The Cambridge Companion to Video Game Music

edited by Melanie Fritsch and Tim Summers.
Cambridge University Press, 2021, 446 pages.

reviewed by

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To study and teach video game music is to be continually confronted with competing and often disorienting realities. Game music has a deep history, stretching back to the "Eureka" moment of Frankensteinian improvisation by which Atari engineer Al Alcorn produced the famous beeps of *Pong* (1972) by diverting some spare voltage into a simple buzzer, and even far beyond that into a noisy pre-history that includes pinball machines, shooting galleries, and other mechanized entertainments of the twentieth-century arcade midway.[1] But the game industry and its sonic practices also hurtle forward at an alarming pace, the rhythms of technological and stylistic paradigm shifts better measured by annual trade shows than by the slow epochal movements found elsewhere in media studies: the invention and influence of the telegraph, telephone, Internet, and so forth. Put another way: each four-year cycle of university students matriculating and graduating constitutes nearly 10% of the entire history of game music, indicating the field's youth. In much the same way as the riotous rhythms of Stravinsky's *Le sacre du printemps* (1913) are as old now as the incisive E-flats of Beethoven's *Eroica* symphony were when the Dance of the Adolescents rocked the Théâtre des Champs Élysées, so too are some of game music's most defining moments much closer to those primordial buzzes in a Silicon Valley office park than they are to the present. High quality audio entered the industry in the early 1990s, and game composers have had access to full symphony orchestras, recorded in stereo, for far longer than they didn't. To write off the sounds of video games as mere "bleeps and bloops," as many casually still do, is to judge a 51-year-old by the braces and freckles in their fifth-grade yearbook photo. Game music has arrived. It has grown up, and done so alongside the political, social, and technological developments of the past half-century.

The study of game music is thus the study of twentieth-century and increasingly twenty-first-century history. It feels very appropriate, then, that *The Cambridge Companion to Video Game Music* (*CCVGM*) begins with the timeline that maps important moments in video game music onto world events: mostly technological and

1 See Collins (2012).

scientific, but also geopolitical and cultural. The medium of the timeline is also an appropriate statement of the book's ambition: *CCVGM* sets out to present a broad view of a diverse and ever-changing discipline, representing both theoretical and practical research (4) and aligning scholarly trends in the study of game music with approaches drawn from musicology, the humanities, and the social sciences more broadly. What's more, the volume takes up a dual mission of serving as an introductory or reference work, and of presenting new research on game music and sound (4). While ludomusicology has from its inception revolved around edited collections and interdisciplinary journals, *CCVGM* distinguishes itself by presenting a combination of introductory information, foundational work, and a cross-section of new and forward-looking scholarship. The book also usefully bridges scholarly research with perspectives from practice, whether from academics who teach in technically oriented game design or composition programs, or from a diverse roster of game composers and producers who have written chapters or whose voices appear in interviews.

The Cambridge Companion to Video Game Music is edited by Melanie Fritsch and Tim Summers, two of the five members of the pan-European "Ludomusicology Research Group" (www.ludomusicology.org; two other members, Andra Ivanescu and Michiel Kamp, have contributed chapters). *CCVGM* presents a diverse and international picture of a thriving, healthy discipline, and one which has been highly international since its inception. Contributors to the collection hail from the United States, Canada, the United Kingdom, Germany, the Netherlands, South Africa, Japan, Australia, and more. The book consists of 24 chapters written by both scholars and practitioners, grouped into six sections. The first section is concerned with **Chiptune**, a term encompassing both the "raw, geometric sound," as Kenneth McAlpine puts it (chapter 2, 33), of simple electronic synthesis that characterized the 8-bit videogame consoles of the 1980s and various subgenres of popular music that continue to employ or draw inspiration from those sounds. **Creating and Programming Game Music** consists primarily of testimonials, reflections, and "how-tos" from industry practitioners. **Analytical Approaches to Video Game Music** is the book's most extensive section and its most methodologically diverse: the six contributions include historical and taxonomic studies of game music, reflections on semiotics and hermeneutics, and analytical chapters using established music-theoretical techniques or exploring the liminal space between sound, music, and dialogue. While brief, the fourth section, **Realities, Perception, and Psychology**, hints at the exciting potential of player-centered approaches to game music, by including perspectives on virtuality and ecological perception, emotion, and biofeedback; it is here that *CCVGM* hints most obviously at the massive iceberg of interdisciplinary game audio research yet to be carried out, floating below the surface of what has already been

done. The four essays in **Game Music, Contexts, and Identities** demonstrate both games and game-related media as objects of historical and cultural interpretation, embedding not only the ideas and signifiers of those who make them, market them, and play them, but also the collective labor of translating, archiving, and critiquing them. The final section, **Beyond the Game**, examines the intersection of game soundtracks and popular music in the realms of music licensing and artist promotion, participatory culture, and game music concerts.

Each section of the book begins with a six- to eight-page essay by the volume's editors, who offer context and summarize previous research related to each topic. These essays, while concise, offer perhaps the most comprehensive introduction to major trends in ludomusicology, with extensive footnotes highlighting influential books and articles. Taken together, the book's six sections form an effective narrative that begins with history, moves through current techniques and issues in both the creation and analysis of games, and then expands outwards into wider considerations of games and their music as significant cultural artifacts. The editors display an impressive command of ludomusicology's growing literature, and a knack for clearly explaining the intellectual history and significance of individual areas of game music studies. Some individual chapters directly support the book's introductory mission, particularly the cases in which established scholars have contributed essays that either summarize and build upon the research agendas with which they are readily identified, or offer clear introductions to important topics. Michael Austin's comprehensive taxonomy of "Music Games" (chapter 9) is one such example, carefully chronicling the many subgenres of music games, the most mainstream of which (*Guitar Hero* and *Dance Dance Revolution*) effectively gave music scholars the ludic foothold needed to launch the very discipline of ludomusicology.[2] Mark Grimshaw-Aagaard's "Sound and Presence in Computer Games and Other Worlds" (chapter 15) effectively synthesizes some of the author's own prior research, while incorporating new insights from cognitive neuroscience, and Guy Michelmore offers a primer on "The Process of Creating Game Music" (chapter 4) from the inception of a project, through composition, recording, release, and promotion.

Readers interested in music theory and analysis will find very few chapters that engage with conventional analytical methodologies. In fact, a skeptical reader might wonder, "why is a book like this being reviewed in a venue such as *Theory & Practice*?" There are many ways to answer that question, not least the fact that music theoretical research always benefits from taking new perspectives and new repertoires into account. My own preferred answer would highlight that many of *CCVGM*'s best

2 See Whalen (2004), Miller (2012), and Moseley (2013). See also Austin (2016), a strong essay collection on this topic.

contributions are inspirationally interdisciplinary, offering both an object lesson and an opportunity to music theorists. Just as scholars like Scott Murphy and Frank Lehman have shown that Hollywood film music is both the *ne plus ultra* of expressive and hermeneutically rich chromaticism and a useful whetstone upon which structural and interpretive theories of the same can be honed,[3] contributions like Michiel Kamp's "Autoethnography, Phenomenology, and Hermeneutics" (chapter 10) show how richly games and game studies can contribute to music theory and musicology's evergreen debates over topics such as formalism and the nature of musical narrative. Reading the volume from a theoretical perspective, James Newman's "Early Video Game Music and Technology" (chapter 1) demonstrates how delicately game scholars must balance the intertwining influences of software, hardware, and musical creativity, and is thus in close dialogue with recent approaches to analysis, performance, and instrumentality.

Steven Reale's chapter on "Analytical Traditions and Game Music" (chapter 12) stands alone with regard to established music-analytical systems, presenting creative re-imaginings of Formenlehre, Schenkerian analysis, and Neo-Riemannian theory using case studies on situation-specific soundtrack variations, Nintendo's trademark musicalized sound effects, and musical and spatial mappings in the popular game *Super Mario Galaxy* (2007).[4] But numerous chapters are involved with the act of analysis more broadly construed, and even more involve theory-adjacent interdisciplinary connections. For instance, after a primer on the ideas of Charles Sanders Peirce, Iain Hart's "Semiotics in Game Music" (chapter 13) relies extensively on analysis to underscore its arguments about thematic and orchestrational variations across a game franchise, and it employs both conventional transcriptions and a waveform-based analysis. Other chapters illustrate the porous border between music and sound that has characterized video game audio for its entire existence. Drawing on insights from both music cognition and non-musical studies of subjective involvement in games, Dana Plank's "A Cognitive-Emotional Approach to Game Sound" (chapter 16) skillfully weaves together the musical-by-necessity sound effects of the Nintendo Entertainment System (think of the fanciful upward "swoop" that accompanies Mario jumping in the air[5]) with momentary musical cues (treasure "chimes" and the sound of the game

3 See, for instance, Murphy (2006), Murphy (2019), and Lehman (2018).

4 The latter argument builds on Reale's (2015) Society for Music Theory presentation, summarizing and strengthening his memorable argument that the "transformational attitude" presented in Lewin (1983) is ideally suited for analyzing videogame music.

5 Such sound effects were almost always *synthesized* as tones rather than being played back from sound recordings; the Nintendo Entertainment System's (NES) capacity for samples was very limited, meaning that most NES sound effects have a pitch profile and some (such as collecting coins or pausing the game in *Super Mario Bros.*) have identifiable interval content. See Altice (2015, 249–288) for more on the technical

clock running down) and traditional musical underscoring to propose a theory of sonic-emotional involvement in games.

The book is not without its flaws, most notably in how its scholarly apparatus fails to deliver on its promise of "summarizing existing knowledge" in the field (4)—arguably, an important goal of any scholarly handbook. *CCVGM* features only a "Select Bibliography" of three pages, covering the entire volume; it could easily have been thirty. Individual chapters often feature only short lists of "Further Reading," generally numbering in the single digits. Some have no reference lists at all. This unfortunately belies the rich and frequent citations that are found in the footnotes of each chapter; within each essay, references abound, but they are never collated for the reader. (The index, thankfully, is fairly comprehensive.) The omission of organized reference lists is likely an unfortunate decision from the publisher to save pages, also unfortunately a common occurrence in recent essay collections.[6] Moreover, the "Select Bibliography" is devoted solely to ludomusicological scholarship; the exclusion of interdisciplinary resources is a disappointing omission when a fuller Works Cited list might have highlighted the methodological omnivory of the collection's many vibrant intellectual conversations.[7] Absent too is any sort of "ludography"—a list of games cited—a bibliographic form which has become commonplace within the discipline (it is a fixture, for instance, in the *Journal of Sound and Music in Games*).

One might wish for a few more citational connections *between* chapters as well, as there is sometimes the effect of parallel monologues where there ought to be dialogue. The volume generally lacks cross-references between chapters, and while the introductions to each section are free of the stilted chapter-by-chapter summaries so often found in the introductions to essay collections and special journal issues, there is also a lost opportunity to highlight connections—and contradictions—between the larger ideas being raised by different contributors. Game audio director Rob Bridgett (chapter 7, 111) and music theorist Elizabeth Medina-Gray (chapter 11, 176), for instance, propose precisely the same tripartite division of videogame soundscapes into dialogue, sound effects, and music, just a few chapters apart (albeit with different rhetorical goals). Chapter 3 is an interview with Japanese game composer Junko Ozawa,

capabilities of the NES.

6 Though publishers may simply be trying to save pages of back matter (and thus production costs), I would argue that books and essay collections minimizing their scholarly apparatus is also an accessibility issue: where might a new reader look if they wish to know more, if not to footnotes, endnotes, or bibliographies? Minimizing citations all too often serves as accidental gatekeeping, separating new readers from the deeper context that might contribute to their understanding.

7 Among the most significant non-musical game studies texts discussed within the body of the book but not included in the Bibliography are Kocurek (2015), Consalvo (2016), Calleja (2011), and Aarseth (1997).

who wrote music for *Galaga 3* (1984), *The Tower of Druaga* (1984/85), and *Donkey Konga* (2003), among others; it sheds new light on familiar narratives of early game composition, including Ozawa's early training, the creative and technical demands of early game composition, and the cultural impact of game music in Japan—and it offers a woman's perspective that is too often absent from such histories. Readers interested to know more about the role of women in the early history of game music might want to flip ahead to chapter 21 to read Andrew Lemon and Hildegonda Reitveld's contribution, "Female Credit: Excavating Recognition for the Capcom Sound Team," which offers a detailed account of some of Ozawa's precise contemporaries (including Yoko Shimomura, Harumi Fujita, and Junko Tamiya) and their work for a rival company. A more obvious editorial hand might also have helped to draw into productive focus the tensions that occasionally arise between contributions. For instance, only a few dozen pages after the editors argue that the distinct technical features and musical demands of game music serve as important markers of its distinction from film music (59), Bridgett (chapter 7) asserts precisely the opposite, writing that a "mature" and aesthetically sophisticated soundtracking process aspires towards the condition of cinema in both form (based on short, discrete cues rather than continuous music that reacts to the player's actions) and content (focused on delivering narrative information and heightening emotional impact, rather than any of the interactive roles music can play).

While some of the territory covered by *CCVGM* may seem well-trodden by now—how many more accounts of chiptune are needed?—many of the volume's contributions successfully show that there is still more work to be done even within the discipline's most thoroughly worn grooves. James Newman's (chapter 1) critique of both technological determinism and teleological history in accounts of early game music is fresh and incisive, calling scholars toward greater methodological rigor. Melanie Fritsch (chapter 14) provides a detailed and nuanced framework for integrating insights from performance studies into the study of game sound. And many contributions open up previously unexplored areas within game music. William Gibbons's chapter on "Globalization, Localization, and Video Game Music" (chapter 20), for instance, engages non-musical scholarship on games to study the nuances of music in localization (adapting aspects of a game for international markets, as when a game developed in Japan is released in Europe or America, or vice versa).

Even the collection's few omissions are instructive. The volume generally neglects the early history and "pre-history" of game sound. The Atari VCS, for instance—a home console that dominated the market from 1977 until the notorious "crash" of 1983—appears only in a single chapter (chapter 1), and neither arcade games nor pinball machines appear in the book at all. While the latter case is perhaps less surprising—

video game is right there in the title, after all—it is a striking feature of such an otherwise comprehensive volume, and perhaps an indication of shifting priorities within the field that the first decade of game sound and music is mostly ignored. The second decade fares no better, as games and systems from the 1980s through the early 1990s feature in only a few chapters: The Nintendo Entertainment System (NES) and Sega's Master System and Genesis/Mega Drive play a starring role in Newman's aforementioned historiography of what we might call the "programmable sound generator" era; the original *The Legend of Zelda* appears as an initial subject of analysis in Plank's contribution (chapter 16); and contributions by Medina-Gray (chapter 11) and James Cook (chapter 19) show that there is still much to be learned about the musical and sonic techniques that formed the foundation of important game design techniques like abstract or representational dialogue and contributed to the entire aesthetic edifice of 8- and 16-bit games, the visual and sonic styles of which remain ubiquitous and influential today. To be clear, it is not as if early game audio has not been explored and documented; numerous valuable historical and analytical treatments exist. It is merely striking that such a large volume spends so little time on historical games, when the extensive and underexplored back catalogues of such early systems mean that there are many more interesting insights and object lessons to be found.[8]

Fortunately, the space that isn't devoted to the 1970s through early 90s is productively filled with a cross-section of contemporary games that includes both contemporary blockbusters (such as *Halo*, *The Elder Scrolls*, *The Last of Us*) and long-running disciplinary-favorite franchises (*Super Mario Bros.*, *The Legend of Zelda*, *Final Fantasy*, and *Civilization*). There are only a few mentions of mobile or "casual" games (another genre, often ignored, under whose many thousands of examples interested scholars could easily find themselves buried) such as *Plants vs. Zombies* and the *Candy Crush* series. K. J. Donnelly's stellar essay on "The Triple Lock of Synchronization" (chapter 10) is one example of theoretical research that manages to integrate insights from computing, design, and the player's experience (not to mention from Donnelly's extensive prior work on synchronization in film sound) and applies them to blockbusters and mobile games alike. Notably, there continues to be a need for more exploration of music and sound in independent and experimental games, a topic that appears frequently enough in ludomusicology conferences but is sparsely represented here (and elsewhere in print).

The representation of indie games in *CCVGM*, however, brings me to one of the book's strongest selling points: a series of contributions written by or featuring

8 Wikipedia lists 520 officially released games for the Atari VCS, almost 1,200 for the Sega Master System and the Genesis together, and nearly 1,400 titles for the NES—nearly half of which appeared only in Japan.

interviews with practicing game industry professionals. Ben Babbitt's (chapter 8) first-hand account of creating the music for the indie darling *Kentucky Route Zero* (released serially from 2013 to 2020) shows how valuable it can be to bring the creative insights of thoughtful game composers into academic venues, especially those whose aesthetic sensibilities present a clear counter-narrative to the "big studio" perspectives often heard.[9] In fact, the contributions from composers are a notable and unique selling point for the book. As might be expected, these insights range from practical advice learned through years of high-level industry work to personal insights that are rarely found in scholarly approaches to game music. For the former, see Bridgett's contribution, which is clear-eyed about the challenges of creating music for a product whose final form is even less fixed than a film-in-progress (chapter 7), and Thomas Böcker's (chapter 24) account of the entrepreneurial skills required to stage events like the Symphonic Game Music Concerts and the acclaimed *Final Symphony* (2013). Examples of personal compositional insight include Ozawa's account of her traditional conservatory education in the aforementioned interview (chapter 3) and Babbitt's tales of working as part of a three-person team on *Kentucky Route Zero*, which resulted in a close entwinement of music, narrative, design, and programming.

Stepping back, *CCVGM* gives a clear and relatively comprehensive picture of the discipline of ludomusicology. And these insights from those who make the games that ludomusicologists study help *CCVGM* capture the field of video game music studies at its interdisciplinary best—a space characterized by the intersection of theory and practice, of academic study and performance, of criticism and creation—and to promote this dynamism even further. As music theorists continue to imagine all the sonic worlds music theory might be able to study, and the infinite ways music can be understood, they just might find in ludomusicology a cognate discipline grasping at some of the very same questions—with a few answers to share as well.

9 For a similar kind of self-reflection from an indie game composer, see Golding (2021).

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