

Playing with Music – Featuring Sound in Games

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Reflecting semantic variations of the words “playing” and “music”, the variable of playing “with” music – instead of the common activity of performing some kind of tune – does not seem to be the most likely one. Nevertheless focusing on music itself, being the object of an activity, this perspective opens up a wide historical context. Originating in the joy of creatures to explore and vary accidental and purposeful alternatives with limited consequences, gaming includes the ability to share these experiences with competitors and confederates. Throughout history this joy of gambling took advantage of all the technical possibilities a time could offer. This led to a giant step in modern ages, when the approaching mechanically-operated systems generated new variants of games and gambling by challenging the general boundaries of human abilities and conditions. The intention of the following considerations is to take a closer look at the influences of computers on music in the wide field of entertainment and gaming. This semi-theoretical perspective on the subject of music and games is related to the circumstance that game music cannot be considered as a distinctive musical genre, but is rather qualified through a functional assignment. Only the association of certain sounds with sequences in games and fragments of story lines that are intensively linked by means of individual and often private experience provokes and features these attributes.

Therefore the term “game music” contains many highly diverse styles that are rooted, on the one hand, mainly in contemporary youth culture, including the rapid shifts of interests and preferences occurring within every few years. On the other hand, the wide sector of film music is a major source of influence, especially in underlining sequences corresponding to emotional demands. In cases where classical elements are needed in the musical design of games, one would most likely expect the use of short phrases that are common in movie soundtracks and which give a typical impression in a brief moment rather than adapting quotes from baroque, renaissance, classical, romantic, or even impressionistic repertoires. This preference for functional means brings to light the diffuse margins separating game music from film music and – as a historical role model – to symphonic poems that also deal mainly with programmatic and illustrative matters. As one clear difference, music in games must necessarily lack decidedness and undoubted meaning due to the variability of the actions driving the game’s plot forward, in contrast to movies, where the synchronicity of the pictorial and the aural layers are determined by

technical modalities and planned in detail by a director and his collaborating composer. Instead, games consist of various modules for a story line that are recallable within the set of rules that designate the course of a game. This does not mean that the musical foundations for those modules are not equally fixed and usually linked to certain scenes, levels or chapters. But according to the decisions a gamer can make within a plot, and depending on his playing abilities, the succession of scenes can be variable. Hence the music and the different moods that are to be offered are structured – in a historical comparison – more in the sense of a baroque suite rather than in the determined order of a classical sonata. Maybe an example nearer to our present time is even more obvious than a baroque suite: huge parts of the several variations that the different game chapters can offer share similarities with Karlheinz Stockhausen's way of organizing fixed but independent elements in *Klavierstück X* (1962) by aleatoric rules. The following remarks on game music, by discussing different approaches to the matter of performing music as a game itself, are meant as an overview of how differently the space of gaming and of performing music can be filled. The longer first section deals with the phenomena of importing parts of game soundtracks into the traditional classical concert hall, transformed from chip-based sounds, sample libraries and synthesizers into the soundscape of a traditional score, usually for an orchestra with optional piano or other solo instruments. The shorter second section changes the perspective from the passive concert listener to the active player impersonating iconic guitar heroes in the analogous game. Furthermore, a closer look will be taken at software and specialized technical tools that supplement the creative abilities of unskilled music fans with a desire to compose their own tunes.

1 Rededications

Crafting musical elements to suit a functional context seems to be one of the oldest and purest human needs for music. As far as we know from archaeological findings and historical sources (antique vases, ancient texts and the like), musical accompaniments of spiritual rites, of sacred and martial rituals set certain frameworks for the performing musicians. Furthermore, the idea of art as an aesthetic practice for its own sake – which seems to be so tightly chained to the concept of western classical music – is instead much younger, being rooted in the 18th century and including controversial statements by Alexander Gottlieb Baumgarten, Immanuel Kant and their followers, if the experience of artworks is supposed to be pleasurable. This concept of “l'art pour l'art” originates in the bourgeois ambition to free music from the conventions of clerical and aristocratic representation. Another historical strand with dominant influences in the matter is the joy of gambling, be it for edification and amusement or – again with long traditions in

human civilizations – as a bloodless ground for highly-esteemed competitions. The remark on peaceful environments for musical battles, represented in the little adjective “bloodless”, brings us to a third major area of functional music, namely in the military context of supporting the moral status of troops, coordinating moves and synchronizing collective movements. Merging these elements for musical purposes in the field of modern computer games, it seems obvious why music is an important and indispensable part of game setups in attracting and convincing players to face the thrill and challenge of an unfamiliar plot.

Getting one step closer to music from games being performed in concert halls by orchestras – to which the heading “Rededications” refers – one has to take into consideration the long history of music that was primarily designed as dance accompaniments and was the subject of stylizations and artifices. One little trace, for example, is the succession of tempi for symphonic movements, originating in the elaborate balance of slower and faster dance meters in baroque suites, purposefully combining different dances that even refer to national traditions such as allemandes, polonaises etc. Enjoying dances like waltzes or minuets as concert pieces, the energetic body movements of the audience are transposed into the rational experience position of static bodies. At first sight, playing game music in concerts shares some similarities with this tradition as computer games require a high degree of practice to perform the highly-choreographed motions of the player and his animated avatar. Furthermore, the different levels of the story line offer some parallels to ballet as a codex of different body movements following a plot accompanied by music. At second sight, the performers’ or, respectively, the players’ movements, serve different purposes as the main focus for games is the motivation to compete against one’s own previous high scores and against the abilities of other players. Therefore the role of music in games – to accompany and dramatize an interactive plot – brings the music’s design much closer to the area of moving pictures, and game music concerts much closer to the similar development of film music concerts, where the creation of an aural sphere is removed from the display of fictional characters and scenarios. Contrary to the fixing of sounds on the film reel, game music concerts instead revitalize the music through the motion of living musicians to become a live act that can hold the audience’s attention without the assistance of further artistic elements such as actors, costumes, scenarios or visual staging by means of a camera lens.

For a closer understanding of driving forces within game music concerts, one has to separate, for a moment, for methodological reasons, the musical sphere – the aesthetic object – from the experience of the listeners, who are familiar with the music through their intense activity while gaming and are now meeting their favourite tunes in a public area while surrounded by other fans. Within this perspective, it is quite obvious how game concerts quickly became integrated into game conventions, such as the “Symphonic Game Music Concerts” which opened

the “Games Convention” fair in Leipzig, Germany, from 2003-2007 (though one has to mention that the first game music concerts took place in Japan as an independent concert series between 1991 and 1996). The most striking limitation of game music affects both the compositional style of the pieces and the people who composed them, leaving hardly any room for individuality. To prevent misunderstandings, the fragile status of a composition’s individual note says nothing about the former’s musical quality, or about the intentions of the composer. To give an example, the upcoming piano virtuoso, the German youngster, Benyamin Nuss, presents tunes from game composer Nobuo Uematsu in concerts and on his first solo CD. The general impression of this compilation is one of strong heterogeneity, drawing a stylistic bow from Ludwig van Beethoven’s dramatic art and Edvard Grieg’s lyricism through Claude Debussy’s sound sensibility and Erik Satie’s tense calmness to George Gershwin’s drive. The success of the Uematsu project by 20-year-old Nuss proves that his appreciation of game music correlates with the preferences of a generation of listeners in welcoming music in a classical setting that is familiar to them from their everyday life. This observation in turn hints at a general problem in 20th century’s music: that of trying to continue the classical heritage of steady stylistic progress which led to the abandonment of tonality. The resulting social isolation of contemporary avant-garde music, leading not towards a socially accepted, fashionable underground-scene (like Jazz), but instead towards the margins of public recognition, left a vacuum in popular concert programs that film music has started to fill very successfully during the last two decades. The set of character pieces from Benyamin Nuss’ Uematsu-adaptations shows the same tendency to mostly sail around material that musicologists used to call canonic and representative for compositional approaches after 1900. The benefit of this approach is highly entertaining music performed with technical brilliance at the expense of a lack of stylistic consistency and uniqueness. As each theme represents a different level of a game or reminds one nostalgically of old games, a concert with such music is more like a revue of short pieces and therefore different to the drama-turgy of a multi-movement symphonic concept.

The opportunity of reminding people of certain scenes, figures and images while listening to these melodies in a concert opens up new possibilities for concepts such as 19th century symphonic poems, where an overall story – whether obvious, as printed in the concert programme, or hidden in the score – sews a thread through a set of various shorter pieces. This aspect is of vital importance in understanding the pieces, as they are designed to function without telling a story on any literal level and therefore are highly dependent on the listener’s knowledge of the game plots and their main characters. Furthermore, it is no surprise that enthusiastic reviewers as well as composers like Jonne Valtonen in his symphonic poem *Legend of Zelda* relate game music concerts to classical music such as *Ein*

Heldenleben (1899) by Richard Strauss in order to emphasize the music's quality and their own musical knowledge.¹

Another characteristic of original game music – in its main aspects similar to film music – is that the storytelling leaves only little space for the individualistic handwriting of the composer. Therefore most accompaniments are written in a heterogeneous mixture of romantic and epic elements. Yasunori Mitsuda seems to be an exception to the average biography of game music composers by having had a professional education at the Junior College of Music in Tokyo. As far as biographies can be reconstructed and artists do not use an alias (such as Chris Hülsbeck and Nobuo Uematsu), the usual way of getting involved with the production of game music is to join collectives of other game enthusiasts, being influenced as self-taught musicians mostly by the popular music of their generation.² In turn, the companies which developed from these collectives define the musical design of the games in order to form a homogenous unity. Again it has to be mentioned that these criteria tell nothing about the quality and legitimacy of the music, but only about the composer's technical and theoretical experience when turning to orchestral scores. In consequence, many of them use the service of skilled arrangers (who are even harder to identify biographically) to turn their game music into pieces for orchestral concerts. Having removed the game music from their original setting, orchestral concerts, in a way, return the composer's individuality to the music and offer him the solitary focus of performing his music live without other distractions. But, on the other hand, the music – due to its necessity to function within the multimedia surroundings of a challenging and stimulating computer game – would often suffer from a lack of musical individuality if the listeners were not capable of imagining the visual and motional parameters. Hence one has to wait to see how many pieces will earn their living on their own outside of the game world, fitting independently into the world of popular classical enterprises, as the film melodies of John Williams, Ennio Morricone, Bernard Herrmann and other icons of the movie world have long since managed to succeed in doing.³ It is no uncommon

¹ <http://www.squareenixmusic.com/features/reports/symphoniclegends.shtml> [05/05/2012]

² Andy Brick studied composition at University of Michigan and Mannes College of Music, New York.

³ Tommy Tallarico: "Audio is one-third of the experience. You have the design and the story, you have the visuals and you have the audio. In film, most of the music is being talked over, it's background music except for maybe a chase scene. In video game music, it's often foreground music, and our music is played so much more and so often. People are playing the same game for 20 or 30 hours and so the music better be good or it'll get annoying really quick. Avatar was a huge blockbuster movie, but hum me the music. It's hard because a lot of it was talked over. If Beethoven were alive today, he'd be a game composer, he wouldn't want anyone talking over his music."

See www.chicagonow.com/blogs/gamesmith/2010/11/tommy-tallarico-it-shows-how-far.html#ixzz14dQvG6TU. [01/30/2012] More Tommy Tallarico: "Well, honestly, as much as great music as there was, there was a lot of crap too. I think the music today from games like God of War and Metal Gear Solid---there's some amazing music now and crappy music now. But back then, and I've been a composer when all we had was bleeps and bleeps, and really you had to rely on melody - it had to be a great melody. So for

phenomenon in music history that the creators of famous melodies are, by far, less well known than the recognition their works earn, so that, for example, a tune like Edvard Grieg's *In the Hall of the Mountain King* (from his *Peer Gynt* suite, 1888) appears in innumerable versions and situations without giving a hint of its creator. And again, such a setting does not tell very much about the music, the composer or the audience. In such cases, only the setting itself could give hints that the old-fashioned aesthetics of a religious devotion to art is abandoned in favour of genius.

Remembering that for methodological reasons the connection of game music concerts and their reception has become separated, the focus on the listeners now has to be supplemented. One first observation is the rapidly growing attention to game concerts during the last few years, uniting the music and game industry, concert promoters and ensembles, journalists, academic scholars and, last but not least, a mostly young, enthusiastic and economically solvent audience spread primarily across the U.S., Europe and Japan. Despite the current success of game music concerts, the motives of the different participants remain, to a large extent, unclear. The thesis that game music (like film music a few years earlier) fills a gap in the 20th century orchestral repertoire has different consequences according to the individual approaches of the various parties: the media industry, for example, still suffering from the digital revolutions that arrived on the agenda through downloads and turned established business strategies upside down, will always search for new trends to establish and serve consumer demands. Devoted fans, in contrast, expect to recognize their favourite tunes in an orchestral tapestry as identical to the computer versions as possible, not to have to compare different interpretations of a standard canon of pieces, this being due to the fact that so far a canon of standard game pieces hardly exists for orchestral projects but, instead, each new project aims at hosting premiers and presenting previously unrecorded pieces. Furthermore, the enthusiastic perception of such adapted material as well as the numerous comments in web communities and concert reviews undermine the supposition that these pieces do not serve as a source of rational examinations of compositional details for the listeners, but rather are associated with an intensive, highly-emotional stimulating effect. One reason for this tendency could be the predisposition of the listeners. Though being passive recipients in a concert, they remember, as active players, their first contact with the music when it served as the soundtrack to their own virtual-gaming adventures. The first internalized appropriate reaction to the tune was action and the motion of their own body in a private situation at home or with friends, not the concentrated stillness of a public concert in the company of a

Tetris, Metroid, Mega Man, they all had very catchy melody lines---even to Sonic the Hedgehog and the 16-bit era, it was all about melody, melody, melody. That still resonates with new music, that hook, that motif of the song is still important. Melody is most important." Read more: <http://www.chicagonow.com/blogs/gamesmith/2010/11/tommy-tallaricoit-shows-how-far.html#ixzz14dRA0yYE> [01/30/2012].

few hundred other listeners. The transformation of listening to these pieces in a concert by watching musicians perform brings to light even more one of the layered meanings of this paper's title "Playing with Music", by now letting others play the music while the multisensory context of the game is excluded for the duration of the concert.

Of course, in reality, such an ideal type of listening predispositions does not exist, especially because some concert promoters try to transplant visual dimensions and spectacular effects from the games into the live situation of the symphonic concert. Using video screens and pyrotechnical devices only seems consequent when planning game music concerts which cohere to the standards of pop events, just as the majority of game music composers originate from a pop music background as do most of their listeners, so that they explore the environment of classical music as a distant phenomenon of their cultural descent. The celebration of game music performed by a classical orchestra in turn alludes to associations of aural art in a culturally legitimately environment, which would mean practically ennobling game music as a popular phenomena through the status of classical music while, on the other hand, formally denying such a strategy by propagandizing game music concerts as an alternative to common classical music events. Listening and performing music has always been connected with social boundaries such as education, canonical knowledge or special musical skills (instrumental experience, etc.). Commemorating prejudices and standard press headlines, computer games glorify violence, serve lower instincts, isolate socially and promote physical addiction. Combining such generalizations with average clichés about classical music, the ambition of game music concerts would be to purify and uplift pop to become art.

Fortunately artists like Tommy Tallarico, celebrated video game composer and originator of the concert series "Video Games Live", not only does not forget the demand for game concerts to entertain, but additionally turns this into the essence of his enterprise. Besides using, as a guitar player, his familiarity with the technical standards of rock shows, he incorporates other game devices into the concerts as important elements to address the audience: "We're also doing a pre-show costume contest and Guitar Hero competition beforehand. The person who wins will come up on stage and play Guitar Hero while I play the guitar part and they'll have to score a certain number of points to win a prize."⁴ The member of the audience who has qualified to be their representative strives to change from being a video-game player at home and now a passive listener in the auditorium into a player again and, on the stage, even joins in with the performers of a real musical concert. The main fantasy behind *Guitar Hero* (2005) and its crucial formula for success unfold here, which brings us to our second category.

⁴ <http://www.chicagonow.com/blogs/gamesmith/2010/11/tommy-tallaricoit-shows-how-far.html#ixzz14dQYu5X5> [05/05/2012]

2 Acting, Performing and Composing

With the turn of the millennium, a format gained popularity on TV channels worldwide wherein young applicants try to impress a jury in a musical competition and get elected by the audience to become “superstars” and “idols” in order to start a professional career. Nevertheless the average half-life period of the winners is rather short, usually lasting until the next season starts, to be forgotten for the sake of the new season’s “superstar”. The exploitation cycle of these formats is optimized to build up new talents, endow them with promising titles, push them into the billboard charts and resell their biographies in talk shows and magazines. This reality-simulation of fame – sped up to a cycle of only a couple of months – is very popular among young viewers as it lines up new faces and interesting stories in quick succession. Bringing it down to the musical essence, all shows only feature vocalists, as singing seems to be the easiest way to access the world of popular music, and significantly real musical talents use other media channels to foster a serious career in the music business. Beyond all critical discussions that accompany this format, the idea of casting new artists that compete for the grace of a jury (or rather, an audience) is built upon a very long tradition in music history, such as, for example, being highly accepted when it comes to famous and prestigious competitions for violinists, pianists and the like. As the many hours of disciplined and ambitious practice are not very appealing when transferred into a broadcast format for an audience that is supposed to get the impression of “I can do this myself, too”, professional castings find only a specialized group of devotees.

Taking another example from the classical world of musical professions, the fame of legendary charismatic conductors transformed artists such as Arturo Toscanini or Herbert von Karajan into popular media figures and made broadcast conducting a wonderful target for parodies. Coming back from those introductory thoughts to the matter of video games, the link between simulated conducting to the imaginary guitar is obvious, as this instrument has served more than any other in the last decades as a tool for the dream of self-made fame and fortune in the figurative term of sex, drugs and rock’n’roll. The first musical computer games, such as Toshio Iwai’s *Otocky* (1987), started at the end of the 1980s, explored possibilities to operate the musical soundtrack by the motion of the virtual characters or to synchronize the player’s moves to the beat of a backing track. Nevertheless it took nearly twenty years of technical progress and the invention of special controllers to make a music-simulation game a huge success and an extremely profitable business when *Guitar Hero* was born in 2005.

In the tradition of a game type where players have to react according to the beat to gain credit points, *Guitar Hero* merged the do-it-yourself idea of punk and pop “anybody can do this” with the challenge of imagining how it feels to be a famous virtuoso. What makes this particular game special is the unprecedented

cooperation of different participants in the media business. The characters incorporated in the game are therefore no fictional figures but, instead, the most prominent rock musicians of the present time. And as a flight simulator is only really tempting if the most prestigious runways are included in the game, each new edition of *Guitar Hero* supplies more famous songs to be performed. To round up the simulation, the game depends on a plastic controller modelled after iconic guitars like Gibson's "Les Paul", "Flying V" and "Explorer", Gene Simmons's axe-shaped bass, Fender's "Stratocaster", or the body of B.C. Rich's "Warbeast" model. To get the authentic feeling of guitar playing, the left hand handles five buttons of different colours, representing the first five frets, while the right hand primarily moves a switch (in the way a plectrum picks the strings around the pickups) and, additionally, makes use of a whammy bar.

From a musicological point of view, the way the tasks a player has to fulfil are mediated is another particularity. As the songs roll forward, the use of a regular notational system would be far too difficult to coordinate and would limit the attraction of the game to a handful of specialists capable of sight reading. To name the precise note on a guitar to be played, song books combine the system of five notational lines with tabulator symbols, but this correct but doubly complex notation of musical information is unsuitable. Instead the creators of *Guitar Hero* developed a notational system of their own, adapting the necessary information to the limited possibilities of the controller, which meant having the five buttons on the guitar's neck in different colours. In the way a space ship would be navigated through flying obstacles, a rolling treadmill carries green, red, yellow, blue and bronze coins according to the order in which the player has to hit the buttons with his left hand. The decisive aspect of this graphical arrangement is that players willingly accept the transfer of music into a graphical system, especially as the guitar as a perfect starter instrument is attractive to amateurs without the necessity of learning to read notes.

The emphasis for a good performance in *Guitar Hero* remains on the side of dexterousness, so that re-enacting intense situations on stage is the primary aim. Gaming cannot function without the fantasy of the player who uses his imagination to build a second reality. Within this simulation, he gets the chance, by means of limited technical requirements, to impersonate the role of rock stars without taking their risks of public failure with the enormous potential consequences. The benchmark for a player's success is to battle his way musically from small clubs and smelly venues to large halls with roaring crowds. But the final step from a perfect simulation into the real world will nevertheless be always out of reach, the enthusiastic audience will always be a virtual one, as long as the controllers – being toys, not tools, in a preformed technical setting – are engineered reductions of a much more complex system. Only when controllers like the handheld unit of Nintendo's "Wii" console can be detached from their original purposes, can such

toys become real instruments in the sense that creative strategies very often intentionally misuse technical devices to find new artistic forms of expression.⁵ But in the case of *Guitar Hero*, real creativity of varying and abrogating norms cannot become part of the game, because exceptions are not part of the programmed matrix as a random factor would be. Even surrounding the guitar player with rock band mates on drums, vocals and bass in the complementary game *Rock Band* (2007) does not solve the question.

Thinking about the creative limits of a very popular and entertaining game would not be even worth an issue if the possibilities to turn the controller-toy into a musical instrument were not included in the recent versions of *Guitar Hero*. But the simulated recording studio shows even more the artistic and unsolvable limits of the game due to the fact that a five-button controller can never be a substitute for the instrument that was used to create the intended sound, just as a simple rearrangement of prepared basic materials will never be more than a copy and variation of preselected thoughts. In the end, simplified achievements cannot set new standards by abandoning established conventions.

To round up this overview of different attempts to connect computer games to the musical reality of concerts and composing, a further tendency is to use machines for creative processes. As long as artists make use of such devices, discussing the status and the quality of the results becomes complex, controversial and tempting for scientific analysis. In case of products for a broad consumer market, professional solutions are too complex, offering too detailed tools with too many possibilities to people who are unfamiliar with basic standards. Some companies try to serve both demands, providing different versions of a software, other configured hardware such as sound processors, keyboards and other programmable devices with presets and guided tours through both the general features and the more complex layers of the machine's matrix. Again others concentrate on only one group of users. Reaching potential customers to attract them to a new product as well as overcoming inhibiting emotions such as shyness and a lack of self-confidence is a major obstacle for producers. Therefore the effectiveness should not be underestimated when dominating brands like Microsoft, well known for their success in technically transforming very complex machines such as modern computers into tame, comfortable and entertaining servants, promote software like "Soundsmith", designed to help any enthusiastic music lover become a creative artist.

Software of that kind belongs to a tradition of machines designed to support and facilitate human operations. Also gambling and playing with machines has a long common tradition, be it with chess automats or pianolas. But improving technical standards by building instruments to serve the needs of performers was

⁵ For more details see: Custodis, Michael (2011): Performing Live-Electronics. Der Keyboarder Jordan Rudess. In: Becker, Thomas (ed.) (2011): Ästhetische Erfahrung der Intermedialität. Bielefeld: Transcript-Verlag: 199-216

always different to inventing compositional support systems. Relating to the diversion of the two linked but hierarchically graded exercises of inventing or playing a piece in the course of the 19th century – the German word “Werktreue” fits the bill – improving instruments helped the performers to refine their style. But making use of statistical, technical or other non-artistic procedures for compositional operations – as various prominent artists in the 20th century did by means of chance and aleatoric systems, mathematical structures or serial procedures – immediately eroded the composers’ credibility in the eyes of conservative critics and scholars.

Testing material set up by others, and using this increase in knowledge and skills can help to improve one’s own abilities and explore areas one probably would not dare to try without trustworthy advice. But reducing such advisory structures to machines, which means limiting the full capacity to programming, in the end leads to standardized results, which, in the case of music productions with preset-sounds, produces pieces sounding very alike. This set of margins makes software like Microsoft’s “Songsmith”, where a melody can be sung into a computer which will build an automatic accompaniment according to different choices of style and tempo, comparable to computer games such as the studio mode of *Guitar Hero*, where a certain set of limitations also cannot be suspended. The result may be an entertaining experience of playing with music but, as a matter of principle, no musical novelty.

Like any other segment of the modern world, the effects of mechanization slowly and inexorably changed the way we hear and look at music. Beginning with sustainable improvements for the construction of instruments (e.g. mechanics of organs and pianofortes, mechanical valves for flutes and clarinets) the fascination to automate the (re)production of music began long before the invention of Thomas Alva Edison’s wax cylinders or Emile Berliner’s gramophone. Since the appearance of handcrafted marvels such as medieval glockenspiels in churches and on town halls, renaissance music automatons such as organ clocks, the 18th century’s orchestrions and barrel organs as well as musical boxes from the following century, the idea to start music by the switch of a button has never lost its attraction.

Detaching the musical accomplishment from interpretative influences, musical automatons are based on a standardized performance. This principle underwent a rapid acceleration due to the electrification of every corner of our modern world, so that especially the duality of producing and reproducing musical recordings is characteristic for a once fixed and henceforth reproducible form. Transferring this method of pre-producing musical elements for later easily accessible reproduction in the area of computer games and pre-programmed devices (such as keyboards, drum machines or sound libraries) enables everyone who seeks support for their own creative ambitions to comfortably find quick feelings of success and to expand their abilities into areas beyond their own limitations. But every technical develop-

ment seems to stimulate countertendencies, so that other creatives start to modify sound chips and game consoles to find new musical forms of expression and to re-humanize technical procedures. And here the circle returns to the beginning of these remarks, where the idea of playing with music was labelled as a central attribute of human culture. It seems that the desire for new entertainment and risk-reduced challenges, which games can offer, satisfies a requirement similar to the need of most people to have music surrounding them, accompanying their lives and filling the space around and between them. The next few years will show how the relationship of games and music will further develop, but it seems that the joy of playing (along) with music will not lose its fascination very quickly.