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Review of *The Game Audio Strategy Guide*

A Practical Course *by Gina Zdanowicz and Spencer Bambrick*
(Routledge, 2020, 416 pp, $75.95)

The Game Audio Strategy Guide is a dense educational textbook that packs as much information as possible into a single source and aims to fulfill multiple goals. The authors present a theoretical and practical framework that covers all major aspects of game audio (sound design, composition, implementation, business) from the fundamentals all the way to advanced topics. Further, it aims to bridge the gap between academia and industry practice. While these are certainly challenging goals, the authors are knowledgeable and experienced industry professionals and educators who hold, in my opinion, the correct attitude for game audio education: "Game audio is *not separate from game development*, it is a specialization *within* game development" (4). This approach is evident throughout the book and is reinforced by the excellent and relevant use of contributions in the form of vignettes and quotations from well-known (and at times legendary) practitioners, such as Tom Salta, in small sections headed "Visiting Artists." The writing style is easy to follow, which is appropriate for its target audience of students and educators, and includes a balanced dosage of humor that lightens up technical material: one passage, for instance, notes that "implementation is half of the creative process. If anything is written on my tombstone, I want it to be that" (xiv).

A noteworthy feature of this book is its detailed companion website, which is actually a vital part of the reading experience, an approach that might bring its own advantages and disadvantages. The website adds a considerable amount of essential information, detailed clarifications, examples, and practical exercises for each chapter. On the downside, the reader cannot always follow the discussion effectively without bouncing back and forth between the book and website, which might often require multiple re-logins. This might not necessarily be a problem, especially in the case of an e-book, but some readers might not be accustomed to such an approach or might underestimate the significance of the companion website although the authors clearly emphasize the importance of its use repeatedly.

The book is divided into four parts, one for each major component of game audio—Sound Design, Music, Implementation, and Business and Networking. If these parts are

treated by the reader as a starting point of reference rather than an expectation of a thorough and complete guide, I believe that the wide scope of the material is one of the biggest strengths of this publication: it serves as an excellent, current, and comprehensive overview of game audio that offers both a solid theoretical understanding of the basics as well as useful practical and applicable information on each topic. When covering such wide of a range of educational topics (basically everything game audio) in a single source, it is only natural that challenges in thoroughly exploring each topic will emerge; each of the four parts could easily be further split into a separate book (or even a series of books). The whole book should be approached linearly, read from beginning to end. Every chapter ends with a useful summary that assists the reader by recapping the main concepts covered and connects these topics to the chapters that follow. So does this book manage to deliver on the ambitious goals that it sets? To answer this question, I will approach and review each part individually.

"Part I: Sound Design" manages to successfully balance both theory and practice with clarity and focus in the three chapters devoted to this area. Chapter 2 discusses, amongst other topics, the effects of nonlinearity on sound design, the sound design process, and some of the essential skills that sound designers should continuously polish. In contrast, chapter 3 explores the practical side of designing sounds and is one of the strongest chapters in this book, especially in combination with the material found on the companion website. This section features a lot of practical information around Foley recording, using libraries, and processing sounds. What is only slightly confusing is why the "Functions of Sound" are explored here and not in the previous chapter that is more focused on theory. The section on creating original recorded sounds, "Sourcing Source Material" (63–73), was intriguing and contained many references to inspiring techniques that the reader can explore further such as circuit bending, procedural generation, and even electromagnetic fields! As mentioned earlier, it is only understandable that because of the wide scope of the book, many elements are simply referenced in a very short paragraph rather than explored in any depth. I was, however, surprised to see so little information on synthesis, which in my opinion is a core area of SFX creation. An excellent subsection is titled "Putting It All Together" (97–113) and provides concrete case studies of designing numerous SFX by analyzing each sound's various attributes (physics, materials, spatialization, and narrative design). This is particularly useful as it not only demonstrates the recipe of how to construct various SFX, but more importantly it allows the reader to follow the reasoning behind the process and provides a framework that can be applied to future work. Finally, chapter 4 is a shorter chapter that discusses voice production and provides the general information that one would expect around this topic with some excellent additional contributions by the visiting artists. My only criticism is that I would like to have more visual material to support this area, as the companion website is quite limited in this chapter (for instance, a photo/diagram of a basic voice recording setup would be useful).

"Part II: Music" follows a very similar structure to the previous part, which helps with continuity, and the topic is again split over three chapters. "Chapter 5: The Basics of Nonlinear Music" is, as expected from the previous part, more theory based and discusses

the effects and challenges of nonlinearity in music, among a number of other short but interesting topics (e.g., diegetic vs non-diegetic music). What could have been expanded here is the subsection on game music functions, which, in contrast to Part I's "Functions of Sound," mainly discusses mood induction and immersion, while other important functions (e.g., music as a memory aid) are left out (for more info on the functions of music see the work of Karen Collins).[1] The authors cover the terminology of interactive and adaptive music (142), but perhaps a short definition of dynamic music could also have been included in the discussion. "Chapter 6: Composing Music" is in my opinion the most interesting chapter of Part II, as the authors explore topics that are rarely discussed in composition books such as "how to generate musical ideas." I also particularly enjoyed the subsection "Starting Points for Musical Composition" (162–165), which explores major sources of inspiration for game music: game artwork, characters and story, and the very often overlooked game mechanics. The subsection "Composing Game Music" (165–183) includes many useful tips on melodic, harmonic, rhythmic, and timbral ideas. The main drawback here (which is perhaps unavoidable) is that grand topics such as aleatory techniques, diatonicism, chromaticism, deceptive cadences, or extended harmony are explored within a few sentences that can only serve as a point of reference for further study and are not really supported by relevant examples from game music.

"Chapter 7: Arranging and Orchestration for Games" provides some basic information on writing for orchestral instruments, which in my view is not as useful as the rest of the material in the book. While this information is certainly welcomed, the topic of orchestration has been explored in great depth in many prior publications (a fact that the authors recognize and correctly point to sources such as Samuel Adler's *The Study of Orchestration*).[2] More importantly, a lot of the information covered here is not particular to the medium and does not apply only to games but to orchestral writing in any setting. There are references and links to some examples on the companion website, but they are quite unspecific since they take the form of a listening list of game soundtracks that incorporate different orchestral groups. A more helpful part of this chapter is the individual tips on how to improve MIDI orchestrations as well as the advice to create solid templates for future use.

"Part III: Implementation" is divided in two chapters, "Chapter 8: Audio Implementation, which covers general audio implementation concepts and techniques, and "Chapter 9: Music Implementation," which looks into vertical, horizontal, and other dynamic music systems. The authors manage to provide complex and technical information on other topics such as the preparation of assets, integration, optimization, and testing. There are dedicated books on the subject of implementation that cover these topics in much greater depth, and as game audio implementation is a technically complex and challenging area, I do not believe that this section of the book can provide sufficient

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1. See, for instance, Karen Collins, *Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design* (Cambridge, MA: MIT Press, 2008).
2. Samuel Adler, *The Study of Orchestration*, 3rd ed. (New York: W.W. Norton, 2002).

support for someone with no knowledge on the topic to actually apply these concepts and techniques on their own.[3] The way implementation is covered in this book, however, can still be very valuable as it avoids relying exclusively on one specific software environment in the usual "follow along" tutorial style of most publications in this field. While this different approach might be harder to apply by a student, it provides a better overview of the overall process and familiarizes the reader with a greater range of industry tools both in a game engine and at a middleware level. The authors explore how major implementation concepts function differently in multiple industry-standard software (UE4, Unity, Wwise and Fmod) and provide useful comparisons, examples, and even downloadable sessions in the accompanying website. As in the previous parts of the book, many topics cannot be explored in sufficient depth (e.g., mixing for different platforms, or brief mentions of machine learning, or VR audio), but nonetheless there are a lot of useful pointers here on further resources that can spark the interest of the reader.

"Part IV: Business and Networking," the final part of the book, is slightly shorter in length. It is rare that discussions on such topics actually offer anything new, and before reading this part I was expecting to find the usual clichés of "make a website, have a demo, and go to conferences." While this is perfectly good advice, I believe it is obvious by now and has been mentioned by almost every book on media composing. I was, however, very pleasantly surprised to find many additional valuable suggestions that I strongly agree with and that make these chapters an excellent read for students and professionals alike. The authors discuss their game career philosophy that is centered around their interesting concept of "The Pyramid of Sustainability" (345), which has personal health and happiness at its base and encourages readers to focus on things that are within their control and challenge the traditional notions of success. Aside from these valuable touches of creative stoicism, there is also a lot of information on useful business topics such as setting rates, contracts, licenses, finding work, and working to improve diversity within the industry. I particularly enjoyed the accompanying website's set of "5 Year Plans" with strategies for different pathways. In contrast to the previous three parts, the information found in this section feels more concrete, and there is less of a need to refer to other books to supplement the information (except perhaps on music copyright).

In conclusion, does the *The Game Audio Strategy* successfully achieve its brave and ambitious mission to provide four (or more) educational books in one across its multiple parts? Yes, partly (no pun indented). The wide nature of some topics is simply impossible to explore in such condensed sections (e.g., harmony or orchestration in a few pages) whereas other areas are covered in more depth and have less of a need to be supplemented by external sources (e.g., business or Foley recording). In any case, when the book is taken as a whole, in combination with the accompanying website, the amount of overall information this publication provides is astonishing. As an educator, I cannot think of another game audio book that provides that much combined value to its readers in such an expanded range of topics that touch on both

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3. Richard Stevens and Dave Raybould, *Game Audio Implementation: A Practical Guide Using the Unreal Engine* (Burlington, MA: Focal, 2016).

a theoretical and a practical perspective. If a student wishes to buy only one educational book on game audio, I think this is it! ▪

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