3 | Waveform Wizard: An Interview with Composer Junko Ozawa

JUNKO OZAWA, TRANS. LYMAN GAMBERTON

Introduction

Junko Ozawa was born in 1960 in Saitama prefecture. After attending the Musashino College of Music as a student in the Musicology Department and graduating with a major in Instrumental Piano, she joined the Namco Corporation in 1983 (now Bandai Namco Entertainment). The first game she worked on was *Gaplus* (1984, the name was later changed to *Galaga 3* in the United States), and following this game, she was in charge of the music for *The Tower of Druaga* (1984, for which she also wrote the sound driver) and *Rolling Thunder* (1986), amongst several other games. She was also responsible for porting some of her game music from the arcade to the Famicom versions (e.g., *The Tower of Druaga*), and further created the music for games that Namco developed for other companies, including Nintendo's critically acclaimed rhythm game *Donkey Konga* (for the Nintendo GameCube, 2003). She is credited alongside Toshio Kai, Nobuyuki Ohnogi, Yuriko Keino and Yuu Miyake for the song 'Katamari On Namco' on the *Katamari Damacy – Touch My Katamari Original Sound Track 2* soundtrack release of the PlayStation Vita title *Touch My Katamari* (2011). Since leaving Namco in 2008, she has continued to compose music, alongside giving piano performances and doing a variety of musical activities.

The music she created for *Gaplus* and *The Tower of Druaga* was included in the second game music album ever made. Produced by Haruomi Hosono (famous member of the Japanese synthpop and computer music pioneers Yellow Magic Orchestra) and released in 1984, the album entitled *Super Xevious* contained music by Namco's female composers: Ozawa-sensei and the other major composer, Yuriko Keino. The success of this album and its predecessor *Video Game Music* released earlier the same year started the game music boom in Japan.[1] *Streets of Rage* composer Yuzo Koshiro, who is

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[1] For further information, see Melanie Fritsch, 'Heroines Unsung: The (Mostly) Untold Story of Female Japanese Game Music Composers', in *Women's Music for the Screen: Diverse Narratives*

also often lauded for having an influence on 1990s electronic dance music, mentions Ozawa's *The Tower of Druaga* soundtrack in a video posting as one of the major inspirations for his own work. In 2016, the Danish indie rock duo The Raveonettes dedicated the song 'Junko Ozawa' to her and her work. Ozawa-sensei[2] herself appeared in Nick Dwyer's *Diggin' in the Carts* documentary series, in which she also talks about her work at Namco and presents her own wavetable library. While other major manufacturers worked with PSGs (programmable sound generators, as documented elsewhere in this book), Namco's customized arcade game boards created sound with built-in wavesound generators (WSGs), including the C15, and the later model C30, which featured a dedicated 8-channel wavesound generator. This allowed for the use of customized waveforms that Ozawa-sensei and her fellow Namco composers used to create a distinct and recognizable Namco sound. As is the case for many other female Japanese composers (see Chapter 21 by Lemon and Rietveld in this book),[3] her musical impact and legacy is still to be fully acclaimed in academic research.

Note from the editors: The following interview with Ozawa-sensei was conducted in the Japanese language, then translated back into English and brought into the form of an article. This would not have been possible without the dedicated and outstanding help and translations of Lyman Gamberton, to whom the editors owe their deep gratitude.

Becoming a Video Game Music Composer

The first time I touched a piano was when I was two years old. My sister, who is four years older than me, had begun to learn piano and so my parents brought one home. Although I begged my parents to let me take lessons, because I wanted to learn the same way my sister did, I was still too little and wasn't allowed to study properly. Imitating the pieces that my sister played, I played them in my 'own style'; and from around the time I was four years old, I was able to study under the guidance of a music teacher.

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in *Sound*, ed. by Felicity Wilcox (New York: Routledge, in press); Chris Kohler, *Power-Up: How Japanese Video Games Gave the World an Extra Life* (Indianapolis: BradyGames, 2004); and Yôhei Yamakami and Mathieu Barbosa, 'Formation et développement des cultures autour de la "Geemu Ongaku"(1980–1990)', *Kinephanos* 5, no. 1 (2015): 142–60.

[2] 'Sensei' is used here as an honorific, indicating teacher or learned authority, in keeping with convention.

[3] See also Fritsch, 'Heroines Unsung.'

When I was in high school, a friend invited me to join a band they had started. I was the keyboardist. Although I only played one concert during my high school years, I resumed band-related activities from the time I started at university, and gradually I began to compose my own melodies. My harmony classes at university were also really interesting, and it was there that I developed a further interest in composition.

Because I majored in music at university, I wanted to have a job where I could use my musical skills and knowledge. I found Namco Ltd. through my search for companies that employed music majors. I was already familiar with them via their Micromouse events.[4] I thought I would be able to do interesting work there and so I sent in a job application. At that point in time, I was willing to do anything as long as it involved music – I didn't expect it to be video game music.

My first completed project was *Galaga 3*. While my senior (*senpai*)[5] was teaching me, I was able to compose slowly and by trial and error; there were barely any impediments. The method of entering musical data is different to the way a score is written, so I struggled a bit at the beginning – but every day was a fresh experience, and it was a lot of fun to, for example, create 60-second sound clips.

I think that recent video game music does not greatly differ from TV/ film music and so on, but when I was just starting out as a composer, game music was decisively different. For game music at that time, the whole point was that the 'performer' was a computer. Computers' strong point is that they can play music fast and accurately: the sound was completely different to what musical instruments had been able to do up until then. There is only a slight electronic tone to the sound. Because the number of output sounds is limited to three or eight, if a different sound occurs in the middle of the song, the vocal portion within the melody is completely cut out.[6] That is characteristic of this kind of game music.

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[4] Notes are by the editors, unless otherwise indicated. For the rules of the Micromouse events see New Technology Foundation, 'Rules for Classic Micromouse' (*c*.2010), (last accessed 20 May 2020), www.ntf.or.jp/mouse/micromouse2010/ruleclassic-EN.html. On that page the following description of the events can be found: 'Micromouse Contest is a contest in which contestants enter their robots to compete for intelligence and speed while the robots negotiate a specified maze. A robot participating in this contest is termed a micromouse.'

[5] Translator's note: By 'senior', Ozawa-sensei is referring not to managerial or corporate-hierarchy-related 'senior composers', but to the senpai–kōhai dynamic, a specific form of hierarchical interpersonal relationship similar to that of a mentor and a mentoree – that is, they were **her** seniors, if not seniors in the company.

[6] Here Ozawa-sensei refers to the capacities of the Namco WSGs mentioned in the introduction of this chapter.

The most difficult thing is always being under pressure to meet a deadline. The music is created after the character development has finished: although the last part of the game's development period is busy no matter what, because the programmers and the art/design team's appointed deadlines get delayed, I have to make the music in what little time (barely any) I have before my deadline. The thing that brings me greatest joy is that many people all over the world are hearing the music I've composed as they play.

I can't really say if my musical style has been influenced by any particular musician, but an artist I do like is Stevie Wonder. If we're talking about composing video game music specifically, I think the greatest influences for me were songs from the various anime series I often watched on TV as a child.

Starting to Work at Namco

At that time, the places where you could play video games (they were called 'game centres') had a very bad image. They were the kind of places that elementary and middle schoolers would be told by their teachers and parents to avoid because they were dangerous – and since my parents were both teachers, I received fierce opposition, especially from my mother. While this was going on, Namco was working as a company to improve the image of the games industry. At that time, I thought the creative environment inside Namco was something really amazing. The latest computer equipment was set out for us, and there were very expensive musical instruments that you could not buy as an individual collector. Working every day with these great instruments, being told that I could use whichever ones I wanted, was my dream.

At first it was 'one composer per game' in terms of composition, but as the games got bigger, the number of melodies also increased, so we eventually composed as a group. The first thing I considered was songs that suited the game. The game's 'image' grew out of its time period, location, content etc. as I composed. When I first joined the company, I was hyper-aware of trying to make music that would not fall short of the expected standard, because the people who were already 'senior' composers were making really fantastic video game music.

Waveforms and Sound Driver

For the waveforms, I created software that added additional waveforms, or I analysed the waveform of the sound created by a synthesizer, using an

oscilloscope or an FFT analyser.[7] Anyhow, amongst the many prototypes I'd created, I had about twenty that looked potentially useful. As for the sound driver, since my senior already had one, I kept reading and referencing it, and I added specifications that were easy for me to use. Since I understood how the programming language worked, it was not very difficult at all. Of course, that is because the driver my senior had made was already there; if I had had to make it from scratch, I think it would have been more of a struggle. When I created a sound driver by myself, it was satisfying to be able to put all of my own ideas into practice straight away, such as being able to change the tone in detail.

Because *The Tower of Druaga* is set in ancient Mesopotamia, neither techno nor contemporary music seemed appropriate. I thought that it should be classical music, something with a slightly 'Ancient Egyptian' atmosphere. When the knight character comes out, I thought it would be good to create a brave and solemn atmosphere. The melody is the image of the knight gallantly marching forwards.[8] At that time, the sound integrated circuit could not output more than eight sounds including the sound effects, so I did not plan to write an orchestral melody. But I can't help thinking that the sounds transformed into an orchestra inside the listener's head . . .

The Status of Video Game Music in Japan in the Early 1980s

Regarding video game music at that time, I think that even the video game production companies themselves weren't very aware of it. Of the companies that made video games, Namco was very aware of the importance of video game music – they recruited composers as company employees and composed original melodies, but it was also a time when the machines made by other video game companies were playing 'ready-made' songs without any repercussions. (There should have been copyright issues.) Mr Haruomi Hosono, of the Japanese techno-unit Yellow Magic Orchestra,

[7] 'In the computer method, almost universally the mathematical tool to calculate the spectrum is a Fourier transform, usually a special form called the fast Fourier transform, FFT, which is particularly suited to computers. Thus, the digital method of spectrum analysis is often called an FFT analyzer.' Albert D. Helfrick, *Electrical Spectrum and Network Analyzers: A Practical Approach* (San Diego, CA: Academic Press Inc., 1991), 15.

[8] It is worth noting that *The Tower of Druaga* precedes *Dragon Warrior/Dragon Quest*, a game released for the Famicom with a soundtrack by Koichi Sugiyama that is oftentimes mentioned as the first classical-style game music.

produced Namco's *Xevious* as a musical album, but that was the very first album of video game music anywhere in the world.[9] In terms of how the record was marketed, it was put with the film soundtracks and in the techno music corner, since game music didn't yet exist as a genre. These days, first-class orchestras that usually play classical music often do eventually include video game music in their concert repertoires. It seems more people come to the video game music concerts than to the classical performances, and the orchestras say they want to continue doing these kinds of concerts in the future. The orchestras are happy because adults come along with kids for the video game music programmes.

About the Albums *Super Xevious* (1984) and *The Return of Video Game Music* (1985)

For both of those albums, the producer (Mr Haruomi Hosono) selected and arranged his favourite songs. Once everyone had decided the order of the songs, the engineer created the record by cutting and pasting songs from the game's circuit board. For *Super Xevious*, there is a special BGM (background music) for the player name and high score in *Gaplus* and *The Tower of Druaga*. As for *The Return of Video Game Music*, my essay is written inside the album notes.[10] At the time, we discussed it with the director: we decided that the game music we had composed would be the first A-side. For the B-side, we decided to put in the music that we had made but had not ended up using in a game and that we personally liked. Later, the B-side compositions by Ohnogi-san[11] were used in a game after all.

To record the music I brought the whole game machine to the recording studio, attached a clip cord to the foot of the IC[12] on the circuit board, and

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[9] Here Ozawa-sensei refers to the album entitled *Video Game Music* (released in April 1984), which preceded *Super Xevious* by four months, and included music from Namco arcade games such as *Xevious, Pac-Man, Mappy, New Rally-X* and others. It did not include music by Ozawa-sensei.

[10] Translator's note: Ozawa-sensei does not elaborate further on the title of her essay or give any other details. The essay she is referring to is the one in the album liner notes called 'Making of Druaga Music'.

[11] Nobuyuki Ohnogi was also one of the Namco composers, who had started his career in the company in 1981, and is known for titles such as *Galaga, Mappy* and *New Rally-X*. He was also involved in the creation of the game music albums and after leaving Namco in 1985 continued working on similar album projects. See 'Nobuyuki Ohnogi', *Video Game Music Preservation Foundation* (*c*.2020), accessed 23 May 2020, www.vgmpf.com/Wiki/index.php/Nobuyuki%20Ohnogi.

[12] Integrated circuit.

recorded it with as little noise as possible before the sound was amplified. During the break, I watched the producer, sound engineer and other people fight over who got to play the game. I think these kinds of records were starting to be produced because video game music had become trendy worldwide, and because there was increasing focus on its originality.

The Current State of Video Game Music Education

I do not think there needs to be a specialist BA or other university degree, but I do think technology and research are necessary for attaching sound to image in the same way for films and television – so a class on coordinating image and music in video games could also be good.

If video games as a medium are an important part of popular culture, then I think video game music is certainly also important. In the future, I think games will not just be a part of 'culture', but will also play a role in physical convalescence and in medical treatment, and that they will become more interlinked with human life in general.

Further Reading

Fritsch, Melanie. 'Heroines Unsung: The (Mostly) Untold Story of Female Japanese Game Music Composers', in *Women's Music for the Screen: Diverse Narratives in Sound*, ed. Felicity Wilcox. New York: Routledge, in press.

Kohler, Chris. *Power-Up: How Japanese Video Games Gave the World an Extra Life*. Indianapolis: BradyGames, 2004.

Yamakami, Yôhei and Barbosa, Mathieu. 'Formation et développement des cultures autour de la "Geemu Ongaku" (1980–1990).' *Kinephanos* 5, no. 1 (2015): 142–60.

Video

Dwyer, Nick (dir.). *Diggin' in the Carts*. (2014). [Video documentary series] (accessed 23 May 2020). http://daily.redbullmusicacademy.com/2014/10/diggin-in-the-carts-series.

Koshiro, Yuzo. *What Led Me to Game Music? Talk About the Music of The Tower Of Druaga, Gradius, Space Harrier*. (2019). [Video] (accessed 23 May 2020) www.youtube.com/watch?v=tLqbixY5H0s.