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The Game Freaks Who Play With Bugs – In Praise of the Video Game *Xevious*

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Translators' Introduction

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"The mystery deepens every time you play!!
When will the entirety of *Xevious* be revealed?"
(Xevious Promotional Poster, Namco 1983)

In the 1980s, Japanese habits were being drastically transformed by the integration of video games in the entertainment industry. This change first took hold in the large network of arcade parlors that were established all over the country, which was a result of the craze of *Space Invaders* in the summer of 1978 (Taito). Those venues saw a rapid influx of new coin-operated video games that were ever more sophisticated and engaging than before. On the home front, not only had Nintendo's Family Computer democratized the pleasures of digital entertainment, but it allowed people to play games from arcades comfortably at home. It also allowed them to embark on longer video game adventures with the release of RPGs such as *Dragon Quest* (Enix, 1986). Such games made computer role playing games accessible to a wider demographic than the small circles of personal computer enthusiasts. However, the

suddenness of this invasion in the fabric of everyday life was not without triggering some concerns. Indeed, critics became wary of the negative effects of video games and, around 1985, a feeling of uneasiness towards this new form of entertainment started to spread across Japanese media (Sakamoto, qtd. in Kumada, 2011, p. 2). Arcades were spoken of as hotbeds of delinquency and home video games as sneaky devices shifting children's focus away from school and social interactions (Katou, 2011, p. 43-47). For many people, video games were a problem. It is in this context that Nakazawa Shin'ichi, in 1984, wrote one of the first academic texts in Japanese on video games, which was about a very influential arcade title of that period called *Xevious* (Namco, 1983).

Nakazawa Shin'ichi was (and still is) a prolific Japanese intellectual and a specialist of Anthropology and Religious Studies. He has been publishing on those topics since the beginning of the 1980s. He wrote about many subjects including philosophy (*Mori no barokku* (Baroque of the Forest), 1992; *Hajimari no Lenin* (The Beginnings of Lenin) 1994), religious studies (*Keruto shuukyou doruidizumu* (Druidism in the Celtic Religion), Nakazawa & all., 1997), particularly Eastern cults and, in recent years, he developed an interdisciplinary approach to ecology and critical theory (*Earth Diver*, 2005; *Yasei no kagaku* (Science of the Wilderness), 2012). At first glance, one would not expect a writer with Nakazawa's background to provide a critique of such a novel form of entertainment as video games, but it is precisely this intellectual formation that allowed him to look at them with fresh eyes. For the purpose of introducing the translation of his early piece "The Game Freaks Who Play With Bugs"—published in Seidousha's philosophy and critical theory magazine *Gendai Shisou - Revue de la pensée d'aujourd'hui*

Figure 1: A picture of *Shangri-La*'s scoreboard. Taken from The Internet Pinball Database (http://www.ipdb.org/showpic.pl?id=2110&picno=1999).

Figure 2: A *Shangri-La* machine in a game hall in Köln. Taken by Candida Höfer.

(Contemporary Thoughts) in June of 1984 for a special themed-issue on entertainment and capitalism—and to explain his general involvement with *Xevious* and the world of video games, it is important to first emphasise his involvement in the studies of Tibetan religion.

In 1979, Nakazawa sets off to Nepal seeking to study local Tibetan religious practices. Upon his return, he publishes with the Lama *Khetsun Sangpo* Rinpoche[1] within the collection *Niji no kaitei Chibetto no mikkyou no meisou shugyou* (Sea of Rainbow – Mediation Practices of Tibetan Buddhism) (1981). In 1983, Nakazawa publishes *Chibetto no Mousharuto* (Tibet's Mozart), his first monograph on the topic. As a specialist of the Tibetan religion, and especially as a specialist of the *Book of the Dead*, he continues to be involved in various projects related to this topic (*San man nen no shi no kangae chibetto no shishanoshou no seikai* (30,000 Years of Thoughts on Death – The World of Tibet's Book of the Dead) (1993). Even in the English world, but notably in Canada, Nakazawa has been credited for his involvement in the 1994 National Film Board of Canada documentary film *The Tibetan Book of the Dead: A Way of Life* (McLean, 1994). It is this great interest in religious thoughts and practices from Tibet that most likely led him to take notice of the article that would later comprise the backbone of his thoughts on *Xevious*; that is, Michael Oppitz's paper on pinball game analysis, "Shangri-La, le panneau de marque d'un flipper. Analyse sémiologique d'un mythe visuel". This 1974 article published in the French journal *L'Homme* sets to conduct a semiotic analysis of the scoreboard of *Shangri-La*—the pinball machine heavily inspired by Eastern exoticism and that which occupies Nakazawa's thought for the first part of his article—as he unpacks the ideological underpinnings of the machine's aesthetic and social life. Nakazawa borrows Oppitz's conclusions that *Shangri-La* creates a sense of Asian exoticism, transforming the myth of Shambhala into a backdrop for the repackaging of capitalism's principle of competition as mass entertainment. While this distortion of Tibetan imagery certainly concerns Nakazawa, his major contribution in understanding the mythology of this pinball machine is the statement that their gameplay is inherently limited. The machine affords players to play for high scores, but does not offer much more. It is through a comparison with video games, a new form of entertainment still at an early stage of development in the 1980s, and through innovation in game design that the limited

1 Important figure amongst Tibetan Lama Priest, famous for numerous publications, including the Biographical Dictionary of Tibet and Tibetan Buddhism. He taught the holy Dharma in Japan for a decade in the 1960s (Dojo Ling).

understanding of the potential of amusement machines will be challenged and expanded. Indeed, Nakazawa states that *Xevious*, through its hypertextuality, its developed corpus of paratextual works, and the surprises caused by its bugs, is a text holding the potential to generate a mythology for the players willing to get deeply involved in it. Players are no longer interested in high scores, but are interested in discovering hidden elements within its code through experimentation.

Video 1: *Xevious* arcade gameplay

Xevious' game design was indeed revolutionary in 1983. The game is a vertical scrolling shooter in which the player controls a small interceptor ship called Solvalou battling against a variety of enemy ships as well as tanks and auto-turrets, the so called "ground targets". Solvalou is equipped with two weapons: a Zapper to shoot flying targets down and a Blaster to destroy ground vehicles and buildings. The game's background scrolls down continuously, depicting various environments such as several forests, various bodies of water and, most notably, some mysterious geoglyphs. The goal of a game session is to get as far as possible, defeating various waves of enemy ships and several stronger boss characters. Additionally, one of the defining characteristics of *Xevious* is the presence of hidden characters and bonuses hidden in various locations in the game. These secrets have greatly contributed in turning the game into a cult title in arcades. All of these elements are also supported by a

strong sense of narrative. Indeed, the events depicted in the game constitute only a tiny chapter within the greater narrative of the struggle between humanity and the biocomputer GAMP, a sci-fi saga spanning thousands of years. With its high end graphics, fluid character animation and a memorable soundtrack to the mix, it becomes clear as to why *Xevious* made such a deep impression on gamers of the era and why it firmly stands as one of the flagship titles of arcade retro-gaming culture in Japan.

Figure 1: Screenshot from the first episode of the 2013 television series *No kon kiddo: bokutachi no geemushi* (No Continue Kid: Our Game History) broadcasted on TV Tokyo, a drama focusing on the history of Japanese arcades, and in which *Xevious* plays a central role. Taken by the author.

Nakazawa primarily applies an ethnographic mode of analysis on *Xevious*. While he does write about the content of the game, his focus is not to provide a personal account of his gameplay experience. Rather, he mostly relies on the perspective of gamers and genuinely seeks to understand their engagement with the machine. After establishing a short history of the video game industry through the *PONG*/*BreakOut*/*Invaders*-games[2] axis, he delves into an examination of video games' paratextual literature. Nakazawa demonstrates that *Xevious*' fan walkthroughs, music CD, and others, shape how gamers define and approach the game. In other words, it is a sort of *media mix* centered around the mythology of *Xevious*, which drives this early research and allows him to get a deeper insight on what drove game freaks (or gamers) to engage with arcade games with such enthusiasm.

2 Nakazawa never refers directly to Space Invaders in this text, but rather to the plethora of games that later took inspiration from it such as Nintendo's *Space Fever* (1979) or Namco's *Galaxian* (1979).

Nakazawa agrees with the general notion that *Xevious* players are driven by the discovery of secrets rather than obtaining high scores[3], but he also goes beyond this concept, suggesting that bugs—error elements not meant to be part of the game—are also essential drivers of player engagement with the machine. Even today, the compilations of Youtube videos featuring amusing bugs from new game releases stand as a testament to Nakazawa's belief that the discovery of bugs still remains an important aspect that drives gamers to produce content as they are consuming the games. In doing so, Nakazawa also poses an indirect question that carries resonance to this day: to what extent are unwanted bugs part of games as we know them today? This is indeed a valid question considering that, at around the time when this article was initially published, the term *urawaza* (secret techniques) was on the lips of many Japanese children for whom playing video games was mainly a quest to find unorthodox gameplay phenomenon in their favourite games; little did they know then that most of these were not intended to be gameplay features, but were simply bugs left by the developers (Gorges 2011, p.103). Another interesting aspect of this article is the comprehensive fashion in which Nakazawa explains how certain bugs are directly related to the machine's hardware; the time lapse between the three CPUs constituting the game. This leads us, today, to wonder if any of the following incarnations of *Xevious* on the Famicon, MSX, and other platforms included those bugs as well, and if those changes due to hardware limited the potential of discovery that the original arcade machine provided.

Those questions are beyond the scope of this introduction and even Nakazawa himself, towards the end of his article, admits not being able to provide a definitive answer on the impact of video games and their "mythopoetics" (their ability to generate myths and stories) on the generation of "game freaks" he wrote about. However, his desire to see if video games could indeed elevate their users' thoughts beyond what he calls the "capitalistic pleasure" derived from achieving high scores led him to continue investigating the world of video games in subsequent works. Those include *Poketto no naka no yasei* (Wilderness in the Pocket) (1997), a critical investigation of *Pokémon* from the point of view of psychoanalysis

3 This was, amongst other things, the main point brought forward by the special report on video games by the NHK documentary program Shutoken (NHK, 1986). A large segment of the show was dedicated to *Xevious* designer Masanobu Endo.

and a later work entitled *Denshi geemu no kairaku* (The Joy of Electronic Games) published in 1987 in which *Xevious* is again put under investigation (Endo, Nakazawa, Yasuda & Eiji).

I will leave it up to the reader to judge the place of Nakazawa's paper within the field of Game Studies. However, the wish is twofold in the publication of this translation for the *Kinephanos* special issue about "Geemu and Media Mix". My initial intention was to share an interesting reading of the game *Xevious*, an extremely important game in Japan, but one that did not receive similar attention in the rest of the world. This partly explains why it is rarely discussed in the English language narratives of video game history. The scholarship on video game history in the West such as Leonard Herman's *Phoenix: The Fall & Rise Video Games* (1997) and Steven Kent's *The Ultimate History of Video Games* (2001) tend to overlook the significance of *Xevious*. However, the game's importance is mentioned in Tristan Donavan's more recent *Replay: The History of Video Games* (2010). The second reason for translating this article pertains to the extremely early nature of the text. This pioneer work, which links games and religious studies, is one of the earliest pieces of academic literature on video games in Japan. It is noteworthy for providing a fresh perspective on the subject, paving the way for other critics. As such, it constitutes an important object in the historiography of Japanese game studies that should be available for Western scholars.

Finally, the authors would like to thank Prof. Nakazawa himself for graciously allowing his work to be translated. We also acknowledge the contributions of Martin Picard for making this project possible, as well as Prof. Kaori Kabata and Daigo Shima for providing a helping hand in the translation of the challenging passages of the text.

The Game Freaks Play with Bugs –
In Praise of the Video Game Xevious

Nakazawa Shin'ichi

Figure 2: *Xevious*' demonstration mode. The game's release date is stated to be 1982 on this screen despite being released in January of 1983. This is due to the fact that the game was completed and released for location test in December of 1982 (Wakao, 2013).

1

In 1967, the large-scale American amusement device manufacturer Williams and Company[4] released a pinball machine by the name of *Shangri-La*. In the history of pinball, 1967 was the time when cabinets were already approaching their full maturity. First manufactured in the middle of the 1930s, pinball machines evolved at a similar pace to that of the economic growth in the United States. It is during this period that they thrived to the point of becoming one of the representative devices of electromechanical game machines alongside bingo and slot machines.

One would not see any noteworthy, original feature in *Shangri-La* by looking solely at its mechanical aspect. On the contrary, on this level, it belongs to the ordinary kind of pinball machines. The basic structure of those games asks the player to flip the ball away from the fall area of an inclined board while hitting as many targets in order to gain the maximum points possible by using both left and right flippers. Despite the fundamental structure of the device, manufacturers were able to tailor their machines in unique ways by adding complex thrills and various light ornaments.

However, as a machine built in the second half of the 1960s, the mechanical features of *Shangri-La* are comparatively simple. Its front scoreboard is not ornamented by any complex flashing illuminations, and the cabinet is not equipped with an additional third flipper.

4 Nakazawa uses the name Williams and Company, but further research indicates that the company was named Williams Electronic Manufacturing Company during the time of the release of *Shangri-La*. It is now called MWS Industries, a subsidiary of Scientific Games Corporation.

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Although equipped with extremely conventional mechanisms, this pinball machine had, most likely, drawn public attention because of the peculiar picture featured on its scoreboard.

On the right side of *Shangri-La*'s scoreboard is an illustration of a water bird playing in a pond surrounded by blossoming lotus flowers. Three Asian women with thin, slanted eyes wearing Chinese dresses are standing by the banks of the pond. Beyond the water bird in the pond, lies a Chinese-style Buddhist temple. Looking at this part of the picture, one might feel something like a sense of cultural unity. However, the questionable nature of the pattern gradually becomes noticeable as a *Toori* gate from traditional Japanese Shinto temples surrounded by tropical vegetation emerges in the background. This sense of incoherence gets stronger when looking at the left end of the scoreboard. There, a structure reminiscent of a temple standing several stories high can be seen. On each floor of this structure are some men and women wearing a variety of ceremonial garments typically worn by Lama priests during rituals, and looking out into the distance. Following their line of sight, we notice a tall snow-covered mountain drawn near the center of the board. One might wonder if the mountain depicted here is Mount Kailash, a sacred mountain located at the frontier of Tibet and India. Since the pinball machine is entitled *Shangri-La*, it is possible to assume that it is the case.

This assumption is deeply tied to the fact that the word *Shangrilla* is a derivation of the Tibetan word *Shambhala*. *Shambhala* refers to the legend of *The Peach Blossom Spring*, a story transmitted by the people of Tibet. *Shambhala* is an earthly paradise that is thought to be located somewhere around the northwestern part of the Tibetan plateau, landmarked by Mount Kailash. This *Shambhala* became widely known by the term *Shangrilla* through James Hilton's novel *Lost Paradise* published in 1933 that became a bestseller book and was later arranged into musicals and movies. Since then, the term *Shangrilla* has, for many people in Europe and the United States, become a term synonymous with the longing of a representation of paradise intertwined with captivating eastern connotations.

The background of *Shangri-La*—manufactured by Williams and Company at a time when pinball machines were reaching their full maturity—overflows with a unified sense of paradise that comes from a strange mixture of eastern exoticism randomly put together in the background. According to American anthropologist Michael Oppitz, pinball game machines

and the prosperous context that marked the essence of capitalism in their period is splendidly represented within the elements drawn onto *Shangri-La*'s scoreboard.

It can be easily understood that the pleasure of pinball machines comes from the enjoyment of a type of competition, which occurs between the player and the machine. The player is able to control a ball, which seems to fall in random directions, by operating the left and right flipper. Additionally, a player's ball control skill is immediately calculated and displayed on the front part of the scoreboard in a decimal system. According to anthropologist Michael Oppitz, the pleasure gained from playing those pinball machines lies in the way in which it cleverly reflects the dreams associated with high-growth period capitalism. He writes about this aspect of the machine in his essay "The Shangri-La within the Pinball Machine".[5]

Pinball attempts to give a different form to the concept of competition[6] in a really brilliant way. The catch phrase "the joy of competition unfolds the pleasure of the mind" that was bestowed to pinball games demonstrates the meaning of the strange variation of collective games. Pinball creates a sense of society; it is a cooking pot that stews sociality. Players can be seen challenging high scores by themselves for their own solitary enjoyment. However, pinball players are also simultaneously playing within a social network. While pinball machines provide amusing distractions, they also provide therapeutic effects. In the context of the conditions of an actual workplace, the principle of competition wears down the worker's body. However, in this case, the same principles of competition are clearly charged with the radiance of paradise. Pinball, through this therapeutic effect, smoothly sneaks in the imperative of "success" that society constantly calls upon people, making it possible for the player to revisit the crude reality of competition. Therefore, it is possible to look at pinball machines as a sort of educational apparatus based on the pleasure of playing. Furthermore, the *Shangri-La* pinball machine, which is penetrated by our society's logic of competition, stands in fierce opposition to the Tibetan legend of *Shambhala*, which seeks to nullify this very sense of competition. However, it is evident that both versions of *Shangri-La*, despite their differences, seek a middle ground. Within pinball's paradise, what is granted as bonus

5 Nakazawa probably refers to a Japanese translation of Michael Oppitz's article "Shangri-La, le panneau de marque d'un flipper. Analyse sémiologique d'un mythe visuel" published in the French journal L'Homme in 1974.

6 Reference to the term "competition" as understood by economic theory.

money is only a high score. So even there, the proverb “playing for play’s sake” explains the spirit of *Shangri-La* very well.

Here, I think, Oppitz makes an important observation by considering the essence of the contemporary game machine industry. This observation has a profound relationship to the modern transformation of the concept of paradise typified by *Shangri-La*.

While legends such as the Tibetan story of *Shambhala* describe paradise as a formative place of rebirth from the “here” and “now” of modern daily life, at the same time, it can be considered as a “Neverland” that can never be attained. Regardless of whichever representation we associate paradise to, the truth is that it is also a concept that cannot be given materiality or be observed. However, by presenting the concept of an observable and a material paradise, the legend of *Shambhala* teaches us that it is not possible to consider life in this world.

That being said, capitalism has altered the concept of paradise as it creates an illusion of material substance of the “here” and “now”. This is because it gives material substance to the “Neverland” and sends it back to the real world. For example, the high score displayed on *Shangri-La*’s scoreboard is a way to transfer paradise to the real world and to make it tangible. The immediate rate at which the scoreboard converts the player’s skills into numerical values is also a blatant representation of paradise in the “here” and “now”. Here, *Shangri-La* deeply weaves together an advanced exercise in the principle of competition and the concept of the materialization of paradise.

The *Shangri-La* pinball machine condenses and reflects the public spirit of the golden years of electromechanical games. Within this game, capitalism based on the principle of competition does not show any particular sign of decline yet. The mix of strange Eastern exoticism drawn on the scoreboard demonstrates this very clearly. The East is cut into pieces, divided, and tossed into the American cultural amalgam through the logic of competition, which is relentlessly seeking expansion. The very crucible of this amalgam is the matrix of capitalism’s fantasy of *Shangri-La*.

However, what *Shangri-La*'s blatant form points to, more or less, is the essence already shared between all game machines of the electromechanical era: a mechanical sense of movement, a stochastic worldview, and the conversion of players' skills into a high score expressed in numerical values. The great transformation that was in progress within capitalism was not yet visible in these electromechanical game machines.

2

However, there were also signs indicating that the game industry was undergoing some transformations. In 1962, several years prior to the launching of the *Shangri-La* pinball machine, Stephen Russell, a student specializing in computer graphics at the Massachusetts Institute of Technology (MIT), was already employing cathode-ray tubes as a playing field in the production of *Spacewar* at his university's laboratory. This was the world's first video game. As it would, Russell's prototype would later come to have a large impact on the amusement machine industry as a whole.

In January of '62, Russell succeeded in creating a dot that could first be seen skipping on a screen by connecting MIT's minicomputer PDP-1 to a cathode-ray tube (a CRT graphic device). This dot gradually took the shapes of space crafts and stars. Within a mere month, Russell devised controls for the navigation of two spaceships that were navigating around a star. *Spacewar* did not just feature a *bomb button* that would later become characteristic of the *Invaders*-games, but it went so far as to add a *panic button* that brought about a catastrophic effect to the entire screen. Clearly, Stephen Russell's *Spacewar* showed signs of being a sophisticated video game.

Yet, it took approximately ten years for video games to reach the general public from the hands of the amusement industry. This was more tied to economic issues than a matter of computer graphic techniques. Due to the extremely high cost of basic elements used in transistor logic circuits at the time, video games, even when they were released, were nowhere near profitable.

To increase the margin of profit, it was necessary to combine both the computer and CRT, while maintaining a balance between novelty and the cost of creating games that could

become popular. In 1972, Nolan Bushnell's corporation, Atari, launched the legendary game *PONG*, but it had taken close to ten years of trials and errors in order to achieve its immense success.

Compared to *Spacewar*, the concept of *PONG* is rather quite simple in terms of video game mechanics. By using a "paddle and ball" device, a ball is hit in between two paddles that move up and down, which depend on the operation of the dial. In more concrete terms, *PONG* simulates the movement of a ping- PONG racket and ball. Nowadays, even a middle school student would be able to program games such as *PONG* with ease on his home computer. However, it is perhaps because of its level of abstraction and simplicity that *PONG* became such a popular commodity and became a big hit, which sold close to a hundred thousand copies (that is, if we take into consideration the number of machines that were copies of the original). The existence of Atari Corporation and *PONG* had a significant impact even within the amusement industry.

The year 1973 marked a shift away from electromechanical games such as pinball, bingo, and slot machines that were once central to amusement facilities. Many major amusement machine manufacturers began investing in video games, which was, then, followed by the birth of a number of companies that specialized in games. Sounds such as *gacha gacha* and *chin chin*[7] were gradually replaced by new and humorous techno sound effects created by computers in amusement facilities. Triggered by the success of *PONG*, video games created by the amusement industry started to evolve all at once, creating more complex and revolutionary games.

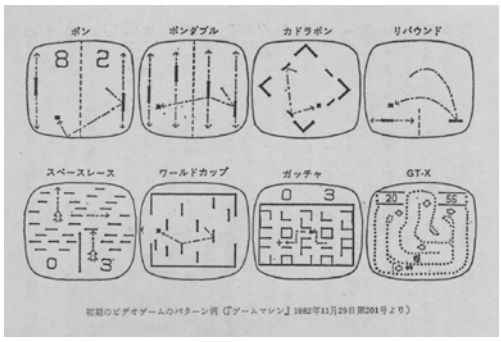

Figure 3: Examples of Early Video Game Patterns (*Geemu mashin* [Game Machine], issue number 201, November 29 1982), in order of appearance: *PONG*, *PONG Double*, *QuadraPONG*, *Rebound*, *Space Race*, *World Cup*, *Gotcha* and *GT-X*.

7 Onomatopoeia referring to the clattering and tinkling sounds associated to electromagnetic games.

Many of the first successful video games consisted of abstract simulations of sports such as ping-pong, tennis, soccer, and hockey. For a few years after the release of *PONG*, successful video games were variations on the "paddle and ball"-type of games, complexifiying their motions (picture reference).

The next objective for video games was to grow out of the "paddle and ball" genre. There were high expectations put on the idea of replacing the game machines of entertainment facilities with video games. While sports such as speed racing and baseball were turned into video games, their moderate success did not exert so much influence on the evolution of video games on a broader scale. This is because the true appeal of video games does not merely rest in the simulation of reality.

It is widely acknowledged that what had truly contributed to the flight of video games was Atari's announcement of *Breakout* and its following success.[8] Upon first glance, it is still possible to consider that *Breakout* was a slightly clever variation of the "ball and paddle" concept. It is believed that this variation held a great idea that would provide a significant leap forward into the world of video games.

After pressing the play button of this game known as *Burokku Kuzushi* in Japan, a wall of stacked blocks was revealed at the top of the game's display. The "ball and paddle", as seen in *PONG*, is projected at the bottom of the display screen and starts to move smoothly across it. The player operates the paddle to move from left to right and proceeds to hit the blocks with the ball to destroy them (or delete them). As the game progresses, the program is set on steadily decreasing the size of the ball as well as changing its speed, thus making the motions more complex.

The reason why *Breakout* did not attract much attention, at the time of its launch, was because a lot of people were unaware of the magnitude and meaning behind the game's concept of using a ball to continuously pierce through the blocks that were located at the top of the screen. However, as this game machine gradually gained popularity, many people were

8 Nakazawa refers to the success of *Breakout* in Japan specifically.

able to realize the important idea behind *Breakout*. Many began to wonder what would happen if the blocks at the top of the screen were programmed to move vertically and horizontally. This idea caused a whirlwind within the video game world. In effect, *Invaders*-games were born.

Invaders-games infused "block" games such as *Breakout*, which were based on an extremely abstract concept, with a sense of motion and mythical imagination. It is possible to say that this paved a way for a completely new flow of video games that was initiated by *PONG*. In other words, it is possible to find a continuous structural relation between the form of *Invaders*-games and the "paddle and ball" games, insofar as it pertains to the foundational structure of video games. However, *Invaders*-games, infusing those elements to this video game form, successfully turned it into a new genre.

Invaders-games gave vertical and horizontal motion to the fixed cluster of blocks from "block" games. Moreover, those mobile clusters of blocks were given the shapes of invaders from outer space that attacked players. The game featured a confrontation between Earth and hostile invaders from space. This conventional (or rather out-dated) mythical, sci-fi narrative formula established the game's context that provided a sense of mythological meaning that could be easily understood by anyone familiar with the abstract block clusters of "block" games. The upper playfield of the display was reworked into a battlefield for the relentless invaders-shooting battle. These game machines were first made by the Japanese manufacturer Taito and it is widely known that they also acquired a large market in America. It can be argued that "capitalist games"—such as pinball, which immediately display the numerical conversion control skills of stochastic elements like chance and randomness on the score board, and *Invaders*-games, which immediately convert the destruction of invaders into numbers that appear on the machine's display—are games that utilize a "proto capitalist cosmology" as their backdrop. The fact that this game, which was born out of the Japanese amusement industry, "invaded", *per se*, the foreign market is very interesting. This is because *Invaders*-games—with the concurrent introduction of a new sense of motion and ancient sense of mythical imagination—felt like they were sharing some common elements with the

essence of the "techno-culture" that followed it.[9]

One must not forget that *Invaders*-games had one more important aspect. That is, the appearance of these types of games brought about the full-scale use of microprocessors (CPU). Prior to this, the majority of video games used TTL (transistor-transistor logic) circuit. In addition, it was common at the time for games to be equipped with a monochrome display. By making full use of these CPUs, *Invaders*-games' aimed to increase access time speed. Groups of characters that moved smoothly across the screen were projected in beautiful digital colors. The lever, which was once limited to two directions also increased to four and finally to eight, gradually allowing the player with a greater degree of freedom. Within a mere year or two, the shortly lived *Invaders*-games boom faded, but these games paved a way for the video game industry that would lead to even more potential.

3

It is in this context that *Xevious* made its appearance. Namco released the game in January 1983, at a moment where no titles were expected to last as long as twelve minutes.

Xevious belongs to the "scrolling" types of video games which featured backgrounds that continuously changed and expanded. If we are to make an extreme approximation, the game could be considered a mix of action games like the *Invaders*-games *Galaxian*, and *Galaga*, which simulated airborne battles, and driving simulator games such as *Rally X* and *Pole Position*, in which the background flowed continuously. Thanks to this mix, *Xevious*' action combined air battles that consisted of successive ambushes by flying vehicles of the Xevious army as well as the destruction of ground targets like energy hangars installed in the forests or in military bases. All of this resulted in a scramble-type game that was more complex than any other game before.

Yet, that is not all. *Xevious* was also successful in raising the sense of motion and awakening the sense of creativity that *Invaders*-games had introduced to video games, but to an even higher level. The exquisite sense of motion that *Xevious*' characters displayed was startlingly fresh, even for a generation that grew up to be familiar with the supple visual movements

9 A reference to the "techno-pop" music wave. Please refer to Yamakami and Barbosa (2015) for more information.

featured in animation films. *Xevious* even became an interlocutor (TN: “taiwasha”) equipped with plenty of creative depth for the youths who continued to read space sagas—which can be said to be the modern version of the mythical imagination—or metaphysical sci-fi. This is enough to think that the great underlying potential of video games that had laid dormant in their genotype through the course of their history, starting with *PONG*, awoke as *Xevious*. It is for this reason that *Xevious* was singularly able to maintain people’s interest in today's video game world where the product rotation period lasts less than a few months.

With that said, one quickly realizes that explaining the appeal of *Xevious* in an easily understandable manner is, probably, a very daunting task. First, let us focus on how everyday players had fun operating and deciphering *Xevious*, and how something so ordinary can be brought into focus. Then, let us solve the clues behind this multilayered video game.

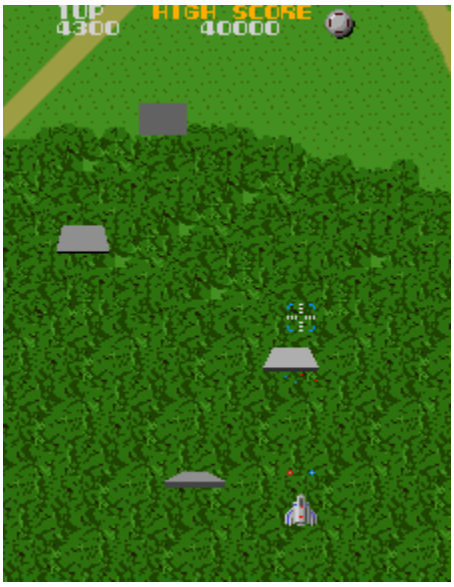

Figure 4: A screenshot from *Xevious* in which a wave of Bakuras can be seen.

The greatest difference between *Invaders*-games and *Xevious* is the presence of a narrative development. In *Invaders*-games, even if one accumulates a high score, an irrepressible feeling of monotony sets in during long term play. This is because the game only features an earth/outer space invaders or inside/outside mythical dualism and thus misses the opportunity to unfold a narrative. However, players of *Xevious* can engage in a “conversation” with the machine for hours on end. This is possible because their “conversations” steadily develop and expand. Players are stimulated by the hunch that some great narrative is lurking in the scrolling background of *Xevious.*

I think that *Xevious* evokes a sense of narrative in two major ways. One way would be through referentiality (quotations). When passing through the third area of the Xevious army base, the player-controlled aircraft Solvalou is threatened by flat airborne objects called Bacuras that fly toward it while rotating multiple times. People with even a little knowledge of sci-fi will automatically understand that Bacuras are referencing the superconscious

monolith featured in Clarke and Kubrick's SF movie *2001: A Space Odyssey* (1968). Furthermore, when reaching the seventh area of the Xevious army base, a giant, lush "Nazka geoglyph" makes its appearance, immediately evocating occult sci-fi concept such as the ones from the movie *Message from Space*[10] in the minds of players. An abundant number of references to movies, animation, sci-fi, and other sources commonly shared by the game developer (the person in charge of the *Xevious* project is a young man in his early twenties called Masanobu Endo) and players are mentioned in *Xevious*' scrolling deployment. For this reason, as soon as a "referenced character"[11] shows up, the game's setting gets connected to other big narratives and the game is able to acquire deeper signification.

However, the biggest source that holds the force of narrative evocation of this video game is located somewhere else. Indeed, the entirety of *Xevious'* action was planned as a long sci-fi narrative wrapped up in a single episode by its creator. With this narrative as the setting, careful consideration was exercised so as to give the game's deployment an unbroken creative flow through the creation of area maps and the way the game's program was carried out.

Figure 5: The cover of the 2005 edition of the *Xevious* novel (Endo, [1991] 2005). The geoglyphs can clearly be seen.

This *Xevious* novel[12] incorporates, amongst other things, the Xevious language as well as its mathematical symbols.[13] Isn't this reminiscent of an

10 A reference to the 1978 sci-fi movie *Message from Space* (Uchuu kara messeji) directed by Kinji Fukasaku.

11 In Japanese, at the time, the term character did not refer to a human-like character figure, but any sort of moving object or person. Thus background elements that appear or flicker can be considered as characters (NHK, 1986).

12 While this novel was only officially published in 1991 through the publisher Futabasha, it seems that its story circulated amongst fans before that. It was later reedited in 2005 by Fukkan.com.

13 This is a reference to the original language that Masanobu Endo developed for *Xevious* and its accompanying written

animation movie, up to the production? The construction of a single unified world, so to speak?—What this novel presents is something that is closer to a prologue than the actual scenario of the game. However, making the development team read this prologue clearly made possible the assignment of individual personalities to each and every enemy character of the game. This process elevated the story of the game (from “The Making of Xevious” (*LOGiN*, 1983)).

For this reason, strangely enough, even players unaware of the existence of the novel (it is possible to read a digest version of the story in *Xevious – A Walkthrough for Ten Million Points* (Urusei and Nagakane, 1983)) get pulled into the scrolling deployment of the game. This stirs up the longing for getting further and wanting to know more about the game's setting. It awakens the desire to know more about the specifics of the story.

The biggest narrative element in the setting of the video game *Xevious* and the one that most spectacularly symbolizes the game is probably the giant fortress, Andor Genesis. Andor Genesis is a giant mother-ship that suddenly appears, rumbling low over the ground in areas four, nine, and fourteen. The blaster ground weapon needs to be shot at Andor Genesis’ central core in order to destroy it. However, as it is being destroyed, a black body of energy called Bragza, which is said to be the source of energy embodying the whole of the Xevious army, escapes and transfers to another Andor Genesis ship.

What the players can feel behind *Xevious'* narrative is the unseverable and unbreakable body of energy that flows through and shapes the game. In other words, what players sense in this game is not the realization of the novel’s narrative in a concrete form, but the existence of a flow field embedded with the power of generating narratives, so to speak. As if being stimulated by a mythopoetic force, *Xevious* leaves those who have experienced this field with a strange and deep impression. (I refer to the dialogue between Mister Masanobu Endo and Mister Haruomi Hosono, published in the February 1984 issue of the computer game magazine *LOGiN*).

However, I think, we can find out yet another feature that characterizes the game *Xevious* in

script, which is based around mathematical symbols.

the exquisite mobility shown by the enemies of the Xevious army. From the beginning of the production process, this game was conscious of the motions featured in television animation—their fluency, their flexibility, their speed, and humour—and it tried to represent them using computer graphics. I think they were able to achieve this to a considerable degree.

Figure 6: A screenshot from *Xevious* in which the first wave of Toroids can be seen.

Immediately after pushing the play button and starting the game, several Toroids—unmanned reconnaissance ships belonging to the Xevious army—appear in front of Solvalou, which comes out of the forest. For many people who engage with *Xevious* for the first time, what is surprising, first and foremost, is the smooth flight path shown by those Toroids. Players anticipate their attacks as they seem to fly straight toward them, but Toroids instead rotate unexpectedly, show their flank, and fly off outside the CRT display. One may also think of the antipersonnel combat ships called Torkans that rapidly turn their cockpit around and fly off to the right after initiating an attack. Zoshis, whose name means "death" in the Xevious language, rotate on one extremity while approaching, just like an octopus. Zoshis show a truly complex rotational movement to the point that, at the beginning, it is difficult to estimate their flight path.

Of course, there is no doubt that the movements shown by the characters of *Xevious* are realized upon the accumulation of programming techniques developed since *Galaga* and *Bosconian*. However, it seems that no other game had ever improved character motion to the same level of exquisiteness and elegance as *Xevious*. This is related to the increased number of pattern rewrites used to represent the movement of a single character. A good example of this is the flight pattern of the horseshoe crab-looking manned ship Terrazi (see figure 9). In its case, seven patterns rewrites are used in order to represent the movement of a single character.

The whole of *Xevious* is full of surprising appearances and motions, disruptive explosions,

changes of speed, and humorous gestures. The catastrophically disruptive surprise caused by this mobility is veiled by a force of narrative generation that seems to flow continuously throughout the game. For this reason, the power of mythopoetics, the force pushing up the dynamics of narrative generation, does not end up in isolation nor do these disruptive motions end up as insipid noise. The combination of the motions of the mythical imagination and their disruptive aspect ends up giving *Xevious* a sense of modernity like no other video game before.

4

However, if *Xevious* was comprised of just these elements, wouldn't it be simply nothing more than a good working amusement machine? *Xevious* shows a mastery of computer graphic display, which enabled the representation of flexible and nimbler characters motions that was not seen in any other video game before it. In addition, the game's entire depth is wrapped in a profound mythical imagination, which attests to *Xevious*'s unprecedented level of achievement. But if, despite all of this, players showed enthusiasm only when repeatedly destroying the Xevious army's aircrafts and ground targets for high scores, then, one could doubt how these aspects of the game, which appear as novelties, amount to nothing more than mere decorations. Besides, if we considered *Xevious* as manifesting a kind of psycho-therapeutic effect, that in itself would not be that new. If *Xevious* only allowed us to play in a manner that simultaneously make us comfortable, delighted, and exalted in the process of achieving high scores, converting the players' skills in numerical values within a state of paradise embedded into the machine, then, in short, one would come to think of it as nothing more than an educational/therapeutic device that serves the purpose of the spirit of the old type capitalism embedded with the principle of competition. In other words, *Xevious* shares similarities with many game machines produced by the amusement industry up until now.

This would certainly be true should players have only been attracted to the process of improving their high scores. However, in actuality, a new generation of "game freaks" are discovering unprecedented new ways of enjoying video games through the masterpiece of *Xevious*. The "enemy" of those children who produced high score walkthroughs of the game is no longer the Xevious army. "Game freaks"' next fight now unfolds between them and the computer program that holds the video game itself. Their interest has moved towards the

discovery of elements such as “hidden characters”, bugs (insects) within the programs, “mysterious phenomena” that occur occasionally in the data transfer process between CPUs, and other such “rare phenomena”.

Information saying that *Xevious* was crammed with many “hidden characters” was known early on amongst children. In reality, from the start, there was a special program incorporated in *Xevious*, which made both Sol towers (the memory tower of the Xevious computer army and which are hiding underground) and the special underwater flags pop up to the surface when specific locations on the ground were bombarded with the blaster. The “game freaks” that were capable of producing high score walkthroughs of the game directed their interests exclusively toward the unveiling of “hidden characters”, thus causing moments of enjoyment.

However, a rumour that even more mysteries were concealed within *Xevious* spread amongst children shortly after. It was unlikely that these bugs were programmed and children were not the only ones to encounter them since these bugs also appeared to many other people. One may wonder if these bugs that were causing the mysterious phenomenon existed within the program of *Xevious* that prided itself for its godly perfection. Alternatively, people wondered if they could pull out some sort of supernatural phenomenon on the screen by initiating a complex attack that would overload the CPU. The interests of *Xevious* freaks were focused on the discovery of the gateway of black holes like those scattered within the program.

A number of such "mysterious phenomenon" are reported in the strategy book “*Xevious - A Walkthrough for Ten Million Points*” compiled by the two young game freaks Urusei Anzu and Nakagane Naohiko (1983). According to the book, the “mysterious phenomena” are mainly caused by bugs within the program and the time deviation occurring during data transfer between CPUs. *Xevious* uses three CPUs. One is used for generating sound (*Xevious* generates both new BGM [background music] as well as some engaging music). On this subject, I want readers to listen to the album *Video Game Music* supervised by Haruomi Hosono (Alpha Record, 1984). The second CPU is called the monster allocation unit (MAU) and stores character pattern information. Finally, the third CPU acts as the central component that synthesizes the whole game. A chaotic exchange of data occurs between those three CPUs during the game. For this reason, when the timing of this data transfer slips off, a

variety of “mysterious phenomena” such as the followings may happen:

- After the destruction of Andor Genesis’ Argos[14] (15), its core is also destroyed and its functions come to a halt. As a result, the background turns to black and it looks as if the player is entering a tunnel until, eventually, a background previously unseen appears. This phenomenon might be caused by a misreading of the coordinates of the map’s data.
- All areas of the game are joined together by a green forest background. The forest area joins the scrolling background data at the corresponding part, but its appearance on screen puts great pressure on the CPU. For this reason, a number of "mysterious forest phenomena" may appear.
- In the warp zone of area 15, Solvalou may warp back to area 7 immediately after being hit by a Jara’s bullet.[15] This warp phenomenon occurs when the player’s spaceship is shot down at the moment when the CPU is in the middle of giving instructions signaling that a player has progressed beyond 70% of a given area.

Figure 7: The “mechanics” page from the *Xevious* novel depicting several enemy ships.

In addition to these CPU-induced bugs, there is a number of “mysterious phenomena” caused by bugs in the program itself. Because of this, one can witness phenomena such as seeing a Domogram[16] passing under the remains of another destroyed Domogram as they come out in circular formation.

14 Argo, or Arugo, refers to the four blinking parts that surround an Andor Genesis’ core, which are firing bullets at the players at irregular intervals. Destroying each Argo grants 1000 points.

15 Small interceptor ships flying in similar patterns to those of Toroids.

16 Domograms are one of the early mobile ground targets that populate the Xevious army base.

Who knows how many bugs still remain to be found within the program now (it is unlikely that the presence of such bugs go unnoticed since manufacturers test new products between 6 months to a year through repeated test play). The possibility of unexpected "mysterious phenomena" caused by the software putting heavy pressure on the hardware still remains. It is precisely the field of potential of those "mysterious phenomena" previously unseen in amusement machines that *Xevious* has tried to break open and expand.

By ingeniously leaving bugs behind, *Xevious* ended up holding countless mysteries and gateways towards numerous black holes. Now that game freaks have surpassed the stage of seeking capitalistic pleasure by playing for the sake of attaining high scores, they are trying to enter the phase that will enable them to engage in new conversations (through battles) with computers, or rather, should we say, with the consciousness of the cosmos. Children start to recognize the similarity between Gödel′s incompleteness theorems and computer programs with the visual information provided by video games, in that they would not run at all if they had no bugs. Children also recognize the nomad-like scientific belief that this universe is packed with an unlimited number of entrances to many black holes. However, it remains unclear now which facet of the capitalist system, which continuously undergoes chimera-like transformations, the joy gained from playing with bugs corresponds to.

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