Game music: from composer to consumer

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Author: Ellinor Åberg
Supervisor: David Thyrén
Seminarieexaminator: Jonas Bjälesjö
Formell examinator: Thomas Florén
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Foreword

On this first page, I would like to thank everyone who made this bachelor's thesis possible. A huge thanks to the composers Inon Zur, Sam Hulick and Tobias Lilja for being willing to participate in my research and for being so helpful and generous. I would also like to thank my supervisor David Thyrén for his guidance and patience. And absolutely not least, I would like to thank my friends and all of the survey participants for taking their time to participate.
**Abstract**

By conducting an experiment involving interviews with successful video game music composers about the emotions they wish to convey to the players with their music, and a survey questioning consumers about what emotions they actually experienced while listening to these musical pieces, this bachelor's thesis tries to provide a deeper understanding for music in games and the impact it has on the player and whether or not the three composers that has been interviewed has succeeded with conveying the emotions they wished to convey to their consumers. The results showed that each composer that has participated has been able to convey the music's intended emotions to their consumers more or less. Almost none of the musical pieces used stood out as wrongly perceived by the survey participants. The preconceptions we have about emotions in music, both generally and in video games, has become so deeply rooted that by only listening to a musical piece one can determine its emotive state and character.

**Keywords**

Game music, video games, music composing, composition, emotions and music, Inon Zur, Sam Hulick, Tobias Lilja
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1. Introduction

At the beginning of the 1970s, video games existed almost entirely as novelties passed around by programmers and technicians with access to computers—primarily at research institutions and large companies. However, the history of video games transitioned into a new era early in the decade with the rise of the commercial video game industry.¹

Today, there is no doubt that video games have become a huge part of our culture. The video game industry's sales have increased with 149.7 percent from the year 2000 to 2009 in Sweden alone² and is showing no signs of stopping internationally either. Newzoo, one of the leading providers of market intelligence covering global games, posted an article in April of 2017 stating that 2.2 billion gamers across the globe are expected to generate $108.9 billion in game revenues in 2017. This represents an increase of $7.8 billion, or 7.8%, from the year before.³

With that being said, the video game industry is growing, and it’s growing rapidly. And with growth comes improvement, especially within the music field. Early video game music was once limited to simple melodies of early sound synthesizer technology, but now video game music is a legitimate industry of its own. Today, internationally renowned orchestras perform entire concerts of music composed specifically for video games, and game soundtracks regularly feature top-notch techno, hip-hop, punk and rock bands and video game soundtracks now have their own real estate in retail outlets both online and off. Music in video games—just as with movies—is there for a reason and it’s usually to convey something to the consumer emotionally. As an active music- and sound producer with aspirations for video game music, I have chosen to focus on analyzing whether or not music composers for video games have managed to convey the emotions they’ve put into their music to the consumers (the players).

¹ Stuart, Keith “The digital apocalypse: how the games industry is rising again” The Guardian (2016)
² Dataspelsbranschen (2010)
³ McDonald, Emma “The Global Games Market will reach $108.9 billion in 2017 with Mobile taking 42%” Newzoo (2017)
1.1 Purpose and research questions

The purpose of this bachelor's thesis is to provide a deeper understanding for music in games and the impact it has on the player. Through my analysis I want to be able to find out what type of emotions and associations the music transmits to players with or without prior knowledge of the game or scene to which the music is intended, and see if the results corresponds with the composer's original intentions.

To concretize this bachelor's thesis and fulfill its purpose, it has been broken down into two overall research questions:

- Have the music composers I have interviewed succeeded with transmitting the emotions they’ve wanted their consumers to experience when listening to their music?
- Can people without prior knowledge of the game or scene to which the music is intended answer accordingly to the composer's original intentions?
2. Previous research and theory

*Sounds come from outside the body, but sound itself is near, intimate; it is an excitation of the organism; we feel the class of vibrations throughout the whole body…. A foot-fall, the breaking of a twig, the rustling of underbrush may signify attack or even death from hostile animal or man…. Vision arouses emotion in the form of interest…. It is sound that makes us jump.* (John Dewey, 1934)

2.1 History of game audio

Aaron Marks writes about how video games made its first grand appearance in the early 1970’s with the game *Computer Space.* In the year 1975 Atari’s game *Pong* took its place in history, which by today's standards was a very simple game and the few sounds it played were very simple, single-toned and electronically generated. During this time, there just wasn’t any hardware for making music to video games. It wasn’t until 1977 that the Atari 2600 game system brought on the first improvement in game audio. The demands for more games like this grew and with that so did the technology.

In 1982, Atari presented a dedicated audio processor called Pokey. The Pokey chip used four separate channels which controlled the pitch, volume, and distortion values of each—allowing a four-piece virtual band to perform for the first time. From here on out, each new game system introduced had more audio resources to draw from. The original Nintendo Entertainment System (NES) in 1985 used five channels of monophonic sound. 1986 brought Sega’s introduction into the ring with monophonic sound generators using four octaves each. By 1989, the NEC Turbo Grafx brought six voices with stereo output—and the Sega Genesis brought 10 voices. Both incorporated a later add-on which allowed for CD-quality audio and at last we were getting to enjoy some music and sound the way it was meant to be heard. Audio processors continued to improve, adapting synthesizer chips, 16-bit processors, more voices, more memory, better compression and decompression algorithms, and even internal effects processors.5

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4 Marks, Aaron (2009:3).
5 Marks, Aaron (2009:3).
2.2 The correlation between humans and music

There exists a growing amount of evidence that highlights that music in general influences certain behavior and emotions in humans across a range of diverse domains. In an article written by Gianna Cassidy and Raymond A. R. MacDonald published for *The Scandinavian Journal of Psychology*, an experiment was conducted where they let 70 participants complete three laps of a driving video game in seven different sound conditions. These were silence, car sounds, car sounds with self-selected music, and car sounds with experimenter-selected music, high-arousal (70 bpm), high-arousal (130 bpm), low-arousal (70 bpm) and low-arousal (130 bpm) music. Six performance measures (time, accuracy, speed, and retrospective perception of these), and four experience measures (perceived distraction, liking, appropriateness and enjoyment) were taken. The findings suggested that fast paced music made players drive faster, that self-selected and experimenter-selected music differentially affected time estimation and with participants overestimating time in self-selected music and underestimating time in experimenter-selected music. Exposure to self-selected music also resulted in highest ratings of liking, appropriateness and enjoyment in comparison to the other sound conditions.

2.3 Research regarding my field

In Daniel Beckmans’ bachelor’s thesis *Computer game music: an analysis of the feelings and associations it creates in listeners and whether or not the composer has succeeded with conveying its intended feelings of the game and music* (2004), Beckman conducted an experiment in which he, by doing a survey with video game interested high school students, tries to prove in what way and how a player listens and embraces music in computer games. The students were allowed to listen to a number of musical pieces without knowledge of what game the music belonged to. At the same time, they filled out a survey for each piece they heard, which is similar to my own research method.

The results showed that young people within the gaming community in many cases can easily determine exactly what feelings the music is intended to describe, as well as what kind of computer game the music is intended to. Beckman concludes that the understanding of what type of feelings and expressions computer game music tries to convey has become something common within the gaming community, that they only through music are easily capable of determining both the game's character and genre. This also implies that the composers whose music Beckman chose to include in

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his experiment have succeeded with their intentions of describing the nature of the game through their music.\textsuperscript{7}

2.4 Narrative functions in music

Johnny Wingstedt writes about how music has six basic narrative functions in film and computer games in his dissertation\textsuperscript{8}, which I will refer to in my analysis.

The emotive narrative function can be described in two different ways. It can be described as what the listener perceived while listening. In other words, what specific feelings or moods the listener experienced. The alternative is that the understanding of the emotional dimension is more observed, which means that the listener already on an intellectual level understands that certain emotions are supposed to be conveyed but these are not emotionally experienced by the listener themselves. In practice, the emotive narrative function often becomes a mixture of observed and perceived meaning. Emotions can be linked to individual events, characters, relationships, or more overall situations in a story - or forebode upcoming events.

The informative narrative function refers to where music explains situations and communicates information to the listener. This is used when music communicates different eras, show social status or represent a character for example.

The descriptive narrative function is similar to the informative narrative function but differs in such a way that the music actively describes something. That something usually being the characteristics of a person or place. Usually, it is about describing physical environments.

It may apply to concrete physical environments, such as “the sea”, “the forest”, “the city” or more abstract environments such as “morning”, “sunset” or “storm”. This narrative function may also apply to movements, particularly common in animated movies.

The guiding narrative function refers to the occasion when the music directs the audience's attention. This is common in video games, where the music can be used as a tool to make the player make a specific action.

The rhetorical narrative function refers to how music can be used as a means to create space for reflection in a story. For example, the music can "burst into laughter" or use politically charged references. A common example is that a certain scene uses music that has a completely different story and feeling.

\textsuperscript{7} Beckman, Daniel (2004).
\textsuperscript{8} Ternhag, Gunnar & Wingstedt, Johnny (2012:165).
The temporal narrative function refers to the music's ability to create continuity as well as create a defined structure.9

3. The Composers

3.1 Inon Zur

Inon Zur (b. 1965) is an Israeli-American music composer. Originally writing for movies and television, he later moved into composing for video games. Zur has been described as being "internationally recognized as one of the A-list orchestral composers in the video games industry". Zur has composed the music to over 50 video games, 15 television shows, and 10 movies, as well as many movie trailers. He has been nominated for numerous awards, and has won three—a Telly Award in 1997 for Best Score on Power Rangers: Turbo, a Game Audio Network Guild award in 2004 for Best Original Instrumental track for Men of Valor, and a Hollywood Music in Media Award in 2009 for Best Original Song – Video Game for Dragon Age: Origins. Zur's compositions frequently are focused on full orchestras, choir and, in some games like Prince of Persia, ethnic instruments like Arabic flutes and the woodwind duduk.

Before our interview—that took place via Skype—Zur agreed on that I could choose each musical piece. I, myself, am a big fan of the Dragon Age franchise and its music so I chose two musical pieces from this game that I thought had the widest variety of instrumentation and also the widest emotional variety in accordance to my own intuition. The third song is from the game Fallout 4 which I also chose on my own accord. The following are the songs that were eventually included in the survey.

- Ferelden at War from Dragon Age: Origins
- Love Song from Dragon Age: Origins
- The Commonwealth from Fallout 4

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10 Music4Games (2006)
3.2 Sam Hulick

Sam Hulick (b. 1974) is a Los Angeles based, BAFTA nominated and NBC News award winning composer for film, television and interactive media. Hulick is best known for creating the signature music for BioWare's blockbuster sci-fi franchise Mass Effect as well as original music for the fantasy role playing games Baldur’s Gate and Baldur’s Gate II Enhanced Editions. With a penchant for creating powerful emotions and memorable themes, Hulick's original scores range from fantasy landscapes and sweeping sci-fi to orchestral bombast, intimate piano and small string ensembles.

Hulick and I conversed back and forth through email. I eventually sent him three musical pieces that I had chosen myself for him to comment on which we agreed on. It turned out that some of the pieces I suggested Hulick had not written himself. And one of them were a re-orchestration of an already existing piece that had been composed by another composer. So Hulick suggested that he could pick out pieces he himself had written and composed to its entirety so he could provide better answers. Hulick asked me what game he had composed music to I would preferably his comments on, and as a fan of the Mass Effect franchise we agreed on that he would comment on two pieces from this game in particular. Two pieces that Hulick has composed will be included, these are:

- Victory from Mass Effect
- I Was Lost Without You from Mass Effect 3

3.3 Tobias Lilja

Tobias Lilja (b. 1984) is a Swedish musician. Tobias started working as an audio designer and music composer for the video game studio Tarsier Studios in Malmö in 2011. Tarsier Studios would later release a game called Little Nightmares that quickly caught the attention of people worldwide. The game received positive reviews upon release with critics praising the atmosphere, graphics, sound, and storyline. Shortly after starting at Tarsier, Tobias also got a bigger studio space. Parallel to his job at Tarsier, Tobias continues to do freelance work for various clients, both as a sound designer and composer. He still lives in Malmö, Sweden.

11 https://samhulick.com/
12 https://www.tobiaslilja.com/
Same as with Hulick, me and Lilja conversed back and forth via email. I sent Lilja some pieces I personally liked since I’ve played *Little Nightmares* myself and Lilja willingly commented on every piece. I chose to include the song I thought had the biggest contrast in comparison to the other pieces included in the survey to get a wider range of musical genres, which turned out to be Six’s Theme Part 1.

4. Method

To fulfill my research I have chosen to use two different methodological approaches, one qualitative and one quantitative. The first method involves interviewing of three successful video-game music composers about their original intentions for some of their musical pieces, which is a qualitative research method. This type of method is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insight into the problem or helps to develop ideas or hypotheses for potential quantitative research. The emphasis is more often on words rather than on quantification when collecting and analyzing data.\(^{13}\)

The second method involves a quantitative research method, a survey, which I chose to create with Google’s own form service. Quantitative research is used to quantify and get an overview of a large material or problem by generating numerical data or data that can be transformed into usable statistics. It is used to quantify attitudes, opinions, behaviors, and other defined variables – and generalize results from a larger sample population. In my case, I want to quantify the participants opinions. Quantitative research uses measurable data to formulate facts and uncover patterns in research and is more structured than qualitative data collection methods.\(^{14}\)

4.1 Delimitations

There is, without a doubt, a considerable amount of video game music and video games out there. Which is why I have chosen to limit this research to six musical pieces (three of these pieces were composed by Inon Zur, two by Sam Hulick and one by Tobias Lilja) from five different video games to include in my survey to avoid too much data and to avoid the risk of tiring the participants. I have also made the conscious option as to not include age or gender in the survey since it is not relevant for my research. Furthermore, I chose to write this bachelor's thesis in English.

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\(^{13}\) Svenning, Conny (2000:69)

\(^{14}\) Svenning, Conny (2000:67)
due to the fact that two of the composers I interviewed are English-speaking and I want them to be able to read and take part of my research if they so wish.

4.2 Interviews

As mentioned earlier, the interviews with Sam Hulick and Tobias Lilja took place via email. After receiving their answers, I decided to choose the pieces they gave the most feedback on since it gave me more of an hindsight for the creation of the survey.

The interview with Inon Zur took place through Skype. I chose to have a structured approach while conducting the interview. A structured interview-approach assumes that the interviewer's questions to the respondent is based on a predetermined questionnaire or questions. The interview was split into two parts and took place during the dates 2017-10-17 and 2017-10-18. Before the interview, me and Zur had already agreed on which of his musical pieces we were supposed to discuss, and I had prepared four questions for each piece. Zur had been informed about the purpose of my research ahead of the interview. The following are the questions:

- What kind of emotions did you want this piece to convey to the player?
- What were your original intentions with this piece? Did you stick to your original intentions or did they change throughout creation?
- Do you think this piece plays a big role in the game?
- Tell me about the instrumentation, what is the purpose behind it?

After the completion of the interview and after more research, I came to the conclusion that only one of these questions were relevant for my research and this was question 1, where Zur talks about the emotions he wanted to convey to the player with each piece. However, the full transcribed interview is still included in the attachments section for anyone interested.

4.3 The survey

With the use of Google’s own form service, an online survey was created. I chose this data collection method as it suited my research purpose the best. Online surveys have become much more common in recent years and is a very cost-efficient way to collect data. Moreover, distribution

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is cheap and you don’t need to register the answers separately.\(^\text{16}\) Surveys are a simple and effective way to carry out extensive data collection. After you have created an online survey, theoretically, an infinite number of people can answer the survey via the internet. The same analysis would be difficult or possibly impossible through interviews for example. The question about selection in an online survey does not need to be considered particularly carefully because, for practical reasons, online surveys usually make the selection of computer identities rather than physical individuals. One of the major advantages of creating your survey online is the ability to create interactive devices, where the survey’s creator can view responses and statistics on one's survey in real-time. However, a prerequisite for completing an online survey assumes that those who participate have access to a computer, tablet or mobile phone with sufficiently fast internet connection.\(^\text{17}\)

In the survey, people who both did and did not have any prior knowledge of the game or to what type of scene the music is intended in game, answered accordingly to the survey what type of emotions they experienced while listening to each musical piece. By doing this, I was able to conclude if the consumers experiences corresponded with the composer's original intentions. I was also able to see if the people who had played the game answered more correctly versus the people who have not, or if previous knowledge of the game even matters at all.

The survey was exposed to the social media pages Facebook and Tumblr where it reached 143 participants under the course of two weeks. These social media sites were strategically chosen to get an even distribution of participants who had played the game and who had not. I posted it on my own personal Tumblr blog since I knew a lot of my followers were familiar with the games that were being addressed in the survey. On Facebook, the survey was posted in two different groups but also on my personal Facebook page where it was left open for anyone to participate.

The survey itself was split into five different sections, each section containing music from a specific video game and composer. Each section started off with asking the participant if they’ve played, not played or are familiar with the video game to which the music was intended to. Each section and musical piece had the same emotional options and the same questions. There were ten different emotional options the participant could choose from, these were;

\(^{16}\) Trost, Jan & Hultåker, Oscar (2016:135).
\(^{17}\) Trost, Jan & Hultåker, Oscar (2016:135).
• Love, passion
• Anger, rage
• Concern, fear
• Happiness, joy
• Melancholy, gloom
• Sadness, grief
• Suspense, tension
• Peace, calm
• Stress, pressure
• Victory, triumph

Furthermore, an “Other…” option was added in case a participant felt like none of the options fit their experience or if they wanted to add any additional comments. Participants could choose multiple options when it came to emotions.

To be able to contrast and categorize each emotional option the participant could choose from, I chose to base my options on Robert Plutchik’s *Wheel of Emotions* (1980) which is a wheel-like diagram, visualizing emotions. An image of this diagram is included in the attachments section.

### 4.4 Ethical considerations

I have taken the research ethical guidelines developed by the Swedish Research Council into account throughout my research. All participants have been informed of the purpose of the research, and that their personal data will be treated confidentially and that all material is used for research purposes only.

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18 Plutchik, Robert (1980).
19 Swedish Research Council (2002).
5. Result & analysis

On the following pages I will add each composer’s own words about their work before presenting the results of the survey. I will comment and analyze the results from each piece in relation to the composer's original intentions. I will also add some comments that the survey participants have left if I think they are noteworthy.

Piece 1.

Ferelden At War (2:57)

- Video game: Dragon Age: Origins
- Composed by Inon Zur
- Genre: RPG, fantasy

This piece plays fairly early in the game when the antagonists of the game (a race of humanoid tainted creatures that mostly dwell in the underground, called Darkspawn) and the protagonist soldiers are facing each other for the first time on screen. However, during the interview, Zur mentioned that this piece in particular wasn’t tailored specifically for this scene, but instead one of the many “battle-themed” pieces that Zur had composed that was strategically chosen for this scene in particular by the game developers. Zur also mentioned how he took the soothing and calm vocals from the games main theme and basically distorted it in a way that it became a wild call for war. The following is Inon Zur’s own statement about what emotions he wanted to convey with this piece:

The emotions I want to convey with this piece would be fear and tension. And also some type of thrill of a war. Those emotions, all together. (Inon Zur, 2017)
Fig 1. The results from the survey. With the most overwhelming response being [suspense, tension] with [stress, pressure] at second place and [concern, fear] at third place.

Analysis

There’s no doubt that the music conveyed its intentional feelings perfectly. The results shows that the majority thinks that the emotion Zur wants to convey with this piece is [suspense, tension], [stress, pressure] and [concern, fear]—all reminiscent ‘feelings’ of a war, which does not involve any positive feelings.

This was one of the pieces that stood out since there wasn’t a noticeable difference between participants who had played the game or not. One might argue that this may be because of the emotive narrative function that Wingstedt (2012) mentions that music can have on a listener. When listening to Ferelden At War there’s no doubt that it is filled with tension and fear and instrumentation that emphasizes on just this feeling in particular (horns, half-primitive dark voices, war cries, percussion etc). This points at Wingstedts theory on how listeners can on an intellectual level understands that certain emotions are supposed to be conveyed because of the music’s instrumentation. A noteworthy comment even mentions that the song reminds them of just this “feeling of a war”, which corresponds correctly with Zur’s statement. Others also mention panic, fear and anticipation.

Piece 2.

Love Song (2:55)

- Video game: Dragon Age: Origins
- Composed by Inon Zur
- Genre: RPG, fantasy

As probably guessed by its title, “Love Song” is the piece that plays when the characters in the game engage in a romantic situation, such as making love. During our interview, Zur mentioned that this song has something that he calls “two layers”. Zur talked about how the first layer is the orchestral layer and the other is the more folk-y layer (the flute, the lute, and old folk instruments). These two layers combined create this special “color” that Dragon Age has in its music, because it
basically tells you that it isn’t symphonic, classic nor totally folk—it creates something else together. The following is Zur’s statement on ‘Love Song’ from the interview:

“To me this song is a combination of love, lust and desire. But I also want to convey the feeling of that you’re clinging onto something that you have no control over. You can’t control your love, attraction or desire even though you know that it can be very harmful for you in the end. So its not this sweet love song.” (Inon Zur, 2017)

Fig 2. The results from the survey. With the most overwhelming response being [love, passion] with [happiness, joy] at second place and [peace, calm] at third place.

Analysis

The emotion [love, passion] is clearly the overwhelming response in this result. Out of 143 participants, 98 of them (66.6 percent) experienced this emotion, which is the correct response. However, [happiness, joy] and [peace, calm] were also popular responses amongst the participants. One may argue that this contradicts Zur’s statement about how this isn’t a “sweet” love song and its underlying meaning about how you cannot control your desires even though it can be harmful for you. This may occur because of the descriptive narrative function the music has in this case.20 The music actively describes something, that something being the two characters making love and the

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20 Ternhag, Gunnar & Wingstedt, Johnny (2012).
physical environment in which they are located, which is a camp in the middle of an ongoing war. Zur even mentioned during our interview that he thought that this piece played a big role in this scene in particular, and how the scene wouldn’t be the same without it. This, including two layers that Zur mentioned may not be that easily perceived by people who have not played the game. For those who have played Dragon Age: Origins however, including myself, too much immersion can sometimes be to the music’s disadvantage. Succeeding with romancing the character of your choice feels like a big accomplishment hence why so many people might experience the emotions [happiness, joy] and [peace, calm] which makes the more melancholy emotions in the music that Zur talks about not that noticeable. Love and passion is clearly something the majority of the participants assume that the composer wants to convey, however.

Some noteworthy comments:
• “A combination of melancholy and happiness, as if crying tears of joy”
• “It feels like a goodbye song. After a victory that cost a lot.”

Fig 3. This pie-chart shows how many percent of people who have played, have not played or are only familiar with the game Dragon Age: Origins to which the previous two songs were composed to.
Zur mentioned during our interview how this song plays at different points throughout the game and how it is essential every time it does since it creates this common threat in the game and how it emphasizes on this sense of longing to the past and the sadness and loneliness that comes with it. The song is perfectly chosen for what it's used for in the game, and that motif in particular. Walking out into the world you once knew, now all abandoned and wrecked by the old war - this tune gives you that kind of sensation of things you are familiar with, now long abandoned and in ruin, of exploring the remains of your old home - eerily peaceful, like a great grave of what once was. The following is Zur’s statement on what emotions he wished to convey with this piece:

“With this piece I want the player to sense a feeling of discovery, but not a happy one. It’s more of a sense of a sad discovery. I would also say memories and loneliness more than anything else, and sadness.” (Inon Zur, 2017)

Fig 4. The results from the survey. With the most overwhelming response being [melancholy, gloom] with [sadness, grief] at second place with [suspense, tension] at a close third place.
Analysis

This piece certainly made the participants experience a wide range of emotions. Almost all participants chose three responses or more, with 14 people leaving their own comment as well which makes this piece the most commented on by the participants.

As we can observe, [melancholy, gloom] is at first place with 79 participants picking this (56 percent), which corresponds correctly with Zur’s statement. The impressive wide range of comments are also surprisingly correct in accordance to Zur’s statement—a lot of participants mentioning loneliness in particular. Some also mentioned desolation, sadness and despair but also curiosity. One comment in particular stood out where the participant has written; “Familiarity, but with an edge. You know this place, but not in the state that it’s currently in.” and this participant in claimed to have not played the game.

The other most picked responses ([suspense, tension], [sadness, grief] and [peace, calm]) almost all contradict each other in a way, however. One might argue that this could have something to do with the instrumentation of the song. Zur mentioned during our interview how he experimented with the instruments with this piece and how each instrument represents a ‘feeling’. Zur talked about how there is a colliding sound throughout the song with the harsh, primitive sound of the bowed guitar and violins and the soft, warmth of the piano. Zur emphasized on how this creates a interesting dual purpose sound. The bowed guitar and violin represents this harsh, rough reality while the soft piano represents emotions and warmth. This may explain why the wide range of distribution between these emotions since they were all experienced throughout the song because of its choice in instrumentation and shape.

The Commonwealth is used as a guiding narrative function\(^\text{21}\) where it directs the audience's attention every time it plays ingame. Zur emphasized on this in particular and how, every time it plays throughout the game, creates this common threat in the game which makes it essential every time it plays and works as a sort of leitmotif\(^\text{22}\) for how the player is supposed to acknowledge the world around them.

\(^{21}\) Ternhag, Gunnar & Wingstedt, Johnny (2012).
\(^{22}\) a recurrent theme throughout a musical or literary composition, associated with a particular person, idea, or situation.
Fig 5. This pie-chart shows how many percent of people who have played, have not played or are only familiar with the game Fallout 4 to which the previous song was composed to.

Piece 4.

Victory (0:51)

- Video game: Mass Effect
- Composed by Sam Hulick
- Genre: RPG, sci-fi, action

This piece is from the first game in the Mass Effect franchise and plays at the end of the game when the enemy (a highly-advanced machine race of synthetic-organic starships) is defeated. Hulick mentioned how it in the very end trails off in uncertainty when debris crashes into the place where Shepard (the main character) was, so the player isn't sure if they’re alive or dead. The following is Sam Hulicks statement on ‘Victory’ from our email-interview:

Obviously this is a very triumphant sounding piece. It starts off somewhat subdued but confident, and in the middle climaxes to a triumphant fanfare. (Sam Hulick, 2017)
Fig 6. The results from the survey. With the most overwhelming response being [victory, triumph].

**Analysis**

As observed by this result, Hulick was able to convey his intentional feelings with this piece perfectly. Out of the 143 participants, 136 of them (92 percent) experienced the correct emotion [victory, triumph] which makes this piece the one where the most overwhelming majority of participants picked the correct response. There wasn’t even a noticeable difference between participants who had played the game or not. Two participants wrote in the exact same answer which was “relief” which may point at Hulick’s statement about how the piece climaxes into a triumphant fanfare after being somewhat subdued in the beginning. One participant also mentioned that there’s an element of pride and great achievement at the beginning of the song which also corresponds with Hulick’s statement.

Since there wasn’t any difference between people who had played the game or not, the emotive narrative function is the most compelling answer for this result. Listeners can easily on an intellectual level observe and understand that [victory, triumph] is what the composer wants to convey because of the music’s conveying instrumentation and shape. As Hulick mentioned, the song climaxes into a triumphant fanfare and uses instrumentation that emphasizes on just this (trumpets, percussion, trombones, horns…).
Some noteworthy comments:

• “Feelings of group unity.”
• “I’m experiencing a strong sense of pride while listening to this”
• “Bravery”
• “Epicness.”

Piece 5.

I Was Lost Without You (2:34)

• Video game: Mass Effect
• Composed by Sam Hulick
• Genre: RPG, sci-fi, action

*I Was Lost Without You* is arguably a song that almost every Mass Effect fan know about. As a song that plays in one of the final scenes in the final game of the trilogy (Mass Effect 3) it is quite rememberable. The music plays before the final battle, where the main playable character (Shepard) and their love interest (that the player themselves have chosen) converse about the final upcoming battle. There’s obviously some worry and sadness since none of the characters know if they will live to see the next day, and the scene later ends with the two characters making love. Hulick mentioned that this song really goes through these phases because of this mixture of emotion. The following is Hulick’s own words about this piece:

> The beginning of the song is very delicate and intimate, while the middle part develops a sense of longing and passion. The final part (where the strings come in) is ethereal, passionate.. almost lustful. (Sam Hulick, 2017)
Analysis

The results on this piece are a bit more uncertain, as if the participants weren’t sure where to place it. Out of the 143 participants 77 of them had played the game, and their most popular response was [sadness, grief] with both [love, passion] and [melancholy, gloom] as close seconds which is the right answer. The 66 participants who had not played the game also had [sadness, grief] as their top pick but [melancholy, gloom] as their second while [love, passion] was only picked by seven participants. This might suggest that the participants who had played the game knew this song from the scene to which it is intended and as a result could pinpoint and provide the correct answer more easily. This song in particular is a good example of the informative narrative function in action if we look back on Hulick’s statement about this song… The music explains the situation that the main character is in the night before the final battle, but also the relationship between them and their love interest. The music moves when the player wants it to. While the main character sits alone and thinks about the upcoming battle, the more melancholy and sad part of the music plays. Meanwhile, when their love interest enters the room, more instruments start to emerge. Eventually, at the end, when the two are making love, the song becomes lustful and passionate with more instruments such as violins. This may suggest that the game developers had this in mind when picking the music for this scene which might make the song difficult to take out of its context. However, despite this, almost all comments on this piece were written by the people who had not played the game and their comments in particular were surprisingly accurate. A total of four of these comments mention, in different ways, how this song made them feel as if it was a “deserved rest from chaos” and the “calm before a storm” which is very true indeed. One comment even restates what Hulick mentioned himself about the end of the song, about how passionate it becomes towards the end when the violins come in.

Some noteworthy comments:

“Very passionate at the end when the violins come in.”

“The calm before a storm.”

23 Ternhag, Gunnar & Wingstedt, Johnny (2012).
“A deserved rest from chaos.”

“It feels like a respite, a breath of fresh air in a time of darkness. Hence the melancholy laced in. Though there’s some hope in it.”

“Defeat, seeking comfort and advice. It ends on a more hopeful and determined tone.”

“Longing, bittersweet.”

Fig 8. This pie-chart shows how many percent of people who have played, have not played or are only familiar with the Mass Effect Trilogy to which the previous two songs were composed to.

Piece 6.

Six’s Theme Part 1 (1:20)

- Video game: Little Nightmares
- Composed by Tobias Lilja
- Genre: Horror, platformer, puzzle

*Little Nightmares* itself is a game with a dark story, which obviously makes its music just as dark. This piece plays when the main character in the game (a hungry nine-year-old girl named Six) is having regular moments of excruciating, primal-like hunger and eats whatever is around her. Lilja mentioned that the ‘voices’ that plays in the song is the voices of sick, hungry children that represents Six’s character. Lilja also mentioned how even the melody in itself is wobbly and
transmits some kind of nausea since these are the feelings that the main character is experiencing throughout the game. The following is Tobias Lilja’s own words on the song:

This piece is askew, concerning and sad. I want this piece to transmit a feeling of sadness and long dull periods of waiting. (Tobias Lilja, 2017)

Fig 8. The results from the survey. With the most overwhelming response being [concern, fear] with [suspense, tension] at a close second place.

Analysis

Since Little Nightmares is an indie game developed by a (at the time of its release) small and independent game development studio, it didn’t have as big of an audience as the previous three games. Out of the 143 participants had only 9 of them actually played the game, 46 participants were familiar with it and the remaining 88 had not played it and were not familiar with it either. Despite this, out of 143 participants, 104 of them (73 percent) experienced the concerning feeling that Lilja mentioned [concern, fear]. This is quite surprising considering how small the amount of people who actually had played the game was, which leads us to how this piece is reminiscent to the informative narrative function where music explains situations and communicates information to the listener. Six’s Theme Part 1 is a very descriptive and explaining piece of music where it, almost to its entirety, represents a character.24 One would argue the reason why so many people answered

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24 Ternhag, Gunnar & Wingstedt, Johnny (2012).
correctly comes back to its buildup and instrumentation. The song is only 1 minute and 20 seconds yet still goes through several phases that represent Six. The song starts out slow and wobbly and after a few moments turns into almost a lullaby with unsettling vocals representing hungry children that only gets more and more intimidating and louder and distorted where it at the end reaches a climax and turns completely silent, which one would argue explains how so many people could answer correctly even though they had not played the game themselves.

This was one of the pieces that had the most individual comments, with around 12 participants leaving their own thoughts. The comments the participants left point towards them feeling strong emotions of discomfort and fear while listening and most of them even wrote in the same answer which was how they thought it sounded creepy. To summarize, all of the leading categories are mostly even perceptually distributed in relationship to each other and they all represent more ‘negative’ and/or ‘sad’ emotions, which is what Lilja wanted to portray.

Some noteworthy comments:

• “A strong sense of sadness and unease.”
• “Very creepy and uneasy.”
• “unrest, restless spirits, the desire to run far and FAST”
• “Discomfort and sadness”
• “Nightmare fuel!”
• “Loneliness and confusion....”
• “A feeling that something bad is about to happen”
6. Discussion

Whilst observing the results of my research overall, the main results shows that each composer that has participated has been able to convey the music's intended emotions to their consumers more or less. Almost none of the musical pieces used in my research stood out as wrongly perceived by the survey participants, which has been a surprising and exciting discovery. By all means, fairly positive results appeared throughout the experiment and many of the participants had actually managed to respond astonishingly correct in accordance to the composers original intentions whether or not they had played the game. One thing that came to mind while observing the results was how the length of the song sometimes affected how ‘correct’ the participants could place it. This may suggest that the shorter a song is, the easier it is for people to perceive its intended emotions. This also applied to the songs instrumentation and shape. The songs with lesser instruments were easier for participants to sort into the correct emotional category. One could argue that when a song is long and has a huge number of instruments backing it up, it becomes more and more difficult to place into a specific emotional category.
Inon Zur

Since Inon Zur and I had our interview through Skype, I was able to get more in-depth answers about each piece. This later turned out to be to Zur’s benefit since two out of the three songs Zur had composed that was used in this research were clearly correctly perceived by the participants no matter if they had played, were only familiar with or had not played the game, these being Ferelden At War and The Commonwealth. Ferelden At War in particular having an overwhelming amount of participants choosing the correct emotional response. Love Song, however, managed to convey its ‘main’ feeling to the participants (that being love and passion) but not exactly its underlying meaning that Zur talked about during our interview.

Sam Hulick

Out of two musical pieces that was used in this research composed by Hulick, one of them stood out as the most correctly perceived by the participants. This was Victory, which had an overwhelming amount of participants choosing the correct emotional response. The second piece, I Was Lost Without You was not exactly wrongly perceived but participants did have a hard time placing it. However, as mentioned earlier in my analysis on this piece, one could argue that taking a song that is specifically tailored for a scene in a video game or movie out of its context may make it more difficult to place into an emotional category.

Tobias Lilja

The one musical piece included that had been composed by Tobias Lilja was Six’s Theme Part 1 from the indie-game Little Nightmares which only 9 out of 143 participants had actually played. Despite this, the results showed that a surprisingly high amount of people could still answer correctly and could by only listening to the musical piece determine what emotions Lilja wanted to convey.

The execution of my survey and method of choice has likely affected the result. If an in-depth interview had been conducted with all three composers, not just with Inon Zur, they would have been able to explain their intentions with their music on a more in-depth level and discuss exactly what in their music emphasizes on the emotion they wished to convey. The survey and how its questions were formed and what type of alternatives the participants were introduced for may also have affected the results. It can depend on the participants will to actually participate and to answer.
honestly and thoroughly. The survey has enabled a large number of consumers to participate, but it may also have restricted how thoroughly each participant has answered. Interviews with every participant would have given more detailed answers and a deeper insight into how the participant thinks and acts. However, that would have been impossible since my survey reached a total of 143 people and would have required incredibly large resources. I found that there is some shortage on previous research around the same area that my own research questions point at. This may be due to my own lack of finding any previous research on this area. However, one could speculate that game developers or movie directors may do similar experiments as I have made to make a specific scene as emotionally charged as possible.

7. Conclusion

One could argue that through so many years of consumption of interactive media and entertainment, modern film/video gaming and other popular culture most people are aware on a subconscious level about what musical “rules” that exist. Because of this, most people are able to come to a reasonably correct perception about what emotions a specific musical piece wants to convey. This is also something that Beckman (2004) could conclude with his research within this field. Something that Beckman also mentions that could also apply to this result is how some music can be more “anonymous” than others. Some songs simply do not have the distinctive features and qualities that some others have. This certainly does not mean that “anonymous” music serves its purpose worse than any other song, but without a connection to imagery it is more difficult to conclude what emotional element a song belongs to.
8. Reference list

Literature


Electronic sources

Music in Games: from Composer to Consumer

Through this analysis, I want to be able to find out what type of emotions and associations the music transfers to players with or without prior knowledge of the game's story or scene at which the music is inserted, and see if the results correspond with the composer's original intentions. Thank you for taking part of my survey!

*Required

1. Have you played and/or are you familiar with the video game Dragon Age: Origins?*  
Mark only one oval:  
- I have played it  
- I have not played it but I am familiar with it  
- I have not played it and I am not familiar with it

Song #1

[Music link]

2. 1.2. What emotions do you think the music composer is trying to convey with this musical piece?  
Mark all that apply:  
- Love, passion  
- Anger, rage  
- Anxiety, fear  
- Happiness, joy  
- Melancholy, gloom  
- Sadness, grief  
- Suspense, tension  
- Peace, calm  
- Stress, pressure  
- Victory, triumph  
- Other:

Song #2

[Music link]

2. 1.3. What emotions do you think the music composer is trying to convey with this musical piece?  
Mark all that apply:  
- Love, passion  
- Anger, rage  
- Anxiety, fear  
- Happiness, joy  
- Melancholy, gloom  
- Sadness, grief  
- Suspense, tension  
- Peace, calm  
- Stress, pressure  
- Victory, triumph  
- Other:

Song #3

[Music link]

2. 2. Have you played and/or are you familiar with the video game Fallout 4? *  
Mark only one oval:  
- I have played it  
- I have not played it but I am familiar with it  
- I have not played it and I am not familiar with it  
- Other:
5. 2.1 What emotion do you think the music composer is trying to convey with this musical piece?*

 Tick all that apply:
- Love, passion
- Anger, rage
- Concern, fear
- Happiness, joy
- Melancholy, gloom
- Sadness, grief
- Suspense, tension
- Peace, calm
- Stress, pressure
- Victory, triumph
- Other:

5. 3. Have you played and/or are you familiar with the Mass Effect video game franchise?*

 Mark only one box:
- I have played it
- I have not played it but I am familiar with it
- I have not played it and I am not familiar with it
- Other:

Song #4

5. 3.2 What emotion do you think the music composer is trying to convey with this musical piece?*

 Tick all that apply:
- Love, passion
- Anger, rage
- Concern, fear
- Happiness, joy
- Melancholy, gloom
- Sadness, grief
- Suspense, tension
- Peace, calm
- Stress, pressure
- Victory, triumph
- Other:

6. Have you played and/or are you familiar with the video game Little Nightmares?*

 Mark only one box:
- I have played it
- I have not played it but I am familiar with it
- I have not played it and I am not familiar with it
- Other:

Song #6

7. 3.1 What emotion do you think the music composer is trying to convey with this musical piece?*

 Tick all that apply:
- Love, passion
- Anger, rage
- Concern, fear
- Happiness, joy
- Melancholy, gloom
- Sadness, grief
- Suspense, tension
- Peace, calm
- Stress, pressure
- Victory, triumph
- Other:

Song #5

15. 4.1 What emotion do you think the music composer is trying to convey with this musical piece?*

 Tick all that apply:
- Love, passion
- Anger, rage
- Concern, fear
- Happiness, joy
- Melancholy, gloom
- Sadness, grief
- Suspense, tension
- Peace, calm
- Stress, pressure
- Victory, triumph
- Other:

Thank you for your participation!

Powered by Google Forms.
Inon Zur

Ferelden at War

If you listen to this piece, you can hear that I divided it into two parts. The first part is kind of like a suspense with a vocal that sounds really weird and pitched down. What I did here was reused the vocals from the main theme song of Dragon Age: Origins and then I just lowered the pitch at least three half notes. You know that shit is going to hit the fan at any moment. So it’s dark, you see fog coming up, maybe you see a few dead bodies thrown around. You basically know that the battle is about to start, and no matter what it isn’t going to end well.

• What kind of emotions did you want this piece to convey to the player?

The emotions I want to convey with this piece would be fear and tension. And also some type of thrill of a war. Those emotions, all together.

• What were your original intentions with this piece? Did you stick to your original intentions or did they change throughout creation?

Good question. Okay, so, I think that I did stick with my intention overall. But I think that I probably changed the way I wanted to bring it together a few times. Basically, when you start a cue with a suspense and then break it into action then you have to understand that—from a technical point of view—sometimes you can loop only the suspense part and then loop the action part. You can decide basically which part to play where and when during the game. With today’s technology, programs themselves can determine not only what cue is playing but what part of the cue is playing.

• Do you think this piece plays a big role in the game?

(pause) Yes. But again, you have to remember that this piece could be played at any battle scene in the game and it would work just as well, it wasn’t exactly tailored for the scene it plays in particular. I mean, except music for cinematics, what we call the ingame music usually—not always—sometimes we do actually make a certain musical piece for a specific point ingame if it’s really, really important. But when it comes to battle music, for example, when I work on music for Fallout games—they don’t even tell me “oh, this is going to be for this and this battle and it’s going to be played here and there!”. No, what they tell me is more like “write a few battle cues in this, this and this style” like it’s always very vague. I just come up with my own musical ideas and they’re the
ones picking out where to put it in the game and when and how it’s supposed to be playing. This is how it works in most cases but, as I said, if there is a really important scene we do actually create scores for those specific scenes.

- Tell me about the instrumentation, what is the purpose behind it?

   Basically what was interesting about this cue was what I did with the voice—in the main theme it’s very soothing but I instead lowered it and basically distorted it and it almost became a wild call for war and it almost became kind of half-primitive.

**Love Song**

- What kind of emotions did you want this piece to convey to the player?

   To me its a combination of love, lust and desire. But also sadness and loss. So basically you’re clinging onto something that you have no control over. You can’t control your love, attraction or desire and you know that it can be very harmful for you in the end. So it’s not this sweet love song.

- What were your original intentions with this piece? Did you stick to your original intentions or did they change throughout creation?

   I would say I stuck to my original intentions, yes.

- Do you think this piece plays a big role in the game?

   Yes, I do.

- Tell me about the instrumentation, what is the purpose behind it?

   Okay so, this song has two “layers”. The first layer is the orchestral layer and the other is the more folk-y layer (the flute, the lute, and these kind of old folk instruments). These two layers combined create this special “color” that Dragon Age has, because it basically tells you that it isn’t symphonic, classic and also not totally folk—it creates something else together. And with the vocals, it creates this “elven” feeling.

**The Commonwealth**

- What kind of emotions did you want this piece to convey to the player?
With this piece I want the player to sense a feeling of discovery, but not a happy one. It’s more of a sense of a sad discovery. I would also say memories and loneliness more than anything else, and sadness. This is what I really, really tried to convey with this piece.

- What were your original intentions with this piece? Did you stick to your original intentions or did they change throughout creation?

I mean, composing music for Fallout games have been very intuitive... Most of the time I don’t know what I’m writing for. I’m basically composing music for something that doesn’t really exist yet. We do talk about emotions, soundscape and what we want the music to say, but we definitely do not talk about scenes, storylines or anything like that at all.

- Do you think this piece plays a big role in the game?

This music plays different times and in different places throughout the game, and whenever it plays it creates this common threat in the game which makes it essential everytime it plays. It emphasizes on this sense of longing to the past and the sadness and loneliness.

- Tell me about the instrumentation, what is the purpose behind it?

There is a colliding sound throughout this song with the harshness and primitive sound of the guitar and the softness of the piano that creates this interesting dual purpose sound. On the outside it sounds rough and hard but on the inside it is very warm and emotional... Like the bowed guitar and violin represents this harsh reality while the soft piano represents the emotions and warmthness within, and I really liked this working with this combination.

Sam Hulick

Mass Effect 1: Victory

Obviously this is a very triumphant sounding piece :) It starts off somewhat subdued but confident, and in the middle climaxes to a triumphant fanfare. The very end trails off in uncertainty (this is when the debris crashes into the place where Shepard was.. so the player isn't sure if he's alive or dead)
Mass Effect 3: I Was Lost Without You
This one really goes through phases. The beginning is very delicate and intimate. The middle part develops a sense of longing and passion. The final part (where the strings come in) is ethereal, passionate.. almost lustful.

Tobias Lilja
Little Nightmares: Six's Theme Part 1
Skevt och ledsamt. En känsla av lång och enförmig väntan.
Röster som påminner om sjuka, hungriga barn. Sväjjig melodi som framkallar ett lätt illamående.
01:00: upplösning. Denna används när huvudkaraktären blir "hungry" och måste hitta något att äta.

Attachment - Robert Plutchik’s Wheel of Emotions