use defence for its copying of those codes. The US Supreme Court gave its analysis of the four factors of the fair use defence.

For the nature of the copyrighted work, the court held that the copied codes were a combination of uncopyrightable ideas (the overall organization of API) and newly created expressions written by Google. Since the value of the copied codes mainly originated from the investment of computer programmers who had learned and in practice used the API's system, interpreting the copying of those codes as fair use would not undermine the protection for computer programs in a general sense. So, this factor would not be a hindrance to establishing fair use.

For the purpose and character of the use, the court confirmed Google's copying as a transformative use because that copying served the aim of not only creating a different task-related system for a different computing environment, but also creating a platform that would achieve that goal. That aim was emphasized by the court as consistent with the constitutional objective of copyright in the US. In that sense, Google also won in this factor.

For the amount and substantiality of the use, the court explained that what Google had copied occupied 0.4% of the entire API at issue, meaning that Google only copied a rather small amount of the copyrighted codes. So, when seen from the perspective of substantiality, since Google's copying was a transformative use, this factor also weighed in favour of Google.

For the last factor, the effect of the use on the potential market for or value of the copyrighted work, the court provided three reasons to explain why Google's copying would not lead to negative market effects to the right holder of the copied codes. First, no market substitute would result from Google's copying. Second, the right holder of the copied code would also benefit from Google's copying because the copying would actually bring the right holder a different market. Third, enforcing copyright on the copied code would risk causing creativity-related harm to the public. Therefore, and also according to the analysis above, the Supreme Court confirmed Google's copying of the copyrighted codes as fair use.

Although not directly related to the cloning of video game software, the *Google* case can be considered as establishing the rule that copyright does not extend to elements

¹⁶⁸ *Google LLC v. Oracle America, Inc.*, 593 U. S. ____, 141 S. Ct. 1183 (2021).

of computer programs, such as APIs, that enable interoperability or compatibility.¹⁶⁹ In that sense, for the action of cloning video game software, the copying of video game programs that are written for compatibility or interoperability can establish fair use. Except for that, it is very hard for game clones that copy programs that are not aimed at achieving functional goals to be considered as fair use. From that, although we do not see any concrete case showing whether the cloning of video game software can constitute fair use, it may be fair to say that, under most circumstances, the cloning of a pre-existing video game software will have little chance of establishing fair use.

3.5 Conclusions

When determining copyright infringement caused by game clones, the legal experiences provided by US judicial practice has been examined in three aspects: copyrightability of a video game, copying of protectable expressions, and exceptions and limitations to copyright.

Copyrightability of a Video Game

There are three requirements for a work to be copyrightable under the US Copyright Act. The first is the requirement of originality. It means a work should be created independently by its author and reflect a modicum of creativity more than merely trivial. In practice, if the issue of originality is not directly put forward, US courts will consider a work as original if the certificate of registration of that work is provided as *prima facie* evidence. The second is the requirement of fixation. It requires a work to be fixed on a tangible medium. The third and last requirement relates to the idea/expression dichotomy. It says the “idea” of a work should not be protected.

For a video game, US courts protect video game software and its screen display separately as a “computer program” and an “audio-visual work” respectively. For video game software, considering the low threshold for the requirement of originality, video game software will be considered as original when distinguishable variations can be found. For a video game screen display, although its originality will also be easily confirmed because of the low threshold requirement, a dispute exists on the issue of whether it should be protected separately from the software which a display comes from. For that issue, US courts correctly have pointed out that a video game screen display and its software are relatively independent. Based on that, if originality can be perceived in a video game screen display, then that screen display should be protected.

¹⁶⁹ MA Lemley, Pamela Samuelson, ‘Interfaces and Interoperability After *Google v. Oracle*’ <https://ssrn.com/abstract=3898154>.

For the requirement of fixation, since video game software definitely satisfies that requirement, the issue is whether the interactivity of a video game screen display will negate its fixation as an audio-visual work. US courts confirmed the fixation of a video game screen display because they had correctly observed that a player's interactivity will not change what has been initially set by the creator of a screen display.

For the idea/expression dichotomy, by providing a series of examples that should be considered as an "idea", the contents perfectly fitting those examples can be directly precluded from protection. Except for that, the meanings of those examples of an "idea" need to be further embodied to match the specific contents of an object. Considering that, the issue of whether specific contents in a video game should be protected still needs to be determined *ad hoc* by US courts. In other words, it is necessary to see how US courts in practice apply the idea/expression dichotomy when making decisions on copyright infringement.

Copying of Protectable Expressions in Video Games

When determining copyright infringement, US courts first need to confirm the ownership of copyright, which concerns the copyrightability issue as we have discussed above, and then to find copying by the defendant. To find copying, US courts need to confirm not only probative similarity, which means the copying as a factual matter, but also substantial similarity, which means misappropriation as a legal matter. Since probative similarity is not difficult to confirm, substantial similarity becomes the main issue for US courts.

When finding substantial similarity between video game software, US courts, following the way of handling ordinary computer programs, adopt the abstraction-filtration-comparison test (the AFC test). In the abstraction step, video game software is abstracted into six levels: (1) main purpose; (2) system architecture; (3) abstract data types; (4) algorithms and data structures; (5) source code; and (6) object code. Then in the filtration step, after filtering ideas, information, methods, scientific discoveries, facts, information in the public domain, expressions that should be considered as "scenes a faire" or inseparable from an idea, protected expressions in video game software include source code, file layouts and codes for more game-specific features. In the comparison step, a comparison between alleged infringed software and alleged infringing software is made by relying on expert opinions, and the reliability and relevance of expert opinions used in the comparison is also checked by US courts.

When finding substantial similarity between video game screen displays, US courts adopt the extrinsic/intrinsic test. (1) In the extrinsic test, US courts first abstract the idea of a video game as game rules in fairly abstract terms, and the idea of a video game should not be described in great detail so that the protection of a video game

screen display will be too limited to defend non-literal copying. After that, by considering the scenes-a-faire doctrine, the merger doctrine, and functional consideration, US courts identify protectable expressions in characters, playing field, settings, and sounds of a video game screen display. It is worth noting that US courts tend to provide a wider scope of protection for a video game screen display because, with the development of technology, more and more artistic and creative elements can be realized and presented, making more and more expressions on a screen able to be protected by copyright law. Although a great effort has been made by US courts to provide detailed analyses of protectable expressions in a video game screen display, they disagree on the scope of protection for characters (items) and the dimensions of playing fields in a video game screen display. (2) In the intrinsic test, to further find protectable expressions, which may be omitted in the analytic dissection, in the arrangement of elements in a display, US courts do not make an analytic dissection but a visual comparison of the “total concept and feel” of video game screen displays from a perspective of ordinary observers. In practice, the “total concept and feel” from ordinary observers is usually a court’s speculation. Considering that the comparison between computer programs is made by relying on relatively objective expert opinions, it is fair to say that uncertainty and subjectivity prevail in the intrinsic test. Moreover, considering the subjectivity in abstracting the idea of a video game and the divergence of opinion on the scope of protection for playing fields in a video game screen display, the extrinsic/intrinsic test as a whole is subjective and full of uncertainty when used as a tool to find substantial similarity between video game screen displays.

Exceptions and Limitations to Copyright and Game Clones

As for exceptions and limitations of copyright, the US Copyright Act stipulates a general clause of fair use and a series of specific situations. Since those specific situations are obviously not suitable for the act of cloning a video game, the general clause of fair use seems to be a theoretical choice.

However, among copyright infringement cases caused by game clones, nearly no creator of a game clone raised the fair use defence except in the *Tetris* case. Even in that case, the defendant tended more to prove what it had copied was out of the scope of protection than to rely on the fair use defence. In theory, the cloning of a video game screen display is difficult to be admitted as fair use because there will be great obstacles for a defendant to convince a court in all of the four factors of the fair use defence. When compared with the cloning of a video game screen display, the fair use defence may not be an unreachable target for cloning of video game software. The *Google* case, which shows that copying of programs for compatibility and interoperability can establish fair use, gives hope to the action of cloning pre-existing video game programs for the functional considerations. While, except for copying to achieve functional targets, it is not possible to consider the cloning of video game software as fair use. So, for most actions of cloning an existing video

game (whether it concerns the software or the screen display), there is nearly no chance of establishing fair use under US judicial practice.

Chapter 4 Legal Experiences from Judicial Practice in Japan

4.1 Introduction

After explaining the three core issues for determining copyright infringement caused by game clones (sub-question (1)) in Chapter 2 and introducing how US judicial practice handles those three core issues (sub-question (2)) in Chapter 3, this chapter turns to present how those core issues have been determined by Japanese courts (sub-question (3)). In Japan, there are so many successful video games, talented game designers, and great game companies, and anyone who really cares about video games will not disregard that country and will be curious about how its courts handle game clones. In that sense, observing Japan will be necessary for a country like China, which also wants to make a success of its video game industry by providing a good legal environment. What's more, since Japan shares the same legal tradition with China, not only the civil law tradition in a general sense but also the author's right tradition in the field of copyright law, legal experiences in Japan can help Chinese courts in becoming aware of how courts in other countries, which follow the same legal tradition, determine copyright infringement regarding game clones. By doing that, Chinese courts can have a clearer recognition of their own performance and improve what they have not done well. In a word, in-depth observation of the legal experiences from Japan is necessary.

To introduce the legal experiences of Japan, this chapter focuses on how Japanese courts handle the three core issues mentioned in Chapter 2: Section 4.2 concerns the copyrightability of a video game, Section 4.3 explores how Japanese courts find copying of protectable expressions between disputed video games, and Section 4.4 discusses the applicability of copyright exceptions and limitations to game clones. Section 4.5 provides a summary of the findings of this chapter.

4.2 Copyrightability of a Video Game

4.2.1 A General Introduction to Copyrightability in Japan

In the Copyright Law of Japan, a protectable work is stipulated in Article 2(1)(i) as “a creatively produced expression of thoughts or sentiments that falls within the literary, academic, artistic, or musical domain”.¹ According to that Article, there are four requirements for the copyrightability of a work (著作物性) in Japan. First, the words “thoughts” and “sentiments” refer to that a copyrighted work should be a

¹ Article 2(1)(i), Copyright Law of Japan (2020 Edition). For an English translation of the Copyright Law of Japan, see <https://www.cric.or.jp/english/clj/cl1.html#chapter1sect1>.

result of humans' general spiritual activities (such as thinking, perceiving, and imagining), rather than mere facts or data.² Second, a protectable work should be "creatively produced", which refers to the requirement of creativity (創作性).³ Third, a protectable work should be an "expression" (表現) rather than an "idea". Fourth, a protectable work should fall within "the literary, academic, artistic, or musical domain".⁴ Besides that, Article 13 of the Copyright Law of Japan precludes protection for four kinds of works: laws, regulations, judgments, and government works.⁵ Since a video game is definitely a human-created work that falls within the literary and artistic domain and does not belong to the works stipulated in Article 13, this section focuses on the second and third requirements (i.e., "creativity" and "expression") by introducing how Japanese courts have applied those requirements in practice.

4.2.1.1 The Requirement of Creativity

Although the requirement of creativity is stipulated in Article 2(1)(i) of the Copyright Law of Japan as "creatively produced", we would need to turn to judicial practice and scholarly opinions to see how that requirement is interpreted. In judicial practice, "creativity" requires a work to be an outpouring or manifestation of an author's personality⁶ and not an imitation of other works.⁷ Here the word "personality" does not mean a work needs to reach a certain artistic level, to be something that is not easy to think of, or to be novel, but means it is something different from the works created by others.⁸

To explain whether personality is manifested in a work, Japanese courts have developed the "range of choice" (選択の幅) theory after computer programs and databases, which have a different nature when compared with traditional artistic

² Marie Konishi, 'About Copyrightability' (著作物性について) (2004) 57(2) Patent 57.

³ Here we use the word *creativity*, rather than *originality*, to represent the Japanese term 創作性. There are two reasons for that choice. First of all, considering that the English translation of Article 2(1)(i) of the Copyright Law of Japan uses the phrase "creatively produced" in its definition of a copyrighted work, we think the word *creativity* will be more suitable than the word *originality* to reflect that translation. Second, among the academic articles in Japan, most Japanese scholars use the English word *creativity* to represent the Japanese term 創作性. To respect that choice and reflect that habit as it is in the comparative methodology, this research uses the word *creativity*.

⁴ Sakai Machiko, 'A Perspective on the "Originality" in Copyright Law' (著作権法における『創作性』概念に関する一考察) (2012) 58(7) Electronic Intellectual Property 1.

⁵ These works are: (i) the Constitution and other laws and regulations; (ii) notifications, instructions, circular notices, and other similar materials issued by a national or local government agency, an independent administrative agency, or a local independent administrative agency; (iii) judgments, decisions, orders, and decrees of the courts, as well as rulings and decisions made by administrative agencies in proceedings of a quasi-judicial nature; and (iv) translations and compilations of the materials listed in the preceding three items, which are made by a national or local government agency, independent administrative agency, or local independent administrative agency.

⁶ Tokyo District Court, Judgment on March 3, 1986 (昭和 58(ワ) 747); Ryu Kojima, 'Japan' in RM Hilty, Sylvie Nerisson (eds), *Balancing Copyright – A Survey of National Approaches* (Springer, Berlin 2012) 571.

⁷ Tokyo District Court, Judgment on October 11, 1972 (昭和 44(ワ) 9353).

⁸ Yoshiyuki Tamura, *Intellectual Property Law* (知的財産法) (Fourth Edition, Intellectual Property House, Beijing 2010, in Chinese) 412.

works, and were introduced as protected subject-matters under the Copyright Law of Japan in the 1990s.⁹ According to the “range of choice” theory, if there were a wide range of choice to express an idea, then that expression will be considered as creative. Instead, if the choice to express were limited or even unique, then the creativity of that expression will be denied.¹⁰ According to a legal scholar’s summary, there are two perspectives to observe the range of choice for a certain expression. One is the perspective of creativity (創作的「選択の幅」論). This perspective focuses on the creator of an expression and cares about the range of choice a creator can make when expressing an idea. The other is the perspective of competition (競争法的「選択の幅」論). This perspective is attentive to whether and how one creator’s expression of an idea, if protected, will limit other creators’ follow-on expressions of the same idea.¹¹ If so, to avoid a monopoly on certain expressions that only can be communicated with limited forms, the protection of that expression will be denied. In a word, when a court applies the “range of choice” theory to determine the creativity of a work, it needs to consider whether there is enough range of choice for a creator to express an idea, and whether protection of a certain expression will leave enough range of choice for other people to express the same idea.

The “range of choice” theory provides a relatively objective and practical way to apply the “personality” standard. For example, if the range of choice for expressing an idea were limited or unique, then it is fair to say that there would be a rather limited or no space for a person to manifest his or her personality when expressing that idea. The creativity in that kind of expression would be denied.¹² However, that does not mean that the personality standard is no longer helpful. In fact, as the Intellectual Property High Court has pointed out, although there is a wide range of choice for expressing an idea, if that expression is common or ordinary, then it should still not be considered as creative because no personality can be found in that expression.¹³ Also, the “range of choice” theory has another drawback. It still leads to uncertainty or subjectivity to some extent because the range of choice for expressing an idea is not static but dynamic. The range may either expand or shrink along with social changes, making some expressions either creative or not creative anymore.¹⁴

According to the introduction above, when determining the creativity of a work, the consideration of personality is a general principle for Japanese courts. At the same time, the “range of choice” theory functions as a relatively objective standard when

⁹ For example: Intellectual Property High Court, Judgment on December 26, 2006 (宇宙開発事業団事件, 平成18(ネ)10003); and Intellectual Property High Court, Judgment on July 17, 2008 (ライブドア裁判傍聴記事事件, 平成20(ネ)10009).

¹⁰ Sakai Machiko (n4), at 2.

¹¹ Sakai Machiko (n4), at 2-3.

¹² For example, in a case regarding a book about the basic knowledge of the concept of “city” in Japan, the Tokyo District Court denied creativity of the classic academic definition of a city because, as a classic definition, it only had a limited range of choice to express that concept. See Tokyo District Court, Judgment on April 25, 1994 (城の定義事件, 判時1509号130頁).

¹³ Intellectual Property High Court, Judgment on July 14, 2010 (富士屋ホテル事件, 平成22(ネ)10017).

¹⁴ Sakai Machiko (n4), at 4.

applying that principle. And when the application of the “range of choice” theory is not proper under the situation that expressions are common or ordinary, although there is a wide range of choice to communicate the idea behind those expressions, Japanese courts still need to use the personality standard to confirm creativity.

4.2.1.2 The Requirement of Expression

Besides the requirement of creativity, a protectable work in Japan should also be an expression rather than an idea. In that sense, Japan also follows the idea/expression dichotomy, although this is not explicitly obvious in a provision like Article 102(b) of the US Copyright Act and Article 9(2) of TRIPS. The aim of excluding the protection of idea is to avoid excessive regulation of personal thoughts.¹⁵ The concept of “expression” represents things that are expressed to the outside through specific forms of expression which include but are not limited to words, signs, lines, surfaces, colours, scales, and so on.¹⁶ At the same time, “expression” should not be interpreted as restricted with a certain formality.¹⁷

Judicial practice in Japan follows the rule introduced above, i.e., only things that have been expressed through specific formalities will be considered as “expression”. For example, as the Supreme Court of Japan pointed out in a case relating to *manga*, copyright protection for a character only extended to specific expressions of that character, rather than an abstract impression or concept.¹⁸

However, even if an expression of an idea is specific enough, that expression will also be considered as the idea itself if it cannot leave a desired range of choice for others. In a case regarding articles in mathematics,¹⁹ the Osaka High Court held that the clarification and derivation of mathematical formulas and propositions should not be considered as expressions but ideas. That is because the court opined that copyright protection for them will make the purpose of scientific publication (of course including the publication of articles in mathematics in the case) impossible, i.e., to convey practical knowledge about science to the general public and give other scholars the opportunity to further develop it. From the court’s analysis, we can find that the requirement of expression is closely related to, and even decided by, the requirement of creativity. In essence, the Osaka High Court denied the “expression” nature of a mathematics article by considering the range of choice left for other scholars if that article were protected. That reflects the “range of choice” theory from the perspective of competition, which, according to the scholarly interpretation as we have introduced, is an important standard for determining creativity. Therefore, it is

¹⁵ Yoshiyuki Tamura (n8), at 415.

¹⁶ Marie Konishi (n2), at 59.

¹⁷ Article 17 (2) of the Copyright Law of Japan: “Enjoyment of the moral rights of an author and of a copyright requires no formalities.”

¹⁸ Supreme Court of Japan, Judgment on July 17, 1997 (ボハイ事件, 平成4(オ)1443).

¹⁹ Osaka High Court, Judgment on February 25, 1994 (脳波数理解析論文事件, 平成2(ネ)2615).

fair to say that an expression would be protectable only if it meets the requirement of creativity. In that sense, the requirement of creativity is the decisive issue when a Japanese court determines the copyrightability of a work.

Since video game software and its screen display are both protectable under the Copyright Law of Japan, the next two sections address how copyrightability of a video game has come to be determined by Japanese courts under both situations.

4.2.2 Video Game Software

In Japan, video game software is protected as a “work of computer programming” as stipulated in Article 10(ix) of the Copyright Law of Japan, or a program work in other words. In Article 2(x)-2, the concept of “computer program” is further defined as “a set of instructions written for a computer, which makes the computer function so that a specific result can be obtained”. Furthermore, inside a computer program, three kinds of contents stipulated in Article 3(10) are not protected: programming language (i.e., letters and other symbols used as a means of expressing a computer program and the systems for their use), coding conventions (i.e., special stipulations for the use of a programming language provided for in the preceding item in a specific computer program), and algorithm (i.e., a procedure in a computer program, which consists of a set of instructions for the computer).

Considering the functional nature of a computer program and its pursuit of efficiency, the creativity of a computer program will be denied if copyright protection of that program does not leave sufficient choices to follow-on programmers.²⁰ Different from other kinds of works, the functional nature of a computer program also decides that, if a computer program, which consists of unavoidable but obsolete expressions, were protected, then other programmers would have to make useless and unnecessary efforts to avoid infringement.²¹ In that sense, ordinary programs that can be completed by average programmers should not be considered as creative, and even if creativity were conferred on those programs, the scope of protection should also be limited.²² In a word, the creativity of a computer program is determined by Japanese courts in a strict manner because the functional nature of a computer program limits the range of choice for a programmer and may also set restrictions on follow-on creation by other programmers.

Different from focusing on the functional nature of ordinary programs, Japanese courts tend to confirm the copyrightability of video game software. In the case of *Space Invaders Part II*, the Tokyo District Court considered video game software as specific expressions of a solution for projecting contents of a video game to a screen,

²⁰ Ryu Kojima (n6).

²¹ Nobuhiro Nakayama, *Legal Protection of Software* (ソフトウェアの法的保護) (Yuhikaku, Tokyo 1988) 26.

²² Tadashi Inoue, ‘Copyrightability of Programs’ (プログラムの著作物性) (2007) 60(6) Patent 90.

consisting of a combination of instructions and other information expressed through programming language.²³ The Tokyo District Court further reasoned that, since the solution to realize what the creator wanted to create was not unique, the video game software should be considered as a reflection of the creator's personality.²⁴ In the case of *Strategy X*, similar to the reasons provided by the Tokyo District Court in the *Space Invaders Part II* case, the Osaka District Court held that a creator's choice on specific instructions showed his or her personality and resulted in expressions that should be considered as a work of computer programming.²⁵ From those two cases, Japanese courts were more likely to confirm the creator's personality in video game software than in ordinary computer programs. And the requirement of creativity, or more exactly, the "range of choice" theory, plays a crucial role for determining the copyrightability of video game software.

4.2.3 Video Game Screen Displays

Under the Copyright Law of Japan, a video game screen display can be protected as a cinematographic work, which is stipulated in Article 10(vii) and defined in Article 2(3) as "a work rendered in a manner that produces a visual or audio-visual effect analogous to that of cinematography, and that is fixed into a physical object". That is a mainstream approach for the protection of a video game screen display in Japan.

It is still worth noting that, besides protecting a video game screen display as a cinematographic work, specific elements in a screen display can also be protected in Japan. In the case of *Fishing Game Town 2*,²⁶ which concerned the issue of whether copyright of a certain game image, i.e., the "fish attraction screen" (魚の引き寄せ画面), was infringed, the right holder chose to protect that image as a fine art work under Article 10(vi) of the Copyright Law of Japan (i.e., "paintings, woodblock prints, sculptures, and other works of fine art"). That is to say, in Japan, a creator can freely choose what to protect in his or her video game screen display, either the display as a whole or specific elements in the display, only if those contents can meet the requirements of protectable works under the Copyright Law of Japan. However, the protection of specific elements in a video game screen display is rarely put forward by the right holders. Even in the *Fishing Game Town 2* case, since the protection of the game image as a fine art work caused no dispute between the claimant and the defendant, the Intellectual Property High Court did not consider that issue.

²³ Tokyo District Court, Judgment on December 6, 1982 (スペース・インベーダー・パートII事件, 昭和54(ワ)10867).

²⁴ Tokyo District Court, Judgment on December 6, 1982 (スペース・インベーダー・パートII事件, 昭和54(ワ)10867).

²⁵ Osaka District Court, Judgment on January 26, 1984 (STRATEGY X 事件, 昭和57(ワ)4419).

²⁶ Intellectual Property High Court, Judgment on August 8, 2012 (釣りゲームタウン2事件, 平成24年(ネ)第10027号).

Now that we have described how the protection of a video game screen display as a cinematographic work is a mainstream approach to explain how a video game screen display is confirmed in practice in specific cases, we examine two classic cases below: the *Pac-Man* case and the *Tokimeki Memorial* case.

4.2.3.1 The *Pac-Man* Case

The practice of protecting a video game screen display as a cinematographic work originated in *Pac-Man* case.²⁷ In that case, considering both of the definitions for a “cinematographic work” and a “work” under the Copyright Law of Japan, the Tokyo District Court summarized three requirements for an object to be a cinematographic work and gave its decision on whether a video game screen display would meet those requirements.

The first requirement, as the court explained, concerns the “formality of expression” (表現方法の要件), which means an object should be expressed in a way that produces visual or audio-visual effect analogous to that of cinematography. More specifically, a cinematographic work should consist of continuously moving images that can be projected on screens, cathode ray tubes, LCD screens or other displays. Since the working principle of a video game is to project images on a display and to swap frames at very short intervals to make those images appear to change continuously, a video game screen display was considered by the court as having a formality of expression similar to cinematography.

The second requirement relates to the “form of existence” (存在形式の要件), which means that an object should be fixed on a tangible medium, not limited to a film, but also include any tangible medium such as CD-ROM, floppy disc, hard disc, and etc. In fact, as the court explained, a video game screen display, i.e., continuously moving images, is a result of the process in which CPU reads the instructions of computer programs of a video game, extracts data related to those images from certain places, and displays those data in a sequence that makes those images appear to move continuously. Based on that, a video game screen display is fixed on a tangible medium. Moreover, the court also confirmed that the interactivity between a player and a screen display would not negate the fixation of a video game screen display. The interactivity between a player and a screen display was interpreted by the court as an act that requires CPU to extract data from a different place or to change the sequence of how those data will be displayed. In that sense, a player’s operation cannot change what has been pre-set by video game software and will not affect the fixation of a video game screen display. In a word, a video game screen display can meet the “form of existence” requirement.

²⁷ Tokyo District Court, Judgment on September 28, 1981 (パックマン事件, 昭56(ワ)8371号).

The third requirement relates to the “contents” (内容の要件), which means that an object should be a protectable work, i.e., creatively produced expressions, required by Article 2(1)(i) of the Copyright Law of Japan. By describing the video game *Pac-Man* in detail, the court found the existence of creative expressions in five aspects: (1) characters of the game; (2) the playing field of the game and its main characteristics; (3) the actions of characters under a player’s operation; (4) a specific description of the mechanics of the game, such as the specific behaviours of certain characters under specific conditions and situations; and (5) the score mechanics of the game, which explain how a player’s score is counted and shown on the screen. Based on those descriptions, the court directly confirmed the copyrightability of the screen display of *Pac-Man*.

From the *Pac-Man* case, we observe that the Tokyo District Court provided a detailed and comprehensive analysis of why it protected a video game screen display as a cinematographic work. The court explained the working principle of a video game to show that a video game screen display has a formality of expression similar to cinematography. It also explained how images of a video game are projected to a display and shed light on why a player’s interaction with those images would not affect the fixation of a screen display. And it gave a rather detailed description of creative expressions in a video game screen display. Since the analysis of the court remains so convincing, from the *Pac-Man* case on, it is mainstream practice to protect a video game screen display as a cinematographic work in Japan.²⁸

4.2.3.2 The *Tokimeki Memorial* Case

Besides the *Pac-Man* case, the case of *Tokimeki Memorial* is another classic case that explicitly shows how a Japanese court determined the copyrightability of a video game screen display.

Description of the Game

In that case, the Osaka High Court first gave an abstract introduction to the contents of *Tokimeki Memorial*, which is a video game that simulates dating. The court then provided a highly detailed description of that game by summarizing it into three stages. The first, or the initial, stage is where the game shows nine ability values of the character a player can operate, the hidden values that will affect how the character’s values will affect the view of the school girl (the character wants to have a date with her), and the presentation of all the values on a screen. The second is the progression stage. In that stage, to make the girl accept the character’s date invitation, a player needs to invite the girl to do a series of different activities. Different

²⁸ That kind of protection was further accepted by the Supreme Court of Japan then. See Supreme Court of Japan, Judgment on April 25, 2002 (中古ソフト事件, 平成 13(受)952).

invitations and activities will trigger different scenes and situations, making the hidden values, which show the girl's attitude to the character, change dynamically. A player needs to adjust his strategy (i.e., try different invitations or take part in different activities) to keep the hidden values high (meaning a high probability for the acceptance of the date invitation) and can check that value indirectly by calling the school girl's brother in the game. Also, since it takes a long time for a player to complete the game, there is an archive mechanism which enables a player to temporarily store his game progress. The last is the ending stage. In this stage, there will be a graduation ceremony. In the ceremony, after satisfying certain conditions, a player triggers a happy ending that the girl will accept the date invitation. Otherwise, the invitation will not be accepted, and the character and the girl will amicably say goodbye to each other.

Besides the introduction to the stages of the game, the court also outlined the specifics of how the story in the game was set. Those specific settings include the timeline in the game, the space and limitations for a player to operate in the game, the values that are necessary for a school girl (especially the lead female character, "Shiori Fujisaki") to accept the date invitation, the school girl the character will encounter during the game, and how the encounter will be triggered.

Explanation of the Game from a Technological Perspective

Then the Osaka High Court explained the working principle of the game from a technological perspective. That description is similar to that in the *Pac-Man* case. As the court explained, a video game screen display is projected, through a player's operation to the instructions inside the video game software, to a screen. All the contents of a game that a player can operate are pre-set by software. And the contents (such as the outer appearance and settings of characters, music, the conditions for a player's operations) are stored as data in a CD-ROM.

Copyrightability of the Game

After stating the factual issues, the Osaka High Court turned to legal issues. It examined four issues. The first issue relates to the nature of a video game. Based on the description of the game contents and the explanation of the technological principle of a video game, the court confirmed that video game software should be considered as a program work and its screen display as a cinematographic work. Beyond that, the court emphasized that, in a video game, the program work and cinematographic work should not be viewed as simply co-existing, but as relating to each other. That relationship between video game software and its screen display is considered as justifying the copyright protection of "images" in a game.

The second issue concerns a more specific scope of protection for a video game screen display. In this case, the court identified the characters appearing on the

screen as the main objects for copyright protection in the screen display of *Tokimeki Memorial*. More specifically, two kinds of characters are pointed out. One is the heroine “Shiori Fujisaki” and other school girls in the game. The other is the character that is operated by players. Different from those school girls who had specific outer appearances and facial expressions, the player-operating character did not have a specific image but was presented with a combination of a series of ability values. Since those values of the character changed with the activities in which it participated, the court held that a *de facto* character of a high school boy was built by those values in the game.

The third issue concerns whether “game balance” and “interactivity” should be protected under copyright law. For “game balance”, it means that different values that shows different abilities or states of different characters are inter-dependent and generally stay in a balance, making players’ operations more complicated and thereby arousing players’ interest. Based on that, the court interpreted “game balance” as an idea that belongs to the field of game design, and copyright protection should only cover specific stories and images expressed in the game. For “interactivity”, the court held that, since all the contents unfolded in a video game are pre-set and stored in computer programs or data, that meant “interactivity” was a technological concept but not an expression that reflects a creator’s thoughts and emotion.

The fourth issue relates to the initial values pre-set in the game and the settings that determine how those values will change according to a player’s operation. The court considered both the initial values and settings above as expressions because they essentially affect and push forward the unfolding of stories in the game.

4.2.3.3 Comments

From our brief description, in both the *Pac-Man* case and the *Tokimeki Memorial* case, of how a Japanese court determines copyrightability of a video game screen display, we can identify important information in three aspects.

First, Japanese courts provide a detailed analysis of not only contents shown in the game but also the technological principle from which a video game screen display (and a video game as a whole) is derived. By doing this, Japanese courts provide a solid factual foundation and background knowledge for their follow-on legal analyses.

Second, during the process of determining copyrightability, besides generally considering a video game screen display as a cinematographic work, Japanese courts further identify a specific scope of protection for a display. On the one hand, game characters, features of a playing field, stories, and specific settings such as values were all confirmed as protectable expressions. On the other hand, concepts such as “game balance” and “interactivity” were not considered as expressions.

Third, in the *Tokimeki Memorial* case, we can find a clear statement about the inter-dependent relationship, rather than simply a co-existing one, between video game software and its screen display. Although that statement was made for justifying a separate protection for a video game screen display, it implies that Japanese courts have already noted whether and to what extent video game software will affect the copyrightability and the scope of protection of its screen display.

4.3 Use of Copyrighted Contents of a Video Game

When deciding copyright infringement, after confirming copyrightability of a work, Japanese courts determine the issue of whether copyrighted contents have been used by the alleged infringing work. This section first introduces how decisions are made on that issue in a general sense, and then will focus on and analyse decisions regarding game clones.

4.3.1 The General Rule: Reliance + Similarity

When finding whether copyrighted contents have been copied, two requirements should be confirmed by Japanese courts: (1) “reliance” (依拠性) of the alleged infringing work, and (2) “similarity” (類似性) between the alleged infringing and infringed works.²⁹ We examine below how those two conditions have been interpreted by judicial practice in Japan.

4.3.1.1 Reliance

The requirement of “reliance” has been interpreted in a landmark case in Japan: the *One Night in Tokyo* case. In that case, the Supreme Court of Japan held that: “The reproduction of a work should be interpreted as a reproduction based on an existing work...Otherwise, even if a work is the same as an existing work, that work should not be considered as a reproduction of the existing work.”³⁰ The Supreme Court further explained that if the creator of the alleged infringing work has no access to the existing work or does not know about the existence of that work, regardless of whether that situation comes from the creator’s negligence or not, the creator should

²⁹ DS Karjala, Keiji Sugiyama, ‘Fundamental Concepts in Japanese and American Copyright Law’ (1988) 36 Am. J. Comp. L. 666. Also see, Tatsuhiro Ueno, ‘Restructuring the Requirements of Infringement under Copyright Law: Problem of “Reproduction or Adaptation”’ (著作権法における侵害要件の再構成: 「複製又は翻案」の問題性) (2012) 65(12) Patent 152.

³⁰ Supreme Court of Japan, Judgment on September 7, 1978 (ワン・レイニーナイト・イン・トーキョー事件, 昭和50(オ)324).

not be considered as meeting the requirement of reliance.³¹

Based on the Supreme Court's reasoning, "reliance", in the practice of lower courts in Japan, is always found in a situation in which a creator of the alleged infringing work has had the opportunity to contact an existing work³² or a situation in which the same mistakes and other similarities, which do not make much sense to a work, can be found in both the alleged infringing and infringed works.³³ In addition, if the degree of similarity, when seen from a factual perspective, between two works is too high, the requirement of "reliance" will also be confirmed because there is no other reason to explain why those two works are so similar.³⁴ In a word, as a factual issue for Japanese courts, the existence of reliance will be determined by both the opportunity of access and the degree of factual similarity between two works.³⁵

4.3.1.2 Similarity

Unlike the requirement of reliance, the requirement of "similarity" is a legal issue. In that issue, finding similarity between the alleged infringing and infringed works is the main focus of Japanese courts.

To find similarity, "direct perception of essential features of expression" (表現上の本質的特徴の直接感得) is the standard followed by Japanese courts.³⁶ That standard is applicable to cases regarding infringement of both the reproduction right (Article 21 of the Copyright Law of Japan) and adaptation right (Article 27).³⁷ The standard originates from the *Parody* case. In that case, the Supreme Court of Japan concluded that: "without permission, the use of an existing work should be limited to the extent that essential features of expression in that work will not be directly perceived."³⁸ However, at the time when the *Parody* case was being adjudicated, since copyright law in Japan did not provide a clear definition of the copyrighted "work", it was problematic for a court to interpret the essential features of expression in specific cases.³⁹

That problem was alleviated to a great extent after the current Copyright Law of

³¹ Supreme Court of Japan, Judgment on September 7, 1978 (ワン・レイニーナイト・イン・トーキョー事件, 昭和 50(オ)324).

³² Hisamichi Okamura, 'Practice of Copyright Infringement Litigation' <https://www.law.co.jp/okamura/copylaw/singai05.html>.

³³ Yoshiyuki Tamura (n8), at 430.

³⁴ Tokyo District Court, Judgment on April 25, 1994 (城の定義事件, 判時 1509 号 130 頁).

³⁵ Nobuhiro Nakayama, *Multimedia and Copyright* (Iwanami Shoten, Tokyo 1996) 33.

³⁶ Yoshiyuki Tamura, 'The Case that Acknowledged the Unique Significance of the "Direct Perception of Essential Features of Expression" Standard (1): The *Fishing Game Town 2* Case' (著作権の保護範囲に関し著作物の「本質的な特徴の直接感得性」基準に独自の意義を認めた裁判例(1): 釣りゲータウン 2 事件) (2013) 41 Intellectual Property Law and Policy Journal 99.

³⁷ Tatsuhiro Ueno (n29), at 149.

³⁸ Supreme Court of Japan, Judgment on March 28, 1980 (パロディ事件, 昭和 51(オ)923).

³⁹ Yoshiyuki Tamura (n36), at 101.

Japan provided a clear definition of a copyrighted “work” because Japanese courts now can interpret the meaning of “essential features of expression” by relying on the requirements of creativity and expression. A reflection of that is the *Esashi Oiwake* case,⁴⁰ which concerns the infringement of adaptation right under the current Copyright Law of Japan. In that case, as the Supreme Court reasoned, adaptation of an existing work should be an action of creating a new work that creatively expresses thoughts and emotions by not only maintaining the essential features of expressions in that work but also modifying, increasing, decreasing, and changing those expressions. That is to say, in the adaptation of an existing work, those essential features should be perceived directly by anyone who has access to that work. Then, as the court further emphasized, if a work has the same identity as an existing work in a part that is not an expression itself or not a creative expression, such as an idea, feeling, fact or incident, it should not be considered as an infringement of adaptation right of that existing work. From that, the Supreme Court actually interpreted the “essential features” of an expression as the creativity of that expression.⁴¹ In that sense, the finding of similarity is closely connected with the issue of copyrightability, especially the requirements of creativity and expression.

In fact, considering a copyrighted work should be a creatively produced expression of thoughts or sentiments (Article 2(1)(i) of the Copyright Law of Japan), when finding “direct perception of essential features of expression” in the comparison between the alleged infringing works and the alleged infringed works, it becomes a trend for lower courts in Japan to compare by following the standard of “commonality of creative expressions” (創作的表現の共通性).⁴² Based on that practice, “direct perception of essential features of expressions” equals, or is embodied in, a comparison between the creative expressions in related contents. In that sense, regardless of which standard a court follows, the standard of “direct perception of essential features of expression” or the standard of “commonality of creative expressions”, confirmation of creativity in disputed expressions is always accorded core status when a court finds similarity in the process of determining copyright infringement.

Based on the discussion above, the following sections will examine how Japanese courts find similarity in specific video game cases.

4.3.2 Similarity between Video Game Software

From the Japanese cases we have discussed, similarity between video game software was usually not an issue discussed in judgments. That is because, in those cases, computer programs of video games were either literally copied⁴³ or partially

⁴⁰ Supreme Court of Japan, Judgment on June 28, 2001 (江差追分事件, 平成 11(受)922).

⁴¹ Tatsuhiro Ueno (n29) at 150.

⁴² Yoshiyuki Tamura (n36) at 103.

⁴³ For example, Tokyo District Court, Judgment on December 6, 1982 (スペース・インベーダー・パートII

modified (i.e., certain values or parameters in a program were changed, and the main contents of that program remained untouched),⁴⁴ making it easy for a court to find similarity. Recently, in the case of *Hōchi Shōjo*,⁴⁵ the finding of similarity between video game software, although not a main issue in that case (as we further describe below, the main issue of that case regards the finding of similarity between disputed video game screen displays), was examined by the Tokyo District Court. However, in that case, the court held that the similar codes between the claimant's software and the defendant's software were ordinary and did not meet the requirement of creativity, making it an easy choice to deny the existence of similarity. In other words, the *Hōchi Shōjo* case only tells us that the copyrightability issue is important in the process of finding similarity, but cannot show anything more about how a Japanese court determines similarity between disputed video game software.

That situation also exists in more recent cases regarding ordinary computer programs. For example, in the *BoatSniper* case, since the defendant's program was a literal copying of the claimant's program, there was no need for the Osaka District Court to give a detailed analysis of how to find similarity between disputed programs.⁴⁶ Another example is the *X-Smart* case. In that case, the Tokyo District Court also did not provide an analysis of how it determined similarity because that case also concerned the literal copying of a copyrighted computer program.⁴⁷ In addition, in the *Contact Angle Calculation (Droplet Method) Program* case, since the defendant copied part of the claimant's program, the Tokyo District Court confirmed the existence of copyright infringement without further explanation.⁴⁸ In a word, from more recent cases, either video game software cases or ordinary computer programs cases, we cannot gain a clear picture of how Japanese courts find similarity between disputed programs.

To look at that practice in more detail, considering that video game software is in essence software, we will discuss how a Japanese court found similarity between ordinary software in the *Train Line Design Program* case. Although it is an old case, we have not seen any recent case that overturns the rule established in that case. From *Train Line Design Program*, we can speculate on how similarity between video game software will be determined by Japanese courts.

事件, 昭和 54(ワ)10867), and Osaka District Court, Judgment on January 26, 1984 (STRATEGY X 事件, 昭和 57(ワ)4419).

⁴⁴ For example: Tokyo District Court, Judgment on July 14, 1995 (三国志III事件, 平成 5(ワ)13071).

⁴⁵ Tokyo District Court, Judgment on February 28, 2021 (放置少女〜百花繚乱の萌姫たち〜事件, 平成 30(ワ)28994).

⁴⁶ Osaka District Court, Judgment on January 21, 2021 (*BoatSniper* 事件, 平成 30(ワ)5948).

⁴⁷ Tokyo District Court, Judgment on March 4, 2020 (*X-Smart* 事件, 平成 29(ワ)19073).

⁴⁸ Tokyo District Court, Judgment on April 24, 2014 (「接触角計算(液滴法)プログラム」事件, 平成 23(ワ)36945, 平成 24(ワ)25059, 平成 25(ワ)9300).

4.3.2.1 The *Train Line Design Program* Case

In the *Train Line Design Program* case, the Tokyo District Court compared two programs that were used to make drawings for railway electrical design and equipment management.⁴⁹ We first describe how that comparison was made in detail.

Standards of Comparison for Determining Similarity

Before it compared specific computer programs, the Tokyo District Court explained the standards for its comparison in three aspects. First, the objects for comparison should be works that are protectable under the Copyright Law of Japan, i.e., creative expressions. Since an expression can be considered as sufficiently creative when it reflects its creator's personality, a computer program can also be a protectable work if it can meet that requirement. Second, two kinds of expressions that should not be considered in the comparison. The first kind are programs with limited or unique ways of expression or programs that have a simple content and can be described with very short tags. These programs were precluded because their protection would hinder the widespread use of computers, and cause great obstacles to social life and to the economy. The second kind are programs that are extremely common for describing how a specific function would be executed. They were excluded because their protection would risk protecting and monopolising functions and ideas themselves in a computer program. Third, when making the comparison, the court will determine the existence of similarity by considering whether creative expressions are similar to a substantial degree or whether creative features can be perceived directly, rather than making a brief comparison on whether or not the overall steps and composition of programs are similar. From that comparison, both the "commonality of creative expressions" standard and the "direct perception of essential features of expression" standard were applied by the court to determine the existence of similarity.

Process and Conclusion of the Comparison

After stating the standards for the comparison, the Tokyo District Court then began to compare specific computer programs disputed in the case. The computer programs compared by the court were put forward by the claimant. More specifically, the claimant mentioned five sections of its computer programs according to their functions. Focusing on the five sections of programs mentioned by the claimant, the court introduced and explained in a specific manner those programs section by section from a technological perspective. By doing this, the court showed how it understood as a factual issue the controversial programs in this case, facilitating its follow-on legal analysis.

⁴⁹ Tokyo District Court, Judgment on January 31, 2003 (電車線設計用プログラム事件, 平成 13(ワ)17306).

When making legal analyses, the court followed two steps. In the first step, the court focused on the copyrightability of the allegedly infringed computer programs, especially the issue of whether creativity could be found in those programs. Considering the functional nature of many programs, the court held that they did not meet the requirement of creativity and the requirement of expression. More specifically, the court held that many contents in the allegedly infringed programs belonged to “algorithms” as stipulated in Article 3(10) of the Copyright Law of Japan. By doing this, the court actually denied the copyrightability of those contents of the claimant’s programs. After precluding what should not be protected, in the second step, the court made its comparison by applying both the “commonality of creative expressions” standard and the “direct perception of essential features of expression” standard. The court denied the finding of similarity without a detailed explanation. In fact, we think that manner (i.e., the court simply gave a brief conclusion on whether or not similarity existed) is a natural result of the application of the “direct perception of essential features of expression” standard. Under that standard, the term “direct perception” implies that a comparison will be made by relying on the instincts of a rational person. In that sense, whether or not similarity exists becomes a “I know when I see it” issue that is self-evident. That explains why the court consistently gave brief conclusions of whether or not it found similarity without further instruction as to how the court arrived at those conclusions.

4.3.2.2 Comments

Although the *Train Line Design Program* case is not directly related to video game software, considering that video game software does not have substantial differences from other kinds of computer programs, what we have found in the *Train Line Design Program* case definitely provides us with some insights into speculating on how Japanese courts will find similarity between video game software. These insights are based on examining three aspects.

First, from a technological perspective, the court gave a detailed introduction and explanation to the disputed computer programs put forward by the claimant. By doing that, the court resolved the dispute in the factual issue, provided a solid foundation for its follow-on legal analyses, and prepared a convincing conclusion in its judgment.

Second, when applying the “direct perception of essential features of expression” standard to find similarity, since “direct perception” of similarity relies on a person’s instincts and is self-evident, the court paid most of its attention to confirm whether a certain computer program is protectable, but provided only a very brief conclusion as to whether similarity was found between protectable programs and the alleged infringing programs. In other words, the copyrightability of a computer program is

the most important issue for a Japanese court in the process of determining copyright infringement.

Third, the scope of copyright protection for computer programs is strictly limited by the consideration of the public interest, such as the range of choice for follow-on programmers, its influence on specific industrial fields like computers, and its influence on social life and economics in a general sense. In fact, that case can be considered as an example showing the attitude of Japanese courts to avoid providing broad protection to computer programs whose expression is strongly restricted by considerations of utilitarian functions.⁵⁰

4.3.3 Similarity between Video Game Screen Displays: The *Tear Ring Saga* Case and the *Hōchi Shōjo* Case

In the *Pac-Man* case,⁵¹ which started the practice of protecting a video game screen display as a cinematographic work in Japan, according to the comparison table of the screen compositions between the alleged infringed and infringing works provided by the claimant, the Tokyo District Court found that, although the alleged infringing work had modified the shape and location of a playing field (the maze and monster's nest), descriptions of colour and movement of characters, and numbers of items in the maze (seeds and fruits), those modifications should be considered as small and unobvious by ordinary persons who knew the *Pac-Man* game. In that case, since similarity in that case was easily confirmed, the court did provide in detail a picture of how it compared video game screen displays to find similarity. To clearly show this picture, this section discusses the *Tear Ring Saga* case and the *Hōchi Shōjo* case.

4.3.3.1 The *Tear Ring Saga* Case

The *Tear Ring Saga* case⁵² concerns the issue of whether the screen display of the alleged infringing video game was an adaptation of the display of the alleged infringed video game. To solve that issue, the Tokyo High Court made a detailed analysis.

Introduction to the Game and its Essential Features of Expressions

At first, the Tokyo High Court described the overall composition of the alleged infringed video game screen display as *scenes* (i.e., the opening scene, the whole-map scene, the battle-map scenes, and the ending scene), *stories* (i.e., articles

⁵⁰ Shinto Teramoto, 'Copyrightability and Scope of Protection for Works of a Utilitarian Nature under Japanese Law' (1997) 28(1) IIC 56.

⁵¹ Tokyo District Court, Judgment on September 28, 1981 (パックマン事件, 昭和 56 (ワ) 8371 号).

⁵² Tokyo High Court, Judgment on June 24, 2004 (ティアリングサーガ エトナ英雄戦記事件, 平成 14 (ネ) 第 6133 号).

or scripts shown on the screen, and also the stories presented by dynamic images), *units* (i.e., characters and items), *background images* (appearing in the battle-map scenes, showing natural landscapes or urban architectures), and *background music and sound effects*.

Among those elements, considering that players usually paid most of their time and attention to the battle-map scenes and their audio-visual effects, the court examined three things: (1) the dynamic images presented in the battle-map scenes, (2) the overall composition in those images, and (3) the stories related to those images. These should be considered as core to understanding the essential features of creative expressions for the screen display, while the background images, background music and sound effects were secondary.

Comparison for Finding Commonality of Creative Expressions

After explaining the essential features of creative expressions in the alleged infringed video game screen display, the court made a comparison for finding commonality of creative expressions in the alleged infringed and infringing screen displays. Before giving a detailed comparison, the court explained general rules and standards for the comparison from seven aspects: (1) The requirement of creativity will be determined by considering whether a creator's personality has been reflected. The degree of creativity will determine and limit the scope of protection for a work. (2) The comparison for finding commonality of creative expressions should not be limited to constituent elements of a certain image presented by the screen display, but should also make a comparison by considering all the image as a whole. (3) Besides the images themselves, the arrangement and sequence of different images should also be considered as perhaps being copyrightable. (4) Game rules themselves should be viewed as unprotectable ideas, and only specific expressions originating from game rules would be copyrightable. (5) The user interface of a video game, different from the screen display of a movie, contains a series of functional considerations, such as simplicity of a player's operation and clarity of information shown on the screen. Therefore, creativity of the user interface of a video game would be rather limited and would be denied in a general sense. (6) The court would not find commonality from the "style" of a video game screen display because "style" was so abstract that it was not protectable by copyright law. (7) When the alleged infringing video game screen display contained different expressions from the alleged infringed one, if those different expressions give an ordinary person an overall different impression, then essential features of creative expressions of the alleged infringing display should be considered as not being able to be directly perceived, making it fail to confirm infringement of a reproduction right or adaptation right.

Based on the rules and standards above, the court compared 42 places, which were considered as having commonality of creative expressions, of the disputed video game screen displays. By explaining the results of the comparison for those 42

places one by one, the court held that commonality only existed in unprotectable ideas and expressions without creativity or with only a rather low degree of creativity. Based on that decision, the court denied infringement of adaptation right.

4.3.3.2 The *Hōchi Shōjo* Case

The *Hōchi Shōjo* case⁵³ concerned a mobile game *Hōchi Shōjo* built on the world view of the Three Kingdoms era in China. Players use female characters from that era to battle with each other, and those female characters are trained (i.e., get experience and other benefits) through the battles they have fought. Since players need to choose the female characters they want to place in each battle and the battle will happen automatically even if the mobile game is closed, this kind of game is called the place-in Role Play Game (RPG).

As to how to find copyright infringement between the disputed video game screen displays, same as the *Tear Ring Saga* case discussed above, the Tokyo District Court also followed the standard of finding the commonality of the essential features of creative expressions. It is worth noting that the court emphasized that functional considerations would limit the creative expressions in the screen display. More specifically, according to the court, since the display facilitated the players browsing and operating in the process of playing the game, the author's personality presented on the display would definitely be restricted by those functional considerations. In that sense, only the expressions that were distinctive from those functional considerations could be protected.

Following that line of reasoning, to find whether the essential features of creative expressions in the claimant's screen display had been copied, the Tokyo District Court compared three aspects of the disputed screen displays: the basic configuration of the game, the specific configuration of the game, and the overall impression and effect of the game.

The first aspect was the basic configuration of the claimant's mobile game *Hōchi Shōjo*. The basic configuration included two parts: one was the topic of the game (the historical topic regarding the Three Kingdom era), and the other were the mechanics in the game (such as the "alliance" mechanics in which several players could challenge the boss together, and the "strengthening the training" mechanics in which the player could enhance the state or equipment of the character according to his own preference). The court held that those two parts both belonged to the ideas

⁵³ Tokyo District Court, Judgment on February 28, 2021 (放置少女へ百花繚乱の萌姫たちへ事件, 平成30(ワ)28994). In fact, there is a second instance for this case, see Intellectual Property High Court, Judgment on September 29, 2021 (令和3(ネ)10028). In second instance, the Intellectual Property High Court confirmed the correctness of the Tokyo District Court's judgment. So, what we present here is the Tokyo District Court's judgment on the *Hōchi Shōjo* case.

of the game and the copying of those ideas did not lead to infringement.

The second aspect compared by the court was the specific configuration of the disputed screen displays. The specific configuration consisted of two parts. One part concerned the characters' types, abilities, and mechanics. The characters could be divided into two types: "chief general" and "deputy general". The chief general had different main abilities. There were three main abilities: muscle power, intelligence, and agility. For the deputy general, when certain conditions were met, it could be used to support the chief general. All the characters would shine on the screen; and when the player touched them, sound could be heard. For the characters' types, abilities, and mechanics mentioned above, the court considered them as ideas that should not be protected. Another part of the specific configuration related to the pictures of the disputed screen displays. For them, the court also held that similarities could not be found in creative expressions.

The third aspect examined by the court was the overall impression and effect of the game. The overall impression and effect of the game referred to the combination of the overall structure, mechanics, and image arrangement (such as the order of images, selection and arrangement of materials). The claimant claimed that the combination should be protected because it reflected the plaintiff's choice and the range of choice still existed for others. However, the court disagreed with that opinion because it held that, even though the range of choice existed, if an expression resulted from the claimant's choice was common, the expression should not be protected. Accordingly, the court did not find copyright infringement in the overall impression and effect of the game.

4.3.3.3 Comments

From the *Tear Ring Saga* case and the *Hōchi Shōjo* case, we can clearly extract how the standards for determining similarity (i.e., the "direct perception of essential features of expression" standard and the "commonality of creative expressions" standard) were in practice applied in a specific case regarding video game screen displays. More specifically, that practice conveys important information about four aspects.

First, the Tokyo High Court claimed that the comparison for finding similarity should not only be limited to the constituent elements of an image but also include all those continuous moving images and the arrangement of those images.

Second, copyrightability is a core issue when Japanese courts find similarity. For example, in the *Tear Ring Saga* case, when comparing 42 places in disputed displays, the Tokyo High Court focused on the copyrightability of whether the contents in a certain place had met the requirements of creativity and expression. By denying the

copyrightability of all those 42 places, similarity between disputed displays were directly denied without further comparison. Similarly, in the *Hōchi Shōjo* case, the Tokyo District Court also denied copyright infringement by directly denying the copyrightability of the contents in the claimant's video game screen display.

Third, the scope of protection for a video game screen display does not extend to the game rules themselves, the “style” (which is a hard-to-define concept) of a video game, the user interface, and other contents that are dictated by functional considerations. In fact, from the cases we have discussed so far, we get the impression that Japanese courts always provide a rather limited scope of protection for elements in a video game screen display. The *Tear Ring Saga* case and the *Hōchi Shōjo* case are good examples of that because all the disputed contents in those two cases were considered as ideas or not sufficiently creative. Similar situations also existed in other cases. In a case relating to the screen display of a video game *Fishing Game Town 2*,⁵⁴ the image presenting how a fish would be attracted by a player was determined by the Tokyo District Court as either ideas or expressions with a rather low degree of creativity. What's more, that limited scope of protection for a video game seems to only protect against literal copying and modifications that are small and not obvious. This seems to be true when we compare the *Pac-Man* case with the *Tear Ring Saga* and *Fishing Game Town 2* cases, which were all adjudicated by the Tokyo District Court. In the *Pac-Man* case, the Tokyo District Court was willing to confirm the existence of similarity because it thought modifications in the alleged infringing display could be considered without doubt as small and unobvious by ordinary persons who knew the *Pac-Man* game. Nonetheless, in the cases of *Tear Ring Saga* and *Fishing Game Town 2*, since the differences between the disputed displays were more obvious than those in the *Pac-Man* case, the Tokyo District Court was reluctant to find similarity. From that, we can speculate that, for elements in a video game screen display, Japanese courts tend to provide a rather limited scope of protection that can only defend literal copying.

Fourth, when the alleged infringing video game screen display contained different expressions from the alleged infringed one, if those different expressions give an ordinary person an overall different impression, then the finding of similarity will be denied. From that, we can extract that the “overall impression” of a video game screen display is emphasized by Japanese courts when investigating similarity.

4.4 Limitations of Copyright and Game Clones

When the action of cloning a video game is confirmed as copyright infringement, it means some copyrighted contents (for example, computer programs, screen displays,

⁵⁴ Intellectual Property High Court, Judgment on August 8, 2012 (釣りゲームタウン2事件, 平成24年(ネ)第10027号).

and any other elements) in an existing video game have been copied. To defend itself against liability for copyright infringement, the creator of a game clone needs to prove that its exploitation of those copyrighted contents has legal reasons. Under the Copyright Law of Japan, legal reasons for exploiting a copyrighted work are stipulated in regulations regarding the limitations of copyright. In this section we first discuss how the limitations of copyright are stipulated in the Copyright Law of Japan, and subsequently examine whether those limitations can provide legal reasons for the action of cloning a video game.

4.4.1 A General Introduction to the Limitations of Copyright in Japan

In Japan, before the 2018 amendment of its Copyright Law, limitations of copyright were stipulated with “individual specific requirements” for the purpose and ways of behaviour of using a copyrighted work, but they were considered as having problems to meet current and future needs in fields such as deep learning with AI, location search services, and information analysis services.⁵⁵ To solve those problems, Japan revised its Copyright Law in 2018 to establish “flexible regulations” for the limitations of copyright.⁵⁶

Flexible regulations for the limitations of copyright in Japan were established according to different types of actions. In general, by considering both the public interest and the disadvantages of copyright holders, actions related to the limitations of copyright can be divided into three types. The first type concerns actions that can be evaluated as not normally harming the interest of a right holder. The second type includes actions that harm the interest of a right holder only to a minor degree. The third type relates to actions that are expected to promote the use of copyrighted works in order to realize policies of public interest. Among the three types above, the first and second types of actions are where the flexible regulations were established.⁵⁷ Below, we first describe concrete provisions related to the first and second types to assess how the ways of behaviour for exploiting a copyrighted work are regulated.

The First Type of Actions

In the current Copyright Law of Japan, Articles 30-4 and 47-4 provide for highly flexible regulations for the first type of actions that can be evaluated as not normally harming the interest of a right holder. Article 30-4 concerns exploitation without the

⁵⁵ Ministry of Education, Culture, Sports, Science and Technology of Japan, ‘Overview Explanatory Material of the Bill to Partially Revise the Copyright Law’ (著作権法の一部を改正する法律案 概要説明資料) https://www.kantei.go.jp/jp/singi/titeki2/tyousakai/kensho_hyoka_kikaku/2018/contents/dai4/siryou6.pdf.

⁵⁶ Ministry of Education, Culture, Sports, Science and Technology of Japan (n55).

⁵⁷ Satoshi Iwatsubo, ‘2018 Copyright Law Amendment: “Flexible Regulations for Limitations of Copyright”’ (2020) 73(8) Patent 1-2.

purpose of enjoying the thoughts or sentiments expressed in a copyrighted work,⁵⁸ including (1) the use in testing to develop or put into practical use of technology that is connected with the recording of sounds or visuals of a work or other such exploitation, (2) the use in data analysis (meaning the extraction, comparison, classification, or other statistical analysis of the constituent language, sounds, images, or other elemental data from a large number of works or a large volume of other such data), and (3) the use in the course of computer data processing or otherwise exploited in a way that does not involve what is expressed in the work being perceived by the human senses (for works of computer programming, such exploitation excludes the execution of the work on a computer), beyond as set forth in the preceding two kinds of uses. The exploitation of a copyrighted work in Article 30-4 is justified because it will not harm the right holder's opportunity to receive remuneration from people who wish to enjoy the thoughts and sentiments expressed by that work to satisfy their intellectual or spiritual desires.⁵⁹

Article 47-4 concerns exploitation that is incidental to the use of a copyrighted work made available to be exploited on a computer.⁶⁰ Two purposes can justify that kind

⁵⁸ Article 30-4, Copyright Law of Japan:

It is permissible to exploit a work, in any way and to the extent considered necessary, in any of the following cases, or in any other case in which it is not a person's purpose to personally enjoy or cause another person to enjoy the thoughts or sentiments expressed in that work; provided, however, that this does not apply if the action would unreasonably prejudice the interests of the copyright owner in light of the nature or purpose of the work or the circumstances of its exploitation:

- (i) if it is done for use in testing to develop or put into practical use technology that is connected with the recording of sounds or visuals of a work or other such exploitation;
- (ii) if it is done for use in data analysis (meaning the extraction, comparison, classification, or other statistical analysis of the constituent language, sounds, images, or other elemental data from a large number of works or a large volume of other such data; the same applies in Article 47-5, paragraph (1), item (ii));
- (iii) if it is exploited in the course of computer data processing or otherwise exploited in a way that does not involve what is expressed in the work being perceived by the human senses (for works of computer programming, such exploitation excludes the execution of the work on a computer), beyond as set forth in the preceding two items.

⁵⁹ Agency for Cultural Affairs of Japan, 'Basic Concepts Regarding Flexible Provisions of Limitations of Copyright in Response to the Progress of Digitalisation and Networking' (デジタル化・ネットワーク化の進展に対応した柔軟な権利制限規定に関する基本的な考え方について) (24 November 2019) https://www.bunka.go.jp/seisaku/chosakukuen/hokaisei/h30_hokaisei/pdf/r1406693_17.pdf.

⁶⁰ Article 47-4, Copyright Law of Japan:

(1) A person may exploit a work that is made available to be exploited on a computer (this is inclusive of exploitation using information and communication technologies; the same applies hereinafter in this Article), in any way and to the extent considered to be necessary, in one of the following cases or in any similar case in which the purpose is to make that work available to be exploited incidentally on a computer so that the relevant work can be smoothly or efficiently exploited on that computer; provided, however, that this does not apply if the action would unreasonably prejudice the interests of the copyright owner in light of the nature or purpose of the work or the circumstances of its exploitation:

- (i) if the person is exploiting a work on a computer using a copy of that work or is exploiting a work transmitted as a wireless communications or wired telecommunications after having received such a transmission, and if, in the course of the data processing that the computer does in order for that work to be exploited, the person records the work on the recording medium of that computer so that it can smoothly and efficiently perform that data processing;
- (ii) if a person that, in the course of trade, makes available an automatic public transmission server for another person to use for automatic public transmissions records a work that has been made available for automatic public transmission on a recording medium in order to prevent delays or failures of that other person's automatic public transmissions or in order to efficiently transmit a work that has been made available for transmissions so as to relay automatic public transmissions of that work;
- (iii) if the person is providing data by a means that applies information or communication technologies, and records a work on a recording medium or adapts it in order to undertake the computerized data processing

of exploitation. First, to ensure a smooth and effective use of that copyrighted work, an incidental use of that work will be permitted, such as duplication resulting from caching in a computer, duplication for preventing transmission delays or failures, and recording of a work to undertake the computerized data processing that is necessary to prepare to provide that data smoothly and efficiently. Second, to maintain or recover the possibility of exploiting a copyrighted work that has been recorded on a recording medium, that work can be temporarily recorded if those media need maintenance, repairs, replacement, or data recovery.

The Second Type of Actions

Article 47-5 provides for considerable flexibility for the second type of actions that harm the interest of a right holder only to a minor degree. That Article stipulates the minor exploitation of a work when processing information and providing results through a computer.⁶¹ That is to say, when a person undertakes or makes a

that is necessary to prepare to provide that data smoothly and efficiently.

(2) A person may exploit a work that is made available to be exploited on a computer, in any way and to the extent considered to be necessary, in one of the following cases or in any similar case in which the purpose is to maintain or recover the possibility of exploiting a work on that computer; provided, however, that this does not apply if the action would unreasonably prejudice the interests of the copyright owner in light of the nature or purpose of the work or the circumstances of its exploitation:

(i) if, in order to perform maintenance or repairs on a device that has a recording medium built into it, the person temporarily records a work that has been recorded on the recording medium that has been built in to that device (hereinafter in this item and the following item referred to as a "built-in recording medium") on a recording medium other than the built-in recording medium, and then re-records that work onto the built-in recording medium after the maintenance or repairs;

(ii) if, in order to replace a device that has a recording medium built into it with another device with the same functions, the person temporarily records a work that has been recorded onto that device's built-in recording medium onto a recording medium other than that built-in recording medium, and then records that work on the built-in recording medium of the device with same functions;

(iii) if a person that, in the course of trade, makes available an automatic public transmission server for another person to use for automatic public transmissions records a work on a recording medium for use in recovery in the event that the copy of the work that has been made available for automatic public transmission by that automatic public transmission server is lost or damaged.

⁶¹ Article 47-5, Copyright Law of Japan:

(1) A person undertaking an action as set forth in one of the following items that contributes to facilitating the exploitation of a work by creating new knowledge or information through computerised data processing (this includes a person undertaking a part of such an action; limited to one doing so in accordance with the standards prescribed by Cabinet Order) may exploit a work that has been made available or presented to the public (this includes a work that has been made available for transmission; the same applies hereinafter in this Article) (hereinafter in this Article and Article 47-6, paragraph (2), item (ii) referred to as an "available or presented work") (limited to a publicised work or a work made available for transmission), in any way and to the extent considered to be necessary in light of the purpose of the action set forth in the relevant item, when exploiting it incidental to the undertaking of that action (limited to exploitation that is minor in light of the percentage it constitutes of the part of the available or presented work that has been provided for exploitation, the volume of the part of that work that has been provided for exploitation, the accuracy of indications made at the time it was provided for exploitation, and other elements; hereinafter in this Article referred to as "minor exploitation"); provided, however, that this does not apply if the person undertakes that minor exploitation knowing that the available or presented work's having been made available or presented to the public constitutes copyright infringement (for a work made available or presented to the public abroad, this means that the action would constitute copyright infringement if it took place in Japan), nor does it apply if the action would otherwise unreasonably prejudice the interests of the copyright owner in light of the nature or purpose of the available or presented work or the circumstances of its minor exploitation:

(i) using a computer to search for the title or author name of a work in which information that a person is searching for (hereinafter in this item referred to as "information being searched for") has been recorded, for the transmitter identification code (meaning the letters, numbers, symbols, or any other code by which the transmitter of an automatic public transmission is identified) associated with information being searched for that has been made available for transmission, or for any other information concerning the identification or location of

preparation to undertake an action that contributes to facilitating the exploitation of a work by creating new knowledge or information through computerized data processing, he can incidentally exploit that work, and his exploitation should be limited to a minor degree (called the "minor exploitation") by considering the following elements: the percentage it constitutes of the part of the available or presented work that has been provided for exploitation, the volume of the part of that work that has been provided for exploitation, and the accuracy of indications made at the time it was provided for exploitation.

The Third Type of Actions

Besides the actions stipulated in Articles 30-4, 47-4 and 47-5, all the other actions provided for in Articles 30 to 49 inclusive belong to the third type of actions.⁶² This type of actions is aimed at promoting the use of copyrighted works to achieve the goals set by the policies related to the public interest.⁶³ While at the same time, considering that the actions in this type, when compared with the actions in the first and second types, bring greater losses or disadvantages to the right holders of copyrighted works by conflicting with the market of those works, to not

information being searched for; and making the results of that search available;

(ii) undertaking computerized data analysis and furnishing the results of that analysis;

(iii) an action that Cabinet Order prescribes as contributing to increased convenience in the lives of the citizenry by creating new knowledge or information through computerized data processing and making the results of this available, beyond what is set forth in the preceding two items.

(2) A person that prepares to undertake an action set forth in one of the items of the preceding paragraph (limited to a person that collects, organizes, and provides information in preparation to undertake the action in accordance with the standards prescribed by Cabinet Order) may reproduce or make public transmissions of an available or presented work (or make the relevant work available for transmission, if such transmission is being made via an automatic public transmission; the same applies in this paragraph and Article 47-6, paragraph (2), item (ii)) or distribute copies thereof, to the extent considered to be necessary in order to prepare for minor exploitation under the preceding paragraph; provided, however, that this does not apply if the action would otherwise unreasonably prejudice the interests of the copyright owner in light of the nature or purpose of the available or presented work, the number of copies that would be reproduced or distributed, or the circumstances of the reproduction, public transmission, or distribution.

⁶² The third type of actions includes the following Articles in the Copyright Law of Japan: Article 30 (reproduction for private use), Article 30-2 (Exploitation of Incidentally Captured Works), Article 30-3 (Exploiting a Work as Part of the Investigation Process), Article 31 (Reproduction in Libraries and Similar Facilities; Related Matters), Article 32 (Quotation), Article 33 (Printing of Works in Textbooks), Article 33-2 (Reproduction in Order to Prepare a Large-Print Textbook), Article 34 (Broadcasting of Educational Programming for Schools), Article 35 (Reproduction in Schools and Other Educational Institutions; Related Matters), Article 36 (Reproduction as Examination Questions; Related Matters), Article 37 (Reproduction for Persons with Visual and Vision-Related Impairments; Related Matters), Article 37-2 (Reproduction for Persons with Hearing Impairments; Related Matters), Article 38 (Stage Performances for Non-Commercial Purposes), Article 39 (Reprinting of Editorial Commentary on Current Affairs), Article 40 (Exploitation of Political Speeches), Article 41 (Reporting of Current Events), Article 42 (Reproduction for Judicial Proceedings), Article 42-2 (Exploitation for Disclosure Pursuant to the Act on Access to Administrative Organs' Information and Other Provisions), Article 42-3 (Exploitation for Preservation Pursuant to the Public Records Management Act and Other Provisions), Article 43 (Reproduction for Collecting Internet Materials and Online Materials under the National Diet Library Act), Article 44 (Ephemeral Fixation by a Broadcaster or Cablecaster), Article 45 (Exhibition of an Artistic Work by the Owner of the Original), Article 46 (Exploitation of an Artistic work on Public Display), Article 47 (Reproduction in Connection with the Exhibition of an Artistic Work; Related Matters), Article 47-2 (Reproduction in Connection with an Offer to Transfer an Artistic Work; Related Matters), Article 47-3 (Reproduction by the Owner of a Copy of a Work of Computer Programming; Related Matters), Article 47-6 (Exploitation by Means of Translation, Adaptation, or the Like), Article 47-7 (Transfer of Copies Made Pursuant to Restrictions on the Right of Reproduction), Article 48 (Indication of Source), Article 49 (Use of a Copy Other than for Its Intended Purpose)

⁶³ Ministry of Education, Culture, Sports, Science and Technology of Japan (n55).

unreasonably prejudice the interests of copyright holders, the actions in the third type bear more individual and specific requirements for the purposes and ways of behaviour that can provide legal reasons for the exploitation of a copyrighted work.⁶⁴

Based on the brief description above, we will now turn to the action of cloning a video game to see whether it matches those regulations. Since there is no case law, among the cases we have found relating to game clones in Japan, which demonstrates how the limitations of copyright relate to the action of cloning a video game, we provide our analysis from a theoretical perspective.

4.4.2 Not Applicable to Game Clones: A Theoretical Analysis

When a game clone is confirmed as an infringement of copyright enjoyed by the right holder of an existing video game, that means some copyrighted contents (for example, computer programs or specific elements in screen displays) in an existing video game have been copied. To determine whether that copying would fall within the scope of the actions stipulated as limitations of copyright in Japan, it is necessary to consider the purposes and ways of behaviour of the action of cloning a video game.

For the action of cloning a video game, which copied protectable contents in a video game, although it may relate to the purpose of learning, for video games which are commodities aimed at making profits for their investors and creators, its main and final purpose is definitely to increase its probability of success on the game market. As a result, the behaviour of copying will always happen for the contents that have been accepted by the market or have economic values at least in the eyes of the person who makes the copying. In that sense, it is very hard to interpret the action of copying protectable contents in an existing video game as for the purpose of achieving the goals set by the policies related to the public interest. This makes it very hard to be considered as an action in the third type of the limitations to copyright in Japan. The action of copying protectable contents in an existing video game also cannot be interpreted as “without the purpose of enjoying the thoughts or sentiments expressed in a copyrighted work” (Article 30-4, the first type of actions). Instead, it is precisely for that purpose. In addition, the action of copying protectable contents in an existing video game can hardly be considered as an incidental exploitation of a copyrighted work (Article 47-4, the first type of actions), nor can it be viewed as an incidental use of a work when undertaking or making a preparation to undertake an action that contributes to facilitating the exploitation of a work by creating new knowledge or information through computerized data processing (Article 47-5, the second type of actions). In a word, when compared with the purposes and ways of behaviour of the actions listed as limitations to copyright in

⁶⁴ Ministry of Education, Culture, Sports, Science and Technology of Japan (n55).

the Copyright Law of Japan, the action of cloning a video game has an essentially different purpose and way of behaviour, making it impossible to meet any requirements for the actions that can provide legal reasons for copying of protectable expressions.

4.5 Conclusions

This chapter discusses how Japanese courts have coped with the three core issues in copyright infringement cases caused by game clones: copyrightability of a video game, copying of protectable expressions between disputed video games, and the applicability of limitations of copyright to the action of cloning a video game.

Copyrightability of a Video Game

When determining the copyrightability of a video game, based on the definition of a protectable work in the Copyright Law of Japan, a Japanese court would need to confirm whether a video game meets the requirement of creativity and the requirement of expression. The requirement of creativity means a work should reflect its creator's personality. And in judicial practice, Japanese courts also evaluate the creativity of a work by considering the "range of choice" theory. Under that theory, creativity can be found if a work is the result of its creator's choosing from a wide range of choices for expressing the idea of that work, and the creator's choice will still leave enough space for follow-on creators who also want to communicate the same idea. The requirement of expression means a work should be expressed in specific forms. In judicial practice, that requirement is closely related to and even decided by the requirement of creativity because specific expressions will also be considered as unprotectable ideas if they fail to pass the test based on the range of choice theory and thus cannot be considered as creative. (Section 4.2.1)

In Japan, computer programs and its screen display of a video game are protected separately as different kinds of works, affecting how the copyrightability of those contents are confirmed by Japanese courts.

For video game software, although computer programs are generally considered as having a functional nature, and programs that are obsolete and can be finished by average programmers will not be considered as creative, Japanese courts usually admit the originality of computer programs in a video game. That is because those programs in a game are interpreted by the courts as a solution, chosen from among many other solutions, with specific instructions and their combination to project game images to a screen, reflecting the creator's personality and thus should be considered as creative expressions. (Section 4.2.2)

For a video game screen display, it can be protected as a cinematographic work if it is expressed in a way that produces a visual or audio-visual effect analogous to that of cinematography (the “form of expression”), is fixed on a tangible medium (the “form of existence”), and is a copyrighted work that consists of creative expressions (the “contents”). By explaining the contents of a video game and the working principle of a video game, Japanese courts usually provide a solid foundation on how to understand the screen display of a video game (and the video game as a whole) from a factual and technological perspective. Except for determining the subject-matter of a video game screen display as a cinematographic work, Japanese courts further identify a specific scope of protection for a display. In a video game screen display, creative expressions usually include game characters, features of a playing field, stories, and specific settings such as values, rather than abstract ideas such as “game balance” and “interactivity”. Besides that, by discussing the relationship between video game software and its screen display, Japanese courts imply that they have noted that video game software will affect the copyrightability and the scope of protection of its screen display.

Beside being protected as a cinematographic work, the protection of the game image of a video game screen display as a fine art work was agreed by both parties in one case, implying that a right holder can freely choose how to protect a screen display, either to protect it holistically as a cinematographic work or to protect its specific elements to any subject-matter they can match. (Section 4.2.3)

Copying of Protectable Expressions between Disputed Video Games

To find copying of protectable expressions in a general sense, Japanese courts need to confirm the existence of reliance and find similarity between the alleged infringing and infringed works. Confirming the existence of reliance is a factual issue which can be determined by considering the possibility of the defendant’s access to the claimant’s work and the factual similarity (such as the same mistakes and the similarities in the places that do not make much sense for a work) between the disputed works. Finding similarity is a legal issue which a Japanese court will address. (Section 4.3.1)

To find similarity between video game software, the cases we have found regarding video game software, which are related to the literal copying or small modifications of an existing program, do not demonstrate to us how similarity is found. Instead, we took a look at how a Japanese court finds similarity between ordinary computer programs, and gained insights that can help speculate as to how Japanese courts will find similarity between computer programs of two video games. Specifically, we gained three insights. First, Japanese courts generally provide a detailed introduction to and explanation of the disputed programs brought forward by the claimant from a technological perspective, resolving any dispute that may exist as a factual matter. Second, when applying the “direct perception of essential features of expression”

standard to find similarity, considering the “direct perception” of similarity relies on a person’s natural instincts and is self-evident, Japanese courts pay attention to the copyrightability issue of the disputed programs and place that issue at the core in the process of finding similarity. Third, the functional nature of computer programs and its effect on the public interest are repeatedly emphasized by Japanese courts, resulting in Japanese courts providing a rather limited scope of protection for computer programs. (Section 4.3.2)

To find similarity between video game screen displays, Japanese courts examine from a factual perspective the contents of a video game in detail. When making the comparison, they carefully compare the elements in disputed displays, the images consisting of those elements as a whole, and the arrangement and consequence of those images. Within that careful comparison, similar to what they have done in the comparison of computer programs, Japanese courts focus on the copyrightability of disputed elements in disputed displays. From different cases in which comparisons were made, we can speculate that Japanese courts may hold a rather limited scope of protection for a video game screen display against literal copying or modifications that are small and unobvious. Through that rather limited scope of protection, we can also extract how Japanese courts, in their opinions, treat specific contents in a video game screen display when making the comparison. First, the game rules themselves should not be protected in a general sense, except for specific expressions originating from those rules. Second, creativity of the user interface of a video game is rather limited because of considerations of function and efficiency, making the use interface unprotectable in a general sense. Third, “style” is such an abstract concept in a game that it should not be considered as protectable, and similarity in style is not an infringement of copyright. Fourth, if the different expressions in an alleged infringing display make an ordinary person feel an overall different impression from the essential features of creative expressions of an alleged infringing display, then infringement will not exist, implying that Japanese courts take the overall impression of the display in consideration when finding similarity (Section 4.3.3)

Applicability of the Limitations of Copyright to Game Clones

When the copying of protectable expressions is confirmed by Japanese courts, legal reasons, which are indicators of liability for infringement, can be found in provisions regulating limitations of copyright under the Copyright Law of Japan. Categorized by purpose and way of behaviour, three types of actions are stipulated. The first and second types of actions were added when the Copyright Law of Japan was amended in 2018, and they are considered “flexible regulations” when compared with traditional provisions regarding limitations of copyright because the latter provisions are stipulated in an individual and specific manner. Specifically speaking, the first type (Articles 30-4 and 47-4) concerns two kinds of actions that normally do not cause harm to the interests of copyright holders. One relates to the exploitation of a copyrighted work without the purpose of enjoying the thoughts or sentiments

expressed in that work. The other relates to exploitation that is incidental to the use of a copyrighted work made available to be exploited on a computer. The second type of actions (Article 47-5), which concerns the actions that harm the interests of copyright holders only to a minor degree, is the minor exploitation of a work when processing information and providing results through a computer. The third type of actions is aimed at promoting the use of copyrighted works to achieve policies related to the public interest, and they include all the actions, other than the actions in the first and the second type, stipulated in Articles 30 to 49 inclusive in the Copyright Law of Japan. (Section 4.4.1)

For game clones which are determined as infringing the copyright of existing video games, all of the three types of actions above cannot provide legal reasons to exonerate liability for infringement in those game clones. The purpose of cloning an existing video game, although it will always reflect a creator's hope to make its game better, is without doubt to pursue commercial success on a game market in the final analysis. That determines whether the action of cloning a video game has a direct or indirect connection with the public interest included under the third type of actions. Also, the action of copying protectable contents in an existing video game also cannot be interpreted as "without the purpose of enjoying the thoughts or sentiments expressed in a copyrighted work" (Article 30-4, the first type of actions), as an incidental exploitation of a copyrighted work (Article 47-4, the first type of actions), and as an incidental use of a work when undertaking or making a preparation to undertake an action that contributes to facilitating the exploitation of a work by creating new knowledge or information through computerized data processing (Article 47-5, the second type of actions). Briefly stated, the action of cloning a video game, which has been confirmed by Japanese courts as an infringement of copyright, does not fall under the scope of actions that can be considered as limitations of copyright under the Copyright Law of Japan. (Section 4.4.2)

Chapter 5 Judicial Practice in China

5.1 Introduction

This chapter responds to the sub-question (4) of how to improve the performance of Chinese courts in determining copyright infringement caused by game clones. To begin with, this chapter first provides a specific introduction and in-depth analysis of how Chinese courts handle the legal issues related to game clones. Based on that, to identify the places where Chinese courts can improve when handling those issues, this chapter compares the judicial practices in the US and Japan, which we examined in the previous two chapters, with judicial practice in China. After identifying the places for improvement, recommendations to Chinese courts follow.

Section 5.2, to provide the background knowledge of the Chinese copyright system, draws a general picture of the copyright system in China. Section 5.3 introduces China's judicial practice regarding the game clones by focusing on the core issues mentioned in Chapter 2 (i.e., copyrightability of a videogame, copying of protectable expressions between disputed videogames, applicability of copyright exceptions and limitations to the game clones). Section 5.4 compares how US, Japanese, and Chinese courts handle those core issues. By evaluating their differences and similarities, this section identifies a common problem in the judicial practices in those three countries. To solve that problem, recommendations for Chinese courts are provided in Section 5.5. In the end, Section 5.6 gives a conclusion to this chapter.

5.2 A General Introduction to the Copyright System of China

5.2.1 Use of the Term “Copyright”

Before introducing the copyright system of China, to avoid confusion, it is necessary to explain why this chapter uses the terminology “copyright”, which is commonly used to represent the copyright tradition, to describe the legal tradition and jurisdiction of China which actually belongs to the author's right (*droit d'auteur*) tradition.

To explain this, we need to explain the two terminologies used in China: *zhuzuoquan* (著作权 in Chinese) and *banquan* (版权 in Chinese). Both of these terminologies come from a Japanese translation of the English word “copyright”. Historically, the Japanese first translated the word into *banquan* (版權 in Japanese Kanji, a language adopted from Chinese characters) which is a literal translation of “the right on a copy” but then into *zhuzuoquan* (著作権 in Japanese Kanji) which means “the author's

right on his work”.¹ Learning from Japan, the Qing government (the ruler of China from 1644 to 1912) used *zhuzuoquan* in the name of its law, i.e., *Daqing Zhuzuoquan Lyu* (‘The Law of Authorship of the Great Qing Dynasty’ in English and ‘大清著作权律’ in Chinese).² From then on, subsequent governments in China all used the terminology *zhuzuoquan* in their laws,³ and protecting the author’s interest is considered by legislators as the most important issue when drafting the laws,⁴ confirming that China belongs to the author’s rights tradition. This can be illustrated by the fact that, although the copyright law stipulates explicitly that the two terminologies *banquan* and *zhuzuoquan* can be used interchangeably,⁵ the use of *zhuzuoquan* is still mainstream usage in Chinese legal documents, judgments and scholarly articles. So, on the one hand, there is no doubt that China belongs to the author’s rights tradition, but on the other hand, as an issue of translation, the terminology *zhuzuoquan* is actually translated from the English word “copyright”. Since international conventions and the English translation of Japanese law⁶ also use the terminology “copyright”, this research follows this practice as well by using the expression “the copyright system of China” (and “copyright law”) to describe the Chinese system that actually follows the author’s right tradition.

5.2.2 Status Quo of the Copyright System of China

The copyright system of China consists of the following sources of law: international treaties, national copyright law, administrative regulations, local regulations, ministerial administrative measures, local administrative measures, other normative documents, and judicial interpretations.⁷ Since this chapter discusses the legal issues at a national level, we focus on the introduction of the sources of law below: national copyright law, administrative regulations, and judicial interpretations.

The national copyright law in China now should refer to the 2020 version of the Copyright Law of the PRC (the 2020 Copyright Law) because it came into force on June 1, 2021. However, since there are no further interpretations of the concepts and regulations in this newly revised law,⁸ let alone judgments regarding video games,

¹ Chuntian Liu, Bolin Liu, ‘Several Theoretical Issues of Copyright Law’ (著作权法的若干理论问题) (1987) 2 *The Jurist* 39-40.

² Chuntian Liu, Bolin Liu (n1); also see Handong Wu, ‘Probing the Confusion between the Terminologies of *zhuzuoquan* and *banquan*’ (‘著作权’、‘版权’用语探疑) (1986) 6 *Modern Law Science* 35.

³ Chuntian Liu, Bolin Liu (n1).

⁴ Chuntian Liu, ‘Some Thoughts on Copyright Legislation in China’ (关于我国著作权立法的若干思考) (1989)

4 *China Legal Science* 47.

⁵ Article 62, 2020 Copyright Law of China.

⁶ See Yukifusa Oyama and others, *Copyright Law of Japan* (Copyright Research and Information Center, Tokyo 2001). From that we can see, although Japan still uses *zhuzuoquan* (著作権 in Japanese Kanji) in the name of its law now, the English translation of the law uses the word copyright as well.

⁷ National Copyright Administration of PRC, ‘A brief description of the “Copyright Law of the People’s Republic of China” (Amendment Draft)’ (关于《中华人民共和国著作权法》(修改草案)的简要说明) <http://www.ncac.gov.cn/chinacopyright/contents/483/17745.html>.

⁸ There is an example for this. The name of “cinematographic work” is regulated in Article 3(6) of the 2010 Copyright Law, and its definition is regulated in Regulations for the Implementation of Copyright Law of the

the 2010 Copyright Law in China (the former version of the copyright law before 2020; the 2010 Copyright Law) and related cases will still be the main material for the discussion in this chapter.

Besides the national copyright law, the administrative regulations also play an important role in the copyright system of China.⁹ It is a common practice in China that the National People's Congress authorizes the State Council to make administrative regulations with the aim of stipulating certain matters that have not been explicitly stipulated by the law.¹⁰ For example, in the 2010 Copyright Law there are concepts like “*quyi* works”(曲艺作品) and “acrobatic works”(杂技艺术作品) that are not explained by the law.¹¹ While in the *Regulations for the Implementation of Copyright Law of the PRC (2013 Amendment)* which was formulated by the State Council, we can find the definitions of not only all kinds of works enumerated in the 2010 Copyright Law but also other basic concepts like “works” and “creation”.¹² Until now, based on the 2010 Copyright Law, the State Council has formulated 6 administrative regulations regarding copyright (Figure 5-1).

Regulation on the Implementation of Copyright Law of the PRC (2013 Amendment) 中华人民共和国著作权法实施条例
Regulations on Computer Software Protection (2013 Amendment) 计算机软件保护条例
Regulations on Copyright Collective Management (2013 Amendment) 著作权集体管理条例
Regulation on Protection of the Right to Network Dissemination of Information (2013 Amendment) 信息网络传播权保护条例
Interim Measures for the Payment of Remuneration for Phonograms Broadcast by Radio and TV Stations (2011 Amendment) 广播电台电视台录音制品支付报酬暂行办法
Provisions on the Implementation of International Copyright Treaties (1992) 实施国际著作权条约的规定

Figure 5-1 Administrative Regulations Regarding Copyright Protection in China

PRC. However, in the revised Article 3(6) of the 2020 Copyright Law, the term “cinematographic work” has been changed to “audio-visual work”, but since the Regulations for the Implementation of Copyright Law of the PRC have not been revised accordingly, to date we do not know the definition of “audio-visual work” and whether or how it is different from “cinematographic work”.

⁹ National Copyright Administration of the PRC (n7).

¹⁰ Qigang Wan, ‘Contemporary China’s Authorisation Legislation’ (当代中国的授权立法) http://www.npc.gov.cn/npc/xinwen/rddl/fzjs/2011-05/13/content_1655612.htm. Also see, Liguang Zhang, Niklas Bruun, ‘Legal Transplantation of Intellectual Property Rights in China: Resistance, Adaptation and Reconciliation’ (2017) 48 IIC 25.

¹¹ Article 3, 2010 Copyright Law of China.

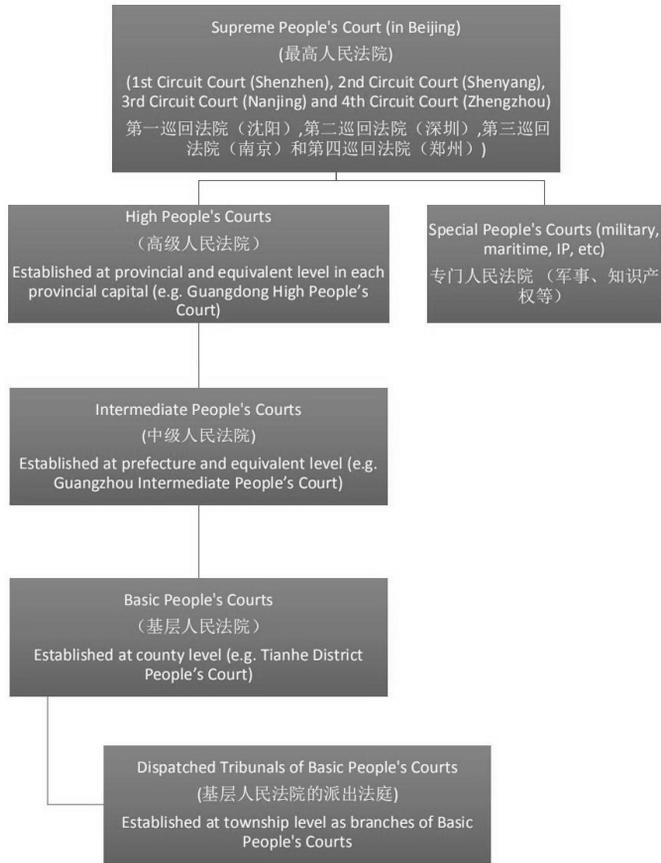
¹² Articles 2, 3, and 4, Regulations for the Implementation of Copyright Law of the PRC (2013 Amendment).

The Supreme People's Court in China makes judicial interpretations on specific issues concerning the application of law in trial work,¹³ and the judicial interpretations have full legal force.¹⁴ In the hierarchy of Chinese courts (Figure 5-2), the Supreme People's Court is the highest judicial organ of the state, followed by the local people's courts which, from a higher level to a lower level, contain the high people's courts, the intermediate people's courts, and the basic people's courts (i.e., the district people's courts). In addition, there are also Special People's Courts in the fields of military, maritime, intellectual property, finance, internet¹⁵ and etc. In the copyright system of China, *Interpretation of the Supreme People's Court Concerning the Application of Laws in the Trial of Civil Disputes over Copyright* (最高人民法院关于审理著作权民事纠纷案件具体适用法律若干问题的解释) is the most important Judicial Interpretation concerning copyright protection, which functions as a crucial supplement for the copyright law and administrative regulations in China.

¹³ Article 2, Provisions of the Supreme People's Court on Judicial Interpretation Work (最高人民法院关于司法解释工作的规定): "The power to make judicial interpretations on the specific issues concerning the application of law in the trial work of the people's courts shall remain with the Supreme People's Court."

¹⁴ Article 5, Provisions of the Supreme People's Court on Judicial Interpretation Work (最高人民法院关于司法解释工作的规定): "The judicial interpretations issued by the Supreme People's Court shall have full legal force."

¹⁵ The Court of Internet (互联网法院), which is a kind of Special People's Court, refers to the courts that accept, serve, mediate, exchange evidence, prepare before court, trial, and pronounce judgments on the Internet. The basic principle is that the entire process is online. Now there are three Courts of Internet in China: the Hangzhou Court of Internet, the Beijing Court of Internet, and the Guangzhou Court of Internet.



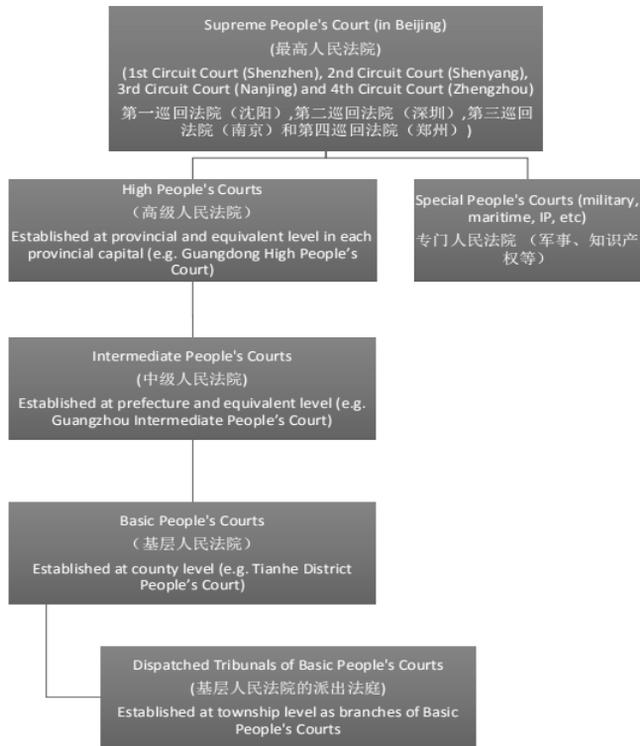


Figure 5-2 China's Judicial System and Court Hierarchy¹⁶

Nowadays, to maximize the function of Judicial Interpretations and to cover their shortage in trial practice,¹⁷ the Supreme People's Court in China established the Case Guiding System. In this system, the Guiding Cases are determined and uniformly published by the Supreme People's Court and have a guiding function for the trials and enforcement of all courts throughout the country.¹⁸ More specifically, for the cases whose facts and application of law are similar to a Guiding Case, the courts should make their judgments by taking the key points listed in that Guiding Case as a reference.¹⁹ When referring to the Guiding Case, the court must quote it in the process of reasoning rather than as the legal basis for a judgment.²⁰ Until

¹⁶ Yifan Wang, Sarah Biddulph, and Andrew Godwin, 'A Brief Introduction to the Chinese Judicial System and Court Hierarchy' <https://law.unimelb.edu.au/centres/alc/research/publications/alc-briefing-paper-series/a-brief-introduction-to-the-chinese-judicial-system-and-court-hierarchy>.

¹⁷ Liming Wang, 'Research on Several Issues of Case Guiding System in China' (我国案例指导制度若干问题研究) (2012) 1 Law Science 73.

¹⁸ Article 1, Notice of the Supreme People's Court on Issuing the Provisions on Case Guidance (最高人民法院印发《关于案例指导工作的规定》的通知).

¹⁹ Article 9, Detailed Rules for the Implementation of the Provisions of the Supreme People's Court on Case Guidance (《最高人民法院关于案例指导工作的规定》实施细则).

²⁰ Article 10, Detailed Rules for the Implementation of the Provisions of the Supreme People's Court on Case

October 2021, the Supreme People’s Court had published 162 Guiding Cases,²¹ and four Guiding Cases concern copyright protection.²² In this chapter, we will mainly discuss Guiding Case No. 81 because it formally establishes “access + substantial similarity” as a general rule for how to decide copyright infringement in China (we will further discuss that in Section 5.3.2.1). In summary, Figure 5-3 briefly shows the sources of law we discuss in this chapter.

The Copyright System of China	Related to this Research
Law	The 2010 Copyright Law and the 2020 Copyright Law
Administrative Regulations	(1) Regulations on the Implementation of Copyright Law of the PRC (2013 Amendment) (2) Regulations on Computer Software Protection (2013 Amendment)
Judicial Interpretation	Interpretation of the Supreme People's Court Concerning the Application of Laws in the Trial of Civil Disputes over Copyright
Guiding Case System	Guiding Case No. 81: <i>Zhang Xiaoyan v. Lei Xianhe, Zhao Qi, and Shandong Aishuren DVDs & Books Co., Ltd.</i>

Figure 5-3 Sources of Law for the Copyright System of China

5.3 China’s Judicial Practice Regarding Game Clones

This section introduces how Chinese courts determine copyright infringement caused by game clones by focusing on three core issues: the copyrightability of a video game, decisions on copyright infringement caused by game clones, and whether the action of cloning an existing video game belongs to actions regarding limitations and exceptions of copyright under the 2020 Copyright Law.

Guidance (《最高人民法院关于案例指导工作的规定》实施细则).

²¹ All the Guiding Cases (in Chinese) are available at <http://www.court.gov.cn/fabu-gengduo-77.html>.

²² The four Guiding Cases regarding copyright protection are: No. 48 *Jingdiao Technology v. Shanghai Naiky Electronic Technology* (北京精雕科技有限公司诉上海奈凯电子科技有限公司侵害计算机软件著作权纠纷案), No. 49 *Shi Honglin v. Taizhou Huaren Electronic Information* (石鸿林诉泰州华仁电子资讯有限公司侵害计算机软件著作权纠纷案), No. 80 *Hong and Deng v. Wufufang Food and Jincai* (洪福远、邓春香诉贵州五福坊食品有限公司、贵州今彩民族文化研发有限公司著作权侵权纠纷案), and No. 81 *Zhang v. Lei, Zhao, and Shandong Aishuren* (张晓燕诉雷献和、赵琪、山东爱书人音像图书有限公司著作权侵权纠纷案).

5.3.1 Copyrightability of a Video Game

5.3.1.1 A General Introduction to Copyrightability in China

“Works” protected under the 2020 Copyright Law are defined in Article 3 as “intellectual creations with originality in the literary, artistic or scientific domain and can be presented in a certain form, including: (1) written works; (2) oral works; (3) musical, dramatic, *quyi*, choreographic and acrobatic works; (4) works of fine art and architecture; (5) photographic works; (6) audio-visual works; (7) drawings of engineering designs, product designs, maps, sketches and other graphic works and model works; (8) computer software; (9) other intellectual creations that meet the characteristics of a work”.

That definition, according to the legislators’ interpretation of the 2020 Copyright,²³ stipulates three requirements of a copyrighted work. First, a copyrighted work should reflect “originality” (独创性). Second, it should belong to the literary, artistic or scientific domain. Third, it should be an “intellectual creation” (智力成果) presented in a certain form which may be one of the examples enumerated in Article 3 as mentioned above. As for a video game, since no one would doubt that it belongs to the literary and artistic domain, we will explain how the requirements of “originality” and “intellectual creation” are applied to it.

5.3.1.1.1 Originality = Independent Completion + Creativity

Although the meaning of “originality” is not explained in the 2020 Copyright Law, the Supreme People’s Court of China explains it in its Judicial Interpretation as an expression that is “completed independently and creatively”.²⁴ Based on that, the standard of originality in China is summarized as *independent completion* (独立完成) plus *creativity* (创造性).²⁵ For “independent completion”, it means a work is not a copy or plagiarism of an existing work.²⁶ Since it is actually a factual issue not

²³ Wei Huang, Leiming Wang (eds), *Introduction and Interpretation of Copyright Law of the People’s Republic of China* (中华人民共和国著作权法导读与释义) (China Democracy and Legal System Publishing House, Beijing 2020) 51-52.

²⁴ Article 15, Interpretation of the People’s Supreme Court Concerning the Application of Laws to the Trial of Civil Disputes of Copyright.

²⁵ See Jinchuan Chen, *Copyright Trial: Explanations of Principles and Guide to Legal Practice* (著作权审判: 原理解读与实务指导) (Law Press, Beijing 2013) 314-317; Guobin Cui, *Copyright Law: Cases and Materials* (著作权法: 原理与案例) (Peking University Press, Beijing 2014) 69; Qian Wang, *Copyright Law* (著作权法学) (Peking University Press, Beijing 2007) 8-14; Yushui Song, *Copyright Dispute: Guidance of Lawsuits and Solutions to Legal Practice* (著作权纠纷: 诉讼实务指引与实务解答) (Law Press, Beijing 2014) 162; Huaiwen He, *The Chinese Copyright Law: Case Studies and Normative Analysis* (中国著作权法: 判例综述与规范解释) (Peking University Press, Beijing 2016) 4-9.

²⁶ Sichuan High People’s Court, Judgment (2010) *Chuan Min Zhong Zi* No. 477 (段国胜与成都风雅堂文化发展有限公司、成都市风雅堂工艺品有限公司侵害著作权纠纷上诉案, 四川省高级人民法院 (2010) 川民发字第 477 号民事判决书); Shanghai First Intermediate People’s Court, Judgment (2013) *Hu Yi Zhong Min Wu (Zhi) Zhong Zi* No. 170 (深圳市三菱文具有限公司与三菱铅笔株式会社不正当竞争纠纷上诉案, 上海市第一

difficult to confirm, Chinese courts pay more attention to the creativity of a work.

For “creativity”, according to the opinion from the Supreme People’s Court, it refers to the presence of an author’s unique personality and thoughts.²⁷ An author’s personality and thoughts are usually identified by Chinese courts through the acceptance, rejection, choices, arrangements and designs made by an author in his or her work.²⁸ However, what level does the creativity reflected from an author’s personality and thoughts reach? According to the mainstream opinion among Chinese legal scholars, the required level of “creativity” is not high²⁹ and only needs to reach a minimum degree.³⁰ In other words, the creativity required in a protectable work will be sufficient if it is more than trivial.³¹ In fact, that opinion actually interprets the standard of “creativity” by borrowing the standard of creativity originating from US judicial practice.³² That interpretation has been criticized for causing theoretical chaos for establishing the standard of creativity in China because, on the one hand, “creativity” in China needs to show an author’s personality and thoughts, reflecting a typical requirement from the author’s right tradition, on the other hand, that standard is interpreted as rather low as more than trivial, following the copyright tradition.³³

Although there may be a theoretical problem for the standard of creativity, the train of thought for how Chinese courts make their decisions in specific cases is clear. They determine whether an author’s personality can be found in a work in two ways.

The first way is to find whether it is possible for the idea behind a certain expression to be expressed in various ways.³⁴ For example, in a case regarding the creativity of a package insert of a drug,³⁵ the Foshan Intermediate People’s Court denied the existence of creativity in the package insert because all the contents written on the package insert (such as the generic name, ingredients, rules, manufacturer, approval number, product batch number, production date, expiry date, etc.) were decided in a rigorous manner by the Pharmaceutical Administration Law of the PRC. In a word,

中级人民法院 (2013) 沪一中民五 (知) 终字第 170 号民事判决书); Hengyang Intermediate People’s Court, Judgment (2006) *Heng Zhong Fa Min San Chu Zi* No. 35 (罗忠诉湖南三九唯康药业有限公司著作权纠纷案, 衡阳市中级人民法院 (2006) 衡中法民三初字第 35 号民事判决书).

²⁷ Supreme People’s Court, Civil Ruling (2013) *Min Shen Zi* No. 1356 (乐高公司诉广东小白龙动漫玩具实业有限公司等侵害著作权纠纷申请再审案, 最高人民法院 (2013) 民申字第 1356 号民事裁定书).

²⁸ See Beijing Chaoyang District People’s Court, Judgment (2011) *Chao Min Chu Zi* No. 31507 (北京远见文化传播有限公司诉阿里云计算有限公司等侵犯著作权纠纷案, 北京市朝阳区人民法院 (2011) 朝民初字第 31507 号民事判决书); Sichuan High People’s Court, Judgment (2008) *Chuan Min Zhong Zi* No. 218 (田道华与李乐清等著作权侵权纠纷上诉案, 四川省高级人民法院 (2008) 川民终字第 218 号民事判决书).

²⁹ *Jinchuan Chen* (n25) 3.

³⁰ *Guobin Cui* (n25) 73.

³¹ *Qian Wang* (n25) 16.

³² *Huaiwen He* (n25) 9.

³³ *Huaiwen He* (n25) 9.

³⁴ *Jinchuan Chen* (n25) 4.

³⁵ Foshan Intermediate People’s Court, Judgment (2013) *Fo Zhong Fa Zhi Min Zhong Zi* No. 14 (广东省佛山市弘兴医药有限公司与湘北威尔曼制药股份有限公司著作权纠纷上诉案, 佛山市中级人民法院 (2013) 佛中法知民终字第 14 号民事判决书).

if it is not possible for an idea to be expressed in many ways, the expression of that idea, like the contents in a package insert of a drug, will not have the space to show personality and to be considered as creative.

The second way is to find whether a disputed expression in the right holder's work contains differences, which can be recognized by ordinary people, from other expressions in works other than the claimant's and defendant's works.³⁶ Since that practice requires a court to compare a disputed expression with other expressions, two factors will be considered in the comparison: the nature of the disputed expression and the scope of expressions for the comparison. For the nature of the disputed expression, according to the Beijing High People's Court, if that expression is based on works or expressions in the public domain, significant differences must be found in that expression before the existence of personality can be confirmed.³⁷ Besides that, according to the Chongqing High People's Court, if the disputed expression is a simple deformation of ordinary expressions (such as English alphabet that do not belong to artistic fonts but common patterns of a drawing), the personality of that expression will be denied.³⁸ For the scope of expressions that will be compared with the disputed expression, it should not be so broad that it includes any expression in the public domain or any expression that has once been published because that actually raises the requirement of creativity to the level of novelty required by patent law.³⁹ In that sense, a reasonable scope of the expressions that will be compared with the disputed expression should be limited to expressions or information that the author of that disputed expression has access to both in theory and in practice.⁴⁰

5.3.1.1.2 Intellectual Creation Presented in a Certain Form

Besides originality, another requirement of a copyrighted work under the 2020 Copyright Law, which is related to a video game, is that a work should be an intellectual creation presented in a certain form. In fact, that requirement can be interpreted from two aspects. First, the requirement as a whole is a reflection of the idea/expression dichotomy in China's copyright law.⁴¹ Second, through the works enumerated in Article 3 of the 2020 Copyright Law, the forms an intellectual creation can take have been listed explicitly. We describe these two aspects individually below.

³⁶ *Jinchuan Chen* (n25) 5.

³⁷ Beijing High People's Court, Judgment (2010) *Gao Min Zhong Zi* No. 772 (北京中易中标信息技术有限公司与微软公司、微软(中国)有限公司侵害著作权纠纷案, 北京市高级人民法院(2010)高民终字第772号民事判决书); Also see, *Huaiwen He* (n25) 12.

³⁸ See Chongqing High People's Court, Judgment (2012) *Yu Gao Fa Min Zhong Zi* No. 257 (重庆市仁和压铸有限公司与重庆莱舍商贸有限公司等侵害著作权纠纷上诉案, 重庆市高级人民法院(2012)渝高法民终字第257号民事判决书); also see, *Huaiwen He* (n25) 13.

³⁹ *Guobin Cui* (n25) 73.

⁴⁰ *Guobin Cui* (n25) 73.

⁴¹ *Wei Huang, Leiming Wang* (n23) 52.

The Idea/Expression Dichotomy in China

Although it is said that the requirement of “intellectual creation presented in a certain form” reflects the idea/expression dichotomy in China, the requirement itself cannot tell us how Chinese courts will interpret that dichotomy. In fact, a detailed explanation of the idea/expression dichotomy can be found from Guiding Case No. 80, which concerned the copyright infringement between a script and a TV series adopted from that script, issued by the Supreme People’s Court in China:

Ideas..., including the cognition of material existence, objective facts, human emotions, and thinking methods, are the objects being described or expressed, belonging to a subjective category... The protectable expression includes not only the final forms of symbols like text, colour, and lines, but also the contents of a work which reflect an author’s idea and emotions. However, the creative ideas, source materials, information in the public domain, forms for creation, necessary scenes, or the expression with unique or limited forms are excluded from the scope of protection. The necessary scenes refer to some events, characters, layouts, and scenes that are inevitable and must be adopted when an author chooses a certain theme for creation. And the expression with unique or limited forms refers to the fact that an idea has a unique or limited way of expression, and that expression should be viewed as an idea that is unprotectable under the Copyright Law.⁴²

From the excerpt above, under China’s copyright law, it is clear that four kinds of things are considered as an unprotectable “idea” under the idea/expression dichotomy. The first concerns the basic elements for creation, such as ideas, source materials, and basic forms. The second relates to information in the public domain. According to legal scholars’ opinion, the public domain should be explained as including: (1) works whose term of protection has expired, (2) foreign works that do not meet the requirements set by the international or bilateral treaties China is a party to, (3) government works, such as “laws; regulations; resolutions, decisions and orders of State organs; other documents of a legislative, administrative or judicial nature; and their official translations” stipulated in Article 5(1) of the 2010 Copyright Law (now Article 5(1) of the 2020 Copyright Law); and (4) works whose right holders waive their copyright.⁴³ The third kind is “necessary scenes” (必要场景), which means some events, characters, layouts, and scenes that are inevitable and must be adopted when an author chooses a certain theme for creation. In the opinion of Chinese legal scholars, “necessary scenes” are considered as having the same

⁴² Guiding Case No. 81: *Zhang Xiaoyan v. Lei Xianhe, Zhao Qi, and Shandong Aishuren DVDs & Books Co., Ltd.*

⁴³ Wenrui Feng, ‘The Issue of Legal Protection regarding the Public Domain under Chinese Copyright Law’ (著作权法上公有领域的法律保护) <http://old.civillaw.com.cn/Article/default.asp?id=38998>.

function of the “scenes-a-faire doctrine” which is adopted in US judicial practice.⁴⁴ The fourth kind is the “expression with unique or limited forms” (有限表达) referring to the expression that has a unique of limited way to communicate. That kind is called by Chinese scholars as the Chinese version of the “merger doctrine” which initially emerged in US judicial practice.⁴⁵

In fact, when we compare how the Supreme People’s Court of China interprets the idea/expression dichotomy, especially the mention of “necessary scenes” and “expressions with unique or limited forms”, with the two ways of how Chinese courts find personality when determining the creativity of a work (i.e., to find whether it is possible for the idea behind an expression can be expressed in various ways, and to find whether an expression contains differences, which can be recognized by ordinary people, from other expressions),⁴⁶ we get the impression that those two issues are handled at the same time and as being inseparable. More specifically, the two ways of determining the existence of personality in a work is directly or indirectly connected with the finding of whether that expression has unique or limited forms for expressing that idea and whether that expression should be considered to some degree as necessary scenes.

The Form of an Intellectual Creation

Besides reflecting the idea/expression dichotomy under the requirement of “intellectual creation presented in a certain form”, Article 3 of the 2020 Copyright Law also enumerates many examples of the forms an intellectual creation may take. Those examples include eight specific kinds of intellectual creations, including: (1) written works; (2) oral works; (3) musical, dramatic, *quyi*, choreographic and acrobatic works; (4) works of fine art and architecture; (5) photographic works; (6) audio-visual works; (7) drawings of engineering designs, product designs, maps, sketches and other graphic works and model works; (8) computer software); and a miscellaneous provision stipulating “other intellectual creations that meet the characteristics of a work”.

In fact, when compared with the 2010 Copyright Law, two revisions have been made in the 2020 Copyright Law for the enumerated forms an intellectual creation may take. One revision is the replacement of the term “cinematographic works and works created by virtue of an analogous method of film production”⁴⁷ with the term “audio-visual work”. To date, the formal definition of an “audio-visual work” is unknown because *Regulations for the Implementation of the Copyright Law (2013 Amendment)*, which usually provides the formal definitions of works listed in the 2010 Copyright Law, is still in the process of revision. Yet, Article 17 of the 2020 Copyright Law, which stipulates the rules of ownership for audio-visual works,

⁴⁴ *Qian Wang* (n25) 31.

⁴⁵ *Qian Wang* (n25) 30-31.

⁴⁶ *Supra* Section 5.3.1.1.1, p. 116-117.

⁴⁷ Article 3(6), 2010 Copyright Law of China.

clearly shows that audio-visual works will include three types: cinematographic works, works of TV series, and other audio-visual works.⁴⁸

The second revision is about the miscellaneous provision for the forms of intellectual creations. In the 2010 Copyright Law, the miscellaneous provision (Article 3(9)) is stipulated as “other works as provided for in the laws and administrative regulations”. The legislative purpose of that provision is to reserve space for new forms of intellectual creations that are necessary for copyright protection along with the future development of culture and technology.⁴⁹ However, that purpose has never been achieved because that provision sets a very strict limitation on the works that can be protected: a work protected as “other work” must have already been admitted by the laws and administrative regulations.⁵⁰ For example, until the 2010 Copyright Law was revised, no work had met that condition in practice.⁵¹ Since no work in reality can be protected as the “other work” stipulated in the miscellaneous provision, the 2010 Copyright Law presents a *de facto* exhaustive list of the forms an intellectual creation can take.

However, that situation is totally changed in the 2020 Copyright Law. By deleting the requirement of being admitted by other laws and administrative regulations, the 2020 Copyright Law makes any intellectual creation that meets the characteristics of a work protectable. In that sense, the *de facto* exhaustive list of protectable works in the 2010 Copyright Law has been changed into an open-ended list. Since the term “characteristics of a work” refers to the three requirements of a copyrighted work (i.e., (1) originality, (2) in the literary, artistic, or scientific domain, and (3) an intellectual creation presented in a certain form), as long as an intellectual creation meets those three requirements, it can be protected as a “work” by China’s copyright law.⁵² At the same time, as for the application of the new miscellaneous provision in practice, before protecting a work as “other intellectual creation”, a court should exhaust the possibilities of whether that work can be protected as one or several specific categories of works enumerated in Article 3 of the 2020 Copyright Law.⁵³

Besides the two revisions of the forms of intellectual creations, the form of an intellectual creation also closely connects with the requirement of originality.

⁴⁸ Wei Huang, *Leiming Wang* (n23) 56.

⁴⁹ Sub-Committee of the Legislative Affairs of the Standing Committee of the National People’s Congress (ed.), *The Interpretation of Copyright Law of the People’s Republic of China* (中华人民共和国著作权法释义) (Law Press, Beijing 2002) 21.

⁵⁰ For example, in a case regarding music fountains, the Beijing Intellectual Property Court denied copyright protection of the spraying effect of a music fountain as the “other work” because the spraying effect had not been mentioned or admitted in any other laws or administrative regulations as a new kind of work; instead, the court protected it as a work of fine art. See Beijing Intellectual Property Court, Judgment (2017) *Jing 73 Min Zhong* No. 1404 (中科水景诉中科恒业、西湖管理处侵害著作权纠纷案, 北京知识产权法院 (2017)京 73 民终第 1404 号民事判决书).

⁵¹ Qian Wang, ‘On the Numerus Clausus of Types of Work—A Review on the “Music Fountain Case”’ (论作品类型法定——兼评“音乐喷泉案”) (2019) 3 *Law Review* 10.

⁵² Chuntian Liu, ‘The Idea of Civil Law and the Amendment of Copyright Law’ (民法理念与著作权法修改) (2021) 1 *Copyright Theory and Practice* 25-26.

⁵³ Wei Huang, *Leiming Wang* (n23) 57.

Although we have discussed that Chinese courts follow the formula “independent completion + creativity” as the standard of originality, as the Supreme People’s Court of China has pointed out, the application of that standard in practice should depend on specific facts.⁵⁴ One of the “specific facts” mentioned by the Supreme People’s Court can be interpreted as the form of an intellectual creation. Since the works enumerated in Article 3 of the 2020 Copyright Law provide the forms, or subject-matters, of intellectual creation (such as written work, musical work, fine art work, cinematographic work, and so on),⁵⁵ the subject-matter that an intellectual creation will fall in should also be considered by Chinese courts when they determine the originality of that intellectual creation.

Therefore, to show how the copyrightability of a video game is determined by Chinese courts, the following sections examine how the requirements of “creativity” and “intellectual creation presented in a certain form” have been in practice applied to the subject-matters that Chinese courts have identified in a video game.

5.3.1.2 Video Game Software

In China, video game software is protected as “computer software” stipulated in Article 3(8) of the 2010 Copyright Law (now Article 3(8) of the 2020 Copyright Law). The concept of “computer software” is further explained in Articles 2 and 3 of the *Regulations on Computer Software Protection (2013 Amendment)*, which was an administrative regulation issued by the State Council of China. “Computer software” consists of “computer programs” and relevant “documents”.⁵⁶ More specifically, a “computer program” means a coded instruction sequence which may be executed by devices with information-processing capabilities such as computers, or a symbolic instruction sequence or symbolic statement sequence which may be automatically converted into a coded instruction sequence for the purpose of obtaining certain expected results. For a computer program, its source program and object program will be deemed as one and the same work.⁵⁷ “Documents” refer to literal descriptions or charts used to describe the content, structure, design, functional performance, development history, test results and usage, such as program design instructions, flowcharts, and user’s manuals.⁵⁸

Moreover, Article 6 of the *Regulations on Computer Software Protection (2013 Amendment)* explicitly stipulates that copyright protection of computer software will not extend to the ideas, processing, operating methods, mathematical concepts or the like used in software development. That provision clearly shows the existence of the

⁵⁴ Supreme People’s Court, Civil Ruling (2013) *Min Shen Zi* No. 1356 (乐高公司诉广东小白龙动漫玩具实业有限公司等侵害著作权纠纷申请再审案，最高人民法院 (2013) 民申字第 1356 号民事裁定书).

⁵⁵ *Jinchuan Chen* (n25) 2.

⁵⁶ Article 2, *Regulations on Computer Software Protection (2013 Amendment)*.

⁵⁷ Article 3(1), *Regulations on Computer Software Protection (2013 Amendment)*.

⁵⁸ Article 3(2), *Regulations on Computer Software Protection (2013 Amendment)*.

idea/expression dichotomy in the field of software protection.

In concrete cases, the copyrightability of video game software will usually be confirmed as a procedural issue by focusing on the existence of “computer software copyright registration certificate” issued by the National Copyright Administration of the PRC (NCAC). Although the registration certificate is just *prima facie* evidence that cannot assure the existence of copyright in computer software from a legal perspective,⁵⁹ if the claimant provided the “computer software copyright registration certificate” and the defendant did not challenge that certificate, the copyrightability of the claimant’s computer software will be admitted by a Chinese court as an undisputed fact. In that sense, the confirmation of copyrightability of video game software turns into a procedural issue. For example, in the case of a video game named *Heroes of Order & Chaos*,⁶⁰ the Chongqing Fifth Intermediate People’s Court claimed that the software of the video game *Heroes of Order & Chaos* belonged to the “computer software” stipulated in the *Regulations on Computer Software Protection (2013 Amendment)*. Considering that the claimant had provided the “computer software copyright registration certificate” as *prima facie* evidence for its copyright and the defendant did not challenge, the court directly admitted the copyrightability of the claimant’s video game software.

It is worth noting that, the reason why the copyrightability of video game software is usually treated by Chinese courts as a procedural issue is that: the cases we can find all relate to the literal copying or small modification of an existing video game software. That is to say, in those cases, the defendants all directly admitted the copyrightability of the claimant’s software,⁶¹ making it unnecessary for a Chinese court to give a legal analysis of that issue.

⁵⁹ *Huaiwen He* (n25) 142.

⁶⁰ Chongqing Fifth Intermediate People’s Court, Judgment (2015) *Yu Wu Zhong Fa Min Chu Zi* No. 00046 (智乐软件(北京)有限公司诉重庆梦呓科技有限公司侵害计算机软件著作权纠纷案, 重庆市第五中级人民法院(2015)渝五中法民初字第00046号民事判决书).

⁶¹ For example, Shenzhen Futian District People’s Court, Judgment (2016) *Yue 0304 Min Chu* No. 25319 (上海要玩网络技术有限公司等诉深圳市六一网络科技有限公司侵害计算机软件著作权纠纷案, 深圳市福田区人民法院(2016)粤0304民初第25319号民事判决书); Beijing Intellectual Property Court, Judgment (2016) *Jing 73 Min Chu* No. 370 (株式会社光荣特库摩游戏诉北京三鼎梦软件服务有限公司侵害计算机软件著作权纠纷案, 北京知识产权法院(2016)京73民初第370号民事判决书); Chongqing Fifth Intermediate People’s Court, Judgment (2015) *Yu Wu Zhong Fa Min Chu Zi* No. 00046 (智乐软件(北京)有限公司诉重庆梦呓科技有限公司侵害计算机软件著作权纠纷案, 重庆市第五中级人民法院(2015)渝五中法民初字第00046号民事判决书); Beijing Haidian District People’s Court, Judgment (2014) *Hai Min Chu Zi* No. 7026 (简乐互动(北京)科技有限公司诉北京宝软科技有限公司侵犯计算机软件著作权纠纷案, 北京市海淀区人民法院(2014)海民初字第7026号民事判决书); Beijing Second Intermediate People’s Court, Judgment (2013) *Er Zhong Min Chu Zi* No. 9903 (蓝港在线(北京)科技有限公司诉九合天下(北京)科技有限公司等侵犯计算机软件著作权纠纷案, 北京市第二中级人民法院(2013)二中民初字第9903号民事判决书); Guangzhou Intermediate People’s Court, Judgment (2011) *Sui Zhong Fa Min San Zhong Zi* No. 34 (广州市中艺电子科技有限公司与广州鑫宇电子科技有限公司侵害计算机软件著作权纠纷上诉案, 广州市中级人民法院(2011)穗中法民三终字第34号民事判决书); Shenzhen Intermediate People’s Court, Judgment (2008) *Shen Zhong Fa Min San Chu Zi* No. 268 (北京某某有限公司诉山东某某有限公司等侵犯计算机软件著作权纠纷案, 深圳市中级人民法院(2008)深中法民三初字第268号民事判决书).

5.3.1.3 Video Game Screen Display

The copyrightability of a video game screen display is a more complicated issue than that of video game screen display because various kinds of elements in a display have been confirmed by Chinese courts as copyrightable subject-matters. Among the cases in China, since to date there is no case determined under the 2020 Copyright Law, the cases we discuss in this section were all determined under the 2010 Copyright Law. Under the 2010 Copyright Law, the copyrightable subject-matters identified by Chinese courts include four types: written works, fine art works, graphic works, and cinematographic works.⁶²

5.3.1.3.1 Written Work

Whether certain textual contents presented in a video game screen display (such as the names of characters, names of game items, textual descriptions of plots and characters, and so on) should be protected as written works is an issue that Chinese courts always need to handle. According to Article 4(1) of the *Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*, a written work should be expressed in a written form similar to a novel, poem, essay, and thesis. From the current cases, three types of textual contents were discussed as related to written works: (1) names of a video game, game characters, and game items, (2) textual descriptions of certain objects in a video game, and (3) textual descriptions of gameplay and game rules.

Names of a Video Game, Game Characters, and Game Items

In the case of *My Name is MT* (我叫 MT, which is a card game),⁶³ the defendant challenged that the name of the video game (i.e., *My Name is MT*) and five characters' names (i.e., 哀木涕, 傻馒, 劣人, 呆贼, and 神棍德 in Chinese) should not be protected as written works, posing the issue of whether a word group or phrase such as a name or title should be protected as a written work to the court. As a response, according to the requirements of a work under the 2010 Copyright Law, the court focused on the requirement of creativity (i.e., the author's personality reflected from a work) and put forward two standards for determining the existence

⁶² In fact, the music in a video game will without doubt be protected as a musical work stipulated in Article 4(3) of the *Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*. Among current cases relating to video games, there was no case that is related to the music in a video game, but only one case in which the use of existing music in a video game was determined by the Beijing Shijingshan District People's Court as copyright infringement, implying that music presented in a video game screen display will be protected as a musical work. So, here we will not talk about the protection of music in a video game. For that case, see Beijing Shijingshan District People's Court, Judgment (2016) *Jing 0107 Min Chu* No. 1812 (86 版《西游记》音乐作品著作权案, 北京市石景山区人民法院 (2016) 京 0107 民初 1812 号民事判决书).

⁶³ Beijing Intellectual Property Court, Judgment (2014) *Jing Zhi Min Chu Zi* No. 1 (北京乐动卓越科技有限公司与北京昆仑乐享网络技术有限公司等计算机软件著作权权属纠纷, 北京知识产权法院 (2014) 京知民初字第 1 号民事判决书).

of creativity. The first standard is whether the word group or phrase can be considered as a result of an author's choice, arrangement, or design. If there is no space for the author to choose and arrange his or her expression, the word group or phrase should be deemed as a merger of the idea and expression and cannot meet the requirement of creativity. Furthermore, ordinary or commonly used word groups or phrases will not meet the requirement of originality. The second standard is whether a word group or phrase can, in a relatively complete manner, reflect an author's thoughts or emotions and convey certain information. Considering a copyrighted work is a bridge between its author and other members of a society, if a word group or phrase cannot give its reader a precise meaning, it will not meet the requirement of creativity.

By relying on the two standards above, the Beijing Intellectual Property Court denied the copyright protection of the names of the video game and five characters. For the name of the video game *My Name is MT*, the court considered both the phrase "my name" and the name "MT" as commonly used expressions. For the names of the five characters (they are called 哀木涕, 傻馒, 劣人, 呆贼, and 神棍德 in Chinese), the court claimed that those names did not convey a relatively complete idea and did not realize the basic function of a written work. Although people who knew the cartoon *My Name is MT* (the work from which the video game was adapted) would understand the meaning and idea of the names above, their understanding did not come from those names themselves but from their reading of the cartoon. In that sense, the names of those five characters could not meet the requirement of creativity.

In the case of *Toy Blast* (快乐点点消, which is an elimination game),⁶⁴ the Shenzhen Intermediate People's Court also confirmed that the name of the video game "快乐点点消" in Chinese was too simplistic to reflect its creator's personality in making choices and arrangements, so that name could not meet the requirement of originality and thus could not be protected as a written work.

Besides the names of a video game and game characters, the names of game items that are considered as ordinary expressions will not be protected. In the case of *Crazy Arcade* (泡泡堂, which is a maze game),⁶⁵ the Beijing First Intermediate People's Court denied protection for the names of game items including the "sun hat" (太阳帽), "angle ring" (天使之环), and "angle wings" (天使之翼). Although the court did not provide an explicit explanation of why the names of those items could not be protected as written works, considering that those names are commonly used word groups and phrases in Chinese and cannot convey a relatively complete idea

⁶⁴ Shenzhen Intermediate People's Court, Judgment (2019) Yue 03 Min Zhong No. 11027 (杭州嗨翻科技有限公司、杭州游比阁科技有限公司与深圳市创梦天地科技有限公司侵害著作权及不正当竞争纠纷, 深圳市中级人民法院 (2019) 粤 03 民终 11027 号民事判决书).

⁶⁵ Beijing First Intermediate People's Court, Judgment (2006) Yi Zhong Min Chu Zi No. 8564 (NEXONHOLDINGS 株式会社等诉腾讯科技(深圳)有限公司等侵犯著作权、不正当竞争纠纷案, 北京市第一中级人民法院 (2006) 一中民初字第 8564 号民事判决书).

the creator wants to express (just like the names of the five characters in the *My Name is MT* case), the court's precluding their protection was not problematic.

Textual Descriptions of Characters, Plots, Items, Game Introduction, and Other Objects

In the case of *Xianyu* (仙语, which is a role-playing game),⁶⁶ the Guangzhou Tianhe District People's Court confirmed the creativity of "the textual descriptions of the game characters' skills, factions, systems related to tactical deployment of troops, and characters", protecting those textual descriptions as written works. In the case of *Koudai Xiyou* (口袋西游, which is a role-playing game),⁶⁷ the Beijing Haidian District People's Court confirmed copyright protection as written works for "the textual descriptions of the special skills of the spelling equipment of factions", "the textual introduction to the plots of the game", and "the textual introduction to the weapons and armors", but denied the creativity of certain textual contents, such as the commonly used expressions and geographical names in Chinese, the expressions used in the work *Journey to the West* (西游记, which is one of the "four masterpieces" in China and was written in 1582, and is in the public domain), and the combination of the commonly used expressions mentioned above. In the *Crazy Arcade* case, the Beijing First Intermediate People's Court held that the textual introduction to a video game could constitute a written work.⁶⁸

Textual Descriptions of Gameplay and Game Rules

In the case of *Hearthstone* (炉石传说, which is a card game),⁶⁹ for the issue of whether the textual descriptions of cards can be protected as written works, the Shanghai First Intermediate People's Court made three decisions. First, the textual descriptions of cards as a whole could be protected as instructions of game rules. Second, since the textual descriptions were dictated by gameplay and game rules, and the choices of expression for them were extremely limited, the degree of originality for those textual descriptions as a whole was rather low. Third, the court emphasized that the textual description of a sign card was too simple to meet the requirement of originality and could not be protected.

⁶⁶ Guangzhou Tianhe District People's Court, Judgment (2016) Yue 0106 Min Chu No. 5333 (杭州网易雷火科技有限公司诉广州悦狼网络科技有限公司等著作权侵权及不正当竞争纠纷案, 广州市天河区人民法院 (2016) 粤 0106 民初 5333 号民事判决书).

⁶⁷ Beijing Haidian District People's Court, Judgment (2013) Hai Min Chu Zhi No. 27744 (广州网易计算机系统有限公司诉北京世纪鹤图软件技术有限公司等侵害著作权、商标权及不正当竞争纠纷案, 北京市海淀区人民法院 (2013) 海民初字第 27744 号民事判决书).

⁶⁸ Beijing First Intermediate People's Court, Judgment (2006) Yi Zhong Min Chu Zi No. 8564 (NEXONHOLDINGS 株式会社等诉腾讯科技(深圳)有限公司等侵犯著作权、不正当竞争纠纷案, 北京市第一中级人民法院 (2006) 一中民初字第 8564 号民事判决书).

⁶⁹ Shanghai First Intermediate People's Court, Judgment (2014) Hu Yi Zhong Min Wu (Zhi) Chu Zi No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院 (2014) 沪一中民五(知)初字第 23 号民事判决书).

In the case of *Toy Blast* (快乐点点消),⁷⁰ similar to the opinion in the *Hearthstone* case and the *Crazy Arcade* case, the Shenzhen Intermediate People's Court considered the textual instructions of game rules as expressions rather than ideas. As the court explained, whether or not to protect contents related to game rules and gameplay should be determined by the idea/expression dichotomy. On the one hand, game rules and gameplay themselves should be considered as unprotectable ideas for a video game because the protection of them would create a monopoly on gameplay and hinder the development and innovation of game rules. On the other hand, the original expression of game rules and gameplay should be protected as a way to motivate innovation. Considering that the textual instructions of game rules were sufficiently original because they were a high-level generalization of the contents of a game and a concentrated presentation of gameplay, the court confirmed those textual instructions as expressions of game rules and gameplay, distinguishable from the game rules and gameplay themselves. While at the same time, since the choice and space of expressing those game rules and gameplay are usually limited, the scope of protection for those textual instructions should also be restricted.

5.3.1.3.2 Fine Art Work

Besides textual contents presented in a video game screen display, the issue of whether specific images and user interfaces can be protected as fine art works were also discussed by Chinese courts in concrete cases.

Specific Images of Game Characters, Game Scenes, Items, and Icons

According to Article 4(8) of *the Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*, fine art works are “two- or three-dimensional works of the plastic arts created in lines, colours or other media which impart aesthetic effects, such as paintings, works of calligraphy and sculptures”.

In the case of *Hearthstone*,⁷¹ when applying the requirement of creativity to a fine art work, based on the definition of a fine art work mentioned above, the Shanghai First Intermediate People's Court interpreted that requirement as consisting of two conditions: (1) the existence of minimal aesthetic effects, and (2) not belonging to the plastic arts in the public domain. By following those conditions, the court directly confirmed the existence of minimal aesthetic effects in both the *Hearthstone* logo and the images of the backs of cards,⁷² and held that there was no evidence

⁷⁰ Shenzhen Intermediate People's Court, Judgment (2019) Yue 03 Min Zhong No. 11027 (杭州嗨翻科技有限公司、杭州游比阁科技有限公司与深圳市创梦天地科技有限公司侵害著作权及不正当竞争纠纷, 深圳市中级人民法院 (2019) 粤 03 民终 11027 号民事判决书).

⁷¹ Shanghai First Intermediate People's Court, Judgment (2014) Hu Yi Zhong Min Wu (Zhi) Chu Zi No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院 (2014) 沪一中民五 (知) 初字第 23 号民事判决书).

⁷² In the video game *Hearthstone*, which is a card game played on a computer, the backs of cards is a feature

showing that those images came from the plastic arts in the public domain, thus affording protection of those images as fine art works. From that practice, we get two impressions. First, since the aesthetic effects only need to be minimal, the existence of minimal aesthetic effect will be easily found in a general sense. Second, the condition of not belonging to plastic arts in the public domain allocates the burden of proof to the defendant who denies the creativity of the claimant's images because the defendant needs to prove that those images should belong to the public domain. In that sense, that condition makes those images easier to be confirmed as protectable fine art works.

Besides the images of logos and the backs of cards, many other images in a video game screen display are also protected as fine art works. In the *Chuanqi Baye* (传奇霸业, which is a role-play game) case⁷³ and the *Xianyu* (仙语) case⁷⁴, which were both adjudicated by the Guangzhou Tianhe District People's Court, the court considered the images of game characters (protagonists and non-player characters), the pets in the game, game scenes (the background images of the user interface), skill icons, buildings and other artistic materials as protectable works of fine art. In the *Toy Blast* case,⁷⁵ the icon of the game app was protected as a fine art work. And in the case of *Westward Journey Online II* (大话西游 Online II),⁷⁶ the Guangzhou Court of the Internet protected the game scenes as works of fine art.

User Interface

In the case of *Galaxy Empire* (银河帝国),⁷⁷ the Dalian Xigang District People's Court provided a detailed analysis of whether the use interface of a video game can be protected as a fine art work. In that case, the court provided three reasons to deny the protection of the screenshots of the user interface of the video game *Galaxy Empire*.

First, the user interfaces that are limited or dictated by functional considerations

which allows players to replace the standard design on the reverse of their cards with alternative designs.

⁷³ Guangzhou Tianhe District People's Court, Judgment (2016) Yue 0106 Min Chu No. 350 (江苏极光网络技术有限公司等诉四三九九网络股份有限公司等著作权侵权及不正当竞争纠纷案, 广州市天河区人民法院 (2016)粤 0106 民初 350 号民事判决书).

⁷⁴ Guangzhou Tianhe District People's Court, Judgment (2016) Yue 0106 Min Chu No. 5333 (杭州网易雷火科技有限公司诉广州悦狼网络科技有限公司等著作权侵权及不正当竞争纠纷案, 广州市天河区人民法院 (2016)粤 0106 民初 5333 号民事判决书).

⁷⁵ Shenzhen Intermediate People's Court, Judgment (2019) Yue 03 Min Zhong No. 11027 (杭州嗨翻科技有限公司、杭州游比阁科技有限公司与深圳市创梦天地科技有限公司侵害著作权及不正当竞争纠纷, 深圳市中级人民法院 (2019)粤 03 民终 11027 号民事判决书).

⁷⁶ Guangzhou Court of the Internet, Judgment (2018) Yue 0192 Min Chu No. 1558 (网易 (杭州) 网络有限公司与广州浩动网络科技有限公司、霍尔果斯毅讯电子科技有限公司著作权权属纠纷、侵害著作权纠纷, 广州互联网法院 (2018)粤 0192 民初 1558 号民事判决书).

⁷⁷ Dalian Xigang District People's Court, Judgment (2014) Xi Min Chu Zi No. 1002 (成都尼毕鲁科技有限公司诉大连斯芬克斯软件开发有限公司侵害作品复制权、发行权、修改权、信息网络传播权纠纷案, 大连市西岗区人民法院 (2014)西民初字第 1002 号民事判决书).

cannot be protected. The video game *Galaxy Empire* contains several functional user interfaces, such as the mission interface (showing a player the missions he needs to complete), the ranking interface (showing a player his rank in the server), the top-up interface (where a player can exchange his real currency for the game currency), the email interface (showing the emails sent by the game system to a player), the setting interface (where a player can set picture quality, sound volume, and so on), the alliance interface (which shows information about the alliance a player is in), the chat interface (where a player can chat with other players), and the activity interface (which shows the activities that are happening in the game). Since all the interfaces listed above are aimed at helping players to operate auxiliary functions in the game, they were considered by the court as not having a minimal aesthetic effect. In addition, all those user interfaces were also deemed by the court as ordinary expressions for a video game because the functions enabled by those user interfaces were extremely ordinary for an online game on the market. In that sense, the court denied the creativity of the functional user interfaces listed above.⁷⁸

Second, the user interfaces that cannot reflect its creator's personality will not be protected. For the user interfaces, which include images of metal processing plants, crystal processing plants, fleets, resources, technology, and so on, the claimant cannot prove that it created those images. In fact, the court found similar and even identical images of those objects in another game named *Ogame*. In that sense, the court held that those user interfaces did not reflect the claimant's personality and could not meet the requirement of originality.

Third, the user interfaces that can only be expressed in limited ways or a unique way will not be protected. In that case, for the user interfaces which show the stairs and equipment of a base, the shape of a planet, and the shape of a galaxy, considering those interfaces need to give players the feeling of reality, the way of expressing those interfaces is rather limited. Moreover, as the court pointed out, the claimant's choice of using dark blue as the background colour of the game was also not creative because using dark blue to present outer space and the universe, which was the topic of the claimant's game, was an ordinary expression. As a result, the creativity of those user interfaces was denied by the court.

In the *Crazy Arcade* case,⁷⁹ the Beijing First Intermediate People's Court denied the protection of the login interface of that game because it considered the adoption of a

⁷⁸ The Guangzhou Tianhe District People's Court in the *Xianyu* (仙语) case held the same opinion. In that case, the choice and arrangement of the elements in the functional user interfaces (such as the mission interface, chat interface, battle interface, alliance interface and so on, which functioned similarly to the interfaces in the *Galaxy Empire* case) was considered as simple permutation and combination of those elements and not qualified for copyright protection. See Guangzhou Tianhe District People's Court, Judgment (2016) Yue 0106 Min Chu No. 5333 (杭州网易雷火科技有限公司诉广州悦狼网络科技有限公司等著作权侵权及不正当竞争纠纷案, 广州市天河区人民法院 (2016) 粤 0106 民初 5333 号民事判决书).

⁷⁹ Beijing First Intermediate People's Court, Judgment (2006) Yi Zhong Min Chu Zi No. 8564 (NEXONHOLDINGS 株式会社等诉腾讯科技(深圳)有限公司等侵犯著作权、不正当竞争纠纷案, 北京市第一中级人民法院民事判决书 (2006) 一中民初字第 8564 号).

rectangular window which is located in the middle of the bottom of the screen (shown in Figure 5-4) as an ordinary form of expression for a login interface.



Figure 5-4 The Login Interface of Crazy Arcade

In the *Hearthstone* case,⁸⁰ according to the Shanghai First Intermediate People's Court, although the court also denied the protection of the layout of a user interface because it was dictated by functional considerations, the court still admitted the protection of user interfaces that had minimal aesthetic effects and did not belong to the plastic arts in the public domain.

From our discussion of the cases above, the existence of functional considerations, lack of creativity, and limited ways of expression can be the reasons to deny the creativity of a user interface. Except for those reasons, a use interface will be protected by a Chinese court.

User Interface Cannot be Protected as a Derivative Work

In both the *Galaxy Empire* case and the *Hearthstone* case, the right holders asked Chinese courts to protect the overall arrangement of the user interfaces and images appearing in the screen display as a derivative work. According to Article 14 of the *Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*, the choice and arrangement of materials (regardless of whether or not they are copyrightable) that reflects originality can be protected as a derivative work. However, both courts denied the request for overall protection of the user interfaces and images as a derivative work by providing different reasons. In the *Galaxy Empire* case, the Dalian Xigang District People's Court held that it was not proper to interpret a video game, which presented dynamic images, as an arrangement of static images.⁸¹ In the *Hearthstone* case, the Shanghai First Intermediate People's Court

⁸⁰ Shanghai First Intermediate People's Court, Judgment (2014) *Hu Yi Zhong Min Wu (Zhi) Chu Zi* No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院(2014)沪一中民五(知)初字第23号民事判决书).

⁸¹ Dalian Xigang District People's Court, Judgment (2014) *Xi Min Chu Zi* No. 1002 (成都尼毕鲁科技有限公司诉大连斯芬克斯软件开发有限公司侵害作品复制权、发行权、修改权、信息网络传播权纠纷案, 大连市西岗区人民法院(2014)西民初字第1002号民事判决书).

considered the arrangement of interfaces as the idea of the images that could be protected as works of fine art, and the court also held the view that the space of the choice and arrangement of user interfaces was limited by the functions of both a video game and a computer screen, meaning that the choice and arrangement could not reflect sufficient creativity qualifying for copyright protection.⁸²

5.3.1.3.3 Graphic Work

According to Article 4(12) of the *Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*, a graphic work means such works as drawings of engineering designs and product designs for the purpose of actual construction and manufacturing, and maps and sketches showing geographical phenomena and demonstrating the fundamentals or the structure of a thing or an object. In the *Cross Fire* (穿越火线, which is a First-Person Shooter (FPS) game) case,⁸³ the “game scenes maps” and the “schematic diagrams of the game maps” (called the game mini-maps) were protected as graphic works by the Shenzhen Intermediate People’s Court.

In the *Cross Fire* case, the Shenzhen Intermediate People’s Court started its analysis by explaining the core of a shooting game. According to expert opinions, the core of a shooting game consisted of three parts: the gameplay (i.e., game rules), the design of game scenes maps (i.e., levels), and the abilities of game characters (i.e., values and data). The design of game scenes maps can be divided into the white box design and the adding of aesthetic effects to the white box. Since any kind of aesthetic effects can be added to a white box, the design of a white box is crucial for a shooting game. In the white box design, the game scenes maps could show their creator’s originality of choosing the elements of a map, including the ways and covers (including the position, size and height of the cover), space, distance, height, orientation, section, etc. All the choices of the elements listed above would greatly affect the progress of the game and how the players would feel and play the game. For example, the different choices of ways and covers of a game scene map will not only affect the difficulty of the game but also the strategy a player will use to combat others in the game.

Based on that, the court considered the expressions of a game scene map as consisting of two parts: the “outer forms of expressions” and the “comprehensive expressions of the inner structure”. The outer forms of expressions are the scenes, which consist of lines, lines, and pattern, that can be directly observed by ordinary

⁸² Shanghai First Intermediate People’s Court, Judgment (2014) *Hu Yi Zhong Min Wu (Zhi) Chu Zi* No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院(2014)沪一中民五(知)初字第23号民事判决书).

⁸³ Shenzhen Intermediate People’s Court, Judgment (2017) *Yue 03 Min Chu* No. 559 (深圳市腾讯计算机系统有限公司与畅游云端(北京)科技有限公司著作权侵权纠纷, 深圳市中级人民法院(2017)粤03民初559号).

people. The comprehensive expression of the inner structure refers to the elements of a game scene map, including the “overall composition, outline, internal path of the map”, the “shape and layout of obstacles”, and the “shape and layout of covers”. Considering that different creators can choose different outer forms of expressions and comprehensive expressions of the inner structure, the ways of expression are not limited. In that sense, the court confirmed the originality of a game scene map.

What’s more, since a game scene map consists of two kinds of expressions, i.e., the outer forms of expressions and the expressions of the inner structure, the court considered the latter, expressions of the inner structure, as more important because, although the aesthetic effects shown as the outer forms of expressions can also attract players to an extent, it is those paths, obstacles, and covers in the expressions of the inner structure that comprise the main focus of a player in a shooting game. Since the expressions of the inner structure in a game scene map have the same forms of expressions required by a graphic work under the 2010 Copyright Law, the court finally determined to protect the game scenes maps of the *Cross Fire* as graphic works. For the “schematic diagram of the game map” (i.e., the game mini-map), since it is a flat diagram that reflects the overall outline of the game scene map, the shape of the internal constituent elements, and the layout structure drawn by purely using lines from the top-view perspective, the analysis of a game scene map is also applicable for that kind of game map. In a word, both the game scenes maps and the game mini-maps were confirmed by the Shenzhen Intermediate People’s Court as graphic works.

5.3.1.3.4 Cinematographic Work

Protecting a video game screen display as a “work created in a way similar to cinematography” under the 2010 Copyright Law (Article 3(6)) originated from the *Hearthstone* case as a recent trend.⁸⁴ According to Article 4(11) of the *Regulation on the Implementation of the Copyright Law of the PRC (2013 Amendment)*, cinematographic works and works created in a way similar to cinematography are “recorded on some materials, consisting of a series of images, with or without accompanying sound, and which can be projected with the aid of suitable devices or communicated by other means”. It is noteworthy that, in Article 3(6) of the 2020 Copyright Law, “cinematographic works and works created in a way similar to cinematography” is replaced with “audio-visual works”. Although the definition of an audio-visual work is not given, according to the interpretation originating from the principles of copyright revision, an audio-visual work is an abbreviated form of the name “cinematographic works and works created by virtue of an analogous method of film production” stipulated in Article 3(6) of the 2010 Copyright Law.⁸⁵

⁸⁴ Shanghai First Intermediate People’s Court, Judgment (2014) *Hu Yi Zhong Min Wu (Zhi) Chu Zi* No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院(2014)沪一中民五(知)初字第23号民事判决书).

⁸⁵ *Wei Huang, Leiming Wang* (n23) 55-56.

That opinion is supported by the WIPO's guide on the Berne Convention.⁸⁶ And legal scholars' interpretation of the Berne Convention is that "there is no longer any meaningful difference between cinematographic work, works expressed by an analogous process, and audio-visual work in a general sense."⁸⁷ So, we can safely come to the conclusion that, under the newly revised 2020 Copyright Law, a video game screen display can be protected as an audio-visual work. To facilitate our discussion, however, we will still use the term "cinematographic work".

In the *Hearthstone* case, the Shanghai First Intermediate People's Court for the first time in China confirmed the protection of the video and animation effects of the disputed video game as a work created in a way similar to cinematography (called the cinematographic work for short). In the court's opinion, the fact that the video and animation effects of a video game consist of a series of images satisfied the characteristic which is similar to the method of filming. In addition, the originality of the video and animation effects was further confirmed by the court because they were independently created by the author and there was no evidence showing that they belonged to the public domain.

In fact, although not problematic for the final result of the judgment in the *Hearthstone* case, the Shanghai First Intermediate People's Court mistakenly interpreted the characteristic of a cinematographic work. For that kind of work, the method of creation is not its core characteristic. In a case where the 3D animation created by adopting computer technology is protected as a work created in a way similar to cinematography, the Wuhan Intermediate People's Court explained that the materials on which a work was recorded were not limited to movie film and the way of recording was not limited to the method of film production.⁸⁸ In that sense, how a work is created is not the decisive characteristic for a work created in a way similar to cinematography. Instead, the core characteristic for that kind of work should be "a series of images". The definition of a movie can help us understand what the feature of "a series of images" means to a cinematographic work. A movie is a motion picture which consists of "a series of still images that, when viewed in rapid succession (usually 24 images per second), the human eye and brain see as fluid movement".⁸⁹ In that sense, the feature of "a series of images" means that the core characteristic of a cinematographic work lies in the fact that this kind of work can give people the feeling of fluid movement, a feeling different from what the static images can provide in a fine art work.

⁸⁶ WIPO, *Guide to the Copyright and Related Rights Treaties Administered by WIPO and Glossary of Copyright and Related Rights Terms* (WIPO, Geneva 2014) 26.

⁸⁷ Sam Ricketson, JC Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond* (2nd edn Oxford University Press, Oxford 2006) 436.

⁸⁸ Wuhan Intermediate People's Court, Judgment (2009) *Wu Zhi Min Chu Zi* No. 38 (北京华夏金马文化传播有限公司诉武汉乐迪熊音乐娱乐有限公司著作权纠纷案, 武汉市中级人民法院 (2009) 武知初字第 38 号民事判决书).

⁸⁹ Richard Barsam, Dave Monahan, *Looking at Movies: An Introduction to Film* (5th edn, W. W. Norton & Company, New York 2016) 4.

In the case of *MU Online* (奇迹 MU),⁹⁰ the Shanghai Intellectual Property Court corrected the problem in the *Hearthstone* case and pointed out that the characteristic of a cinematographic work lay in its form of expression. As the court explained, since the video game screen display in the case consisted of continuous images, its form of expression was similar to that of a cinematographic work. So, it could be protected as a work created in a way similar to cinematography. Moreover, the court also emphasized that, as for the interactivity between a player and a video game, it should not be interpreted as the characteristic of a video game screen display that allowed its player to create some new contents when playing a game. On the contrary, as the court opined, the interactivity did not add anything new for a game because everything that a player can operate was pre-set by the creator of the video game and what a player can “create” in a game was automatically generated by the game system. In that sense, the core characteristic of a video game screen display is still its form of expression that gives people a dynamic feeling by presenting a series of continuous images, making a video game screen display qualify as a cinematographic work.

It is worth noting that, in the case of *Tai Chi Panda*,⁹¹ the Jiangsu High People’s Court considered that the protection of a video game screen display as a cinematographic work provided a sufficient and substantial protection for a video game. That is because, although different contents can be protected as different subject-matters (written works, fine art works, graphic works, and computer software) under China’s copyright law, that kind of protection can only protect a certain part of a video game at once, making it easy for infringers to evade infringement liability by replacing a certain type of element in an existing video game. The protection of a video game screen display, which means the “the overall images that contain gameplay rules and other game materials shown in the running of a game”, as a cinematographic work can take the various elements in a video game into account and provide a comprehensive protection for a video game.

On that basis, the court applied the idea/expression dichotomy to the overall images. Considering many functional user interfaces as ideas, the court excluded the protection of them as the Dalian Xigang District People’s Court had done in the *Galaxy Empire* case. The court also excluded the protection of the layout and functional settings of the user interfaces for certain gameplays because it considered them as ordinary expressions or expressions in the public domain, just as the Beijing First Intermediate People’s Court had done in the *Crazy Arcade* case and the Shanghai First Intermediate People’s Court in the *Hearthstone* case. After precluding the protection of the contents mentioned above, the court confirmed copyright

⁹⁰ Shanghai Intellectual Property Court, Judgment (2016) Hu 73 Min Zhong No. 190 (广州硕星信息科技股份有限公司、广州维动网络科技有限公司与上海壮游信息科技有限公司、上海哈网信息技术有限公司著作权侵权及不正当竞争纠纷上诉案, 上海知识产权法院 (2016) 沪 73 民终 190 号民事判决书).

⁹¹ Jiangsu High People’s Court, Judgment (2018) Su Min Zhong No. 1054 (苏州蜗牛数字科技股份有限公司诉成都天象互动科技有限公司、北京爱奇艺科技有限公司侵害著作权纠纷案, 江苏省高级人民法院 (2018) 苏民终 1054 号民事判决书).

protection of the layout and specific contents of the user interfaces for the gameplays other than what had been precluded. The court reasoned that those layouts and specific contents in certain user interfaces were actually “a specific way of presenting the specific game rules” (对游戏具体玩法规则的特定呈现方式), meaning that they should be considered as protectable expressions. Besides the original layouts and specific contents in certain user interfaces, in the court’s opinion, the choice or arrangement of the unprotectable materials in the claimant’s user interfaces, if distinguishable from other games, could also meet the requirement of originality and become protectable.

5.3.1.3.5 Comments

Our discussion and analysis of how Chinese courts determined the copyrightability of a video game screen display convey information in three aspects. First, although different contents in a video game screen display are protected as different subject-matters, Chinese courts followed the same method of determining originality of a work. That is to find the personality reflected in that work by confirming the existence of independent completion and creativity. When confirming the existence of creativity in a video game screen display, Chinese courts always consider two situations: (1) whether the way of expressing an idea is limited or unique (for example, because of functional considerations), and (2) whether an expression should be considered as ordinary or common from a cultural or technological perspective. If the two situations above do not exist, then creativity of a work will be confirmed.

Second, Chinese courts protect four types of contents in a video game screen display as four kinds of subject-matters under the 2010 Copyright Law: (1) textual descriptions of characters, plots, items, and game introduction as written works, (2) specific images of characters, items, icons of game skills and APP, and some user interfaces as fine art works, (3) game scenes maps and game mini-maps as graphic works, and (4) a series of continuous images as a cinematographic work. (Figure 5-5)

Protectable Contents in a Video Game Screen Display	Subject-Matter
Textual Descriptions (Characters, Plots, Items, Game Introduction)	Written Works
Specific Images (Characters, Items, Game Scenes Maps, Icons of Game Skills and APP, Some User Interfaces)	Fine Art Works

<p style="text-align: center;">Game Maps (Game Scene Map, Game Mini-Maps)</p>	<p style="text-align: center;">Graphic Works</p>
<p style="text-align: center;">A Series of Continuous Images (Layouts and specific contents of user interfaces that can be considered as a specific way of presenting specific game rules, choice and arrangement of unprotectable materials)</p>	<p style="text-align: center;">Cinematographic Works (Audio-visual Works)</p>

Figure 5-5 Protectable Contents and Subject-Matters in a Video Game Screen Display

Third, when determining the copyrightability of certain contents in a video game screen display, Chinese courts provided a detailed analysis of whether certain specific contents should be protected, especially for the contents that can or cannot be protected as written works and fine art works, such as the names of video games, game characters, items, and other unprotectable objects (for example, in the *My Name is MT* case, the *Toy Blast* case, and the *Crazy Arcade* case), and the user interfaces that are dictated by functional considerations or should be considered as ordinary for a videogame (for example, in the *Galaxy Empire* case, the *Crazy Arcade* case, and the *Hearthstone* case). However, it seems that there is some controversy between Chinese courts about the scope of protection for the contents related to game rules and other concepts that are usually considered as ideas in a video game. In the *Hearthstone* case and the *Toy Blast* case, although Chinese courts admitted copyright protection for textual descriptions of game rules (i.e., the game instructions), they provide a rather limited scope of protection for them because their forms of expressions are rather limited. In that sense, the protection of the game instructions can only against a literal copying. While in the *Tai Chi Panda* case, the Jiangsu High People’s Court provided a broader scope of protection for the contents related to game rules. In the opinion of the Jiangsu High People’s Court, if the textual descriptions of game rules, as a part of the video game screen display protected as a cinematographic work, are sufficiently specific, they should be protected with a normal scope of protection that is against more than a literal copying. Therefore, the scope of protection of the contents related to game rules and other “ideas” in a video game needs further elaboration.

5.3.1.4 Other Intellectual Creation: Not Possible

As we mentioned above, the 2020 Copyright Law changed the exhaustive category of copyrightable works in the 2010 Copyright Law into an open-ended list by adding a miscellaneous provision protecting “other intellectual productions that meet the

characteristics of a work”.⁹² Since the open-ended list theoretically provides a court with more discretion on creating new types of subject-matter besides the works enumerated,⁹³ how to apply that discretion to the issue of the subject-matter of a video game becomes problematic. More specifically, can a video game be protected holistically as the “other intellectual creation” under the 2020 Copyright Law?

The answer is no. Of course, a videogame can absolutely meet the requirements of a work and be qualified as a protectable intellectual creation in a general sense, but that is not sufficient. When applying the miscellaneous provision, before a court can directly protect a video game as an “other intellectual creation”, it should exhaust the possibilities of whether a video game can be protected as one or several of the works enumerated.⁹⁴ In other words, a court should provide a persuasive argument as to why the works enumerated are not suitable or applicable for the protection of a video game. However, it will be very difficult or impossible to argue that position because, according to current judicial practice as discussed in previous sections of this chapter, different Chinese courts had confirmed and well explained why different parts of a video game can be protected as computer software, written works, fine art works, graphic works, and cinematographic works (audio-visual works). From a factual perspective, since we cannot find any cases to date involving the protection of a video game holistically as the “other intellectual creation”, that situation at least says that the right holders of video games do not appear to be discontented with the current protection mode for a video game. In other words, although it is still open for theoretical discussion whether a video game can be protected holistically as one subject-matter, we do not see any chance that Chinese courts will protect it as an “other intellectual creation” under the 2020 Copyright Law.

5.3.2 Copying of Protectable Expressions

After examining how a Chinese court determines the copyrightability issue related to a video game, this section discusses how Chinese courts find copying of protectable expressions between disputed video games. We begin by introducing the general rule Chinese courts follow when determining copyright infringement. Then we zoom in on how decisions were made in concrete cases regarding game clones.

5.3.2.1 The General Rule: Access + Substantial Similarity

When determining copyright infringement in a specific case, a Chinese court must follow the general rule that is summarized as a formula called “Access (接触) +

⁹² *Supra* Section 5.3.1.1.2, p. 118-119.

⁹³ Chen Li, ‘The Legal Meaning of the Categorization of Works’ (论作品类型化的法律意义) (2018) 8 *Intellectual Property* 6-7.

⁹⁴ *Wei Huang, Leiming Wang* (n23) 57.

Substantial Similarity (实质性相似)".⁹⁵ The Supreme People's Court in China confirmed that formula in Guiding Case No. 81 by providing two Key Points for lower courts to follow:

[Key Point 2] Whether a work constitutes infringement shall be judged from such aspects as whether the author of the allegedly infringing work has come into contact with the copyright holder's work and whether these two works constitute substantial similarity. To decide whether substantial similarity is constituted, the comparison shall be made by focusing on whether the choices, arrangements, and designs reflected in expressions are identical or similar, rather than focusing on the ideas, emotions, creative mind, and objects etc.

[Key Point 3] In accordance with the provisions of the Copyright Law related to the protection of works, a court shall protect original expressions from an author, i.e., the expression forms of ideas or emotions. Creative minds, materials, information in the public domain, forms for creation, necessary scenes, and expressions with unique or limited forms shall not be protected.⁹⁶

According to Key Point 2, the term "access" means the "author of allegedly infringing work came into contact with the copyright holder's work", and the term "substantial similarity" means "the choices, arrangements, and designs reflected in expressions are identical or similar". Because the existence of "choices, arrangements, and designs reflected in expressions" is actually the requirement of creativity in China,⁹⁷ the term "substantial similarity" can be further interpreted as the situation in which contents of the alleged infringing work have been found as identical or similar to creative expressions of the alleged infringed work. In that sense, the requirement of creativity, also the copyrightability issue as a whole, will be key in determining substantial similarity. In addition, also in Key Point 2, the Supreme People's Court emphasized that the comparison for finding substantial similarity should not focus on "ideas, emotions, creative mind, and objects". From that, the idea/expression dichotomy should also be considered when finding substantial similarity. To further emphasize what should and should not be protected under China's copyright law, in Key Point 3, the Supreme People's Court reiterated the originality requirement and the idea/expression dichotomy which we discussed above in Section 5.3.1.1.

In practice, "access" can be confirmed if the right holder of the alleged infringed

⁹⁵ *Yushui Song* (n25); Zhiwen Liang, 'Judging Substantial Similarity under Copyright Law' (版权法上实质性相似的判断) (2015) 6 *The Jurist* 37-50; Handong Wu, "'Substantial Similarity + Access' As the Rules for Deciding Infringement' (试论“实质性相似 + 接触”的侵权认定规则) (2015) 8 *Law Science* 63-72.

⁹⁶ Guiding Case No. 81, Key Points of Judgment, available at <http://www.court.gov.cn/fabu-xiangqing-37642.html>

⁹⁷ See note 28 and accompanying text.

work can provide either direct evidence showing the creator of the alleged infringing work had direct contact with the alleged infringed work or indirect evidence showing the possibility of contact. For the possibility of contact, it will be confirmed by Chinese courts in two ways: the first is through the facts that the alleged infringed work is widely circulated and is very popular or highly known on the market, and the second is through the existence of similarities (as a factual issue) or substantial similarity (as a legal issue).⁹⁸

Different from the confirmation of access, determining substantial similarity is more complicated because it concerns applying the originality requirement and the idea/expression dichotomy to specific works and making a comparison between disputed works. For this reason, the following section examines how substantial similarity has been determined between disputed video games in concrete cases by Chinese courts.

5.3.2.3 Substantial Similarity between Video Games

In a general sense, the comparison for finding substantial similarity is made by Chinese courts from a perspective of an ordinary observer.⁹⁹ Also, since different parts of a video game are protected as different subject-matters under the 2010 Copyright Law, i.e., video game software is protected as computer software, a video game screen display contains written works, fine art works, graphic works, and cinematographic works, it is necessary to introduce how substantial similarity is found in each case listed above.

To facilitate our discussion, we first need to explain a common practice in China's judicial practice. To show similarity between disputed works as a factual issue (not limited to computer software but to the protectable subject-matters in a video game screen display), it is a common practice for Chinese courts to ask for judicial authentications (司法鉴定) from both parties in the process of copyright litigation as evidence, and Chinese courts will make the comparison to find substantial similarity based on those factual similarities included in judicial authentications. A judicial authentication aims to solve the factual issue in a case. Based on the assignment of the people's courts or the parties to the dispute being litigated, authentication institutions and individuals who are qualified to render judicial authentication of intellectual property in accordance with the law (i.e., *Decision of the Standing Committee of the National People's Congress on the Administration of Judicial Authentication (2015 Amendment)* 全国人大常委会关于司法鉴定管理问题的决定(2015 修正)) will provide a judicial authentication by using science and technology or expertise to deal with special issues related to intellectual property

⁹⁸ Wenjie Ding, 'The Basic Connotation and Determination Rules of Access' (接触要件的基本内涵及认定规则) (2019) 3 Intellectual Property 29-30.

⁹⁹ Zhiwen Liang (n95) 44-45.

rights involved in the litigation.¹⁰⁰ In a word, when a Chinese court finds substantial similarity between disputed video games, the judicial authentication is always important evidence because it provides a Chinese court with the similarities between disputed video games as a factual issue, laying the foundation for a follow-on legal analysis.

5.3.2.3.1 Video Game Software

The copyright infringement cases, which we can find, involving the cloning of video game software are all related to game piracy or literal copying of an existing video game software, rather than related to non-literal copying.¹⁰¹ As a result, the claimant in any of those cases provided a Chinese court with a judicial authentication to show that its video game software had been copied or pirated. Since the judicial authentications in those cases demonstrated that the alleged infringing software was identical or extremely similar to the claimant's software, Chinese courts easily confirmed the existence of substantial similarity and determined copyright infringement. To show how substantial similarity between video game software will be found in more complicated situations, such as the situation of non-literal copying, considering that video game software has no essential difference with other ordinary software, we will take a look at how substantial similarity was found between ordinary computer software instead. To introduce that, we will start from how copyright infringement of computer software is determined in a general sense.

Access + Substantial Similarity + Exclusion of Reasonable Explanations

In China, a general practice of deciding on software infringement is to follow the rule called “access + substantial similarity + exclusion of reasonable explanations (排除合理解释)”.¹⁰² Since the proof of “access” is the same as how the “access” is proven in deciding copyright infringement in a general sense, we need to explain the finding of “substantial similarity” and the meanings of “reasonable explanations”.

To find “substantial similarity” between software, Chinese courts compare: (1) the

¹⁰⁰ Deguo Zeng (ed.), *Judicial Authentication of Intellectual Property Rights* (知识产权司法鉴定) (Intellectual Property Publishing House, Beijing 2019).

¹⁰¹ The cases include but are not limited to: Guangzhou Intermediate People's Court, Judgment (2011) *Sui Zhong Fa Min San Zhong Zi* No. 34 (广州市中艺电子科技有限公司与广州鑫宇电子科技有限公司侵害计算机软件著作权纠纷上诉案, 广州市中级人民法院 (2011) 穗中法民三终字第 34 号民事判决书); Chongqing Fifth Intermediate People's Court, Judgment (2015) *Yu Wu Zhong Fa Min Chu Zi* No. 00046 (智乐软件 (北京) 有限公司诉重庆梦呓科技有限公司侵害计算机软件著作权纠纷案, 重庆市第五中级人民法院 (2015) 渝五中法民初字第 00046 号民事判决书; Beijing Second Intermediate People's Court, Judgment (2013) *Er Zhong Min Chu Zi* No. 9903 (蓝港在线 (北京) 科技有限公司诉九合天下 (北京) 科技有限公司等侵犯计算机软件著作权纠纷案, 北京市第二中级人民法院 (2013) 二中民初字第 9903 号民事判决书).

¹⁰² Jian Song, Tao Gu, 'Discussion on Several Issues of Computer Software Infringement' (计算机软件侵权认定若干问题论述) (2014) 13 *People's Judicature* 84. In fact, that basic rule has no essential difference from the “access + substantial similarity” formula in the Guiding Case, so it should not be considered as a violation of the Provisions on Case Guidance issued by the Supreme People's Court of China.

source programs, (2) the object programs, (3) the characteristic defects of software, (4) the contents in storage media, the installation process, the installation manual, and operational status,¹⁰³ and Chinese courts also confirm the existence of substantial similarity (5) if the use of the claimant's software can be proven through the claimant's technical monitoring means.¹⁰⁴

During the confirmation of substantial similarity between video game software, only after reasonable explanations for the use of video game software have been excluded, can a Chinese court finally determine the existence of substantial similarity. Four kinds of explanations are considered as reasonable. These explanations are as follows. (1) The defendant can prove the allegedly infringing software was developed independently by providing a feasibility analysis report, project development plan, system requirements specifications, files, and source programs.¹⁰⁵ In that sense, it denies the defendant had access to the alleged infringed software. (2) The defendant's software came from other legal sources by providing evidence such as licensing agreements or purchasing contracts,¹⁰⁶ showing the defendant's use of the alleged infringed software is reasonable. (3) The expressions in the claimant's software are unique or limited forms. That explanation comes from Article 29 of the *Regulations on Computer Software Protection (2013 Amendment)* which provides that the use of unprotectable contents cannot lead to substantial similarity.¹⁰⁷ (4) The defendant used the claimant's software by installing, displaying, transmitting or storing for the purposes of studying or researching the design ideas or principles embodied in that software. That explanation is based on Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)*.¹⁰⁸ In fact, the practice mentioned in this type of explanation is called "reverse engineering",¹⁰⁹ which is a form of "fair use" (合理使用)¹¹⁰ in China.

¹⁰³ Those objects compared are also called the non-literal parts of a software, distinguishing them from the literal parts which refer to the source programs and object programs. See *Jinchuan Chen* (n25) 106.

¹⁰⁴ Jian Song, Tao Gu (n102) 85-86.

¹⁰⁵ *Jinchuan Chen* (n25) 107.

¹⁰⁶ *Jinchuan Chen* (n25) 107.

¹⁰⁷ Article 29, *Regulations on Computer Software Protection (2013 Amendment)*: The development of a piece of software which is similar to a pre-existing one due to a limit of alternative forms of expression does not constitute an infringement of the copyright in the pre-existing piece of software.

¹⁰⁸ Article 17, *Regulations on Computer Software Protection (2013 Amendment)*: A piece of software may be used by installing, displaying, transmitting or storing it for the purposes of studying or researching the design ideas or principles embodied in that piece of software, without permission from, and without payment of remuneration to, the software copyright owner.

¹⁰⁹ Jian Song, Tao Gu (n102). In China, the concept of "reverse engineering" is mentioned in Article 50(5) of the 2020 Copyright Law. Although the law itself does not give a clear definition on this concept, we can find its definition in Article 17 of *Regulations on Computer Software Protection (2013 Amendment)*. According to that Article, the purpose of reverse engineering is limited to studying or researching the design ideas or principles embodied in a piece of software. Based on this, it is perhaps fair to say that the purpose of reverse engineering in Chinese law has no obvious difference from what is reflected from the jurisdiction of the US (i.e., "running and loading a computer program with a view to observing it in operation so as to uncover and study ideas and principles that are embodied") and what is stipulated by the EU's Software Directive (which sets exceptions related to interoperability, i.e., the functional interconnection and interaction between elements of software and hardware). For the explanation of the purposes of reverse engineering in the jurisdiction of the US and the EU law, see Noam Shemtov, *Beyond the Code: Protection of Non-Textual Features of Software* (Oxford University Press, Oxford 2017) 72, and also see Recital 10 and Article 5(3) of Directive 2009/24/EC.

¹¹⁰ China's copyright law does not stipulate such concept as "fair use" but only "limitations on rights" in its provisions. As a habit, the concept of "fair use" is widely accepted and used to represent the concrete situations,

Among the four kinds of explanations above, (1) and (3) directly deny the existence of “access” and “substantial similarity”, (2) shows the defendant’s software came from legal sources, and (4) is a specific situation belonging to copyright exceptions and limitations in the field of computer programs. Since (1) and (2) are actually factual issues that can be easily confirmed, and (4) will only be applicable under specific situations, (3), i.e., the claimant’s software is an expression with unique or limited forms, is the legal issue that a Chinese court in particular will usually note when finding copying of protectable expressions. So, we will take the case of *K6* as an example to show how the Shanghai Intellectual Property Court identified the expressions with unique or limited forms.

The K6 Case

In the case of *K6*,¹¹¹ which concerned the issue of whether substantial similarity could be found between the defendant’s computer program *K6* and the claimant’s computer programs, the Shanghai Intellectual Property Court followed the rule of “access + substantial similarity + exclusion of reasonable explanations”.

When applying that rule to disputed computer software, the court emphasized the importance of the originality requirement and held that an expression with unique or limited forms should not be considered as original. More specifically, in a computer program, the court excluded the protection of the four kinds of expressions because they should be considered as expressions with unique or limited forms. (1) The first kind is the expressions formed by the fixed grammar of the same programming language. When different programmers are programming for similar functions, expressions based on the fixed grammar of the same programming language will be basically the same or have very little difference, so those expressions should not be protected. (2) The second kind concerns the expressions regarding the function naming, function definition, variable assignment, and variable definition. That kind of expressions are unprotectable because, based on programmers’ habits, their definitions of the matters mentioned above will adopt basically the same or minimally different expressions even in different software programming. (3) The third kind relates to the codes that are not original, including the third-party open-source code, third-party prior software source code and their combinations. (4) The last kind of expressions relates to the simple combinations of all the expressions in (1), (2), and (3) listed above. If those combinations do not meet the requirement of originality, they will be excluded from protection.

listed in Article 22 of the 2010 Copyright Law (now Article 24 of the 2020 Copyright Law), where a work may be exploited without permission from, and without payment of remuneration to, the copyright owner. It is worth noting that, different from the fair use defence regulated in the US Copyright Act, there is no provision that stipulates a general clause of fair use in Chinese copyright law. See *Guobin Cui* (n25) 579-80. We will further discuss “fair use” in China in Section 5.3.3.1.

¹¹¹ Shanghai Intellectual Property Court, Judgment (2018) *Hu 73 Min Chu* No. 535 (爱康网健康科技(北京)有限公司与上海圣嘉门诊部有限公司、美年大健康产业(集团)有限公司、王海峰、上海美东软件开发有限公司侵害著作权纠纷, 上海知识产权法院(2018)沪73民初535号).

Then, the court started to identify whether or not certain expressions in the claimant's software should belong to the expressions with unique or limited forms. At the same time, since the defendant doubted the existence of certain similarities pointed out by the judicial authentication, the court asked the related authentication institution to respond and gave its opinion on that factual issue. After precluding the four kinds of expressions with unique or limited forms mentioned above, the court considered the expressions left, which were included in the judicial authentication, as protectable expressions. Since the judicial authentication had already shown whether or not the contents in the defendant's software were similar to those protectable expressions, the court directly gave its conclusion on whether or not substantial similarity existed without providing further explanation.

Comments

From the case above, we can speculate about how a Chinese court determines substantial similarity between video game software that is related to the issue of non-literal copying. A Chinese court will follow the rule of "access + substantial similarity + exclusion of reasonable explanations". When applying that rule in practice, the core issue at hand is confirmation of whether the disputed programs of the claimant's software can meet the requirement of originality. And included in that core issue, a Chinese court will focus on precluding the unprotectable expressions in the disputed programs, especially the expressions with unique or limited forms. After a Chinese court precludes all the unprotectable expressions, a comparison will be made between the protectable expressions in the claimant's software and programs in the defendant's software. When making the comparison, since the judicial authentication (perhaps provided by either party) has already shown whether similarities can be found between disputed programs as a factual issue, a Chinese court only needs to determine whether or not it accepts that judicial authentication. If it accepts, a Chinese court will directly decide whether or not substantial similarity exists.

5.3.2.3.2 Video Game Screen Display

In a video game screen display, since different subject-matters have been identified by Chinese courts, including written works, fine art works, graphic works, and cinematographic works, this section discusses how substantial similarity is found in each of those subject-matters.

Written works

For written works in a video game screen display, the conclusion regarding whether or not substantial similarity exists or will be easily made by a Chinese court's

observation from the perspective of an ordinary observer because, as we mentioned above, Chinese courts have already provided a detailed analysis of whether certain contents can be protectable when determining the copyrightability of those contents.¹¹²

For the textual contents that cannot be protected (such as the names of the games, five characters, and game items in the *My Name is MT* case, the *Toy Blast* case, and the *Crazy Arcade* case; the commonly used expressions and geographic names in Chinese and expressions of the public domain work in the *Koudai Xiyou* case),¹¹³ Chinese courts directly precluded their protection and made it unnecessary for determining substantial similarity.

For the textual contents that can be protected (such as specific textual descriptions of characters, plots, items, game introduction, and other objects in the *Xianyu* case, the *Koudai Xiyou* case, and the *Crazy Arcade* case),¹¹⁴ the existence of substantial similarity can be determined through a visual comparison from the perspective of an ordinary observer. It is worth noting that, for the textual descriptions of game rules and gameplay in the *Hearthstone* case and the *Toy Blast* case, although Chinese courts held they were protectable, considering that the forms of expression for game rules and gameplay are rather limited, the scope of protection for those textual descriptions was restricted to only against a literal copying.¹¹⁵ That is to say, for those textual descriptions of game rules and gameplay, substantial similarity will only exist when literal copying exists in the defendant's video game, which can be easily determined.

Fine Art Works

Finding substantial similarity between fine art works in disputed video game screen displays is not problematic for Chinese courts for two reasons. First, for the contents that can be protected as works of fine art (such as specific images of game characters, game scenes, items, icons, and user interfaces),¹¹⁶ their scope of protection does not need to be discussed further because it has already been discussed when Chinese courts determine the issues of copyrightability. For example, in current cases which relate to the video game screen display protected as fine art works, Chinese courts had a consensus on precluding the protection for functional expressions and layout of a user interface.¹¹⁷ Second, the finding of substantial similarity is not hard for a Chinese court because it is assisted with the judicial authentication provided by the parties to the dispute or required by a Chinese court. As we have discussed, for copyright infringement cases regarding video games, judicial authentications are

¹¹² *Supra* Section 5.3.1.3.5, p. 134.

¹¹³ *Supra* Section 5.3.1.3.1, p. 123-125.

¹¹⁴ *Supra* Section 5.3.1.3.1, p. 124.

¹¹⁵ *Supra* Section 5.3.1.3.1, p. 125.

¹¹⁶ *Supra* Section 5.3.1.3.2, p. 125-128.

¹¹⁷ *Supra* Section 5.3.1.3.2, p. 127-129.

always important evidence for factual issues.¹¹⁸ After a Chinese court finds out protectable contents in the claimant's works of fine art, since a judicial authentication has already provided expert opinions of whether similarities can be found between those protectable contents and contents in the defendant's work, a Chinese court only needs to determine whether it will accept the conclusions in that judicial authentication. If so, a Chinese court can directly conclude the existence of substantial similarity from the perspective of an ordinary observer.

Graphic Works

To find substantial similarity in graphic works, the Shenzhen Intermediate People's Court in the *Cross Fire* case¹¹⁹ explained the issue of how to compare. That issue is complicated because, as an FPS (First-Person Shooter) game, the first-person perspective decides that a player cannot see the full game scene maps and mini-game maps but only a part of those maps in the process of playing the game. That is to say, it is impossible to compare all those maps side by side. So, the court decided to compare the images that a player would repeatedly experience in the game, i.e., the scenes a player will see from a first-person perspective. For instance, Figure 5-6 is a classic image showing the scene a player will experience in *Cross Fire*.

After determining how to compare the maps in the game in a general sense, the court then provided a detailed analysis for what to compare. During the process of comparison, as the court explained, since the paths, obstacles, and covers in the game maps are the core expressions that will be focused on by players, those expressions were more important than the aesthetic effects of the outer appearance of those paths, obstacles, and covers. In that sense, from the perspective of an ordinary observer, although the outer appearance of two disputed screen displays were different, the court still confirmed the existence of substantial similarity because the core expressions in a graphic work, i.e., the inner structure of the game maps, were similar.

¹¹⁸ See note 100 and accompanying text.

¹¹⁹ Shenzhen Intermediate People's Court, Judgment (2017) Yue 03 Min Chu No. 559 (深圳市腾讯计算机系统有限公司与畅游云端(北京)科技有限公司著作权侵权纠纷, 深圳市中级人民法院(2017)粤03民初559号).



Figure 5-6 A Screen Shot of *Cross Fire*

Cinematographic works

For a video game screen display protected as a cinematographic work, the finding of substantial similarity for that kind of work is much more difficult than for all the other subject-matters protected in a video game. In fact, the difficulty lies in how to compare.

In the *Hearthstone* case, the Shanghai First Intermediate People’s Court compared the composition and effects of a series of images as a whole because they were considered as the features or forms of expressions in a cinematographic work (i.e., “a series of continuous images”).¹²⁰

However, in the *MU Online* case,¹²¹ although still protecting a video game screen display as a cinematographic work, the Shanghai Intellectual Property Court compared specific outer appearances and images of game scenes, characters, weapons, items, and other objects. In fact, that kind of comparison has no difference from the visual comparison between works of fine art because both of them focus on the specific elements in a static image. What’s more, the court confirmed the existence of substantial similarity because the “visual effects of the overall looks” (整体造型的视觉效果) of the elements in disputed screen displays were not much different. From that, since the term “visual effects” can also be interpreted as “aesthetic effects”, which is a core feature for a fine art work under China’s copyright law,¹²² we further get the impression that the court’s comparison between

¹²⁰ Shanghai First Intermediate People’s Court, Judgment (2014) *Hu Yi Zhong Min Wu (Zhi) Chu Zi* No. 23 (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院(2014)沪一中民五(知)初字第23号民事判决书).

¹²¹ Shanghai Intellectual Property Court, Judgment (2016) *Hu 73 Min Zhong* No. 190 (广州硕星信息科技有限公司、广州维动网络科技有限公司与上海壮游信息科技有限公司、上海哈网信息技术有限公司著作权侵权及不正当竞争纠纷上诉案, 上海知识产权法院(2016)沪73民终190号民事判决书).

¹²² *Supra* Section 5.3.1.3.2, p. 126.

cinematographic works actually has no substantial difference from that between works of fine art.

In the case of *Tai Chi Panda*,¹²³ the Jiangsu High People's Court considered the layouts and specific contents in certain use interfaces as a "specific way of presenting the specific game rules" in the game, and was qualified as protectable expressions. Besides that, the Court also claimed that this kind of protection could provide a more comprehensive protection for a video game than protecting different contents separately as different subject-matters. On that basis, those layouts and specific contents of certain user interfaces became the objects of the comparison for finding substantial similarity.

When making the comparison, the Jiangsu High People's Court in the *Tai Chi Panda* case established a rule that "plagiarism by changing skins" (换皮抄袭) should be considered as copyright infringement. The "plagiarism by changing skins" means an infringer replaces the images and music of an existing videogame, usually considered as the "skins" of a videogame, with the infringer's own images and music, but keeps the game rules, design of values, skill systems, and operation interfaces, usually considered as the "skeleton" of a videogame, as the same as or substantially similar to that existing video game. In fact, the court held that the skeleton of a video game, if presented specifically enough, can be protected. In the court's view, when committing plagiarism by changing skins, the infringer copied the protectable expressions (i.e., the specific ways of how the ideas are presented), leading to the existence of substantial similarity.

The court provided three reasons to explain why the defendant's plagiarism, by changing the skins of the claimant's video game, led to the existence of substantial similarity. First, in the registration certificate of the defendant's computer software, 26 user interfaces archived in that certificate were identical to the elements and user interfaces in the claimant's video game, implying that the defendant only changed the skins of the claimant's game so that it could greatly reduce the development costs of the game and shorten the development cycle of the game. Second, the Court also found substantial similarity in how the game rules were specifically presented in both games, the small difference between the design of values, and the same design flaw in both games. Third, by relying on game players' perception of similarity and experiences of operation, the court found that the defendant's game was consistent with the claimant's game in terms of operating habits and players' experiences (which were proven with factual evidence), which led the court to confirm the existence of substantial similarity. Based on the three reasons listed above, the court concluded its finding of substantial similarity and again emphasized that plagiarism by changing skins was a copyright infringement.

¹²³ Jiangsu High People's Court, Judgment (2018) *Su Min Zhong* No. 1054 (苏州蜗牛数字科技股份有限公司诉成都天象互动科技有限公司、北京爱奇艺科技有限公司侵害著作权纠纷案,江苏省高级人民法院(2018)苏民终1054号民事判决书).

From our discussion of the cases above, the practice of Chinese courts concerning the issue of how to find substantial similarity between cinematographic works has three problems. First, to find substantial similarity between cinematographic works, it is not proper to compare the specific elements shown in the static images of a video game screen display and focus on their aesthetic effects because that practice blurs the boundary between works of fine art and cinematographic works. More specifically, by focusing on the elements of static images, that practice ignores the dynamic nature of cinematographic works and may neglect the possible substantial similarity reflected in a dynamic manner. In other words, just as the Dalian Xigang District People's Court in *Galaxy Empire* case opined, it is not proper to interpret a video game, which presents dynamic images, as an arrangement of static images.¹²⁴ Second, in the practice of providing a comprehensive comparison between cinematographic works, as the Jiangsu High People's Court did in the *Tai Chi Panda* case, the scope of protection for contents related to the game rules is controversial. As a legal scholar pointed out, the Jiangsu High People's Court in the *Tai Chi Panda* case justified the protection for contents related to the game rules by mistakenly equalling the requirement of originality to the specification of game rules in a game.¹²⁵ That critique is correct because the specification or the specific expressions of the game rules could not ensure that those expressions were definitely protectable because it is still possible for those specific expressions to be ordinary expressions and expressions with unique or limited forms, which are unprotectable. In that sense, the practice of the Jiangsu High People's Court will lead to an excessively broad scope of protection for the contents related to game rules. Third, also in the practice of the Jiangsu High People's Court in the *Tai Chi Panda* case, the reliance on the players' overall perception of a video game (such as their game experiences and operation habits) to find substantial similarity was criticized. That practice is problematic because the court cannot ensure that the similarity originating from game players' overall perception of two video games, which is so subjective and may vary from person to person, is the similarity between protectable expressions or unprotectable ideas. If the similarity comes from unprotectable ideas, then it should not be considered as substantial similarity.

Besides the concrete cases, other legal documents also try to explain how to make a comparison between video game screen displays protected as cinematographic works. On 13 April 2020, the Guangdong High People's Court issued the *Guidance on Trial of Cases of Civil Disputes Concerning Intellectual Property Rights of Online Games (for Trial Implementation)* (the "Guidance").¹²⁶ Although the Guidance is only a

¹²⁴ See note 81 and accompanying text.

¹²⁵ Weijun Zhang, 'The Game Rules Presented in an Audio-visual Work are Still Ideas rather than Expressions—Comments on the Judgments of Several Copyright Infringements Cases Regarding Games' (呈现于视听作品中的游戏规则依然是思想而非表达——对若干游戏著作权侵权纠纷案判决的评述) (2021) 5 Electronic Intellectual Property 72.

¹²⁶ Guangdong High People's Court, *Guidance on Trial of Cases of Civil Disputes Concerning Intellectual Property Rights of Online Games (for Trial Implementation)* (关于网络游戏知识产权民事纠纷案件的审判指引(试行)) <http://www.gdcourts.gov.cn/index.php?v=show&cid=227&id=55231>.

suggestion for lower courts in the Guangdong Province of China and should not be considered as a Judicial Interpretation which has legal effect,¹²⁷ it can still provide us with instructive information on how substantial similarity will be found by the Guangdong High People's Court in the future. Article 23 of the Guidance explains how to find substantial similarity between the continuous images of two video games. The comparison should be made by considering five aspects: (1) the overall audio-visual effect of those images; (2) the specific arrangement of the game plots; (3) the specific construction of systems or special detail design of images for game roles, skills, and equipment; (4) the proportion and importance of the same part in the content of the work claimed by the claimant; (5) whether there are reasonable explanations for the identical expressions.

Among the five aspects above, the meaning of “the overall audio-visual effect” mentioned in aspect (1) is not so clear and has to be embodied in specific cases. The game plots and any other specific design or contents mentioned in aspects (2) and (3) are actually a summary of protectable expressions in the existing cases regarding video games (for instance, see our summary in Figure 5-5). Aspect (4) interprets that substantial similarity should be found by considering both the proportion and importance of what has been copied, which is also an issue that needs to be evaluated in specific cases. As for aspect (5), reasonable explanations that make certain expressions in two works identical can be summarized as follows: the expressions belong to the public domain, the expressions are ordinary that cannot meet the requirement of originality, the expressions are dictated by functional considerations, the expressions have unique or limited forms, and the expressions are necessary scenes for expressing certain topics. In fact, the reasonable explanations closely relate to the issue of copyrightability, or more specifically, the originality, of a video game screen display. In that sense, whether or not those reasonable explanations should be evaluated *ad hoc*. In a word, although the Guidance issued by the Guangdong High People's Court in principle only systematically summarizes how to find substantial similarity between video game screen displays protected as cinematographic works, there are still many issues, such as those mentioned in aspects (1), (4), and (5), that need to be embodied and solved under specific situations. That is to say, the Guidance cannot solve the three problems, as we have already pointed out,¹²⁸ of how to compare video game screen displays.

Comments

When finding substantial similarity between disputed video game screen displays,

¹²⁷ According to the *Notice of the Supreme People's Court and the Supreme People's Procuratorate on Prohibiting Local People's Courts and People's Procuratorates from Formulating Documents with the Nature of Judicial Interpretation* (最高人民法院、最高人民检察院关于地方人民法院、人民检察院不得制定司法解释性质文件的通知), since local people's courts in China cannot formulate documents in the nature of judicial interpretation, the *Guidance on Trial of Cases* issued by the Guangdong High People's Court (which is a local people's court) is not a judicial interpretation that has legal effect, but instead a number of suggestions for lower people's courts in Guangdong Province.

¹²⁸ See p. 145-146.

Chinese courts have established a rather clear and stable scope of copyright protection for textual descriptions protected as written works and static images protected as fine art works. Through the perspective of an ordinary observer and assisted with judicial authentications, Chinese courts can provide a convincing and reasoned judgment on the existence of substantial similarity for those kinds of works.

For game scenes maps and game mini-maps protected as graphic works, although this kind of protection is not common for a video game screen display, the Shenzhen Intermediate People's Court in the *Cross Fire* case made an initial attempt to compare the core expressions in a graphic work (i.e., the inner structure of the game maps) in the process of finding substantial similarity.

For the continuous images of a video game screen display protected as cinematographic works, there are three problems which a Chinese court needs to address to find substantial similarity. First, in some cases, the way of comparing cinematographic works is the same as that of comparing fine art works. Second, the scope of protection for contents related to game rules is controversial. Third, the reliance on game players' overall perception to find substantial similarity has been criticized. Furthermore, although the Guangdong High People's Court provided a systematic Guidance, which includes five aspects, for how to find substantial similarity between video game screen displays protected as cinematographic works, it is so rigid that it cannot help to solve the three problems mentioned above.

5.3.3 Applicability of Copyright Exceptions and Limitations

After examining how Chinese courts determine the copyrightability of a video game and copyright infringement in cases regarding game clones, as the last step for determining whether the creator of a game clone, who has been confirmed as using the protectable expressions of an existing video game, should bear the liability of copyright infringement, Chinese courts should respond to the possible defences from that creator of a game clone. For the creator of a game clone, to avoid the liability of copyright infringement, that creator needs to justify that its use of protectable expressions in an existing video game is legal. In that sense, it is necessary to take a look at whether the action of cloning a video game can be considered as an action stipulated in the exceptions and limitations to copyright under China's copyright law.

Under China's copyright law, the exceptions and limitations to copyright can be divided into two types: one is "fair use" (合理使用, and we will further explain the use of that concept later) which means the user of a copyrighted work can use that work freely and does not need to get permission from the right holder of that

work,¹²⁹ and the other is “compulsory licensing” (法定许可), which means the user of a copyrighted work does not need to get permission from the right holder of that work but does need to pay for its use.¹³⁰ Considering that compulsory licensing, stipulated in Article 25 of the 2020 Copyright Law, relates to the use of copyrighted materials in textbooks that are written for the purpose of implementing compulsory education (义务教育) and state education planning (国家教育规划),¹³¹ it is irrelevant to the action of cloning a video game. Therefore, this section will examine whether “fair use” in China is applicable to the action of cloning a video game. We will start by providing a general introduction to “fair use” under China’s copyright law and judicial practice.

5.3.3.1 A General Introduction to “Fair Use” in China

Legislation

In China’s copyright law, the concept of “fair use” is not explicitly stipulated or mentioned; it is instead a habitual statement admitted and used by legislators, judges, and scholars in China. The term “fair use” in China means the situations in which a copyrighted work can be used without permission of the right holder of that work and without payment to the right holder.¹³² The legal basis of “fair use” in China are the regulations stipulated in Article 24 of the 2020 Copyright Law. That Article consists of three parts. The first is a principled regulation on “fair use” in China’s copyright law: under certain cases, a copyrighted work may be exploited without permission from, and without payment of remuneration to, the copyright owner, provided that the name of the author and the title of the work are mentioned, a normal exploitation of the work is not affected, and the legitimate interests of the author are not unreasonably prejudiced. That regulation is actually a direct reflection of the three-step test stipulated in Article 13 of TRIPS.¹³³

The second part of the regulations of “fair use” in China explains the “certain cases” where “fair use” can be established. More specifically, there are 12 situations where copyrighted works can be fairly used without compensation. As shown in Figure 5-7, Article 24 (1) to (12) explicitly stipulate the purpose and specific behaviours of the

¹²⁹ Article 24, the 2020 Copyright Law of China.

¹³⁰ Article 25, the 2020 Copyright Law of China.

¹³¹ Article 25, the 2020 Copyright Law of China:

“Anyone who compiles or publishes textbooks for the purpose of implementing the nine-year compulsory education or State education planning may compile published fragments of works, short written works or musical works, a single work of fine art, or photographic works into the textbooks, however, he shall pay the remuneration as provided, mention the name of the author and the title of the work, and shall not infringe upon other rights which the copyright owner shall enjoy in accordance with this Law.

The provisions in the preceding paragraph shall be applicable to the limitations on the rights related to copyright.”

¹³² Wei Huang, *Leiming Wang* (n23) 143.

¹³³ Baiyong Yang (ed), *Understanding and Application of Chinese Copyright Law: Interpretation of Principles and Issues in the Trial Practice* (著作权法原理解读与审判实务) (Law Press, Beijing 2021) 241.

use that can be considered as a fair use. Besides that, Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)* adds another specific situation for “fair use”: “A piece of software may be used by its installing, displaying, transmitting or storing for the purposes of studying or researching the design ideas or principles embodied therein, without permission from, and without payment of remuneration to, the software copyright owner.” From that Article, reverse engineering¹³⁴ of software can also establish “fair use” in China.

(1) use of a published work for the purposes of the user's own private study, research or self-entertainment
(2) appropriate quotation from a published work in one's own work for the purposes of introduction of, or comment on, a work, or demonstration of a point
(3) inevitable reappearance or citation of a published work in newspapers, periodicals, radio stations, television stations or other media for the purpose of reporting events
(4) reprinting by newspapers or periodicals or other media, or rebroadcasting by radio stations or television stations or other media, of the current event articles on the issues of politics, economy and religion, which have been published by other newspapers, periodicals, radio stations or television stations or other media, except where the author has declared that publication or broadcasting is not permitted
(5) publication in newspapers or periodicals or other media, or broadcasting by radio stations or television stations or other media, of a speech delivered at a public assembly, except where the author has declared that publication or broadcasting is not permitted
(6) translation or reproduction, in a small quantity of copies, of a published work for use by teachers or scientific researchers in classroom teaching or scientific research, provided that the translation or reproduction is not published or distributed
(7) use of a published work by a State organ within the reasonable scope for the purpose of fulfilling its official duties
(8) reproduction of a work in its collections by a library, archive, memorial hall, museum, art gallery or similar institution, for the purpose of the display or preservation of a copy of the work
(9) free of charge performance of a published work, that is, with respect to the performance, neither fees are charged from the public nor remuneration paid to the performers
(10) copying, drawing, photographing, or video recording of an artistic work located or on display in an outdoor public place
(11) translation of a work published by a Chinese citizen, legal entity or unincorporated organization, which is created in the national common language, into a minority nationality language for publication and distribution within the country
(12) Provide published works to the blind, visually impaired and otherwise print disabled in a barrier-free way that they can perceive

¹³⁴ For how to understand the concept of “reverse engineering” in China, see note 109.

Figure 5-7 Specific Situations for “Fair Use” under the 2020 Copyright Law of China

The third part is a miscellaneous provision stating that “other situations stipulated by laws and administrative regulations” can also be considered as “fair use”.¹³⁵ This miscellaneous provision has been recently added to the 2020 Copyright Law. Before the addition of that provision, the 2010 Copyright Law stipulated only the 12 specific situations mentioned above (although with a few non-substantially different expressions), establishing a close-ended system for “fair use” in China. With the development of the internet, and to make the “fair use” system more flexible to meet the needs of reality, legislators in China added the miscellaneous provision in the 2020 Copyright Law and turned the close-ended system into an open-ended one.¹³⁶ As the legislators explained, the use of the miscellaneous provision for “fair use” in specific cases should bear strict limitations. First, “fair use” can only be established in those situations where that had already been stipulated by laws and administrative regulations. Second, a “fair use” should also meet the two requirements set by the three-step test: (1) not conflict with a normal exploitation of the work, and (2) not unreasonably prejudice the legitimate interests of the author. Three, to establish a “fair use”, the name of the author and the title of the work used should be mentioned.¹³⁷

Judicial practice

In 2011, the Supreme People’s Court of China issued a working document named the *Opinions on Issues concerning Maximizing the Role of Intellectual Property Right Trials in Boosting the Great Development and Great Prosperity of Socialist Culture and Promoting the Independent and Coordinated Development of Economy* (关于充分发挥知识产权审判职能作用推动社会主义文化大发展大繁荣和促进经济自主协调发展若干问题的意见, called the *Opinion* thereafter). Article 8 of the *Opinion* mentions how a Chinese court can establish “fair use”:

Under special circumstances as necessary for promoting technological innovation and business development, a use of works may be determined as reasonable after considering the nature and purposes of use, the nature of works used, the quantity and quality of the part of works used, impacts of use on potential markets or values, and other factors, provided that such use neither contravenes the normal use of the works nor results in unreasonable damage to the lawful interests of the author. (*underscoring added by the author*)

¹³⁵ Article 24(13), the 2020 Copyright Law of China.

¹³⁶ Wei Huang, Leiming Wang (n23) 155.

¹³⁷ Wei Huang, Leiming Wang (n23) 155.

From the excerpt above, the Supreme People's Court shows that the establishment of fair use under special circumstances should consider four factors: (1) the nature and purposes of use; (2) the nature of works being used; (3) the quantity and quality of the parts of works being used; and (4) impacts of use on potential markets or values. In fact, those four factors are similar to the four factors in Article 107 of the US Copyright Act (i.e., (1) purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) nature of the copyrighted work; (3) amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) effect of the use upon the potential market for or value of the copyrighted work), which is known as the general clause of the fair use doctrine in the US.

So, how should we interpret the Supreme People's Court's mention of those four factors which are identical to the fair use clause in US law? Since the *Opinion* issued by the Supreme People's Court is a working document that does not have any legal effect, it may not violate the 2010 Copyright Law of China, which was still effective at that time and stipulated a close-ended system of "fair use". In that sense, the mention of those four factors of fair use in US law should not be understood as an attempt to transplant a general clause of fair use to legal practice in China and turning the close-ended system into an open-ended one. At most, those four factors mentioned by the Supreme People's Court can only be interpreted as a tool at that time to increase the flexibility of lower courts' interpretation of the specific situations for "fair use" stipulated in Article 22(1) to (12) of the 2010 Copyright Law.

Although the 2020 Copyright Law has already turned the close-ended system of "fair use" into an open-ended one, that does not change the fact that those four factors for establishing "fair use" mentioned by the Supreme People's Court in its *Opinion* can only function as a tool to increase the flexibility of lower courts' interpretation of specific situations for "fair use" (shown in Figure 5-7, and now stipulated in Article 24(1) to (12) in the 2020 Copyright Law). They still cannot be the proof of the establishment of a general clause of "fair use" in China. In fact, since legislators already pointed out that application of the miscellaneous provision for "fair use" would be strictly limited to the situations that had already been stipulated by laws and administrative regulations,¹³⁸ considering we have not observed those situations so far, it is fair to say that the system of "fair use" is *de facto* close-ended to date until the time that new specific situations are mentioned in other laws and administrative regulations. Briefly stated, it is still not possible to apply those four factors as a flexible tool to determine whether a specific situation, which does not belong to the 12 specific situations stipulated in Article 24(1) to (12) of the 2020 Copyright Law and the reverse engineering stipulated in Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)*, can establish "fair use" in China.

¹³⁸ Article 24(13), the 2020 Copyright Law of China.

5.3.3.2 “Fair Use” and the Cloning of a Video Game

For the action of cloning a video game, whether under the 2010 Copyright Law or the 2020 Copyright Law, to date we have not observed any defendant in cases regarding game clones bringing forward “fair use” as a defence. The reason for that is simple: considering the purpose and ways of the action of cloning a video game, that kind of action cannot be interpreted as any of the 12 specific situations for “fair use” in either the 2010 or the 2020 Copyright Law and the reverse engineering stipulated in Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)*.¹³⁹

It is also not possible to apply the miscellaneous provision of “fair use” in the 2020 Copyright Law and consider the action of cloning a video game as a kind of non-enumerated situation of “fair use”. According to the miscellaneous provision for “fair use” (Article 24(13) of the 2020 Copyright Law), the situations, which are not stipulated in Article 24(1) to (12) of the 2020 Copyright Law, can establish fair use only after they have already been mentioned or regulated in other laws or administrative regulations. However, it is clear that the cloning of a video game has not been added as “fair use” in other laws or administrative regulations in China, and there is no sign of fair use being added in the recent future.

Based on the analysis above, it is safe to conclude that “fair use” as stipulated in the 2020 Copyright Law is not applicable to the action of cloning a video game. In other words, the creators of game clones who use protectable expressions of an existing video game will definitely bear the liability of copyright infringement.

5.4 Comparative Analysis of the US, Japan, and China

In the previous chapters and sections, we have provided an in-depth discussion of judicial practices regarding game clones in the US, Japan, and China. More specifically, we examined how the national courts in the US, Japan, and China handled the three core issues, which include the copyrightability of a video game, copying of protectable expressions between disputed video games, and application of copyright exceptions and limitations to the action of cloning an existing video game. Under the perspective of comparative methodology,¹⁴⁰ we can consider those judicial practices as the solutions, provided by the US, Japan, and China, to those three core issues. So, in this section, we compare those solutions and identify problematic areas in their solutions. To solve those problematic areas,

¹³⁹ We have already explained why game clones usually do not involve the reverse engineering of software, see *supra* Section 3.4, note 153.

¹⁴⁰ *Supra* Section 1.4, p. 9.

recommendations will be made with the aim of improving the performance of Chinese courts.

5.4.1 Similarities and Differences in Handling the Core Issues

5.4.1.1 Copyrightability of a Video Game

The US

In the US, “original works of authorship fixed in any tangible medium of expression” will be protected. According to that definition, a protectable work must meet three requirements: originality (“original works of authorship”), fixation (“fixed in any tangible medium”), and expression (“expression”). US courts have confirmed that a video game can meet those three requirements.

For the requirement of originality, US courts apply a rather low standard, which only requires a work to be created independently by an author and to reflect a modicum of creativity, i.e., a distinguishable variation regardless of whether or not it is trivial. In that sense, a video game, whether regarding its software or screen display, can be easily confirmed as meeting that requirement. More specifically, since video game software and its screen display can satisfy the originality requirement, US courts protect them as two different subject-matters: video game software as computer programs and its screen display as an audio-visual work. In practice, when confirming a work’s originality, US courts will not decide, from a perspective of substantial law, on whether that work meets the requirement of originality. Instead, they decide, from a perspective of procedural law, by relying on the certificate of registration of that work if no evidence to the contrary has been provided to deny the originality of a video game. (Section 3.2.1)

For the requirement of fixation, it is now without doubt that the interaction between a player and its video game, although it seems to change the contents shown on the screen, will not affect the fixation of a video game screen display. (Section 3.2.2)

For the requirement of expression under the idea/expression dichotomy, since the idea/expression dichotomy, although it provides some examples of “idea”, mainly functions as a principle in which all the listed examples of “idea” need to be further embodied in concrete cases, whether certain contents of claimant’s videogame should be protected has to be determined ad hoc. In that sense, for US courts, the confirmation of whether certain contents of a video game belong to expression or idea under the idea/expression dichotomy will be handled mainly in the decisions on copyright infringement rather than the copyrightability of a work. (Section 3.2.3)

Japan

In Japan, a protectable work should be “a creatively produced expression of thoughts or sentiments that falls within the literary, academic, artistic, or musical domain”. Four requirements can be extracted from that definition: the requirement of creativity (創作性 in Japanese) (“creatively produced”), the requirement of human creation (“thoughts or sentiments”), the requirement of expression (表現 in Japanese) (“expression of thoughts or sentiments”), and the requirement of the domain that a protectable work should fall into (“the literary, academic, artistic, or musical domain”). Among those four requirements, since it is rather easy to confirm whether a work is created by a human being and whether it belongs to the literary, academic, artistic, or musical domain, Japanese courts focus their attention on the requirements of creativity and expression.

The requirement of creativity encompasses that a work reflect its author’s personality, but the reflection of personality does not mean a work needs to reach a certain artistic level but means it differs from other works. As an objective and practical way to apply the “personality” standard, the “range of choice” theory means Japanese courts should consider whether there is enough range of choice for a creator to express an idea, and whether protection of a certain expression will leave enough range of choice for other people to express the same idea.

The requirement of expression, which reflects the idea/expression dichotomy, means a protectable work should be something with specific forms such as words, signs, lines, surfaces, colours, scales, and etc. In practice, even if an expression of an idea is sufficiently specific, that expression will also be considered as the idea itself if it cannot leave a desired range of choice for others. In that sense, the requirement of creativity, or more specifically, the consideration of the “range of choice” theory, decides whether a work can meet the requirement of expression. (Section 4.2.1)

For a video game, Japanese courts accord protection to both its software and its screen display. For video game software, although the contents of a computer program that are dictated by functional considerations and are ordinary enough to be accomplished by average programmers will be excluded from copyright protection, by introducing the working principles of video game software, Japanese courts confirmed copyright protection of video game software as a program work because it shows its creator’s choice, from other choices, of one solution to project contents of a video game to a screen, consisting of a combination of instructions and other information expressed through programming language. In other words, video game software reflects both the creator’s personality, thus meeting the requirement of originality, and the specific expressions, thus meeting the requirement of expression. (Section 4.2.2)

For a video game screen display, although a copyright holder can freely choose how to protect its video game screen display (for example, as a fine art work as in the case of *Fishing Game Town 2*),¹⁴¹ the protection as a cinematographic work is the mainstream approach. In specific cases, Japanese courts will provide a detailed explanation of the contents in a video game screen display, laying a solid foundation for legal analysis of what can be protected under the Copyright Law of Japan.¹⁴² When confirming the protection of a video game screen display as a cinematographic work, Japanese courts do two things. First, they justify that kind of protection because a video game screen display not only satisfies the definition of a protectable work under the Copyright Law of Japan by meeting the requirement of creativity and expression, but also has a similar form of expression (i.e., continuously moving images) like film.¹⁴³ Second, more than confirming the protection of a cinematographic work in a general sense, Japanese courts further give an analysis of whether specific contents in a video game screen display can be protected: on the one hand, they confirmed that game characters, features of a playing field, stories, and specific settings such as values were protectable expressions; on the other hand, they refused to consider the concepts such as “game balance” and “interactivity” as expressions and precluded their protection.¹⁴⁴

From the discussion above, both US courts and Japanese courts confirm the protection of a video game as different subject-matters (for example, video game software as computer programs and video game screen displays as audio-visual or cinematographic works) because different parts of a video game can meet the requirements of copyrightable works. However, differences also exist. For US courts, the copyrightability of a video game is a procedural issue that can be easily confirmed with *prima facie* evidence provided by the right holder of a video game. Even if that evidence is challenged by the defendant or the defendant denies the originality of a video game, it is still not a difficult issue for US courts to confirm the copyrightability of a video game (whether its software or its screen display) because the level of originality required by the US Copyright Act is not sufficiently high enough to function as an obstacle. While for Japanese courts, they put more effort into establishing the copyrightability of a video game from the perspective of substantive law rather than by relying on *prima facie* evidence. Specifically speaking, Japanese courts provide a more detailed analysis of why a video game can be considered as a protectable work under the Copyright Law of Japan and why video game software and its screen display can be protected as the specific categories of works (i.e., the program work and the cinematographic work) under Japan’s copyright law. More than that, when justifying the copyrightability of a video game, Japanese courts further draw the scope of protection for a video game, especially for a video game screen display, by identifying which specific contents are protectable (i.e., game characters, features of a playing field, stories, and specific settings such

¹⁴¹ *Supra* Section 4.2.3, p. 84.

¹⁴² *Supra* Section 4.2.3.3, p. 88.

¹⁴³ *Supra* Section 4.2.3.1, p. 85-86.

¹⁴⁴ *Supra* Section 4.2.3.3, p. 88.

as values) and which are not (i.e., contents related to game balance and interactivity of a video game).

China

Under the 2020 Copyright Law of China, a protectable work should be an intellectual creation with originality in the literary, artistic or scientific domain and can be presented in a certain form. From that definition, a protectable work in China has three characteristics, or in other words, should meet three requirements: the requirement of originality (独创性 in Chinese), the requirement of belonging to the literary, artistic or scientific domain, and the requirement of being an intellectual creation presented in a certain form (i.e., the 8 categories of works enumerated and any other works that can meet the three requirements mentioned above).

The requirement of originality in China is interpreted as “independent completion” (独立完成 in Chinese) plus “creativity” (创造性 in Chinese). “Independent completion” means a work is not a result of copying from other people’s works. “Creativity” means the reflection of an author’s personality and thoughts from his choice, arrangement, and designs in his work. And the required level of creativity is rather low so that only a modicum is sufficient.¹⁴⁵ Based on that understanding, when seen from a theoretical perspective, the originality requirement in China has nearly the same substantive contents (the “independent completion”, and the “creativity” with a rather low required level) as the US’s originality requirement, although it still exhibits the outer appearance of Japan’s creativity requirement to some extent (the reflection of an author’s personality and thoughts). In that sense, it is fair to say that China, which should be an authors’ rights country like Japan, actually follows a rather low level of originality requirement for a protectable work similar to the US. In China’s judicial practice, the originality of a work is found through the reflection of an author’s personality in his or her work. More specifically, two ways are established by Chinese courts to identify the reflection of personality. One way is to find whether it is possible for the idea behind an expression can be expressed in various ways, and another way is to find whether an expression contains differences, which can be recognized by ordinary people, from other expressions.¹⁴⁶

The requirement of being an intellectual creation presented in a certain form reflects the idea/expression dichotomy. In fact, four types of things are viewed as unprotectable ideas in China’s judicial practice: basic elements for creation, information in the public domain, necessary scenes, and expressions with limited or unique forms.¹⁴⁷ Those four types of things are not protectable because they concern the public interest (for example, basic elements for creation and information in the

¹⁴⁵ *Supra* Section 5.3.1.1.1, p. 115.

¹⁴⁶ *Supra* Section 5.3.1.1.1, p. 116-117.

¹⁴⁷ *Supra* Section 5.3.1.1.2, p. 118.

public domain) or they cannot reflect the personality of their creators (necessary scenes and expressions with unique or limited forms).

It is worth noting that, when determining the copyrightability of a work, Chinese courts handle the requirement of originality and the requirement of being an intellectual creation presented in a certain form at the same time in an inseparable manner. On the one hand, the requirement of originality (especially the reflection of personality) helps Chinese courts preclude the protection of contents that belong to necessary scenes or expressions with limited forms.¹⁴⁸ On the other hand, since the originality requirement needs to be applied in practice by considering the different forms of expressions (the categories of works enumerated), the requirement of being an intellectual creation presented in a certain form affects how the originality requirement will be applied by Chinese courts for specific works.¹⁴⁹

For a video game, Chinese courts protect its different parts as different kinds of subject-matters: video game software as computer programs, textual descriptions shown on the display as written works, game maps as graphic works, continuous moving images shown on the display as cinematographic works. When compared with judicial practices in the US and Japan, there are more protectable subject-matters confirmed by Chinese courts. That does not mean that in the US and Japan those subject-matters in a video game will not be protected (in fact, a Japanese court admitted the right holder's request for protecting the images of a video game as a fine art work¹⁵⁰), it only means that since many different contents of video games in China have encountered game clones, right holders think it is necessary to ask Chinese courts to confirm their copyright in different specific contents of their video games. Briefly stated, we can say, it is the same in the US, Japan, and China that specific contents of a video game will be confirmed as protectable if they meet the requirements of a copyrightable work and can be protected a certain subject-matter under each jurisdiction's national copyright law.

For video game software, just like US courts which rely on *prima facie* evidence to confirm the originality of a work, Chinese courts confirm the originality of video game software by relying on the "computer software copyright registration certificate" issued by the National Copyright Administration of the PRC (NCAC) as *prima facie* evidence of the existence of a right holder's copyright.¹⁵¹

For the copyrightability of video game screen displays, China's judicial practice is almost the same as Japan's judicial practice. When determining whether specific contents (i.e., textual descriptions shown on the display as written works, game maps as graphic works, continuous moving images shown on the display as cinematographic works) in a video game screen display can meet the requirement of

¹⁴⁸ *Supra* Section 5.3.1.1.2, p. 118.

¹⁴⁹ *Supra* Section 5.3.1.1.2, p. 120.

¹⁵⁰ *Supra* Section 4.2.3, p. 84.

¹⁵¹ *Supra* Section 5.3.1.2, p. 121.

originality, Chinese courts focus on finding the reflection of an author's personality through confirming the existence of independent completion and creativity. When confirming the existence of creativity in a video game screen display, Chinese courts always consider: (1) whether the way of expressing an idea is limited or unique (for example, because of functional considerations), and (2) whether an expression should be considered as ordinary or common from a cultural or technological perspective.¹⁵² In addition, Chinese courts further provide detailed analysis of whether certain specific contents should be protected, especially for the contents that cannot be protected as written works and fine art works, such as the names of video games, game characters, items, and other unprotectable objects (as in the *My Name is MT* case, the *Toy Blast* case, and the *Crazy Arcade* case), the user interfaces that are dictated by functional considerations or should be considered as ordinary for a video game (as in the *Galaxy Empire* case, the *Crazy Arcade* case, and the *Hearthstone* case).¹⁵³ That kind of practice, which defines the scope of protection for specific contents in a video game screen display when determining the copyrightability issue, is the same as that which Japanese courts do in cases regarding video games.

5.4.1.2 Find Copying of Protectable Expressions between Disputed Video Games

The US

For finding copying of protectable expressions in disputed works in a general sense, US courts need to find the existence of "substantial similarity". The approaches used for finding the existence of "substantial similarity" for video game software and its screen display are different.

For finding substantial similarity between video game software, US courts adopt the Abstraction-Filtration-Comparison test (AFC test) which is widely used among cases for computer programs and is not limited to video game software. The first step of the AFC test is "abstraction", which means establishing the hierarchy of abstraction of a computer program. That hierarchy, which has already reached a consensus among US courts, includes six levels: (1) main purpose; (2) system architecture; (3) abstract data types; (4) algorithms and data structures; (5) source code; and (6) object code. The second step is "filtration", which means isolating unprotectable elements from each particular level of a program mentioned above. Unprotectable elements include ideas, information, methods, scientific discoveries, facts, information in the public domain, expressions that should be considered as "scenes a faire" or inseparable from the idea. More specifically, the "scenes a faire" in a computer

¹⁵² *Supra* Section 5.3.1.3.5, p. 133.

¹⁵³ *Supra* Section 5.3.1.3.5, p. 134.

program refer to external factors like hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, target industry practices and demands, and computer industry program practices. After the unprotectable elements are filtered out, “source code and file layouts” are left as protectable expressions in a video game program. The third and last step is “comparison”. Since the comparison between computer programs is far more complex than a simple side-by-side comparison, it is made by relying on expert knowledge in the area of computer programming, rather than by depending on the perspective of lay observers. (Section 3.3.2)

For finding substantial similarity between disputed video game screen displays, US courts apply the extrinsic/intrinsic test, which is widely used for literary and artistic works other than computer programs. In the extrinsic test, US courts need to identify protectable expressions in the alleged infringed work. And in the intrinsic test, US courts need to determine substantial similarity through a comparison made by relying on the response of an ordinary person. When applying the extrinsic test to a video game screen display, US courts usually take two steps. The first step is to abstract the idea of a game and then use it as a benchmark to differentiate between idea and expression in a video game screen display. The idea of a game, according to US judicial practice, is the description of the game rules in fairly abstract terms. Specific contents beyond the idea of a game are all considered as expressions in a video game screen display, but not all expressions will be protected. The second step is to identify protectable expressions by considering a series of parameters including the scenes-a-faire doctrine, merger doctrine, and functional consideration. By considering those parameters, expressions that are greatly affected or even dictated by selected real-world topics (such as golf, karate, and horse racing) and the related medium of a video game (such as computers, joysticks, and other game devices) are precluded from the scope of copyright protection. As a result, the expressions in characters (items), playing fields, settings, and sounds presented in a video game screen display are then identified as protectable expressions. It is worth noting that, divergence of opinion still exists among US courts about the scope of protection for dimensions of playing fields in a video game screen display.¹⁵⁴

US courts apply the intrinsic test by comparing the “total concept and feel” of video game screen displays from a perspective of an ordinary observer or intended audience. In the process of the comparison, the intrinsic test prohibits an analytic dissection but requires US courts to make a visual comparison from the perspective of an ordinary observer or intended audience. US courts may choose to use the intrinsic test to find protectable expressions, which may be omitted in the analytic dissection, in the general sense of a display or arrangement of elements in a display.¹⁵⁵ However, that test has been fiercely attacked for its subjectivity and uncertainty because, without an analytic dissection to set clear targets for

¹⁵⁴ *Supra* Section 3.3.3.2.2, p. 67.

¹⁵⁵ *Supra* Section 3.3.3.3, p. 68.

comparison, it cannot ensure whether the contents that are compared from the perspective of ordinary observers are protectable expressions or not.¹⁵⁶

Japan

When finding the copying of protectable expressions, Japanese courts follow the general rule of “reliance (依拠性) + similarity (類似性)”. The term “reliance”, which is a factual issue for Japanese courts, means the alleged infringing work is a reproduction of or has access to an existing work. As a legal issue, the finding of “similarity” attracts more attention from Japanese courts. To find similarity, “direct perception of essential features of expression” (表現上の本質的特徴の直接感得) is the standard followed by Japanese courts. Within that standard, the meaning of “essential features of expression” is actually interpreted as meeting the requirements of creativity and expression for a protectable work under the Copyright Law of Japan. In that sense, the copyrightability issue is key when Japanese courts find similarity between disputed works. For judicial practice in lower courts in Japan, the standard “direct perception of essential features of expression” was further interpreted or supplemented by the standard of “commonality of creative expressions” (創作的表現の共通性). According to that standard, Japanese courts make a comparison between the creative expressions in related contents to find the existence of similarity. (Section 4.2.1)

1. Comparison between video game software

Although we were unable to identify cases that directly relate to the finding of similarity between video game software, how Japanese courts find similarity between ordinary software can be instructive. As a first step, Japanese courts explain in detail the factual issues regarding the software under dispute as mentioned by both parties, laying a solid foundation for follow-on legal analyses. Then, Japanese courts apply the “direct perception of essential features of expression” standard to find similarity. The application of that standard has two features: (1) the confirmation of whether a certain computer program is protectable demands a considerable amount of a Japanese court’s attention, and (2) the comparison of finding similarity is made by relying on a person’s instincts, and whether or not similarity exists is self-evident. When determining whether or not a computer program is protectable, Japanese courts limit the scope of protection by considering the public interest, such as the range of choice for follow-on programmers, its influence on specific industrial fields like computers, and its influence on social life and economics in a general sense. From that determination, Japanese courts actually allow a rather limited scope of protection for computer programs to avoid providing broad protection to computer programs whose expression is strongly restricted by considerations of utilitarian functions. (Section 4.2.2)

¹⁵⁶ *Supra* Section 3.3.3.3, p. 69.

Differences and similarities between the US and Japan can be discerned when comparing computer software. First, although Japanese courts do not develop a systematic approach, like the AFC test in the US, in identifying the protectable expressions in computer programs, Japanese courts still do their best to provide a detailed legal analysis of the copyrightability and scope of protection for disputed computer programs by explaining the working principles of certain programs and considering how the public interest and utilitarian functions will limit the scope of protection for programs. In that sense, it is fair to say that both US and Japanese courts tend to avoid a broad scope of protection for computer programs. Second, when making the comparison to find whether protectable expressions are copied, US courts rely on experts' opinions while Japanese courts rely on an ordinary person's instincts. US judicial practice is definitely better because, due to the technological nature of computer programs, experts' opinions are definitely more reliable and less subjective than an ordinary person's instincts.

2. Comparison between video game screen displays

As for the comparison between video game screen displays, to apply the "direct perception of essential features of expression" standard and the "commonality of creative expressions" standard to find similarity between disputed video game screen displays, Japanese courts provide instructions in four aspects. First, the comparison should be made by focusing on not only the constituent elements of an image but also all those continuous moving images and the arrangement of those images as a whole. Second, in the comparison, Japanese courts will focus on the copyrightability and scope of protection of disputed contents, and whether the contents of the alleged infringing display are similar to protectable contents can easily be determined by Japanese courts by relying on a person's instincts and visual comparison. Third, the scope of protection for a video game screen display does not extend to the game rules themselves, the "style" (which is a hard to define concept) of a video game, and the user interface dictated by functional considerations. It is worth noting that, from the current cases, especially the cases determined by the Tokyo District Court, we can speculate that Japanese courts tend to provide a rather limited scope of protection for the constituent elements in a video game screen display, and that limited scope can only protect against literal copying and modifications that are small and not obvious. Fourth, Japanese courts will also consider the degree of difference between disputed video game screen displays to determine the existence of similarity. More specifically, when the alleged infringing video game screen display contained expressions different from the alleged infringing one, if those different expressions give an ordinary person an overall different impression, then the finding of similarity will be denied. (Section 4.3.3.3)

When compared with the practice of US courts, although Japanese courts do not give a general decision on what should be the idea of a video game (similar to what US courts do in the extrinsic test), Japanese courts do focus on the copyrightability of

disputed contents in a video game screen display and also give a rather detailed analysis of the scope of protection for a video game screen display. And when viewed from the results in finding protectable expressions, we observe that both US and Japanese courts protect the characters, the playing field, and specific settings in a video game screen display.¹⁵⁷ In that sense, we think US and Japanese courts achieve a similar effect when confirming what should and should not be protected in the process of determining copyright infringement. What is more similar between US and Japanese judicial practices is their noting protectable expressions in the overall impression reflected from the video game screen display. In the intrinsic test, US courts hope to find protectable expressions in the arrangement and overall perception (or the total concept and feel) of a video game screen display by relying on an ordinary observer's opinion.¹⁵⁸ And the Japanese court in the *Tear Ring Saga Case*, also relying on an ordinary person's instincts, reminds us that the comparison should not be limited to the constituent elements of an image but also include the arrangement of all the continuous images as a whole. At the same time, denying extension of the protection of the arrangement to the abstract "style" reflected by a video game screen display.¹⁵⁹ Therefore, we think that, although US and Japanese courts take different approaches when finding copying of protectable expressions in disputed video game screen displays, they essentially achieve the same effect.

It is worth noting that, through the comparison between the US and Japanese judicial practices, there are still two issues that need further discussion. First, since US courts consider the game rules described with fairly abstract terms as the idea of a video game but Japanese courts do not, how should we evaluate US practice of the abstraction of the idea of a video game? Is that really a good performance worth learning? Second, although both the US and Japan note the need to detect protectable expressions in the arrangement or overall perception of a video game screen display, their reliance on an ordinary person's instincts for detecting similarities has been fiercely attacked, especially by US legal scholars.¹⁶⁰ In that sense, how should a national court objectively define the boundary of the "overall perception" or "total concept and feel" of a video game screen display while are the same time ignoring the protectable expressions in it?

China

Chinese courts follow the rule of "access (接触) + substantial similarity (实质性相似)" to find the copying of protectable expressions. The term "access", which means the creator of the alleged infringing work has direct or possible contact with the alleged infringed work, is a factual issue. The term "substantial similarity", which

¹⁵⁷ We come to that conclusion by comparing what US courts protect in a video game screen display (*Supra* Section 3.3.3.2.2., p. 60-61) and what Japanese courts protect in a video game screen display (*Supra* Section 4.2.3.3, p. 85).

¹⁵⁸ *Supra* Section 3.3.3.3, p. 68.

¹⁵⁹ *Supra* Section 4.3.3.1, p. 96.

¹⁶⁰ *Supra* Section 3.3.3.3, p. 69.

refers to the situation in which contents of the alleged infringing work have been found as identical or similar to creative expressions of the alleged infringed work, is a legal issue and attracts significant attention of Chinese courts. (Section 5.3.2.1)

1. Comparison between video game software

For video game software, since the cases we have found, which are all related to the literal copying of existing software, do not demonstrate how a Chinese court compares computer software to find substantial similarity, we then turn our attention to how the comparison is made between ordinary software. For the comparison between ordinary software, Chinese courts compare the source programs, the object programs, the characteristic defects of software, and the contents in storage media, the installation process, the installation manual, and operational status. Furthermore, Chinese courts will also confirm the existence of substantial similarity if the claimant's means of technical monitoring can prove that the claimant's software has been used. During the process of the comparison, it is a critical step for Chinese courts to identify the scope of protection for the claimant's contents that have been used by the defendant. More specifically, Chinese courts will exclude the protection of the claimant's contents if those contents are expressions with unique or limited forms. After a Chinese court filters out all the unprotectable expressions in the claimant's software, the comparison between the protectable expressions in the claimant's software and relevant programs in the defendant's software will be relatively easy. Because the judicial authentication has already shown whether similarities can be found between disputed programs as a factual issue, a Chinese court only needs to determine whether or not it will accept that judicial authentication. If accepted, then the conclusion as to whether or not substantial similarity exists will be determined directly by a Chinese court. (Section 5.3.2.3.1)

When compared with judicial practices in the US and Japan, the practice in China also provides a rather detailed analysis of the scope of protection for computer programs. In fact, although not claiming to use the AFC test, Chinese courts have adopted a method that is essentially the same as the AFC test. For instance, Chinese courts will compare the contents that have been abstracted into different layers in disputed computer programs (such as the source programs, the object programs, the characteristic defects of software, and the contents in storage media, the installation process, the installation manual, and operational status),¹⁶¹ filter out unprotectable contents if they could be considered as expressions with unique or limited forms,¹⁶² and compare whether protectable expressions have been copied by relying on judicial authentication, which demonstrates experts' opinions.¹⁶³

2. Comparison between video game screen displays

¹⁶¹ *Supra* Section 5.3.2.3.1, p. 138-139.

¹⁶² *Supra* Section 5.3.2.3.1, p. 139.

¹⁶³ *Supra* Section 5.3.2.3, p. 137-138.

The finding of substantial similarity between video game screen displays is much more complicated. Since a video game screen display is protected as a different subject-matter in China, the comparisons made by Chinese courts to find the existence of substantial similarity for different subject-matters vary to a great degree.

For the constituent elements of a video game screen display protected as written works, Chinese courts focus on determining whether disputed textual contents are copyrightable and to what degree should be protected. After filtering out the unprotectable from disputed textual contents, the conclusion for the existence of substantial similarity can be directly made by Chinese courts from the perspective of the ordinary person.¹⁶⁴

For constituent elements that can be protected as fine art works or graphic works, the method of finding substantial similarity is similar to that for written works. Chinese courts focus on the scope of protection for the disputed contents by considering whether the forms of expressions of those contents belong to necessary scenes, ordinary expressions, or expressions with unique or limited forms. After precluding anything unprotectable, a comparison will be made between the protectable expressions and contents in the alleged infringing video game screen display from the perspective of an ordinary observer.¹⁶⁵

As to how to compare two video game screen displays protected as cinematographic works, there is a dispute between the constituent-elements-based comparison and the overall-based comparison. The constituent-elements-based comparison, as we have shown in the *MU Online* case, is to compare two displays in the same way as to how Chinese courts find substantial similarity between fine art works.¹⁶⁶ While the overall-based comparison, as we discussed in the *Tai Chi Panda* case, purports that it provides a more comprehensive protection for a video game screen display by not only including the contents related to game rules into the scope of protection, but also adopting the game players' overall perspective as a parameter for finding substantial similarity.¹⁶⁷ However, neither method of comparison mentioned above is satisfactory. The constituent-elements-based comparison ignores that, although fine art works and cinematographic works can be overlapped to some degree, after all they are different subject-matters with different forms of expressions (static vs. dynamic), which means that the methods of comparison for those two kinds of works should be different in a general sense.¹⁶⁸ The overall-based comparison was criticized as improperly broadening the scope of protection for contents related to game rules, and it cannot prove whether the game players' perception of similarity comes from the similarity of protectable expressions or from the similarity of

¹⁶⁴ *Supra* Section 5.3.2.3.2, p. 141-142.

¹⁶⁵ *Supra* Section 5.3.2.3.2, p. 142-143.

¹⁶⁶ *Supra* Section 5.3.2.3.2, p. 144.

¹⁶⁷ *Supra* Section 5.3.2.3.2, p. 144-145.

¹⁶⁸ *Supra* Section 5.3.2.3.2, p. 145.

something unprotectable.¹⁶⁹ In a word, there is no consensus among Chinese courts on how to compare two video game screen displays to find substantial similarity.

When compared with judicial practices in the US and Japan, China's judicial practice reflects similar problems in how to determine the scope of protection for a video game screen display and how to make the comparison. For the scope of protection, US courts do not agree about the scope of protection for characters and playing fields, and Chinese courts do not agree about the protection of contents related to game rules. When making a comparison, US, Japanese, and Chinese courts all tend to rely on ordinary people's (or game players') instincts, overall perception, or total concept and feel on different video game screen displays to reach their conclusions.

5.4.1.3 Applicability of Copyright Exceptions and Limitations to Game Clones

The US

In the US, exceptions and limitations to copyright are reflected in Article 107 of the US Copyright Act, which is a general clause for the defence of fair use. To establish fair use, US courts need to consider four factors stipulated in Article 107: (1) purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) nature of the copyrighted work; (3) amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) effect of the use upon the potential market for or value of the copyrighted work.

Based on case law, the first factor (purpose and character of the use), which is closely related to the third and fourth factors, is aimed at enquiring whether and to what extent the new work is transformative. A use can be considered as "transformative" if it adds something new, with a further purpose or different character, alters the first with new expression, meaning, or message, and/or does not merely supersede the objects of the original creation. The second factor (the nature of the copyrighted work), which is not as important as the other three factors, is aimed at checking to what extent the use of a work relates to copyright's purpose of encouraging creative expression. For instance, the use of creative or imaginative works will be harder when establishing fair use than the use of informational or functional works. The use of unpublished work will have a great chance of leading a court to negate a defence of fair use. The third factor (the amount and substantiality of the use) is closely related to the first factor because the purpose and character of the use determines the extent of permissible copying in this factor. The fourth factor (the effect of the use on potential market for or value of the copyrighted work that has been used) requires a US court to address the extent of market harm caused by

¹⁶⁹ *Supra* Section 5.3.2.3.2, p. 145-146.

the defendant's use, and to confirm whether unrestricted and widespread conduct of that kind of use would result in a substantially adverse impact on the potential market and the market for derivative works. (Section 3.4.1)

For the action of cloning video game software, from the clues reflected in *Google LLC, v. Oracle America Inc.*, the copying of video game programs that are written for compatibility or interoperability can establish fair use. Except for that, or in other words, under most circumstances, it is very hard for the clones of video game software to be considered as fair use. (Section 3.4.3)

As to the action of cloning video game screen display being fair use, the cloning of video game screen displays can hardly be considered as fair use even from a theoretical perspective. In the first place, the cloning of a video game screen display is usually not a transformative use, meaning that it would fail the test of the first factor. Then, the nature of a video game screen display, which is usually imaginary and fantastic, decides that the use of a display cannot be considered as promoting creative expression, meaning that game clones would fail the test of the second factor. At last, unless significant differences can be found in following aspects such as themes, genres, targeted players, and etc., no favourable evidence can be put forward to convince a US court that relevant markets will not be negatively influenced by a defendant's use in game clones, meaning that game clones would also fail the test of the fourth factor. (Section 3.4.2)

Japan

Different from the US, which stipulates exceptions and limitations to copyright through a general clause of fair use with four factors, Japan stipulates limitations of copyright through a list of specific situations that have restrictive purposes and ways of behaviours. The list can be summarized as including three types of actions. The first type concerns actions that can be evaluated as not normally harming the interest of a right holder. This type can be further divided into two kinds of actions. The first kind, stipulated in Article 30-4 of the Copyright Law of Japan, refers to the exploitation without the purpose of enjoying the thoughts or sentiments expressed in a copyrighted work, and the second kind of actions, stipulated in Article 47-4 of the Copyright Law of Japan, concerns the exploitation that is incidental to the use of a copyrighted work made available to be exploited on a computer.

The second type includes actions that only harm the interest of a right holder to a minor degree. According to Article 47-5 of the Copyright Law of Japan, which lists this type of actions, when a person undertakes or makes a preparation to undertake an action that contributes to facilitating the exploitation of a work by creating new knowledge or information through computerized data processing, he or she can incidentally exploit that work, and the exploitation should be limited to a minor degree (called the "minor exploitation") by considering the percentage it constitutes

of the part of the available or presented work that has been provided for exploitation, the volume of the part of that work that has been provided for exploitation, the accuracy of indications made at the time it was provided for exploitation, and other elements.

The third type, including all the other actions stipulated from Article 30 to Article 49 of the Copyright Law of Japan besides the actions stipulated in Articles 30-4, 47-4 and 47-5, relates to actions that are expected to promote the use of copyrighted works in order to realize policies of public interest. When compared with the actions in the first and second types, this type of actions brings greater losses or disadvantages to the right holders of copyrighted works by conflicting with the market of those works. So, to not unreasonably prejudice the interests of copyright holders, actions in the third type include more individual and specific requirements for purposes and ways of behaviours that can provide legal reasons for the exploitation of a copyrighted work. (Section 4.4.1)

When compared with the purposes and ways of behaviours of the actions listed in the Copyright Law of Japan, the action of cloning a video game has an essentially different purpose (commercial purpose) and way of behaviour (use of protected expressions in an existing video game), making it very hard to meet any requirements for the three types of actions mentioned above. In a word, limitations of copyright are not applicable to game clones in Japan. (Section 4.4.2)

China

China uses a habitual statement named “fair use” (合理使用) to represent the situations in which a copyrighted work can be used without permission from the right holder of that work and without payment to the right holder. Although having the same names, “fair use” in China does not resemble the general clause in the US, but more resembles a list of specific situations as in Japan.

According to Article 24 of the 2020 Copyright Law of China, “fair use” consists of three parts: the first part stipulates a principled regulation similar to the three-step test shown in Article 13 of TRIPS, the second part embodies 12 specific situations where “fair use” can be established (Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)* supplements the 13th specific situation that can establish “fair use”: the reverse engineering of software), the third part is a miscellaneous provision stating that “other situations stipulated by laws and administrative regulations” can also be considered as fair use. Although the miscellaneous provision seems to bring with it that “fair use” in China with non-exhaustive situations is open-ended, the limitation of “stipulated by laws and administrative regulations” means that the system of “fair use” in China now is *de facto* close-ended before new specific situations emerge in other laws and administrative regulations. (Section 5.3.3.1)

For game clones, considering the purpose and ways of the action of cloning a video game, they cannot fall under the scope of any of the 12 specific situations for “fair use” in either the 2010 or the 2020 Copyright Law of China and the reverse engineering stipulated in Article 17 of the *Regulations on Computer Software Protection (2013 Amendment)*. Moreover, since the cloning of a video game is not included as “fair use” in other laws or administrative regulations, it is not possible to consider game clones as “fair use” of an existing video game by applying the miscellaneous provision for “fair use”. (Section 5.3.3.2)

Comparing the judicial practices of the US, Japan, and China, we can conclude that the exceptions and limitations to copyright are generally not applicable to the action of cloning a video game (regardless of the specific contents cloned). In Japan and China, it is clear that exceptions and limitations to copyright, which are enumerated for specific situations, are definitely not applicable to game clones. For the US, although it has a general clause of fair use, that general clause is not applicable to clones of video game screen displays. Although the *Google* case gives us the hope that certain actions of cloning video game software, such as copying of the functional elements, can establish fair use in the US, most other actions of cloning video game software will definitely copy more than that, making cloning have little chance of constituting fair use. Therefore, it is basically fair to say that the exceptions and limitations to copyright are not applicable to game clones under the judicial practice of the US, Japan, and China.

5.4.2 Problem and Recommendation: How to Find Copying of Protectable Expressions between Video Game Screen Displays

From the comparative analysis above, considering that judicial practices in the US, Japan, and China have come to the same or nearly the same conclusions on the copyrightability of a video game and whether the exceptions and limitations to copyright are applicable to the action of cloning a video game, an urgent problem now for those jurisdictions lies in how to find copying of protectable expressions between video game screen displays. More specifically, the problem lies in the divergence of opinion on the scope of protection for a video game screen display and on whether the comparison should be made by relying on an ordinary person’s instincts or perception.¹⁷⁰

As for recommendations, we posit that the experience in the practice of how computer programs are compared in the AFC test can help solve this problem. The experience in that practice is for courts to rely heavily on expert opinions to have an objective understanding of the disputed objects. That experience will be helpful for video game screen displays for two reasons.

¹⁷⁰ *Supra* Section 5.4.1.2, p. 165.

First, the practice regarding computer programs has shown its value in providing not only a proper scope of protection for a computer program but also an objective comparison between disputed programs. By relying heavily on expert opinions, now a consensus has formed on how to understand a computer program objectively, i.e., the six-level hierarchy.¹⁷¹ Based on that consensus, it becomes much easier for national courts to agree on the scope of protection by discerning protectable expressions in each level of the hierarchy, and the similarities between disputed programs are also objectively discerned by relying on expert opinions.

Second, expert opinions are needed more for video games screen displays than for computer programs. According to what we have already discussed, a video game screen display is more complicated than a computer program because it is the result of the interaction between functional considerations and artistic expressions.¹⁷² In that sense, a national court has to discern the scope of protection for a video game screen display by not only considering the limitations originating from the literary and artistic expressions themselves (such as the standard expressions or expressions dictated by chosen topics or game genres), but also addressing the limitations from functional considerations originating from technological factors (such as the availability of computer programs for realizing certain artistic effects).¹⁷³ Those limitations, especially the latter kind, need the assistance of expert opinions. Another example that shows the need of expert opinions regards the issue of whether protectable expressions exist in the “total concept or feel” (or the overall perception) of a video game screen display. In specific cases as we have discussed, US and Chinese courts have noted that there may be protectable expressions in the overall perception of a video game screen display, but their approach, which relies on a comparison from the perspective of an ordinary observer’s or a game player’s instincts, has been criticized as improper because it risks protecting contents that should not be protected.¹⁷⁴ In essence, their approach is criticised mainly because they lack a clear and convincing explanation of how a video game screen display is composed. That defect can be overcome only by relying on expert opinions which provide an objective interpretation of the components or elements in a video game screen display.

What’s more, since the final target of this research is to help Chinese courts improve their performance, it is first necessary to explain whether our recommendations, which asks for more reliance on expert opinions, is practical for Chinese courts to find copying of protectable expressions between disputed video game screen displays. We think the answer is affirmative. As we have already discussed, judicial authentications, which are in essence expert opinions, are widely used as evidence for cases regarding not only video game software but also video game screen

¹⁷¹ *Supra* Section 3.3.2.2, p. 57-58.

¹⁷² *Supra* Section 2.2.1.3, p. 19.

¹⁷³ For instance, see *Supra* Section 3.3.2.2, p. 64-65.

¹⁷⁴ *Supra* Section 3.3.3.3, p. 66, and Section 5.3.2.3.2, p. 145-146.

displays in China.¹⁷⁵ In that sense, since expert opinions, which are in the form of judicial authentications, already have a high degree of acceptance by Chinese courts, the recommendation to increase the reliance on expert opinions should not meet any obstacles in the judicial practice of China.

Therefore, in the sections below, following the practice of how computer programs are analysed in the AFC test, we comment on an analysis of how experts opinions can help abstract a video game screen display into a level-based hierarchy. Based on that analysis and considering the current practices of national courts in the US, Japan, and China, we provide an initial scope of protection for a video game screen display. In closing, we explain how expert opinions will function when comparing disputed video game screen displays.

5.4.2.1 Abstraction of a Video Game Screen Display

In the practices of the US, Japan, and China, the abstraction of a video game screen display is only found in the US, but not in Japan or China. US courts abstract the idea of a video game by describing the game rules with fairly abstract terms¹⁷⁶ and try to distinguish between idea and expression for a video game screen display based on that analysis. So, is that a performance which would be good for Chinese courts to learn? We do not think it would be because it has three problems in how a video game is abstracted.

First, the concept of “game rules” is so complicated that it is uncertain whether or not a national court’s description is accurate. Based on David Parlett’s opinion, the concept of game rules can be understood from both static and dynamic perspectives. (Figure 5-8). When seen from a static perspective, game rules refer to the rules in a game either explicit or implicit to the players. The explicit rules are called “operational rules” which are applied to the hardware of gaming equipment to produce an instance of play. This kind of rules are known consciously and are made explicit whenever they are addressed and verbalized, in the forms of “written rules” or “official rules”.¹⁷⁷ The implicit rules inform operational rules, including “foundational rules” (which show the underlying formal structure of a game and are considered by game designers as an as-needed basis, rather than formally documenting the entire set of those rules in a completely abstract way¹⁷⁸) and “behavioural rules” (which require players to be “good sportsmen” when playing a game¹⁷⁹).¹⁸⁰ When seen from a dynamic perspective, game rules also function as

¹⁷⁵ *Supra* Section 5.3.2.3, p. 137-138.

¹⁷⁶ See *Supra* Section 3.3.3.2.1, p. 61-62.

¹⁷⁷ David Palett, ‘Rules OK (or: “Hoyle on Troubled Waters”)’ <https://www.parlettgames.uk/gamester/rulesOK.html>

¹⁷⁸ Jesse Schell, *The Art of Game Design: A Book of Lenses* (2nd edn CRC Press, Boca Raton 2014) 175.

¹⁷⁹ Jesse Schell (n178) 176.

¹⁸⁰ David Palett (n177).

feedback in the continuing modification of the rules of a game. For instance, the operational rules will be modified according to the feedback originating from either the operation of equipment or the “adversary rules” which help the gamers play better in the process of play.

Since the concept of game rules contains different meanings, considering the fact that the courts usually do not realize those different meanings of game rules but instead rely on what they see from the screen display, the description of game rules with fairly abstract terms is definitely not accurate, and any distinction made on that basis will lead to uncertainty for discerning the idea and expression in a video game screen display.

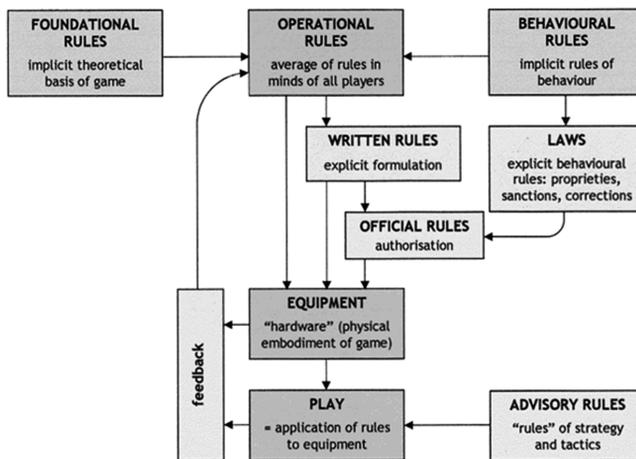


Figure 5-8 Various Kinds of Rules in a Game¹⁸¹

Second, the “fairly abstract terms” used by courts in describing game rules are more or less subjective. In fact, national courts’ interpretations of what can be considered as “fairly abstract terms” vary in different cases, leading to uncertainty concerning the scope of protection for a video game screen display. For instance, the Shanghai First Intermediate People’s Court in the *HearthStone* case described the game rules to such a degree as: “each occupation has 25 exclusive cards and 157 neutral cards, and either side selects one occupation from nine occupations and selects 30 cards from the top exclusive and neutral cards to create his own deck combination” and then precluded the protection of all of the above contents.¹⁸² While the District Court of New Jersey in the *Tetris* case interpreted the game rules as something more abstract which stipulate how and where a shape fits a board, and considered how and

¹⁸¹ Source: David Palett (n177).

¹⁸² Shanghai First Intermediate People’s Court, Judgment (2014) *Hu Yi Zhong Min Wu (Zhi) Chu Zi No. 23* (暴雪娱乐有限公司等诉上海游易网络科技有限公司著作权权属、侵权纠纷案, 上海市第一中级人民法院(2014)沪一中民五(知)初字第23号民事判决书).

where to place the shapes on the board as detailed and protectable expressions.¹⁸³ Although these cases concerned different video games, the different descriptions of the game rules actually lead to different scopes of protection for a video game screen display. If a court describes game rules in a more abstract way, as the US court did in the *Tetris* case, it leaves a broader scope of the protection for specific contents related to game rules. Conversely, if a court describes game rules in a more specific manner, as the Chinese court did in the *Hearthstone* case, it leaves a more limited scope of protection or even no space of protection for specific contents related to game rules. In a word, since different ways of describing the game rules, which can be subjectively determined by a court, cannot ensure a constant scope of protection for a video game screen display, the practice of describing game rules with “fairly abstract terms” will inevitably lead to subjectivity.

Three, the idea of a game should not be interpreted as only limited to game rules in current video games. We should recall that the practice of considering game rules as the idea of a video game initially emerged in the 1980s cases in the US.¹⁸⁴ That practice is understandable because video games of the 1980s fairly closely resembled traditional games like board games and contained very limited artistic expression. However, along with the development of technology, nowadays video games have become more complicated, and their screen displays contain more artistic elements comparable to those of an animated movie.¹⁸⁵ For example, since many video games now contain story-related elements which may have a more important status than the game rules do,¹⁸⁶ the idea of a game cannot be briefly summarized by its game rules but should also consider many other elements, such as its theme and the story-related elements. Just as the Second Circuit in *Computer Associates International, Inc. v. Altai, Inc.* held that the idea of a computer program was not limited to the purpose of the program,¹⁸⁷ we should not find the idea of a video game as just its game rules.

Because of the three problems mentioned above, we should abandon the practice of considering the description of game rules with fairly abstract terms as the idea of a video game. Instead, by relying on expert knowledge in the field of video games, we recommend that a video game screen display can be abstracted into a four-level hierarchy: (1) the problem statement of a game; (2) the nature of the fictional world created by a game; (3) the manner of the display; and (4) the elements of the display. Below we explain the justification for the abstraction of a video game screen display into this four-level hierarchy.

¹⁸³ *Tetris Holding, LLC v. Xio Interactive, Inc.*, 863 F.Supp.2d 394 (D.N.J. 2012).

¹⁸⁴ *Supra* Section 3.3.3.2.1, p. 61-62.

¹⁸⁵ *Supra* Section 1.2.1, p. 2.

¹⁸⁶ *Supra* Section 1.2.1, p. 2.

¹⁸⁷ *Supra* Section 3.3.2.1, p. 56.

5.4.2.1.1 The Problem Statement of a Game

We place the problem statement of a game at the most abstract level in the hierarchy for three reasons. First, when compared with game rules subjectively described by US courts, the problem statement is more objective and direct evidence showing the idea of a video game. As we have described in Chapter 2, the problem statement shows the concrete design goal of a video game and constraints on how to achieve that goal in the form of a file or document, such as a thematically-focused problem statement on “how to make a board game that matches the thematic elements of the classic arcade game *Rampage*” and a mechanically-focused problem statement on “what is a game played well with seven players”.¹⁸⁸ From the instances above, we find that the problem statement defines a video game in the most abstract manner and fits well as the starting point of the abstraction of a video game screen display.

Second, the problem statement also has a procedural value in assisting a court to determine whether “access” exists. Since there is a problem statement inevitably in a file or document for every video game, and there are also technical ways to accurately confirm when both parties’ files of the problem statement were created and whether they are original, a court can examine the existence of “access” by comparing the times of creation and similarities of the expressions of both parties’ problem statements.

Three, if similarities as a matter of fact have already confirmed in disputed video game screen displays, the problem statement can also help a court to examine the motivation of the defendant’s copying. For instance, if the defendant cannot provide the file of the problem statement, then it may be reasonable for a court to deem that the defendant copied the claimant’s video game not with the aim of learning from it but acting in bad faith, such as making a quick profit by free riding.

To understand and compare different problem statements provided by the parties in a dispute, a court also needs to know the concept of “game genre”, which is used to describe the theme or fundamental characteristic which makes a certain kind of game different from others.¹⁸⁹ Although there are many genre systems providing different categories of games, none of them can provide mutually exclusive genres. Considering that, here we don’t want to provide a neat system of the genres but only list the common examples in Figure 5-9 to help a court to understand the possible themes and fundamental characteristics that may appear in expressions of the problem statement.

Genres of Games	Themes or Characteristics
Action Games	Battle

¹⁸⁸ *Supra* Section 2.2.1.2, p. 16.

¹⁸⁹ Simon Egenfeldt-Nielsen, JH Smith, and SP Tosca, *Understanding Video Games: The Essential Introduction* (2nd edn Routledge, Abingdon 2013) 40.

Adventure Games	Mystery solving
Strategy Games	Build a nation in competition with others
Process-Oriented Games	Exploration and/or mastery

Figure 5-9 Common Examples of Game Genres¹⁹⁰

5.4.2.1.2 The Nature of the Fictional World Created by a Game

Following the problem statement, the second level of the hierarchy is the nature of the fictional world created by a game. As opposed to the problem statement which provides the whole picture of a game in abstract terms, this level addresses how a screen display is presented on the most abstract level by focusing on the fictional world created by the game. In this sense, even though this level is less abstract than the problem statement level, it is still very abstract.

Within this level, the fictional world created by a game can be divided into five categories, ranging from the abstract to the representational (Figure 5-10):

Types of games from the abstract to the representational	The fictional worlds created in games
Abstract Game	The entirety or individual pieces in this type of game do not represent something else. The game is the rules. Tetris is the best-known abstract video game.
Iconic Game	Individual parts in this type of game have iconic meaning. We can understand the iconic part from the example of the king of hearts, which represents the king in a standard pack of playing cards.
Incoherent World Game	This type of game provides a fictional world, and where the game contradicts itself or some game events cannot be explained as part of the fictional world but usually can only be explained by referring to the game rules.
Coherent World Game	This type of game provides a coherent world where nothing prevents players from imagining them in any detail. Most adventure games fall into this category.

¹⁹⁰ Simon Egenfeldt-Nielsen, JH Smith, and SP Tosca (n189) 44.

Staged Game	This type of game is a special case where an abstract or somewhat representational game is played in a more elaborate world.
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Figure 5-10 Types of Games and the Fictional Worlds They Create¹⁹¹

This level provides a court with the vocabulary to describe a video game screen display in a very abstract manner and help the court to form a general impression of the idea and expression that may be contained in the screen display. For example, when a court finds a video game is an abstract game (like *Tetris*), it receives a message that many elements in the screen display of that game may be dictated by the game rules and may contain fewer artistic expressions that are protectable or only enjoy thin protection. When a court finds that a video game belongs to the coherent world game category (like *The Legend of Zelda: Breath of the Wild*), it means that the video game screen display may contain expressions that are not closely related to the game rules or other functional considerations.

While at the same time, since the fictional worlds presented by different games can just provide a very general impression on a screen display, a court needs a wider vocabulary for a more accurate description of the display. We can find such in the third and fourth levels of the hierarchy.

5.4.2.1.3 The Manner of the Display & Elements of the Display

The third and fourth levels of the hierarchy aim to provide a wider vocabulary for a court to describe the screen display in detail. Since our abstraction of these two levels comes from a summary of the “game feel” theory, we first describe that theory below.

The “game feel” theory

The “game feel” theory provides a system consisting of measurable factors to meaningfully compare the feel of one game to another. The concept of “game feel” means “real-time control of virtual objects in a simulated space, with interactions emphasized by polish which refers to any effect that artificially enhances interactions without changing the underlying simulation”.¹⁹² It can be measured in six aspects: input, response, context, polish, metaphor, and rules (summarized in Figure 5-11).

“Input” and “response” describe how the “real-time control of virtual objects” is

¹⁹¹ Jesper Juul, *Half-Real: Video Games between Real Rules and Fictional Worlds* (MIT Press, Cambridge 2011) 129-30.

¹⁹² Steve Swink, *Game Feel: A Game Designer’s Guide to Visual Sensation* (CRC Press, Boca Raton 2008) 5-6.

presented. Since the aspect of “input” connects with the considerations from game device and the aspect of “response” connects with those from computer programs, these aspects can actually be viewed as setting the limitations or restrictions from a technical perspective on how a screen display can be presented.

“Context” describes how “a simulated space” inside the screen display is presented in three levels ranging from abstract to concrete: the high-level context provides a general impression of the space in the display, including the feelings of whether the space is open or closed/claustrophobic and the impression of the speed of moving objects; the medium-level context reveals the spacing of the objects; and the low-level context shows how the collisions between objects in the simulated space will feel when compared with the objects in the real world. It is worth noting that, although the “stimulated space” is presented in the three levels mentioned above, those levels are still very abstract and should be considered as the bones (inner structure) regarding the space and its inside objects.

“Polish”, different from the “context” which provides the bones of a video game screen display, covers the skin of the display. “Polish” embodies the simulated space and its inside objects with effects that “create artificial cues about the physical properties of objects through interaction”, and those cues are independent from those objects which are responsible for the essential functionality of the game.¹⁹³ More specifically, those effects include not only the groups of effects which convey nebulous, general perceptions to the player, but also the effects which give the specific impressions of an object (such as the motion, size, shape, nature, and even physical property presented to a player).

“Metaphor” is the aspect of how the objects should be presented in the screen display from a conceptual perspective. The considerations relating to the aspect of “metaphor”, like whether the object should be designed in a realistic, iconic, or purely abstract manner and whether the presentation of objects is harmonious logically with other elements in the game feel, are rather abstract when compared with the previous aspects.

“Rules” is described with three levels under the game feel theory. High-level rules set broad goals that a player needs to achieve when playing the game; mid-level rules concern how certain motions or activities mean or function in a game; and low-level rules relate to the setting of specific values for the activities or events in a game, such as the damage needed to destroy an enemy.

Metrics of Game Feel	Description of the Metrics
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¹⁹³ Steve Swink (n192) 151.

Input	Micro Level: Examining each individual input that makes up the input device
	Macro Level: Examining the possible space of the input device as a whole, its layout and construction and the types of action it implies
	Tactile Level: Examining how the construction of the input device affects input virtual feel of game objects controlled with it
Response	How many objects the player controls
	The dimensions, type and frame of reference for the movement of each avatar
	The ADSR (Attack, Decay, Sustain and Release) envelope representing each modulation of a game parameter by an input over time
	The overall sensitivity of the system as a function of its input and response sensitivity
Context	High Level: The impression of space, speed and motion inherent in the overall conception of the game world
	Medium Level: The immediate space around a character and how the character interacts with objects moving through that space (for example, object avoidance which includes the considerations like the number, size, nature, layout of and distance between objects)
	Low Level: The intimate, tactile, personal interaction between objects (how objects collide, and how these collisions feel compared to everyday objects in the real world)
Polish	Individual, free-standing effects whose motion, size, shape and nature can be measured separately from the simulated objects in the game
	Groups of effects which convey nebulous, general perceptions to the player
	Observable physical properties that are inferred from groups of perceptions (such as mass, material and texture)
	What is each object representing to the player at the conceptual level (the representation of objects)?
	How realistic, iconic or purely abstract is the object (the treatment of objects)?

Metaphor	How well does the representation and treatment of objects in a game coincide with the way those objects behave?
	Does the metaphor set expectations that are in line with game feel for each element of the game?
Rules	High-level rules consist of broad sets of goals that focus the player on a particular subset of motions, such as collecting coins
	Mid-level rules are rules for specific objects in the game world that give immediate meaning to an action, such as capturing the flag in a capture-the-flag multi-player game
	Low-level rules further define the physical properties of individual objects, such as how much damage it takes an avatar to destroy an enemy

Figure 5-11 The Metrics of Game Feel¹⁹⁴

The third level: the manner of the display

We use the term “manner of the display” to present the third level of the hierarchy. The aim of this level is to clearly show what the “overall perception” (or “total concept and feel” called by US courts) of a video game screen display consists of. According to the “game feel” theory, a game player’s overall perception of a video game screen display closely relates to two inter-related parts: (1) the bones of a video game screen display, meaning how the simulated space and its inside objects are structured from a conceptual or logical perspective, which concern the metrics of “context” and a part of the metrics of “metaphor”, and (2) the skins of a video game screen display but only limited to the general effects that convey nebulous and general perceptions to the player, which concern a part of the metrics of “polish”.

The fourth level: the elements of the display

The fourth level of the hierarchy relates to the elements of the display. As the last level of the hierarchy, this level contains the most specific contents in a video game screen display. According to the “game feel” theory, this level mainly relates to: (1) the effects which give the specific impressions of an object (such as the motion, size, shape, nature, and even physical property presented to a player) under the metrics of “polish”, and (2) the low-level rules under the metrics of “rules”, which set the specific values describing the nature of the items, characters, and motions in a game. Here the high-level and mid-level rules under the metrics of “rules” are still too abstract to be considered as specific contents because the high-level rules are so close to the problem statement of a video game (which definitely belongs to the idea of a game) and the mid-level rules are actually conceptual functions of how specific

¹⁹⁴ Steve Swink (n192) Chapters 6-11.

objects will interact with the player.

We now have a complete four-level hierarchy of abstraction for the video game screen display. From abstract to concrete, the first level is the problem statement, the second level is the nature of the fictional world created by the game, the third level is the manner of the display, and the fourth level is the elements of the display. Figure 5-12 shows that hierarchy in detail, and in the following section we apply the second step of the AFC test by filtering out the unprotectable contents in each level of the hierarchy.

Hierarchy of Abstraction (From abstract to concrete)	Description
1. Problem statement	A file or document that describes the goal of a video game and constraints on how to achieve that goal, showing the theme or mechanics of the game
2. Nature of the fictional world created by the game	From abstract to representational: abstract game, iconic game, incoherent world game, coherent world game, staged game
3. Manner of the display (Overall perception)	(1) The bones of a video game screen display that shows how the simulated space and its inside objects are structured from a conceptual or logical perspective
	(2) The skins of a video game screen display that limit the groups of effects conveying nebulous and general perceptions to the player
4. Elements of the display	(1) the effects which give the specific impressions of an object, such as the motion, size, shape, nature, and even physical property presented to a player
	(2) the low-level rules under the metrics of “rules”, which set the specific values describing the nature of the items, characters, and motions in a game

Figure 5-12 The Hierarchy of Abstraction for a Video Game Screen Display

5.4.2.2 A Theoretical Analysis of Protectable Expressions Based on Hierarchy

Until now, we have abstracted a video game screen display into four levels: (1) the problem statement, (2) the nature of the fictional world created by the game, (3) manner of the display, and (4) elements of the display. Here we give a theoretical analysis of protectable expressions in each level.

Levels (1) and (2): The problem statement and the nature of the fictional world created by the game

Among those four levels, it is clear that contents in the first and second levels are unprotectable because they belong to the idea under the perspective of

idea/expression dichotomy. More specifically, the problem statement of a game is comparable to the purpose of a computer program, and the nature of a fictional world created by a game just gives us a very general or abstract structure or framework of the game. Precluding their protection can reserve a space for follow-on developers to learn from the idea of pre-existing games which have become successful on the market, facilitating the future creation of better video games.

Level (3): The manner of the display

For the contents in the third level, i.e., the manner of display, since judicial practices in the US (“total concept and feel”) and China (the “overall perception”) have already caused confusion and criticism,¹⁹⁵ the scope of protection for those contents should be carefully analysed. As we have summarized, contents belong to “the manner of display” consisting of two inter-related parts: the bones that show the inner structure and logical connection of the space and objects simulated in a game, and the skins that give a general and nebulous impression to players through the use of effects.¹⁹⁶ Since there would be no doubt that the skins, which concern the use of specific effects to create a general impression, should be considered as expressions, the question lies in how to treat the bones behind a video game screen display: are they expressions or ideas? In fact, that question is analogous, to some extent, to the question of whether the graphics of a game map should be considered as expressions. The Shenzhen Intermediate People’s Court in the *Crossfire* case has already provided us with an affirmative answer: In that case, the inner structure of a game map, which shows the place and relationship of objects (such as obstacles and covers) in a conceptual manner and functions similarly to the bones of a video game screen display, was confirmed as expressions.¹⁹⁷ Here, the bones of a video game screen display, which shows how the simulated space and its inside objects are structured from a conceptual or logical perspective, are comparable to the inner structure of a game map. Some may doubt that the fact that the bones of a video game screen display are presented through a conceptual or logical manner will make those bones more like ideas than expressions. However, just like the inner structure of a game map, the logical or conceptual presentation of the simulated space and its inside objects mean that they indeed take some specific forms of expressions, although those forms are more abstract than the forms we usually see in a painting or a movie. In that sense, for the bones of a video game screen display which have specific forms of expressions, they should not be considered as ideas.

However, we should still be alert to the fact that considering the contents in the “manner of the display” as expressions does not assure that they are definitely protectable. As we have seen in many US cases, the topics or themes a game wants to show may also make the bones of the display become standard or ordinary

¹⁹⁵ *Supra* Section 5.4.2, p. 169.

¹⁹⁶ *See* Figure 5-12.

¹⁹⁷ *Supra* Section 5.3.1.3.3, p. 129-130.

expressions.¹⁹⁸ For instance, for a video game screen display that depicts or simulates horse racing in the real world, the manner of that display (regardless of its bones or skins), which shows how the objects (perhaps with the skins of horses, persons who ride horses, audiences) are placed and presented on the display, should be almost or nearly the same as what an ordinary person can see in a real-world race course, for example, Las Vegas. In that sense, the expressions related to the manner of the display should not be protected, and at most the skins of a video game screen display can only be protected against literal copying.

Except for chosen topics or themes, functional and technical considerations will also limit the scope of protection for the expressions related to the manner of the display. The functional considerations can be found in the metrics of “input” and “response”. Let’s take action games as an example. Since the theme or main characteristic of an action game is the presentation of battles,¹⁹⁹ the contents related to the manner of display will need to give players the feeling of real battles through the design of “input” and “response”. To achieve that goal, designers need to consider whether the movements are natural, the pace and speed of the activities, and the feedback and smooth control during the process of fighting, and so on. All of those considerations are functional and will build the final presentation of the display of an action game to an essential degree. The technical considerations will also limit the scope of protection for artistic expressions because nowadays artists draw digital paintings by making use of the 2D or 3D software programs.²⁰⁰ The game engine used to design a video game is a good example to show that. Since the game engine is the “software that is extensible and can be used as the foundation for many different games without major modification”,²⁰¹ artistic expressions drawn by using a certain game engine may also contain the technical limitations originated from software; and it is also possible for many aspects of those expressions to become ordinary or standard when the use of a certain kind of game engine becomes a mainstream choice for artists who draw digital paintings pertaining to a certain kind of game genre.²⁰²

Level (4): The elements of the display

The fourth level, i.e., the elements of the display, consists of two parts: (1) the effects which give the specific impressions of an object, such as the motion, size, shape, nature, and even physical property presented to a player, and (2) the low-level rules under the metrics of “rules”, which set the specific values describing the nature of the items, characters, and motions in a game.²⁰³ In our view, the contents related to this level can all be considered as expressions. For the contents in part (1), since they give specific impressions of objects, they should be considered as expressions

¹⁹⁸ *Supra* Section 3.3.3.2.2, p. 64-65.

¹⁹⁹ See “action games” in Figure 5-9.

²⁰⁰ SR Kennedy, *How to Become a Video Game Artist* (kindle edn Watson-Guptill, New York 2013) 74-76.

²⁰¹ Jason Gregory, *Game Engine Architecture* (3rd edn CRC Press, Boca Raton 2018) 12.

²⁰² Jason Gregory (n201) Section 1.4, 13-31.

²⁰³ See Figure 5-12.

without doubt. For the contents in part (2), as the *Tokimeki Memorial* case in Japan explained, the specific settings such as the values of items, characters, and other elements in a game can be considered as expressions.²⁰⁴ It is worth noting, however, that the scope of protection for those contents, similar to that for contents in “the manner of the display”, will also be limited by chosen topics or themes and functional and technical considerations if those contents are considered as ordinary or standard expressions.

Now that we have explained the hierarchy for the abstraction step and given initial advice on the filtration step, we can provide a general guidance to Chinese courts on the protectable expressions in a video game screen display, which is shown in Figure 5-13.

Hierarchy of Abstraction (From abstract to concrete)	Description	Protectable or Not & Scope of Protection
1. Problem Statement	Description of the theme or mechanics with fairly abstract terms	Unprotectable
	Game genre can provide reference to the common theme or mechanics in existing video games	
2. Nature of the fictional world created by the game	Abstract to representational: abstract game iconic game, incoherent world game, coherent world game, staged game	

²⁰⁴ *Supra* Section 4.2.3.2, p. 88.

3. Manner of the display	<p>(1) The bones of a video game screen display that shows how the simulated space and its inside objects are structured from a conceptual or logical perspective</p> <p>(2) The skins of a video game screen display that limit the groups of effects conveying nebulous and general perception to the player</p>	<p>Should be considered as expressions, but the scope of protection will be limited by two factors:</p> <p>(1) the chosen topics or themes</p> <p>(2) functional and technical considerations</p>
4. Elements of the display	<p>(1) the effects which give the specific impressions of an object, such as the motion, size, shape, nature, and even physical property presented to a player</p> <p>(2) the low-level rules under the metrics of “rules”, which set the specific values describing the nature of the items, characters, and motions in a game</p>	<p>Should be considered as expressions, but the scope of protection will be limited by two factors:</p> <p>(1) the chosen topics or themes</p> <p>(2) functional and technical considerations</p>

Figure 5-13 General Guidance on Protectable Expressions in a Video Game Screen Display

5.4.2.3 Comparison by Relying on Expert Opinions

Since Section 5.4.2.1 and Section 5.4.2.2 (i.e., the abstraction of a video game screen display and its scope of protection) have shown what to compare between two disputed video game screen displays, this section gives recommendations on how to make comparisons between computer programs. More specifically, we recommend that Chinese courts should make their comparison by relying on expert opinions. We first explain how expert opinions work when comparing computer programs, and then describe how to apply that practice to video game screen displays.

For the comparison between computer programs, a court needs to compare protectable elements by referring to expert knowledge in two dimensions. First is the

qualitative dimension of the comparison. It means the expert's knowledge can explicitly tell the court whether protectable expressions copied by the defendant should be deemed as a substantial part in the claimant's computer program. Second is the quantitative dimension of the comparison. According to the "sliding-scale approach" (Figure 5-14) put forward by Professor Mark A. Lemley, to determine how much copying occurred at each level of abstraction (i.e., idea, structure, modules, instructions, source code, and object code), "the higher the level of abstraction at which similarities are found, the closer the works must be before a court should find copyright infringement".²⁰⁵ When defining the degree of similarities (i.e., the nature of copying in Figure 5-14) mentioned in this approach (i.e., identity, virtual identity, substantial similarity, minimal similarity), the expert knowledge can provide the quantitative judgment for a court.

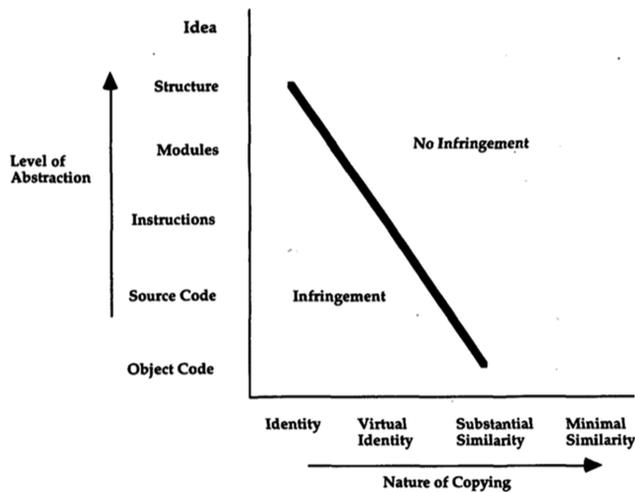


Figure 5-14 The Sliding-Scale Approach in the Comparison of Computer Programs²⁰⁶

That kind of practice can be transplanted to the comparison of video game screen displays. For the qualitative dimension of the comparison, expert opinions can tell a court whether the protectable expressions that have been copied (already confirmed by a court) is a substantial part of the right holder's video game screen display. For the quantitative dimension of the comparison, when applying the sliding-scale approach to video game screen displays, since a video game screen display has been abstracted into four levels (the problem statement, the nature of the fictional world created by the game, the manner of the display, and the elements of the display), expert opinions can indicate how much copying occurred at each level of abstraction. In addition, expert opinions can further show a court the nature of copying by determining whether those similarities should be considered as substantial from a

²⁰⁵ MA Lemley, 'Convergence in the Law of Software Copyright' (1995) 10 High Tech. L.J. 29.

²⁰⁶ MA Lemley (n205) Appendix.

factual perspective. When reaching its conclusion, a court should also follow the rule that “the higher the level of abstraction at which similarities are found, the closer the works must be before a court should find copyright infringement”.²⁰⁷ To illustrate that more explicitly, Figure 5-15 shows how to adopt the sliding-scale approach for the comparison between video game screen displays. It is worth noting that, since a court, if it follows our recommendations on the abstraction and protection scope of a video game screen display, has already found protectable expressions, the practice of relying on expert opinions to make the comparison will not blur the line between factual and legal matters; instead, it will supplement a court’s legal analysis with a firm factual basis, making its determination better reflect and respect the reality of video game design.

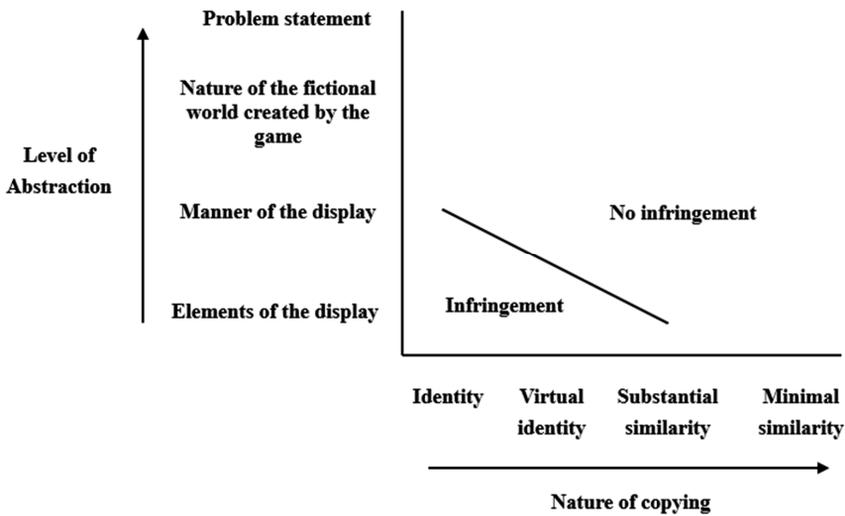


Figure 5-15 The Sliding-Scale Approach for a Video Game Screen Display²⁰⁸

5.5 Conclusions

This chapter does three things. First, it introduces how Chinese courts have responded to the three core issues (i.e., copyrightability of a video game, copying of protectable expressions, and the applicability of copyright exceptions and limitations) in the copyright infringement cases caused by game clones. Second, it makes a comparative analysis of how US, Japanese, and Chinese courts treat those three core issues. Third, it finds that a problem exists in finding the copying of protectable

²⁰⁷ MA Lemley (n205).

²⁰⁸ This Figure is the author’s adaptation of Figure 5-14 which originally comes from MA Lemley (n205) Appendix.

expressions between disputed video game screen displays, and provides recommendations for Chinese courts on how to solve that problem.

How the three core issues are treated by Chinese courts

When handling the first core issue (the copyrightability of a video game), Chinese courts find the personality reflected in that work by confirming the existence of independent completion and creativity. Different parts of a video game are protected as different subject-matters. Video game software is protected as computer software. When confirming the copyrightability of video game software, Chinese courts usually treat it as a procedural issue by focusing on the existence of a “computer software copyright registration certificate” issued by the National Copyright Administration of the PRC (NCAC) because the cases all related to the literal copying or small modification of existing video game software, and the copiers did not challenge the copyrightability of the video game software they copied. A video game screen display contains four different subject matters: (1) textual descriptions of characters, plots, items, and game introduction as written works; (2) specific images of characters, items, icons of game skills and APP, and some user interfaces as fine art works; (3) game scenes maps and game mini-maps as graphic works; and (4) a series of continuous images as a cinematographic work. When confirming the copyrightability of those subject-matters in a video game screen display, Chinese courts always consider whether the way of expressing an idea is limited or unique (for example, because of functional considerations) and whether an expression should be considered as ordinary or common from a cultural or technological perspective. In the process of determining the issue of copyrightability, Chinese courts will also provide a detailed analysis of whether certain specific contents should be protected and the scope of protection. (Section 5.3.1)

For the second core issue, i.e., to find copying of protectable expressions between disputed video games, Chinese courts follow the general rule of “access + substantial similarity” and are particularly attentive to finding substantial similarity. To find substantial similarity between video game software, Chinese courts will confirm whether the disputed programs of the claimant’s software can meet the requirement of originality and preclude the protection for the programs that should be considered as expressions with unique or limited forms. After that, Chinese courts will compare the protectable expressions in the claimant’s software with relevant programs in the defendant’s software. In that process, judicial authentication, which shows whether similarities can be found between disputed programs as a factual issue, will be important evidence for the finding of substantial similarity. To find substantial similarity between video game screen displays, for textual descriptions protected as written works and static images protected as fine art works, since Chinese courts have already provided a detailed analysis of protectable expressions and the scope of protection, they only need to make the comparison from the perspective of an ordinary observer and with the assistance of judicial authentications. For game maps

protected as graphic works, also through the perspective of an ordinary observer, Chinese courts find substantial similarity by comparing the inner structure of the game maps. For the continuous images of a video game screen display protected as cinematographic works, three problems exist when Chinese courts find substantial similarity: (1) the way of comparing cinematographic works is the same as that of comparing fine art works; (2) the scope of protection for contents related to game rules is controversial; and (3) the reliance of game players' overall perception to find substantial similarity is criticized. (Section 5.3.2)

For the third core issue of whether the exceptions and limitations to copyright are applicable to game clones, the answer is an explicit no because the action of cloning an existing video game cannot fall under the scope where "fair use", as stipulated in the 2020 Copyright Law of China, is operative. (Section 5.3.3)

A comparative analysis of judicial practices in the US, Japan, and China

Differences and similarities have been found in the comparative analysis of how judicial practices in the US, Japan, and China handle the three core issues.

For the copyrightability of a video game, US courts will easily confirm copyrightability if the *prima facie* evidence is not challenged, and Japanese courts will provide a detailed analysis of whether a video game can meet the requirements of a protectable work and draw up the scope of protection for specific contents. For Chinese courts, in relation to video game software, their practice is the same as US courts, and in relation to video game screen displays, their practice is similar to Japanese courts. (Section 5.4.1.1)

For finding copying of protectable expressions, in relation to video game software, national courts in the US, Japan, and China all provide a detailed analysis of the scope of protection for computer programs, but Japanese courts seem to adhere to a more limited scope of protection than US and Chinese courts do. In addition, both US and Chinese courts make a comparison between computer programs by relying on expert opinions. With regard to video game screen displays, US courts do more work on outlining the scope of protection for disputed contents than do Japanese and Chinese courts. That does not mean US courts provide a better analysis; Japanese and Chinese courts have already made that kind of analysis when they determine the issue of copyrightability. So, when viewing the issues of copyrightability and of finding copying of protectable expressions together, we get the impression that judicial practices in the US, Japan, and China have a similar effect: they all provide a detailed analysis of what can be protected in a video game and give a scope of protection for specific contents. Furthermore, all the national courts take the perspective of an ordinary observer when comparing disputed video game screen displays. (Section 5.4.1.2)

For the applicability of copyright exceptions and limitations to game clones, the answer from Japan and China is definitely no. For the US, the cloning of video game screen displays will have no chance of being considered as fair use; the cloning of video game software, although is not totally impossible for it to constitute fair use, will have little chance. In a general sense, under the current judicial practices in the US, Japan, and China, it is perhaps fair to say that the action of cloning an existing video game has no chance of being considered as an action within the scope of copyright exceptions and limitations. (Section 5.4.1.3)

The problem and recommendation in finding copying of protectable expressions between video game screen displays

Based on the comparative analysis of judicial practices in the US, Japan, and China, a common problem is found in how to find the copying of protectable expressions in video game screen displays. More specifically, the problem is reflected in the divergence of opinion about the scope of protection for a video game screen display and whether a comparison should be made by relying on an ordinary person's instincts or overall perception.

To solve the problem and improve the performance of Chinese courts, we recommend that the courts find copying of protectable expressions between disputed video game screen displays by following the train of thought provided by the AFC test.

In the first step, a video game screen display can be abstracted into four levels, ranging from abstract to concrete: the problem statement of a game, the nature of the fictional world created by the game, the manner of the display, and the elements of the display. (Section 5.4.2.1)

In the second step, by filtering out the ideas from each level, we arrive at the expressions below: the bones of a video game screen display that shows how the simulated space and its inside objects are structured from a conceptual or logical perspective; the skins of a video game screen display that limit the groups of effects conveying nebulous and general perceptions to the player; the effects which give the specific impressions of an object, such as the motion, size, shape, nature, and even physical property presented to a player; and the low-level rules which set the specific values describing the nature of the items, characters, and motions in a game. For those expressions, we should preclude their protection if they are limited or dictated by the chosen topics or themes the game wants to express and the functional and technical considerations. (Section 5.4.2.2)

In the third step, we recommend that Chinese courts make a comparison by following the sliding-scale approach and with the assistance of expert opinions. By doing that, Chinese courts can decide whether the protectable expressions copied by

the clone should be considered as a substantial part of the screen display (the qualitative dimension of the comparison) and how much copying is sufficient to constitute substantial similarity between the disputed screen displays (the quantitative dimension of the comparison). (Section 5.4.2.3)

Chapter 6 Conclusions

6.1 Summary of the Findings

This research responds to the question: *When determining copyright infringement caused by game clones, how should Chinese courts, compared with the legal experiences in the courts of the US and Japan, improve their judicial practice when handling the three core issues, including the copyrightability of a video game, the copying of protectable expressions between disputed video games, and the applicability of copyright exceptions and limitations?* Chapters 2 to 5 answer that question step by step.

As an introduction to this research into video games, Section 2.2 of Chapter 2 provides background information about what a video game is and how to understand a game clone. A video game is a system that provides experiences to its players through interactivity. The interactivity provided by a video game does not mean the players can bring something to the game that does not initially exist in the game. Inside a video game, four inter-related elements: mechanics, story, aesthetics, and technology, make video game software and its screen display both interdependent and relatively independent. The concept of “game clone” refers to the phenomenon that the four inter-related elements: mechanics, story, aesthetics, and technology, of a game clone are similar or identical to those of an earlier game.

After providing important background information, Section 2.3 of Chapter 2 goes on to explain how to understand the three core issues for determining copyright infringement caused by game clones under the international framework. For the first core issue, the copyrightability of a video game, a video game can be protected under international treaties because it accords with the characteristics of “literary and artistic works”, and the protection of a video game can follow the approach of distributive classification. This means the different contents of a video game can be protected as different subject-matters enumerated in international treaties. However, it is not optimistic to protect a video game as a single subject-matter, because it fails to identify a video game as either an enumerated or non-enumerated subject-matter, such as multimedia works. For the second core issue, the finding of copying of protectable expressions between disputed video games, international treaties do not provide us with any guidance but do give us clues that the action of cloning a pre-existing video game may infringe a reproduction right. Here, the idea/expression dichotomy can be used as a tool for determining the scope of protection for a video game. For the third core issue, the applicability of copyright exceptions and limitations, international treaties also do not give us any clear guidance.

Since international treaties do not provide any specific guidance, we turn to national judicial practice from Chapter 3 to Section 5.3 of Chapter 5, to show how the national courts of the US, Japan, and China respond to the three core issues: (I) the copyrightability of a video game, (II) finding of copying of protectable expressions between disputed video games, and (III) the applicability of copyright exceptions and limitations to game clones. Since we have already summarized our findings in the Conclusions section of each chapter, to avoid repetition, here we just list the main points below in Figure 6-1.

	The US (Chapter 3)	Japan (Chapter 4)	China (Chapter 5 Section 5.3)
I. Copyrightability	Originality: (1) a modicum of creativity; (2) confirmed if <i>prima facie</i> evidence is not challenged.	Creativity: (1) reflection of personality; (2) range of choice	Originality: (1) reflection of personality; (2) expressions that can be expressed in various ways, (3) expressions that are not ordinary or common
	Subject-Matter: (1) computer program (2) audio-visual work	Subject-Matter: (1) program work (2) cinematographic work (3) fine arts work	Subject-Matter: (1) written work (2) fine arts work (3) graphic work (4) cinematographic work (audio-visual work)
		Scope of protection for a video game screen display: (1) Protectable: game characters, features of a playing field, stories, and specific settings such as values (2) Non-protectable: contents related to game balance and interactivity	Scope of protection for a video game screen display: (1) Protectable: textual descriptions (characters, plots, items, game introduction); specific images (characters, items, game scenes maps, icons of game skills and app, some user interfaces); game maps (game scene map, game mini-maps); a series of continuous images (layouts and

			<p>specific contents of user interfaces that can be considered as a specific way of presenting specific game rules, choice and arrangement of unprotectable materials)</p> <p>(2) Non-protectable: names of video games, game characters, items, and other unprotectable objects; user interfaces that are dictated by functional considerations or should be considered as ordinary for a video game</p>
<p>II. Finding of copying of</p>	<p>Abstraction-Filtration-Comparison Test for video game software:</p> <p>Abstraction: abstract software into six levels, including: (1) main purpose; (2) system architecture; (3) abstract data types; (4) algorithms and data structures; (5) source code; and (6) object code.</p> <p>Filtration: isolate non-protectable elements from each level of a program, such as ideas, information, methods, scientific discoveries, facts, information in the public domain, expressions that should be considered as “scenes a faire” (i.e., external factors like hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, target industry practices</p>	<p>Find similarity between video game software (clues from ordinary software):</p> <p>(1) explain in detail the factual issues regarding disputed software mentioned by both parties,</p> <p>(2) apply the “direct perception of essential features of expression” standard by mainly confirming whether a certain computer program is protectable</p> <p>(3) limit the scope of protection for computer programs by considering the public interest (such as the range of choice for follow-on</p>	<p>Find substantial similarity between video game software (clues from ordinary software):</p> <p>(1) compare the source programs, the object programs, the characteristic defects of software, and the contents in storage media, installation process, the installation manual, and operational status. Besides that, Chinese courts will also confirm the existence of substantial similarity if the claimant’s technical monitoring means can prove that the claimant’s software has been used.</p> <p>(2) identify the scope of protection for the claimant’s contents by excluding the protection of the claimant’s contents if those contents are</p>

<p>protectable expressions between disputed video games</p>	<p>and demands, and computer industry program practices) or inseparable from the idea. After filtering out the unprotectable elements, “source code and file layouts” are the remaining protectable expressions in a computer program.</p> <p>Comparison: rely on expert knowledge in the area of computer programming to make the comparison</p>	<p>programmers, its influence on specific industrial fields like computers, and its influence on social life and economics in a general sense) and whether expressions of computer programs are strongly restricted by considerations of utilitarian functions.</p> <p>(4) rely on a person’s instincts to make the comparison.</p>	<p>expressions with unique or limited forms.</p> <p>(3) After a Chinese court filters out all the unprotectable expressions in the claimant’s software, the comparison between protectable expressions in the claimant’s software and related programs in the defendant’s software will be determined by following the judicial authentication, which has already shown whether similarities can be found between disputed programs as a factual issue</p>
	<p>Extrinsic/Intrinsic Test for video game screen displays</p> <p>Extrinsic: (1) abstract the idea of a game by describing game rules with fairly abstract terms (2) protectable expressions: characters, playing fields, settings, and sounds (3) preclude non-protectable expressions from protection by considering scenes-a-faire doctrine, merger doctrine, and functional consideration.</p> <p>Intrinsic: (1) find protectable expressions, which may be omitted in the analytic dissection, in the general sense of a display or arrangement of elements in a display. (2) compare “total concept and feel” of video game screen</p>	<p>Find similarity between video games screen displays by applying the “direct perception of essential features of expression” standard and the “commonality of creative expressions” standard:</p> <p>(1) compare the constituent elements of an image, all those continuous moving images, and the arrangement of those images as a whole.</p> <p>(2) in the comparison, focus on the copyrightability and scope of protection of</p>	<p>Find substantial similarity between video game screen displays:</p> <p>A. For constituent elements of a video game screen display protected as written works, fine arts works, and graphic works: (1) focus on whether disputed contents are copyrightable and preclude the unprotectable contents from protection that belong to necessary scenes, ordinary expressions, and expressions with unique or limited forms (overlap with the copyrightability issue to some extent) (2) rely on the perspective of an ordinary person to make the comparison.</p>

<p style="text-align: center;">II. Finding of copying of protectable expressions between disputed video games</p>	<p>displays from a perspective of an ordinary observer or intended audience, but prohibit an analytic dissection.</p>	<p>disputed contents, and the issue of whether the contents of the alleged infringed display are similar to protectable contents is determined by relying on a person's instincts and visual comparison.</p> <p>(3) the scope of protection for a video game screen display does not extend to the game rules themselves, the "style" (which is a hard-to-define concept) of a video game, and the user interface dictated by functional considerations.</p> <p>Japanese courts tend to provide a rather limited scope of protection for constituent elements in a video game screen display, and that limited scope can only protect against literal copying and modifications that are small and not obvious.</p> <p>(4) the degree of difference between disputed video game screen displays will affect the finding of</p>	<p>B. For video game screen displays protected as cinematographic works:</p> <p>a. The constituent-elements-based comparison: same as how substantial similarity is found between fine art works</p> <p>b. The overall-based comparison:</p> <p>(1) the scope of protection: besides the specific contents that can be protected as written works, fine arts works, and graphic works, also include the contents related to game rules</p> <p>(2) rely on game players' overall perspective to make the comparison.</p>
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		similarity. When the alleged infringing video game screen display contained expressions different from the alleged infringed one, if those different expressions give an ordinary person an overall different impression, then the finding of similarity will be denied.	
III. Application of copyright exceptions and limitations to game clones	Applicable to functional elements (such as the APIs) of video game software	Not Applicable	Not Applicable
	Not Applicable to Video Game Screen Displays		

Figure 6-1 Summary of how the courts of US, Japan, and China handle the core issues when determining copyright infringement caused by game clones

Since the judicial practices of the US, Japan, and China listed in Figure 6-1 can be considered as solutions to the three core issues, we compare these solutions provided by those national courts in Section 5.5 of Chapter 5. Although there are indeed some differences between US practice and the practices in Japan and China, when looking at the issue of copyrightability and the issue of finding copying of protectable expressions together, we get the impression that judicial practices in the US, Japan, and China all have a similar effect: they all provide a detailed analysis of what can be protected in a video game and a scope of protection for specific contents. For the applicability of copyright exceptions and limitations to game clones, the courts of the US, Japan, and China all appear to answer this question in the negative regarding the cloning of video game screen displays. While for the cloning of video game software, US courts may consider the copying of functional elements of a computer program (such as the APIs) as fair use. Except for that, the copying of other parts of a computer program will be copyright infringement, and that is the same as the judicial practices in Japan and China.

Through the comparison, we find a common problem in the judicial practices of the US, Japan, and China: how to determine copying of protectable expressions between

disputed video game screen displays. That problem is reflected from the divergence of opinions about the scope of protection for a video game screen display and whether the comparison should be made by relying on an ordinary person's instincts or perception. In Section 5.4 of Chapter 5, we provide a theory as a recommendation to solve the problem. The theory has three steps similar to the AFC test: (1) In the first step, we abstract a video game screen display into four levels: the problem statement of a game, the nature of the fictional world created by the game, the manner of the display, and the elements of the display. (2) In the second step, we filter out the ideas and unprotectable expressions from each level. (3) In the third step, with the assistance of expert opinions, we make the comparison by using the sliding-scale approach.

6.2 Contributions to the Current Literature

First, this research provides a comprehensive and in-depth discussion about how judicial practice in the US, Japan, and China responds to the legal issues caused by game clones. More specifically, this research contributes to the current literature in two ways. On the one hand, although the scholarly literature in English is familiar with US video game cases, this research combs through those cases and summarizes the common practice or rules followed by US courts when adjudicating disputes concerning video games. On the other hand, this research for the first time introduces video game cases and related judicial practices in Japan and China to the English-speaking academic world. The current literature, especially in English, rarely takes notice of video game cases in Japan and China, let alone their respective judicial practice regarding video games. This research fills this gap and presents a rather comprehensive introduction to, and explanation of, the main cases related to disputes around video games in those jurisdictions. In addition, this research also gives an overview of the Chinese copyright system and shows recent developments in that system.

Second, after demonstrating that for the national courts of the US, Japan and China finding copying of protectable expressions between disputed video game screen displays is problematic, this research tries to build a theory to help national courts overcome that problem. That theory is enlightened by the Abstraction-Filtration-Comparison test invented by US courts. It starts by dividing a video game screen display into a four-level hierarchy: the problem statement of a game, the nature of the fictional world created by a game, the manner of the display, and the elements of the display. It then filters out unprotectable contents, including ideas, ordinary or standard expressions, expressions dictated by functional or technical considerations, and lastly makes the comparison by following the sliding-scale approach assisted by expert opinions. This theory can hopefully be a more objective and less controversial tool than the current method for finding the copying of protectable expressions between disputed video game screen displays.

Third, this research tries to make a connection between the legal community and the video game community. By introducing a series of professional vocabularies used by game researchers, scholars, and developers, this research wants the legal community to have an objective and accurate understanding of video games and the phenomenon of game clones, and to recognize the practice or reality of the video game industry when handling that industry's related legal issues. By doing this, this research hopes that future legislation or judicial practice regarding video games can truly reflect the need for the development of the video game industry.

6.3 The Way Forward: The Prospect for Future Research

In this research, we have found that the finding of protectable expressions between disputed video game screen displays is a common problem for national courts in the US, Japan, and China. The theory provided by this research should only be considered as an initial attempt to solve that problem; there is still a long way before that problem is completely overcome. To solve that problem, there are at least three issues which merit further discussion.

First, the issue of whether the contents related to the game rules should be protected and the reach of the extent of that protection needs further research. Under the four-level hierarchy provided by this research, the contents related to game rules are artificially divided into three parts: (1) the bones of the screen display, (2) the skins of the screen display ((1) and (2) together belong to the level of "the manner of the display"), and (3) the elements of the screen display. However, the boundary between those three parts is not as clear as they seem to be. Besides the concept of "game rules" defined from a perspective of logic (i.e., the "rules" under the element "mechanics", which refer to the abstract goals set in a video game), almost all contents presented on the screen is more or less related to, or should be considered as a specific reflection of, the game rules. That decides that all the contents related to the game rules are more or less inter-connected. So, whether there is a clear boundary in practice, or more exactly, how to draw a perhaps constructive boundary between the different levels of the contents related to the game rules, is still a difficult issue. Only after confirming that boundary can a court further determine the scope of protection for different contents related to game rules.

Second, the issue of how to compare video game screen displays still needs further research. Although this research provides a theory about how to make the comparison, more questions are still awaiting answers. One question could be: since a Chinese court compares the video game screen displays, which are cinematographic works, in the same way as they compare fine arts works, what are the differences for, or what are the characteristics of, the comparison between cinematographic works (or audio-visual works under the 2020 Copyright Law of China)? Another question could be: considering that both films and videogames

belong to cinematographic works, to what degree should the similarities and differences exist between the comparison of those two kinds of objects? Both of these questions not only urge us to better understand what video games, films, and paintings are from a factual perspective, but also ask for a clearer boundary for the definition and characteristics of cinematographic works and fine arts works from a legal perspective.

Third, the issue of how to protect a video game may need further thought. From this research we have learned that the courts of the US, Japan, and China have all chosen the distributive-classification approach to protect different parts of a video game as different subject-matters, but is that really the best choice for the protection of a video game? Since the distributive classification divides a video game into several different subject-matters, that kind of artificial division *de facto* affects or even destroys the inter-connectivity of a video game. Is that the source of the problem which makes it so difficult for national courts to find the copying of protectable expressions? Does holistic protection (i.e., protecting a video game as a whole, as a single, newly-created subject-matter) really not have a chance? Although the attempt to protect a video game holistically as a multimedia work has failed, are there other ways to protect a video game as a whole? The answers to these questions cannot be found in judicial practice, but have to rely on further discussion in the academic community.

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Summary

A video game is a system that provides experiences to its players through interactivity. The interactivity provided by a video game does not mean the players can bring something to the game that does not initially exist in the game. Inside a video game, four inter-related elements: mechanics, story, aesthetics, and technology, make video game software and its screen display both interdependent and relatively independent. The concept of “game clone” refers to the phenomenon that the four inter-related elements: mechanics, story, aesthetics, and technology, of a game clone are similar or identical to those of an earlier game. Since that phenomenon has become a world-wide legal challenge, especially in China, this research tries to answer the question: *When determining copyright infringement caused by game clones, how should Chinese courts, compared with the legal experiences in the courts of the US and Japan, improve their judicial practice when handling the three core issues, including the copyrightability of a video game, the copying of protectable expressions between disputed video games, and the applicability of copyright exceptions and limitations?*

Under international treaties, for the first core issue, the copyrightability of a video game, a video game can be protected because it accords with the characteristics of “literary and artistic works”, and the protection of a video game can follow the approach of distributive classification, which means different contents of the video game can be protected as different subject-matters enumerated in international treaties. However, it is not optimistic to protect the video game as a single subject-matter, because it fails to identify a video-game as either an enumerated or non-enumerated subject-matter, such as multimedia works. For the second core issue, the finding of copying of protectable expressions between disputed video games, international treaties do not provide us with any guidance but do give us clues that the action of cloning a pre-existing video game may infringe a reproduction right. Here, the idea/expression dichotomy can be used as a tool for determining the scope of protection for a video game. For the third core issue, the applicability of copyright exceptions and limitations, international treaties also do not give us any clear guidance. Since international treaties cannot provide any specific guidance, in the following table we compare how national courts in the US, Japan, and China respond to these three core issues.

	The US (Chapter 3)	Japan (Chapter 4)	China (Chapter 5 Section 5.3)
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I. Copyrightability	<p>Originality: (1) a modicum of creativity; (2) confirmed if <i>prima facie</i> evidence is not challenged.</p>	<p>Creativity: (1) reflection of personality; (2) range of choice</p>	<p>Originality: (1) reflection of personality; (2) expressions that can be expressed in various ways, (3) expressions that are not ordinary or common</p>
	<p>Subject-Matter: (1) computer program (2) audio-visual work</p>	<p>Subject-Matter: (1) program work (2) cinematographic work (3) fine arts work</p>	<p>Subject-Matter: (1) written work (2) fine arts work (3) graphic work (4) cinematographic work (audio-visual work)</p>
		<p>Scope of protection for a video game screen display:</p> <p>(1) Protectable: game characters, features of a playing field, stories, and specific settings such as values</p> <p>(2) Non-protectable: contents related to game balance and interactivity</p>	<p>Scope of protection for a video game screen display:</p> <p>(1) Protectable: textual descriptions (characters, plots, items, game introduction); specific images (characters, items, game scenes maps, icons of game skills and app, some user interfaces); game maps (game scene map, game mini-maps); a series of continuous images (layouts and specific contents of user interfaces that can be considered as a specific way of presenting specific game rules, choice and arrangement of unprotectable materials)</p> <p>(2) Non-protectable: names of video games, game characters, items, and other unprotectable objects; user interfaces that are dictated by functional</p>

			<p>considerations or should be considered as ordinary for a video game</p>
<p>II. Finding of copying of protectable expressions between disputed video games</p>	<p>Abstraction-Filtration-Comparison Test for video game software:</p> <p>Abstraction: abstract software into six levels, including: (1) main purpose; (2) system architecture; (3) abstract data types; (4) algorithms and data structures; (5) source code; and (6) object code.</p> <p>Filtration: isolate non-protectable elements from each level of a program, such as ideas, information, methods, scientific discoveries, facts, information in the public domain, expressions that should be considered as “scenes a faire” (i.e., external factors like hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, target industry practices and demands, and computer industry program practices) or inseparable from the idea. After filtering out the unprotectable elements, “source code and file layouts” are the remaining protectable expressions in a</p>	<p>Find similarity between video game software (clues from ordinary software):</p> <p>(1) explain in detail the factual issues regarding disputed software mentioned by both parties,</p> <p>(2) apply the “direct perception of essential features of expression” standard by mainly confirming whether a certain computer program is protectable,</p> <p>(3) limit the scope of protection for computer programs by considering the public interest (such as the range of choice for follow-on programmers, its influence on specific industrial fields like computers, and its influence on social life and economics in a general sense) and</p>	<p>Find substantial similarity between video game software (clues from ordinary software):</p> <p>(1) compare the source programs, the object programs, the characteristic defects of software, and the contents in storage media, installation process, the installation manual, and operational status. Besides that, Chinese courts will also confirm the existence of substantial similarity if the claimant’s technical monitoring means can prove that the claimant’s software has been used.</p> <p>(2) identify the scope of protection for the claimant’s contents by excluding the protection of the claimant’s contents if those contents are expressions with unique or limited forms.</p> <p>(3) After a Chinese court filters out all the unprotectable expressions in the claimant’s software,</p>

	<p>computer program.</p> <p>Comparison: rely on expert knowledge in the area of computer programming to make the comparison</p>	<p>whether expressions of computer programs are strongly restricted by considerations of utilitarian functions.</p> <p>(4) rely on a person's instincts to make the comparison.</p>	<p>the comparison between protectable expressions in the claimant's software and related programs in the defendant's software will be determined by following the judicial authentication, which has already shown whether similarities can be found between disputed programs as a factual issue</p>
	<p>Extrinsic/Intrinsic Test for video game screen displays</p> <p>Extrinsic: (1) abstract the idea of a game by describing game rules with fairly abstract terms (2) protectable expressions: characters, playing fields, settings, and sounds (3) preclude non-protectable expressions from protection by considering scenes-a-faire doctrine, merger doctrine, and functional consideration.</p> <p>Intrinsic: (1) find protectable expressions, which may be omitted in the analytic dissection, in the general sense of a display or arrangement of elements in a display. (2) compare "total concept and feel" of video game screen displays from a perspective of an ordinary observer or intended audience, but prohibit an analytic dissection</p>	<p>Find similarity between video games screen displays by applying the "direct perception of essential features of expression" standard and the "commonality of creative expressions" standard:</p> <p>(1) compare the constituent elements of an image, all those continuous moving images, and the arrangement of those images as a whole.</p> <p>(2) in the comparison, focus on the copyrightability and scope of protection of disputed contents, and the issue of whether the contents of the alleged infringed display are similar to protectable contents is</p>	<p>Find substantial similarity between video game screen displays:</p> <p>A. For constituent elements of a video game screen display protected as written works, fine arts works, and graphic works: (1) focus on whether disputed contents are copyrightable and preclude the unprotectable contents from protection that belong to necessary scenes, ordinary expressions, and expressions with unique or limited forms (overlap with the copyrightability issue to some extent) (2) rely on the perspective of an ordinary person to make the comparison.</p> <p>B. For video game screen displays protected as cinematographic works: a. The constituent-elements-based comparison: same as how substantial</p>

<p>II. Finding of copying of protectable expressions between disputed video games</p>		<p>determined by relying on a person’s instincts and visual comparison.</p> <p>(3) the scope of protection for a video game screen display does not extend to the game rules themselves, the “style” (which is a hard-to-define concept) of a video game, and the user interface dictated by functional considerations. Japanese courts tend to provide a rather limited scope of protection for constituent elements in a video game screen display, and that limited scope can only protect against literal copying and modifications that are small and not obvious.</p> <p>(4) the degree of difference between disputed video game screen displays will affect the finding of similarity. When the alleged infringing video game screen display contained expressions different from the alleged infringed one, if those</p>	<p>similarity is found between fine art works</p> <p>b. The overall-based comparison:</p> <p>(1) the scope of protection: besides the specific contents that can be protected as written works, fine arts works, and graphic works, also include the contents related to game rules</p> <p>(2) rely on game players’ overall perspective to make the comparison.</p>
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		different expressions give an ordinary person an overall different impression, then the finding of similarity will be denied.	
III. Application of copyright exceptions and limitations to game clones	Applicable to functional elements (such as the APIs) of video game software	Not Applicable	Not Applicable
	Not Applicable to Video Game Screen Displays		

Although there are indeed some differences between US judicial practice and judicial practice in the courts of Japan and China, when looking at the issue of copyrightability and of finding copying of protectable expressions together, we get the impression that judicial practices in the US, Japan, and China all have a similar effect: they all provide a detailed analysis of what can be protected in a video game and provide a scope of protection for specific contents. For the applicability of copyright exceptions and limitations to game clones, the courts of the US, Japan, and China all appear to answer this question in the negative regarding the cloning of video game screen displays. While for the cloning of video game software, US courts may consider the copying of functional elements of a computer program (such as the APIs) as fair use. Except for that, the copying of other parts of a computer program will be copyright infringement, and that is the same as the judicial practices in Japan and China.

Through the comparison, we find a common problem in the judicial practices of the US, Japan, and China: how to determine copying of protectable expressions between disputed video game screen displays. That problem is reflected from the divergence of opinions about the scope of protection for a video game screen display and whether the comparison should be made by relying on an ordinary person's instincts or perception. In Section 5.4 of Chapter 5, we provide a theory as a recommendation to solve the problem. The theory has three steps similar to the AFC test: (1) In the first step, we abstract a video game screen display into four levels: the problem statement of a game, the nature of the fictional world created by the game, the manner of the display, and the elements of the display. (2) In the second step, we filter out the ideas and unprotectable expressions from each level. (3) In the third step, with the assistance of expert opinions, we make the comparison by using the sliding-scale approach.

Impact Paragraph

1. What is the social (and/or economic) relevance of your research results (i.e., in addition to the scientific relevance)?

The social and economic relevance of my research consists of three aspects. First, my research results relate to the interests of the video game industry. The video game industry here not only refers to the industry in Chinese, but also the global industry. Since China is now the biggest video game market in the world, lots of game companies, both domestic and foreign, are involved in this market. The proliferation of game clones will affect their interests, and how this phenomenon will be handled by Chinese courts concerns their core interests.

Second, my research results relate to the interest of follow-on game developers. Since learning from existing video games on the market is a common practice in game developing, confirming the scope of protection for a video game closely connects with the boundaries of what contents in a video game can be legally copied by follow-on developers. If the boundaries are not clear, then the activities of follow-on game developers will face great legal risks and even be discouraged, negatively affecting the sustainable development of the video game industry in the future.

Third, just as for the interest of follow-on game developers, my research results also concern the interests of the public. More specifically, the public interest is attached to how a video game can be used by the public other than by follow-on game developers. For example, in China, the question currently of whether the live playing of a video game on a platform like Douyu (which is the biggest live platform in China) should be considered as an infringement has already caused controversy. From that, since new ways of using a video game are emerging, the scope of copyright for a video game's right holders will definitely affect the public interest. So, my research results on how to regulate a video game within copyright law will doubtless relate to maintaining the public interest.

2. To whom, in addition to the academic community, are your research results of interest and why?

In addition to the academic community, the target group of my research is judges. There are two reasons for this. The first reason concerns the reality of the courts and judges in China. Since China is in the process of building a country under the rule of law, both companies and the public are focusing more on the operation and application of laws and other legal norms, and they are more likely to apply the laws as a weapon to maintain their rights and interests. In these circumstances, the number

of lawsuits has is increasing sharply. As a result, courts and judges in China have to face a very heavy workload, and working overtime is commonplace. Considering this, my research results hope to provide clearer guidance for judges when they adjudicate copyright infringement cases regarding video games and game clones. Besides that, I also hope the results can be accepted by, and form a consensus among, judges. If so, the results in this research will save judges' time, improve judicial efficiency, and relieve judges from the pressure of a heavy workload to some extent.

The second reason relates to a video game as an object for recognition. a video game is a complex object which contains software, images, music, and literature works. Besides those elements, since a video game also closely relates to and is deeply affected by technology, to understand what a video game is means to understand the related technology in the first place. This results in recognising and understanding video games being a very hard task for judges. However, they still have to provide their opinions and decisions on the legal issues regarding video games. Therefore, this research wants to provide reliable and succinct information about video games to judges, facilitating their recognition of this type of object. Only by doing this, can judges apply the law properly to video games, and render judgments that are more suitable to the aim of law and the goal of administering justice.

3. Into which concrete products, services, processes, activities or commercial activities will your results be translated and shaped?

My research results will be shaped into more cautious decision-making when a court determines copyright infringement caused by game clones. My results will help courts to better understand what video games and game clones are and recognize how much copyright protection should be provided to a video game. By considering the interests of game developers, follow-on developers, and the public, a cautious decision-making should respond to and protect the interests that have been promised by copyright law.

Besides that, cautious decision-making should also avoid over-protection. To avoid over-protection of video games, courts should draw a proper boundary between private and public interests. Only by doing this, can courts avoid excessive invasion of private interest into the space reserved for the public interest and keep a robust boundary for the latter. More specifically, my results hope to stimulate courts to think more about the public interest regarding the video game industry, especially how the current protection of video games will affect not only the activities of learning and copying from follow-on game developers but also the activities of using and disseminating by ordinary people.

4. To what degree can your results be called innovative in respect to the existing range of products, services, processes, activities and commercial activities?

My results can be called innovative in respect of the current decision-making of a court when it deals with copyright issues regarding a video game. Current decision-making contains too much subjectivity that cannot provide a constant scope of protection for a video game. Since courts currently know little or nothing about video games, they do not have an objective understanding of the object. So, when handling copyright issues, they can only rely on their limited knowledge of video games and the industry to make decisions. As a result, their judgments reflect the big gap between the impression of a judge and the reality of game design and game industry, and they cannot provide a clear and steady boundary for the scope of copyright of a video game, let alone guidance for both right holders and follow-on game developers. Also, the subjectivity of the confirmation of the scope of right also leads to subjectivity when a judge rules on infringement regarding a video game. The subjective decisions prevail in drawing a line between protectable and unprotectable contents, and they also prevail in comparing what has been copied as factual and legal matters.

As an innovation, my results try to turn subjective decision-making into a more professional and objective one. To make decision-making more professional, my results provide a comprehensive understanding of a video game by refining the updated, mainstream theories and knowledge from the field of video game and game design. By relying on my results, courts can have a more professional and systematic recognition of a video game, facilitating the forming of a consensus among judges on what can be protected in a video game. To make decision-making more objective, my results recommend that judges adopt a more objective approach (i.e., the AFC test) to rule on infringement regarding game clones, and in each step of the AFC test, my results try to restrict the subjectivity in the decision-making process to a tolerable degree.

5. How will this/these plans for valorisation be shaped? What is the schedule, are there risks involved, what market opportunities are there and what are the costs involved?

The valorisation which my research results have provided, i.e., the increase in objectivity in a court's decision-making on copyright issues regarding video games, will be shaped by following the schedule below. First, my results provide a professional and systematic understanding of video games for judges. Then, judges can reach agreement on how to recognize a video game as an object in general or as a subject-matter under copyright law. Lastly, by relying on the agreed approach, through a Guiding Case or case law, the courts can further come to a consensus on how to find infringement between disputed video games.

The only risk of the schedule above will be that if courts rely too much on my recommendations, they ignore the development of new technology on video games.

Of course, what I have shown in this research is the most up-to-date knowledge from game designers and game experts, but this knowledge will not remain unchanged. It is dynamic and will even be overturned as technology continues to change and develop. If judges view video games as something static, they will risk holding onto an outdated dogma when providing the scope of protection of a video game. Video games are developing and changing all the time. At first, they were just the presentation of some simple rules and images, but now, they contain more complex mechanics, aesthetics, stories, and technologies. So, to avoid dogmatism, courts should always keep in mind that, all the concrete recommendations in my research are made according to the *present* technological level of video games, and they will definitely be outdated in the future. In other words, judges should keep abreast of the development of technology, and of the realities of the video game industry, and while being mindful of the justice they should reserve for the public interest.

When seen from a bigger picture, the results of my research hope to remind courts, and also legislators, to stay attuned to what they need to judge and regulate, to respect the principles of how a thing originally develops, and to keep up with updated reality rather than outdated beliefs. Only by doing this can my research results, or any other studies in the academic community, become a flexible reference that prepares us for a variable future, rather than a rigid dogma that imprisons us in the eternal present.

Curriculum Vitae

Xiao Wang was born in Jingzhou, Hubei Province, China. He received his bachelor's degree in law from Zhongnan University of Economics and Law and his master's degree in Intellectual Property Law at the same university. In September 2015, Mr. Wang started his Ph.D. career in Intellectual Property Law at Maastricht University under the supervision of Professor Kamperman Sanders. During his Ph.D. career, Mr. Wang did research at the Max Planck Institute for Innovation and Competition as a scholarship holder and as a visiting scholar. Mr. Wang has already obtained the qualification of becoming a postdoctoral fellow at the Law School of Tsinghua University. After receiving his Ph.D. from Maastricht University, he will formally pursue his further career at Tsinghua University.

Propositions

1. A video game is a system that provides experiences to its players through interactivity. The interactivity provided by a video game does not mean the players can bring something to the game that does not initially exist in the game. Inside a video game, the four inter-related elements: mechanics, story, aesthetics, and technology, make video game software and its screen display both interdependent and relatively independent.
2. The concept of “game clone” refers to the phenomenon that the four inter-related elements: mechanics, story, aesthetics, and technology, of a game clone are similar or identical to those of an earlier game.
3. Although there are indeed some differences between US judicial practice and judicial practice in the courts of Japan and China, when looking at the issue of copyrightability and of finding copying of protectable expressions together, we get the impression that judicial practices in the US, Japan, and China all have a similar effect: they all provide a detailed analysis of what can be protected in a video game and provide a scope of protection for specific contents.
4. In the judicial practices of the US, Japan, and China, how to find copying of protectable expressions between disputed video game screen displays is problematic. That problem is reflected in the divergence of opinion on the scope of protection for a video game screen display and on whether a comparison should be made by relying on an ordinary person’s instincts or perception.
5. Courts can follow the three-step theory to find copying of protectable expressions between disputed video game screen displays: the first step is to abstract a video game screen display into four levels: the problem statement of a game, the nature of the fictional world created by the game, the manner of the display, and the elements of the display. The second step is to filter out the ideas and unprotectable expressions from each level and the third step is to make a comparison by following the sliding-scale approach assisted by expert opinions.
6. In the world of copyright law, weighing the balance of interests among right holders, users or follow-on creators, and the larger public will be an eternal problem. This problem will become more complicated when new technologies, new business models, and new kinds of works emerge.
7. Subjectivity is inevitable for the determination of any legal issue regarding copyright which is built on an intangible concept of works, but it is still necessary to restrict the subjectivity to a tolerable degree for the sake of the public interest or common good.
8. Copyright protection should build on human rationality and empirical evidence, rather than faith-based demonstration.

