DURMS
Durham Undergraduate Research in Music & Science

Narration in Music: An Exploratory Study of the Difference in Emotional Responses to Absolute (Non-Narrative) and Programmatic (Narrative) Music

Henry Bashford
Durham University

ABSTRACT

Little is known about the ways in which emotional responses to programmatic and absolute music differ, and how narrative contexts applied to musical examples affect emotional response. The present study aimed to investigate these questions with a sample of participants (*n*=58), from a mixture of musical backgrounds and ages. Seven musical examples were either prefaced with a narrative description or no narrative at all. Results were obtained using both quantitative and qualitative methods, with participants asked to rate their *felt* emotional responses to the excerpts on a scale from 1-5, and give a short descriptive explanation of these emotions. Results showed a significant increase in emotional responses to those excerpts with an accompanying narrative, suggesting music that is programmatic in nature increases *felt* emotions.

1. INTRODUCTION

The debate on music and applied narration has been ongoing since the mid-nineteenth century. Many have claimed the addition of extramusical narratives help further music's emotional content, whilst others saw music to be ineffable. Large amounts of scholarly writing have been produced on the topic within the fields of musicology and philosophical aesthetics (see, e.g., Bonds, 2014; Kregor, 2015). Little is known about the influence of extramusical factors on the emotion elicitation process (e.g., Vuoskoski & Eerola, 2015), but it is established that instrumental music, independent of wider extramusical information, is able to evoke emotional responses and successfully convey semantic meaning (Janata, 2004; Koelsch et al., 2004). The widespread practice of including program notes for classical concerts assumes that the extramusical information affects musical experience (Margulis, 2010). Despite this, little is known about the difference in emotional responses to the genres of program and absolute music, beyond what musicologists have theorised: this study aims to answer some of these questions.

It is well established that music is capable of communicating a story. However, research into extramusical 'storytelling' in music psychology is limited, and thus little is still known about music as an object for meaning and emotional response (see, e.g., Iwanaga & Moroki, 1999; Juslin & Zentner, 2001; Peretz, 2001). In the context of the present study, *programmatic music* is defined as music composed to a preconceived narrative, whilst *absolute music* is taken to be purely self-serving and non-narrative.

The limited number of studies into narration, affect, and music is in part due to a lack of consistency when measuring emotional responses in psychological studies (Sloboda, 1991). The subjectivity of felt emotion makes it difficult to quantify and a lack of consistency between models further complicates this. The differentiation between measures of emotional response is challenging, making it difficult to pinpoint exact felt emotions (Meyer, 1956). A number of emotional models have been developed in an attempt to combat these difficulties, however due to the subjective nature of this type of research these discrepancies cannot fully be erased.

The pairing of narratives and music is not a recent phenomenon, with much of the music we are exposed to being heavily entwined with narrative contexts of some form (Vuoskoski & Eerola, 2015). It is therefore no surprise that the writing of music with a pre-conceived program or narrative is not uncommon. During the nineteenth century, the concept of pure music, free of any extramusical influence became increasingly popular. This led to the development of *absolute music*, which Bond (2014) defines as being 'autonomous, self-contained and wholly self-referential'. From research into the emotional values of music more generally, it has been shown that music can induce emotional responses purely as a result of the music's intrinsic content, as Sloboda's study entitled 'Musical structure and emotional response: some empirical findings' (1991) shows. This study demonstrated that participants were able to recall specific musical moments or functions that provoked both semiotic and emotional responses. However, the difference in the type of emotional response between music with and without extramusical contexts is in need of further exploration.

The research carried out by Margulis et al. (2019) explores the way in which humans are able to narrativise music as an abstract concept detached from any programmatic origins. This therefore presents the question: does self 'narrativisation' of music elicit the same level of emotional response as that of a preconceived narrative? The present study will briefly explore this area of inquiry but hopes to inspire further research into the topic.

There are two main types of emotions that are related to our experiences with music: *felt* and *perceived* emotions (Gabrielsson, 2001). *Perceived* emotion by this definition refers to the perception of an emotion, for example sadness, but this may be perceived by a participant without actually making them feel sad. Whilst *felt* emotion refers to the feeling

of sadness in response to the music. To differentiate between the two may not always be clear, and studies on the topic suggest the term 'music emotion' often will be in reference to a mixture of the two. There is often overlap between the two types of emotion, and is reliant also on the listeners' properties (Gabrielsson, 2001). Despite this, participants taking part in this study were asked to focus on their *felt* emotions as opposed to *perceived* emotions.

A study carried out by Vuoskoski and Eerola (2015) looked into the importance of extramusical information as a means to induce emotion. The study involved participants being split into two groups: both groups listening to a piece of instrumental music. The two groups were then presented with different narratives prefacing the excerpt, one a *sad* narrative, the other a *neutral* narrative. The results of the study showed that the group presented with the *sad* narrative showed an intensified level of *sad* emotions in comparison to the *neutral* group. The conclusion of this study therefore suggests that the contextualisation of a piece of music "can have an impact on the emotional effects of that piece" (Vuoskoski & Eerola, 2015, pg. 270).

The aforementioned studies are relevant to my own research in the field, suggesting an importance in the link between narrative contexts and programmatic writing within the instrumental music tradition. However, little research has focused on the difference in *felt* emotional responses to these two genres from a psychological perspective. Therefore, the present study aims to expand on previous research by examining the effects of applied narrative and preconceived narratives in music in inducing *felt* emotional response. The hypothesis being that music written with an applied narrative will increase the level of the participants' induced *felt* emotions. Furthermore, a secondary hypothesis will be explored, in an attempt to understand how the application of a narrative unrelated to the pieces original context may affect participants level of response. Throughout this study, this extract will be labelled as false narrative (FN) and included under the narrative heading.

2. METHOD

Design. The study was a within-participant experiment, consisting of quantitative and qualitative data collection methods based on a questionnaire conducted through Qualtrics. The independent variable (IV) was the accompanying narrative description for the musical excerpts used, some presented with narrative descriptions and others without narrative. The dependent variable (DV) was the emotional response rating and descriptive questions presented to participants.

Participants. Participants consisted of 103 respondents from different faculties, however this sample was reduced to 58 as 45 responses were incomplete. Participants were aged 18-79 years (M= 36.86, SD= 21.08). Gender was not asked as it was not seen to be relevant to the study's hypothesis. Participants were identified as follows: 25.86% (15 participants) non-musicians, 43.1% (25 participants) music loving non-musicians, 13.79% (8 participants) amateur musicians, and 8.62% semi-professional or professional musicians (4 semi-professional and 1 professional). Musical training and ability were not part of the criteria in the recruitment process. Participants were asked the time they spent meaningfully listening to music each day. 25.86% (15 participants) listened to 1 hour or less, 50% (29 participants) 1-2 hours, 17.24% (10 participants) 3-5 hours, and 6.9% (4 participants) listened between 6-8 hours a day. The mode time spent listening to music was between 1-2 hours a day. When asked whether they regularly listening to classical music (as musical excerpts used were of this nature), 34.5% said yes. To determine whether the addition of a narrative description (or program) altered participants *felt* emotion, they were presented with program (narrative) and absolute (non-narrative) examples.

Stimuli. To maintain consistency, whilst covering a wide breadth of musical examples, participants were presented with 7 excerpts (4 narrative and 3 non-narrative). These consisted of orchestral instrumentation and were published as works between 1808-1936, constituting romantic and late romantic genres. These excerpts were chosen based on a pilot study consisting of 5 participants rating their emotional responses to 14 musical examples. As a result, the excerpts were reduced to the 7 that were validated to convey clear levels of emotion, yet were mostly unfamiliar to participants. The mp3 files used in the study were edited using Logic Pro X and cut to 1.5 - 2.5 minutes in length, to ensure inclusion of the most climactic (emotive) section of the piece, in addition to ensuring phrases were not incomplete. The accompanying narratives for the programmatic (narrative) excerpts were taken from the pieces performance notes, where possible, or from writing on the piece by the composer. Whilst the excerpt with the false narrative (FN) was written by the researcher. The emotion model used consistently throughout the study was the discrete model of basic emotions. This included 5 main emotion adjectives that participants were asked to use when rating their emotional response to the excerpts. These were happiness, sadness, fear, anger, and surprise. The emotion of disgust (usually found in the discrete model see Figure 1) was excluded, as the pilot participants rarely rated this emotion highly, thus was disregarded for the main study. Measurements of participants' emotions were rated using a five-point likert scale plotted along a sliding bar (from least to most).

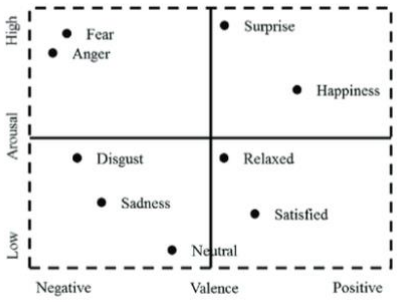

Figure 1. Discrete emotion model by valence and arousal

Procedure. Participants were first presented with a short explanatory introduction to the study. The precise objective of the study was not disclosed to reduce the effect of *demand characteristics*. Participants, having giving consent, were asked to confirm they were over the age of 18 and told how their inputted data would be used. A small number of preliminary questions regarding musical ability and competency, and the number of hours spent listening to music each day were asked. The difference between *felt* and *perceived* emotions were then explained. Participants were told to focus on *felt* emotions when participating. The main study consisted of 7 sections, one for each of the musical excerpts presented in a randomised order to reduce issues of the order effect on participants responses (Schwarz & Hippler, 1990). Participants were told to listen to each excerpt in full, paying attention to the *felt* emotions that may be evoked. The emotional response for each of the five emotions (discrete model) was then rated on the likert-scale from 1-5 to determine the quantity and quality of the emotion. A descriptive question asking participants to describe how the music made them feel followed, highlighting specific features of music and emotion not yet expressed in the discrete model. Each section also included a question of familiarity with the music, as this may affect emotional response (Ali & Peynircioglu, 2010). Due to the effect enjoyment can have on emotional response (Hall et al., 2016), participants were asked to state their enjoyment of the piece. In order to allow participants to fully engage with the study, total control over the playing of excerpts was given. Upon completion, participants were thanked for their cooperation, and provided with contact information should they wished to ask any further questions.

3. RESULTS

The analysis of data involved two main methods, due to both qualitative and quantitative data collection methods being used. To answer the main hypothesis of the study: that listening to music with a preconceived narrative would evoke a greater level of emotional response in comparison to music of an absolute non-narrative form, the mean for each emotion evoked in response to each musical excerpt was calculated. The emotion with the highest mean value for each excerpt was then taken to be the representative emotional value for that excerpt. This was done to maintain consistency in the data, due to some emotions not being evoked. The data of both the narrative and non-narrative examples where then collected and a mean for both categories collated. The total emotional mean of the narrative excerpts (excluding FN) M=3.73 (SD=1.16), whilst the total emotional mean of the non-narrative excerpts M=3.03 (SD=1.36) (see Figure 2). This therefore demonstrates an increase in the strength of the felt emotions evoked as a result of an applied narrative, with a percentage increase of 22.97%.

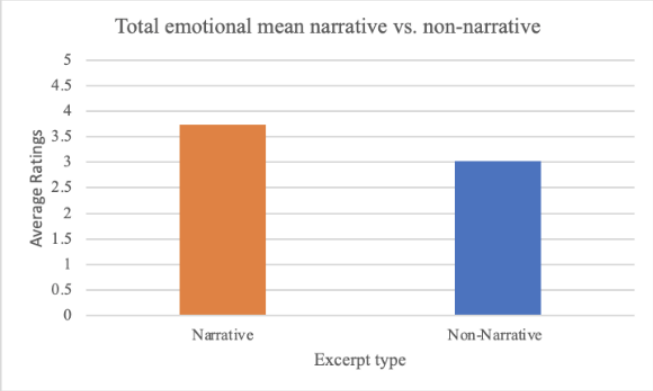

Figure 2. Average ratings of emotional responses per condition

A t-test was carried out to determine whether the results presented proved to be statistically significant (p<.05). As expected, the difference in mean emotional response between the two conditions was statistically significant (p=0.03).

Figure 3 shows the mean average for the highest felt emotion for each excerpt (excluding FN). The results show that the *felt* emotional response to narrative excerpts was stronger than the non-narrative excerpts, for all except *excerpt 5*.

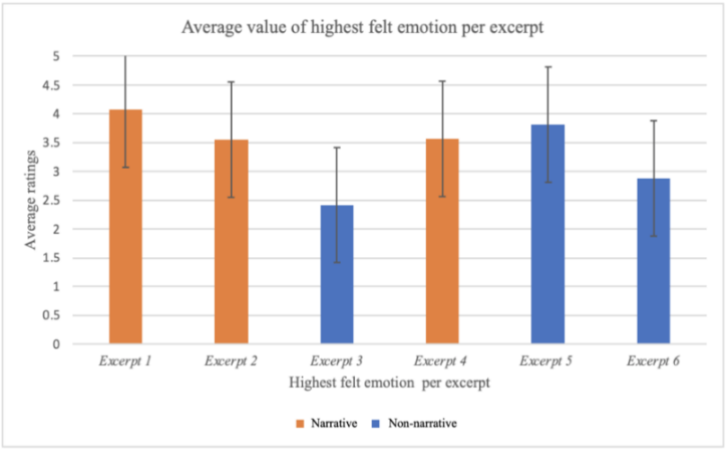

Figure 3. Highest emotional value per excerpt

Furthermore, there was a clear difference in the overall emotional ratings between narrative and non-narrative excerpts, with the non-narrative excerpts producing a much more consistent baseline emotional response (Figure 4). Whilst the emotional ratings of narrative excerpts demonstrated much greater variation, often with a singular emotion being rated much higher (Figure 5).

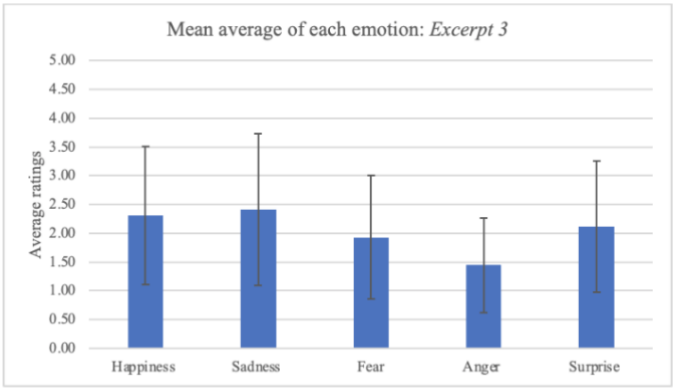

Figure 4. Mean emotional response for excerpt 3

Figure 5. Mean emotional response for excerpt 1

Qualitative data and descriptive responses. Qualitative data was analysed using NVivo, with participants descriptions being coded thematically. This data provided examples of repeated thematic patterns, and different types of emotions experienced. For example, in the first *narrative* excerpt (*excerpt 1*) 41 participants (71%) described emotions related to happiness, with the prevalence of related thematic terms.

Furthermore, some participants specifically mentioned a significance of the narratives effect on their experienced emotions (see appendix for full quotations):

'[...] reminds me of the countryside after reading the narrative' (participant W, 18 years: excerpt 1)

'The narrative [...] caused me to feel significantly more anxious [...]' (participant X, 19 years: excerpt 2)

Interestingly, a number of participants described the adverse effect when listening to excerpts with *no narrative:*

'[...] did not invoke strong emotional reactions[...]' (participant Y, 75 years: excerpt 3)

'Feel like the music was very neutral [...]' (participant Z, 64 years: response: excerpt 6)

The emotional ratings for the excerpt applied with FN supported the study's secondary hypothesis. The emotional response to this excerpt was not as high as those with their original narratives, and the mean average was much closer to the baseline representation of non-narrative excerpts (Figure 6). However, it is not clear if result was because of the change narrative or a more general response to the piece. Therefore, a secondary study focusing on solely on this hypothesis would need to be conducted to reach a conclusion.

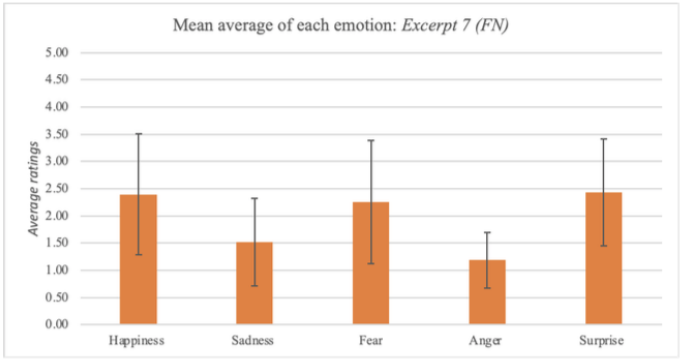

Figure 6. Mean emotional response excerpt 7

Finally, the importance of other factors such as familiarity and enjoyment of the piece were not statistically significant ($p > .05$) in the results and thus further analysis of these factors were not needed.

4. DISCUSSION

These results suggest that narrative in music can have an impact on overall emotional response. As hypothesised, musical examples with narrative appeared to increase participants' level of induced emotions in comparison to their responses to non-narrative *absolute* examples. Across the study, narrative excerpts consistently produced higher emotional ratings, with the exception of one anomaly. This is consistent with the findings of Vuoskoski and Eerola (2015), who concluded that the contextualisation and application of extramusical information in music can lead induced emotional responses to be intensified. However, the present study also shows the specific impact of a narrative context in music, of which little had been explored. Furthermore, the results and statistical analysis provided compelling evidence in support of the study's secondary hypothesis, focusing on the effect of a false narrative applied to one of the excerpts (see *excerpt 7* in appendix). This showed significantly lower levels of emotional response compared to those excerpts with their original narratives, however further evidence would be required to make this conclusive. The present study clearly highlights a significant difference in the way in which emotions are felt and perceived comparatively between narrative and non-narrative music. In general, non-narrative examples provoked a less defined emotional response, whereby individual emotions were harder to distinguish,

likely to be reflected as a baseline emotional response across all musical types. In contrast, the narrative excerpts resulted in a clearer felt singular emotion, with all narrative excerpts (excluding the FN one) evoking one significant emotion. Overall, the increased difference in total emotional means between the narrative and non-narrative data was statistically significant.

The discrete emotional model worked well, providing a clear overarching set of emotions from which to rate. However, upon reflection, and as a suggestion for further study, the use of a circumplex model, such as the dimensional model, in conjunction with a more basic emotional model (discrete) may help better represent *felt* emotions. Nevertheless, the use of the discrete model alongside participant-suggested descriptions provided a clear result.

Interestingly, there was one clear anomaly in the results: *Adagio for Strings* by Samuel Barber (*excerpt 5*) produced a significantly higher and more defined emotional response in comparison to the other non-narrative excerpts. There are a number of potential reasons as to why this was so. 32 participants (55%) stated that they recognised the piece (yes=23, maybe=9). This was higher than the other pieces and may have altered participants' responses due to pre-existing knowledge and emotional association. Furthermore, its use in popular culture and film has led to an association with acts of mourning (see McQuinn, 2009; Tsioulcas, 2019). Finally, its musical content, such as the use of open and stopped strings has been highlighted in previous studies to hold strong connotations of *sadness* (Huron & Trevor, 2016). However, the reason for this anomaly is inconclusive and further research is required.

Although this study has provided strong evidence regarding the effect narration in music has on emotional response, the results are still preliminary. Further study on the topic is needed to fully understand the effect narration has and how change to variables may alter this. The study was not without its limitations however and thus must be discussed. More data and a larger participant sample would be required to reach a suitable conclusion and to verify results. The high loss of participants due to their non-completion of the study had an effect on the overall breadth of results, this being one of the main restrictions of a questionnaire-based study. In addition, a lack of control over participants listening conditions, timing, and surrounding environment all may have affected results. Arguably, the study could have benefited from being a multi-method laboratory study but due to the subjective nature of emotional based studies, evidence of emotional responses are only able to be collected by reports (Gabrielsson, 2001, 127).

This study does not aim to fully reach a conclusion regarding the effect of narration in music but rather provide a basis for further research. This may include: a change in variable. Such as changing the narrative but keeping the same musical example. This will explore the way in which a variable may change emotional responses, as well as a further exploration of hypothesis 2: how unintended narratives applied falsely to *programmatic* music may alter participants' emotional experiences. Therefore, future researchers should view this current study as a starting point for further enquiry.

In summary, this exploratory study aimed to evaluate and explore the difference in felt emotional responses between narrative and non-narrative music. The results mostly support the study's hypothesis. However, the need for more conclusive research in conjunction to the current study would only help to further the understanding of the research field.

REFERENCES

Ali, O., & Peynircioğlu, Z.F. (2010). Intensity of Emotions Conveyed and Elicited by Familiar and Unfamiliar Music. *Music Perception,27*(3), 177-182.

Bonds, M.E. (2014). *Absolute music: the history of an idea*. New York: Oxford University Press.

Gabrielsson, A. (2001). Emotion perceived and emotion felt: same or different? *Musicae Scientiae, 5*, 123-147.

Hall, S.E., Schubert, E., & Wilson, S.J. (2016). The role of Trait and State Absorption on the Enjoyment of Music. *PLoS ONE, 11*(11).

Huron, T., Trevor, C. (2016) Are stopped Strings Preferred in Sad Music. *Empirical Musicology Review, 11*(2).

Iwanaga, M. & Moroki, Y. (1999). Subjective and Physiological Responses to Music Stimuli Controlled Over Activity and Preference. *Journal of Music Therapy*, *36*(1), 26–38.

Janata, P. (2004) When music tells a story. *Nature Neuroscience, 7*(3), 203-204.

Juslin, P.N., & Västfjäll, D. (2008). Emotional responses to music: The need to consider underlying mechanisms. *Behavioural and Brain Sciences*, *31*, 559–575.

Juslin, P.N., & Zentner, M.R. (2001). Current trends in the study of music and emotion: Overture. *Musicae Scientiae*, *5*(1), 3-21.

Koelsch, S., Kasper, D., Sammler, K., Schulze, T., Gunter, A.D. & Friederici, A. (2004) Music, language and meaning: brain signatures of semantic processing. *Nature Neuroscience, 7*, 302-307

Kregor, J. (2015). *Program Music*. Cambridge: Cambridge University Press.

Margulis, E.H. (2010). When program notes don't help: Music descriptions and enjoyment. *Psychology of Music, 38*, 285–302.

Margulis, E.H., Wong, P.C.M., Simchy-Gross, R., McAuley, D.J. (2019). What the music said: narrative listening across cultures. *Palgrave Communications*, 5, 146.

McQuinn, J. (2009). Adagio for strings as film music. *American Music*, *27*(4), 461-499.

Meyer, L.B. (1956). *Emotion and meaning in Music*. Chicago: University of Chicago Press.

Peretz, I. (2001). Listen to the brain: A biological perspective on musical emotions. In P. N. Juslin & J.A. Sloboda (Eds.), *Music and emotion: Theory and research*, 105-134. Oxford: Oxford University Press.

Sloboda, J.A. (1991). Music Structure and Emotional Response: Some Empirical Findings. *Psychology of music*, *19*(2), 110–120.

Tsioulcas, A., (2019) From Funerals To Festivals, The Curious Journey Of The 'Adagio For Strings' [online]. *NPR music*, Available from: https://www.npr.org/2019/02/13/694388226/samuel-barber-adagio-for-strings-tiesto-william-orbit-american-anthem.

Vuoskoski, J.K., & Eerola, T. (2015). Extramusical information contributes to emotions induced by music. *Psychology of Music*, *43*(2), 262-274.

APPENDIX 1: Order of musical excerpts

Excerpt	Title of Piece	Composer	Narrative Y/N
Excerpt 1	Symphony No. 6 in F major, Op. 68 (Pastoral): 1st movement	Ludwig van Beethoven	Y
Excerpt 2	Isle of the Dead Op. 29	Sergei Rachmaninoff	Y
Excerpt 3	Violin Concerto E Minor Op. 64: 1st Movement	Felix Mendelssohn	N
Excerpt 4	Symphonie Fantastique, Op. 14: V. Dream of a witches Sabbath	Hector Berlioz	Y
Excerpt 5	Adagio for Strings, Op. 11	Samuel Barbour	N
Excerpt 6	Violin Concerto in D Major, Op. 61: 2nd Movement	Ludwig van Beethoven	N
Excerpt 7 (FN)	An Alpine Symphony (Eine Alpensinfonie) Op. 64: Nacht	Richard Strauss	Y

APPENDIX 2: Full quotations of participants' qualitative responses as referenced above.

"happy and relaxed, reminds me of the countryside especially after reading the narrative."

(Participant W, 18 years: Excerpt 1)

"The narrative, combined with the style of music, caused me to feel significantly more anxious than I was before the start of the extract. My heart rate increased to a noticeable degree."

(Participant X, 19 years: Excerpt 2)

"This sounded more like an example of musical talent and did not invoke strong emotional reactions when listening, the start of the song when there was only one clear note was quite sombre and made me feel sadness, but throughout the rest it was not invoking too many emotional thoughts"

(Participant Y, 75 years: Excerpt 3)

"Feel like the music was very neutral. It didn't evoke any emotion in me."

(Participant Z, 64 years: Excerpt 6)

.