

**This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.**

**Author(s):** Tuuri, Kai; Koskela, Oskari; Vahlo, Jukka; Tissari, Heli

**Title:** Identifying the Impact of Game Music both Within and Beyond Gameplay

**Year:** 2021

**Version:** Accepted version (Final draft)

**Copyright:** © IFIP International Federation for Information Processing 2021

**Rights:** In Copyright

**Rights url:** <http://rightsstatements.org/page/InC/1.0/?language=en>

**Please cite the original version:**

Tuuri, K., Koskela, O., Vahlo, J., & Tissari, H. (2021). Identifying the Impact of Game Music both Within and Beyond Gameplay. In J. Baalsrud Hauge, J. C. S. Cardoso, L. Roque, & P. A. Gonzalez-Calero (Eds.), *Entertainment Computing – ICEC 2021 : 20th IFIP TC 14 International Conference, ICEC 2021, Coimbra, Portugal, November 2–5, 2021, Proceedings* (pp. 411-418). Springer. Lecture Notes in Computer Science, 13056. [https://doi.org/10.1007/978-3-030-89394-1\\_33](https://doi.org/10.1007/978-3-030-89394-1_33)

# Identifying the Impact of Game Music both within and beyond Gameplay\*

Kai Tuuri<sup>1</sup>[0000-0003-3520-5471], Oskari Koskela<sup>1</sup>[0000-0001-6374-0629],  
Jukka Vahlo<sup>1</sup>[0000-0001-5835-5945], and Heli Tissari<sup>2</sup>[0000-0002-0358-5900]

<sup>1</sup> Department of Music, Art and Culture Studies  
P.O. Box 35, FI-40014, University of Jyväskylä, Finland

{krtuuri,osjokosk,jlvahlo}@jyu.fi

<sup>2</sup> Department of Languages  
P.O. Box 4, FI-00014, University of Helsinki, Finland  
heli.tissari@helsinki.fi

**Abstract.** This paper presents an overview of and a brief critical reflection on game music’s impact on players both within and beyond the context of gameplay. The analysis is based both on the current literature as well as on preliminary (work-in-progress) observations of our research project Game Music Everyday Memories. We consider how the functions and uses of game music potentially extend to people’s everyday life, thus constituting a personally and culturally meaningful relationship with music that is not immediately connected to gameplay. On the other hand, we consider the ways game music and a person’s attachment to the music are involved in gameplay motivation and potential game retention. As a conceptual thematization, four approaches for identifying the broader musical impact of games are suggested and discussed. To substantiate the discussion, we combine some preliminary observations from two different datasets gathered within the ongoing project: (D1) personal narratives of fond game music memories (N=183), and (D2) survey-data on favourite game music (N=785).

**Keywords:** game music · impact · memories · human-music interaction

## 1 Introduction

A game designer’s task is to try to put together core gameplay loops and other game features that enable a desired type of game experience. It is well acknowledged that music has a significant role in this equation. Consequently, a person listening to game music is usually engaged in the specific interactional contexts of play. Therefore it makes sense that research on game music has mostly examined music and its meanings within and as a part of the game. Research in the field of ludomusicology has adopted traditional tools of musicology, treating music as a text and considering its function and meaning with respect to the narrative

---

\* This work is funded by Kone Foundation (grant number 201908388).

and mechanics of the game (see e.g., [10, 23]). Besides the hermeneutic investigations, another line of research has taken an empirical approach and studied game music within a psychological framework, focusing on the effects and role of music in the gameplay experience (e.g., [19, 12, 25]). The existing body of research has acknowledged the crossmodal and interactive nature of game music [4]: In the course of the gameplay experience, music more or less becomes fused with different gameplay activities and the related physical or imagined environments. It thus potentially gets associated with certain indexes (e.g., events of the game) and functions (e.g., narration or mood management) within the game. The motivation of this paper, however, is to stretch our understanding of such game music’s indexes and functions in a manner that extends well beyond the actual gameplay. Games in themselves inevitably become associated with mundane situations and events of life, yielding personal everyday meanings. Yet, so far, only very little research effort has been put into the impact of game music outside the gameplay functions.

Gasca’s [6] PhD thesis was maybe the first study with the aim of showing that game music has “transcended the medium and is enjoyed by audiences beyond the game”. According to the study, people value experiences of game music because of the memories they evoke. Many of such evoked memories were related to the gameworld, its events, feelings and aesthetics. But similarly to musically evoked memories in general [1], many of them included broader remembrances and associations of past times: nostalgic memories of family, friends, places and other autobiographically and socially significant experiences.

Although game music is composed for games, that is, specific activities performed with the game-medium, it is still largely an open question how game music differs from other types of music in terms of developing a personal attachment and meaningful relationships with it. So far practically no published studies exist that would have scrutinized whether game music’s habitual connections to gameplay (i.e., the functional design within a game) would in some form extend into the more varying situational contexts outside the game (i.e., functions in everyday life). In other words, the question remains: what kind of role do games themselves and gameplay experiences have on the relationship a person develops with their music? This is one of the main motivations of our research project *Game Music Everyday Memories*, within which we are doing empirical research on how engagement with game music extends to people’s everyday lives.

In order to promote future studies in the field, and to provide some work-in-progress observations on our ongoing research project, we will here conceptually formulate different ways to approach the phenomenon of constituting a personally and culturally meaningful relationship with game music both within and outside the gameplay. In the next section we will outline and describe four theory-based approaches. The first approach is built on the gameplay motivation perspective. The next two are inherent to music psychology and concern personal relationship with music and the use of music in everyday life. Finally, the fourth approach focuses on game music’s impact on cultural conventions and habits. All approaches conform to Tia DeNora’s [5] concept of human–music in-

teraction as an all-embracing perspective that emphasises the action-oriented [13] and constructive [15] nature in the organization of both game and music related meanings. The perspective strongly correlates with Small’s [21] term *musicizing*, which frames music fundamentally as an activity and underlines the heterogeneity of activities through which music is meaningfully engaged with by people.

To back up the discussion in the following sections, we will reveal some preliminary observations from two currently unpublished datasets gathered within our ongoing project. Our intention here is not yet to present any comprehensive report, but rather, offer some glimpses of relevant information and general views on the basis of the ongoing analysis. The first dataset (D1) was collected in order to qualitatively investigate personal meanings of game music in everyday life. It consists of 183 spontaneous personal narratives of (self-selected) fond game music memories gathered through a public call for stories (elicited writing method, see [9]). The second dataset (D2) was collected in order to quantitatively study game music preferences. It contains survey responses from 785 participants about their favourite game music, the related gameplay situations and experiences, as well as ways of engaging with the music outside the game. Both data collections were conducted in Finland. It should be noted that the detailed analyses of both of the datasets are just currently underway and thus a subject of future publications. In the present paper, discussions either refer to simple descriptive statistical indicators, or preliminary typologies being built upon the analysis of written narratives of game music memories.

## 2 Approaches to Game Music’s Impact

### 2.1 Music as a Motivator for Play

Although music and sounds are not typically implemented into the game mechanics directly (i.e., most games can be played muted), they are an important ingredient of the imaginative immersion of games. For instance, music adds to the feeling of “being there” and game sounds make the game environment feel more responsive and authentic [17]. They are both important for story-driven games and help the player to make sense of what is happening and is about to happen in the game. While game music and game sounds may be argued to have a mostly supporting function that “enhances”, “enables”, or “deepens” the game experience (i.e., they would be part of the “shell” of a game instead of its “core” in terms of gameplay dynamics, see [16]), in themselves, they may also provide an impactful motive for playing games in the first place. Hence, besides the assumed supporting role, we wanted to investigate whether music is also able to carry “core” meanings that players desire to live through and reminisce about. We asked in the D2 to what degree game music had influenced players’ decision to play a game they had chosen to play. An average response was that this influence had been moderate. However, almost 40 percent of the respondents stated that game music had influenced their game choice quite much or

very much. Later in the survey, more than 50 percent of the respondents stated that game music had been a reason for them to play the game again.

The attempt to understand play motivations has been a major vein of research in the overlap of game studies, media psychology, and human-computer interaction [24]. While the literature on player motives is growing rapidly, most models have not considered game music as a motive to engage with games or discussed how game music may be associated with overarching general play motives such as challenge, social interaction, or immersion. Our preliminary findings suggest, however, that game music and sounds might not just belong to the shell of the game experience, but that they might be something inseparable from its core. The data thus indicates that game music may have a significant impact both on the initial decision that players make when choosing a new game to be played, and on retention, that is, their continuous choice to keep on playing and coming back to the game.

## 2.2 Personal Attachment to Game Music

Both the gathering of elicited writings of fond game music memories (D1) and the survey about favourite game musics (D2) gained a respectable number of responses. The participants did not have any problems in naming their personal favourites. On the contrary, the willingness to share their fondly remembered experiences with game music implies that personal attachment to pieces of game music is not a marginal, but a more or less prevalent phenomenon. As Gasca's [6] study pointed out, and psychologists have previously documented [2], music is strongly interconnected with memories. It is certainly not far-fetched to argue that attachment to game music can be largely seen as a memory-related phenomenon, especially concerning memories that include biographical self-remembrance. Thus, a personal value of game music likely relates to music's ability to take a person back in time to meaningful moments and phases in life experienced with the music, and to the related feelings and sensations that accompany those memories [1]. Game music memories from D1 contained references, for example, to other people, certain places, activities and technologies, to autobiographical descriptions, as well as to some specific enjoyable moments with the music or the game itself. Moreover, the attachment to game music can also be examined through the language used in the written memories. The linguistic investigation revealed a prevalent use of metaphoric language, such as the use of a CONTAINER metaphor [14] in describing the memory. These linguistic depictions of a container referred, for example, to "my mind" or "heart" *in which* music-related experiences reside (or into which they come) – characterizing the intimate relationship with the music memory.

In many cases, informants indicated that their memories and the related imagery were appreciated, desirable, gratifying, or even inseparably belonging to their life. In terms of Huovinen and Tuuri's study on cherished music [7], such embraced memories of game music imply that the music-based memory is willingly and appreciatively being maintained, for example, through recurrent

reminiscing. In D2 survey responses, reminiscing (i.e., “inner listening”) interestingly appears to be the second most common activity the respondents do with the game music outside the game (the most common being regular listening).

### 2.3 Uses of Game Music in Everyday Life

In the D2 study, respondents were asked about their activities with their favourite game music outside the gameplay. Results quite clearly show that the majority of players (65%) have those kinds of musicking activities (e.g., listening, reminiscing, playing, singing), pointing out the relevance of the approach. When music’s role is considered in people’s everyday life, it is not only seen as an object of aesthetic appreciation, but as something that people do things with [5]. People use music in different everyday circumstances, for managing moods, for social bonding, and for self awareness [20]. Overall, music could be even taken as a resource for constituting our identity as the persons who we are [5]. From the personal narratives of D1 it is relatively easy to find examples of such usage of game music. In the following quotation from the data, a male participant summarises a collection of functions game music has in his life. This also exemplifies the potential intermix of music’s functions between gameplay (e.g., energizing for a fight) and everyday life (e.g., energizing for sports).

...Game music has acted as background music for many social get-togethers (we have listened to a lot with friends, some also sang and danced with full participation, the best!), motivated me in sports (epic fight musics work well for this!), helped to cope when life felt difficult, speeded up everyday life (e.g., cleaning is nicer when a game soundtrack is playing in the background, such as Undertale), helped to fight the studies (with Bloodborne’s Cleric Beast screaming in the ear, you just need to escape into the depths of an essay), made me find my favorite composer (Nobuo Uematsu) and generally get to know a wide variety of music around the world... (a quotation from D1)

### 2.4 Game Music Cultures

One of the prevalent themes in the personal narratives of D1 concerned how game music has had an effect on one’s musical taste and music listening habits outside the gaming context. Some informants even pointed out a more established taste for game music with consumption practices resembling those of traditional music genres (e.g., buying original soundtracks and attending game music concerts). However, D1 writings also contained several mentions that point towards practices better considered as examples of participatory culture [8, 22] such as listening to fan-made remixes, parodies or covers of game music on YouTube. In all, the most mentioned way of listening to game music outside the gaming context was through streaming services, often involving self-made playlists. Besides representing a musical category of its own, another aspect of game music’s cultural impact is its symbiotic relationship with the music industry. This is

evident, for example, in using licensed popular music in games [3] and in different cross-promotion strategies of marketing music and games [11]. In D1 there are mentions of how games with licenced music have introduced new bands and shaped the musical tastes of the informants but also how original (non-licenced) soundtracks have sparked an interest in previously unfamiliar styles of music. The potential synergy between game music and wider music culture is not only limited to music listening, as there are also games, such as *Guitar Hero* or *Electroplankton*, that incorporate music-making and other acts of musicking into the core dynamics of the gameplay (see [18]). While there were only few mentions about music games in D1, several respondents brought up how game music had inspired them to take up composing or playing an instrument, or even had a part in seeking for a career related to music.

### 3 Concluding Statements

In this paper, we have outlined four distinct approaches for identifying a broader impact of game music. Through discussing these approaches, our aim was to provide some new prospects for game music research that would inspire both the fields of music and game research alike. At this point, however, we are not yet suggesting any comprehensive theoretical model that would cover all potential dimensions of approaching game music’s impact. Of course, more comprehensive results will be reported in future publications, as our research project proceeds in analyzing the gathered datasets. Nevertheless, we hope that this early discussion of the approaches here could serve as a rough thematization of potentially valuable dimensions of game music’s impact.

The theoretical and methodological stance presented in this paper directly reflects the perspective of our ongoing research, in which we aim to triangulate different kinds of data for highlighting an interaction with game music in the processes of personal and cultural meaning-making. Our datasets provide a great deal of concrete examples of such processes. To mention but a few, one can consider the following questions as anecdotal examples:

- how is game music able to “teach” a person to use fighting music as a tool for personal emotional scaffolding (e.g., for overcoming life obstacles)?
- how do experiences of virtual skateboarding through empty industrial halls while listening to skate-punk give an opportunity to negotiate one’s identity and the role of music in it?
- how does hearing symphonic pieces of music along with emotionally loaded game events provide ways for approaching and exploring classical music?

The talk about game music’s impact might lead one to think of game music as an abstract force having an effect on the players and player communities. We would rather argue that the impact should be seen as a result of an interaction-based entanglement between game music and everyday life. Thus, we think we need to raise questions about how a particular music is actively made meaningful

by using it in particular activities and in particular contexts. Through considering people's practical engagement with game music (as in the example questions above) we even argue that the distinction between in-game and out-game meanings becomes blurred – similarly to the way De Nora's acknowledgement of an active and self-reflective use of music has obscured the categories of intra- and extra-musical meanings [5]. While our focus has here been on music's meaningfulness, the adopted "in-action" perspective should also provide fruitful insights into video game research more generally. Similarly to music, the impact of video games is entangled in many kinds of personal and cultural activities that make our lives meaningful. From this perspective, it is particularly this experiential intermix between the inside and the outside of a game that is brought into focus.

## References

1. Barrett, F. S., Grimm, K. J., Robins, R. W., Wildschut, T., Sedikides, C., Janata, P.: Music-evoked nostalgia: affect, memory, and personality. *Emotion*, vol. 10, no. 3, 390–403 (2010)
2. Belfi, A. M., Karlan, B., Tranel, D.: Music evokes vivid autobiographical memories. *Memory*, vol. 24, no. 7, 979–989 (2016)
3. Collins, K.: Grand theft audio? Popular music and intellectual property in video games. *Music and the Moving Image*, vol 1, no. 1, 35–48 (2008)
4. Collins, K.: *Playing with sound: a theory of interacting with sound and music in video games*. MIT press 2013.
5. De Nora, T.: *Music in everyday life*. Cambridge University Press (2000)
6. Gasca, J. S. D.: *Music beyond gameplay: Motivators in the consumption of videogame soundtracks*. Ph. D. dissertation, Griffith University (2013)
7. Huovinen, E., Tuuri, K.: Pleasant musical imagery: Eliciting cherished music in the second person. *Music Perception: An Interdisciplinary Journal*, vol. 36, no. 3, 314–330 (2019)
8. Jenkins, H.: *Fans, bloggers, and gamers: exploring participatory culture*. New York University Press (2006)
9. Johnstone, B.: *Qualitative Methods in Sociolinguistics*. Oxford: Oxford University Press (2000)
10. Kamp, M., Summers, T., Sweeney, M.: *Ludomusicology: approaches to video game music*. Sheffield: Equinox Publishing (2016)
11. Kärjä, A.-V.: Marketing music through computer games: the case of Poets of the Fall and Max Payne 2. In: K. Collins, (ed.) *From Pac-Man to pop music: interactive audio in games and new media*, pp. 27–44, Burlington: Ashgate (2008)
12. Klimmt, C., Possler, D., May, N., Auge, H., Wanjek, L., Wolf, A. L.: Effects of soundtrack music on the video game experience. *Media Psychology*, vol 22, no. 5, 689–713 (2019)
13. Krueger, J.: Enacting musical experience. *Journal of Consciousness Studies* vol. 16, no. 2-3, 98–123 (2009)
14. Lakoff, G., Johnson, M.: *Metaphors we live by*. University of Chicago Press (2008)
15. Matyja, J. R., Schiavio, A.: Enactive music cognition: background and research themes. *Constructivist foundations* 8, no. 3, 351–357 (2013)
16. Mäyrä, F.: *An introduction to game studies*. Sage (2008)
17. Nordahl, R., Nilsson, N. C.: The sound of being there. In *The Oxford handbook of interactive audio*, pp. 213–233 (2014)



18. Oliva, C.: Musicking with digital games. Ph.D. dissertation, University of Malta (2019)
19. Ribeiro, G., Rogers, K., Altmeyer, M., Terkildsen, T., Nacke, L. E.: Game Atmosphere: Effects of Audiovisual Thematic Cohesion on Player Experience and Psychophysiology. In Proceedings of the Annual Symposium on Computer-Human Interaction in Play, pp. 107–119 (2020)
20. Schäfer, T., Sedlmeier, P., Städtler, C., Huron, D.: The psychological functions of music listening. *Frontiers in psychology*, vol. 4, art. 511 (2013)
21. Small, C.: *Musicking: The meanings of performing and listening*. Wesleyan University Press (1998)
22. Smith, J. W.: ‘Wear People’s Faces’ Semiotic Awareness in Fan Adaptations of the Music from *The Legend of Zelda: Majora’s Mask*. *Journal of Sound and Music in Games*, vol 1, no. 4, 45–75 (2020)
23. Summers, T.: *Understanding video game music*. Cambridge University Press (2016)
24. Vahlo, J., Hamari, J.: Five-Factor Inventory of Intrinsic Motivations to Gameplay (IMG). In Proceedings of the 52nd Hawaii International Conference on System Sciences, pp. 2476–2485 (2019)
25. Zhang, J., Fu, X.: The influence of background music of video games on immersion. *Journal of Psychology & Psychotherapy*, vol. 5, no. 4 (2015)