

BA Creative Music Production

Professional Project

Penny Crowther

Musical and Non-musical Sound: Average Listener's Perspective

26/04/24

Barry O'Halpin

Declaration

I hereby certify that the material, which I now submit for assessment on the programmes of study leading to the award of BA(Hons) in Creative Music Production, is entirely my own work and has not been taken from the work of others except to the extent that such work has been cited and acknowledged within the text of my own work. No portion of the work contained in this thesis has been submitted in support of an application for another degree or qualification to this or any other institution.

I have used the IADT library referencing guidelines (available at <https://iadt.libguides.com/referencing>) and/or the appropriate referencing system recommended in the assignment guidelines and/or programme documentation.

I understand that the IADT regards breaches of academic integrity and plagiarism as grave and serious.

By signing this form or by submitting material for assessment online, I confirm that I have read and understood the IADT Academic Integrity Policy (available at <https://iadt.ie/wp-content/uploads/2024/03/Academic-Integrity-Policy-V1-2024.pdf>).

Penny Crowther

26/04/24

Signature of Candidate

Date

Abstract

This project aims to understand what 'noise' is within the context of music, how it can be used within music to introduce interesting timbres and ideas, and what musical characteristics cause the average listener to perceive a piece as either noise or music. This research topic was chosen as it is essential to stretch the boundaries of what sound can be used in music to create fresh ideas. The research is also crucial for experimental artists to understand noise, how it can be used in music, and how an audience may react. The methods used to research this topic include the creation of a survey that presents experimental music pieces to an audience and gathers an audience's opinion on the pieces' musicality. Another method is using experimental sounds and production techniques to create music samples and a long-form piece. According to the survey results, melody, rhythm, recognisable musical instruments, and intention to create art are essential elements for a piece to be considered music to the average listener. Many interesting sounds and timbres were discovered by creating the music samples and the long-form piece. 'Noise' can be defined in many ways, as discovered through the research resources. It can be defined as unwanted or unintentional sound; it can be defined by the characteristics of the Noise genre and by the use of 'noise' in experimental music.

Table of Contents

Abstract.....	3
Introduction.....	6
Literature Review.....	8
Introduction.....	8
How is ‘Noise’ Perceived?.....	8
History of Noise Music.....	9
What is ‘Noise Music’?.....	10
Examples of Noise/Experimental Music.....	11
Conclusion.....	12
Methodology.....	13
Introduction.....	13
Methodology - Survey.....	13
Methodology – Sounds and Production Techniques.....	14
Conclusion.....	14
Analysis.....	15
Introduction.....	15
Creation of Music Samples.....	15
Sample A01 – Birdsong Recordings.....	15
Sample B01 – Drone Added.....	16
Sample A02 – Electric Guitar Recordings.....	16
Sample B02 – Vocals and Guitars.....	16
Sample A03 – Prepared Bass.....	17
Sample B03 – Piano and Prepared Bass.....	17
Survey Design.....	17
Survey Results.....	18
Demographics of Participants.....	18
Sample 01 Results.....	19
Sample 02 Results.....	20
Sample 03 Results.....	21
Long-form piece.....	21
Discussion.....	23
Introduction.....	23
Music Samples.....	23

Survey Design and Results.....	24
Effect of Participants' Demographics on Results	24
Different Versions of the Music Samples	24
Conclusions.....	25
Long-Form Piece.....	26
Conclusion	27
Bibliography	28
Appendix.....	29
Appendix A – Recording Setup in Studio 1	29

Introduction

This research project focuses on what ‘noise’ is and how it differentiates from ‘music’, how noise can be used within conventional music and understanding the average listener’s perspective on music and noise, specifically looking at what characteristics in a piece can impact this perspective. The choice of this topic stems from an interest in highlighting the broad range of timbres that can be used within music and the non-conventional ways a piece can be constructed and composed. This project gathered opinions on experimental music, which may prove helpful to artists within experimental genres so they can gauge the type of audience reaction they may receive in response to their music. Research was conducted into what causes sound to be categorised as ‘noise’ instead of music. Following this research, three short music samples, with two different versions each, were created with the goal of these samples to border on music and noise and be listened to by an audience in order to determine which elements are deemed essential by the average listener for a piece to be considered music. The purpose of two different versions of each sample was to compare and see whether specific changes to the samples changed the audience’s perception of their musicality. These samples were presented to an audience as a survey, with various questions centring on their musicality, or lack thereof, being asked. The responses given in the survey were analysed to understand which sound characteristics caused listeners to perceive a sample as ‘noise’ instead of ‘music.’ As a result of the research conducted and the creation and responses from the survey, a long-form piece was created at the end of this research project.

This topic is worthy of study as it centres on pushing boundaries within music. It is vital to stretch the boundaries of what can be done within art to create new and captivating content. This project involved research into experimental sounds and techniques used by musicians and put some of them to practical use by creating the samples.

Firstly, research resources relating to the topic were studied to understand the topic better and proceed with the project in an informed manner. The meaning behind the term ‘noise’ was researched from multiple different angles: biological (Mark Reybrouck) (Nort), historical (Hegarty) (Russolo), artistic (Novak) (Cage) and through the study of examples of experimental music (Drumm) (Murphy) (Takagi). These resources were discussed further in

the literature review. Following the literature review, the methodologies used in this project were outlined and discussed. The methodology included how the survey was conducted and how experimental recordings of sounds were created and used. Succeeding the methodology, the products of this research project were analysed in the analysis section. In this section, the survey design and results were stated and analysed. The music samples and long-form piece were examined in terms of how they were created. The following section is the discussion. In this section, conclusions were made regarding the results of the survey. All aspects of the research project were discussed regarding their success, knowledge gained through the research project process, and what could have been done differently.

Literature Review

Introduction

In this literature review, various research resources are discussed based on how they relate to the topics of people's perception of 'noise', how noise has been defined in the past, how noise has been defined within music genres and how experimental techniques have been used within music so far. The review will commence with two examples of articles on how people typically perceive noise. One of these examples has a scientific approach, while the other has a cultural approach to this question. These examples will follow with two resources that provide insight into the history of 'noise' being used in music. Then, two resources will be given that detail the characteristics and techniques used in the Noise genre and experimental music. To conclude this review, three music works will be researched that fit into the Noise/experimental music genres and will inform the creation of the music samples and the long-form piece.

How is 'Noise' Perceived?

In the article "Music and Noise: Same or Different? What Our Body Tells Us" (Mark Reybrouck) how humans biologically differentiate music and noise is discussed. The authors, researchers at the University of Leuven, Adam Mickiewicz University and the University of Auckland, explain that "the esthetic quality of music concerns the balance of sound along several dimensions such as frequency, space, and time." Music is balanced among these dimensions, and noise is not. What is considered 'noise' can also be attributed to learned and inherited responses to specific patterns in a sound that may classify the sound as dangerous.

In the article "Noise/music and representation systems", Doug Van Nort, chair of Music and Computational Arts at York University, discusses how noise has been interpreted as musical in the past due to a change in its representation. He begins by discussing what noise has been defined as by artists and academics in the past, including background noise and 'unwanted' noise. The introduction of 'city sounds' into everyday life encouraged artists to incorporate these new sounds (cars, machinery) into musical material. Early recording resulted in white noise/vinyl crackle being always present in music, thus making it an essential part of the music. Composers began constructing systems which created the music rather than having a

more traditional source, such as an instrument or a voice producing the sound. These processes did not necessarily create a 'musical' sound; thus, a type of noise music was born.

Both examples provided insight into what 'noise' might be perceived as, one through a more scientific approach and one through a cultural approach. In both cases, this information was useful when approaching the topic of incorporating perceived 'noise' into a musical context as it gave background on why a sound may be perceived as noise by an audience. These resources were used to help analyse the responses to the survey.

History of Noise Music

Written by Italian futurist painter and composer Luigi Russolo in 1913, the manifesto *The Art of Noise* presented innovative ideas on how noise can be used in a musical/compositional way to create new timbres in music. The Art of Noise is referenced in most if not all, research regarding noise and noise music because of its groundbreaking ideas for its time. It is relevant as context for how noise music came to be and describes exciting ideas on creating it.

Russolo explains how, before the invention of modern machines, "...life unfolded silently, or at least quietly. The loudest noise that interrupted this silence was neither intense, nor prolonged, nor varied. After all, if we overlook the exceptional movements of the earth's crust, hurricanes, storms, avalanches and waterfalls, nature is silent." The manifesto states numerous ways this noise can be used in a musical form. Russolo encourages musicians to use this noise to "... break out of this limited circle of sounds and conquer the infinite variety of noise-sounds." Russolo also created instruments known as the 'intonarumori', each producing a different sound, including howling, thunder, crackling, gurgling, and exploding. In creating these instruments, he showed how to use noises in a musical context.

Noise Music: A History is a book by Paul Hegarty, released in September 2007. Paul Hegarty is an experimental musician and a professor of philosophy and visual culture at the University of Nottingham. Hegarty has drafted multiple books as an author, including two others on 'noise.' As the title shows, this book gives an in-depth history of Noise music¹. This resource is helpful for this project as it provided a solid background on Noise music that proved helpful during the creation of the experimental/noise music samples and the long-form piece. The gathering of information on the history of this topic inspired and informed the process of creating the latest music within the genre/topic.

¹A capital N will be used when referring to the Noise genre. When referring to noise in general, no capital will be used.

Compared to *The Art of Noise* by Luigi Russolo, this book has a broader view of the history of Noise music. While *The Art of Noise* centres on the individual thoughts of one man, *Noise Music: A History* traces experimental and avant-garde music from the early 20th century to the present (which was 2007 at its release). Both offered valuable insights and were helpful when considering this topic of research.

What is 'Noise Music'?

In the book *Japanoise* by David Novak, the question of what Noise music is can be found discussed in detail. Novak is an associate professor of music at the University of California. In *Japanoise*, Novak details his first-hand experiences attending Noise music gigs in North America and Japan. He provides a brief history of Noise music in Japan and numerous interviews with Noise musicians, record shop owners, sound engineers, venue owners, and independent Noise record labels. He refrains from specifically answering as to what Noise music is, even ending the book with this quote, "...I still don't know what Noise is, and I didn't think I was going to end up knowing anyway." (p.233) However, his detailed descriptions of the Noise gigs he attended and the Noise music he heard allowed for a better understanding of what Noise is as a genre. He also discussed different Noise musicians' opinions on what they think Noise music is; these opinions differ from person to person, proving it is not a definable genre. The genre of Noise has particular characteristics such as heavy feedback, glitching sounds, crackling sounds and heavy distortion. Noise music is usually mastered to have no transients and is essentially one block of harsh, loud sound. Although certain aspects of this specific genre may be incorporated into the music samples and the long-form piece, they did not strictly try to be a part of the Noise genre.

John Cage: Journeys In Sound by Allan Miller and Paul Smaczny is a documentary centring around John Cage, the experimental composer. Cage was one of the pioneers of using 'noise' within music, and in this documentary, his compositions are analysed, and his thoughts on music are heard. Cage believed all sound to be beautiful and worth listening to, "It seems to me that the activity of modern music has been to open the eyes and the ears of people to things that they were not aware were beautiful. For instance, in music, particularly to noise." (Cage, 4min 10secs). He used unconventionally musical sounds in his compositions and consequently became well known as he broke down barriers of 'what can be used in music.' In the documentary, before performing a piece he composed called 'Water Walk', Cage states, "I consider music to be production of sound, and since in the piece you will hear I produce sounds, I would call it music." (Cage, 51 secs.)

Both *Japanoise* and *John Cage: Journeys in Sound* provided insight into the Noise genre and noise in music. *Japanoise* is more specific to the genre of Noise and provides many examples that are specific to the genre, whereas *John Cage: Journeys in Sound* provided a vaguer insight as to what music is and what can be done with it by one of the pioneers of experimental music and, as a result, Noise music.

Examples of Noise/Experimental Music

“Less Than Half as Loud” by Kevin Drumm is an experimental electronic music EP released on September 23rd 2017. Kevin Drumm is an experimental musician from Chicago, Illinois. He has a discography amounting to 244 total releases, with 88 of those being albums and 12 being singles or EPs. This EP incorporates musical elements, as chords can be heard playing throughout and percussive-like sounds while also utilising typically non-musical elements in its duration. Tapping and clicking can be heard throughout the track, as well as many other sound effects. These sound effects are used in conjunction with the more musical elements of the track, resulting in an engaging, unique sound. This track was used as an example of what type of music can be created when pushing the boundaries of what can be used in music. It proved helpful in creating the music samples and the long-form piece as a reference.

“Not Just Rivers” by Irene Murphy is a song released on July 22nd, 2022. Irene Murphy is an Irish musician who creates ambient/experimental music. She has composed and performed many original pieces throughout the years and has released music with Diatribe Records. “Not Just Rivers” is a 33-minute-long song featuring various sounds that invoke images of water, including rain, rivers flowing, splashing and so on. This track also features bird songs and other nature sounds, such as thunder and wind. These sounds are paired with more musical elements, such as piano notes, drones, and percussion. This song is another example of experimental music. It displays how typically non-musical sounds can be paired with musical sounds to create an exciting combination of both, creating a new and refreshing sound.

“Kagayaki” by Masakatsu Takagi is an album released on November 19th, 2014. Masakatsu Takagi is a Japanese musician who creates experimental electronic music. He has created soundtracks for anime films, including *Wolf Children* and *Mirai* by Mamoru Hosoda. “Kagayaki” includes natural, ambient sounds reminiscent of a village of people moving, talking and playing. There are also glitches heard throughout the album. These sounds blend with conventional musical elements like singing and traditional Japanese

instruments. This album is a more musical example than the previous two and displays how non-musical sound can be used to elevate musical sounds in a piece. The nature and ambient sounds in this album help accentuate the feeling of nostalgia and warmth that the music wishes to convey.

“Less Than Half as Loud” has more Noise elements than “Not Just Rivers”, which takes a more ambient approach. “Kagayaki” has more musical elements than both of these while still containing ambient noise. All of these pieces utilise non-musical and musical sounds within their tracks. Although they sound different, they were used within the research project to inform creative decisions when creating the music samples and the long-form piece. Compared to the Noise music discussed in *Japanoise*, these tracks are much tamer and less ‘harsh.’ More inspiration was taken from these tracks than from the Noise tracks discussed in *Japanoise*.

Conclusion

Overall, these resources were valuable when conducting the research project. Each of these resources offered a well-rounded view of the topic being researched. Firstly, when analysing the survey results, being aware of how ‘noise’ is typically perceived by humans in both a scientific and a cultural context was convenient. Knowledge of the history of Noise and experimental/avant-garde music, in general, was essential when approaching music of this category. This information helped when understanding what has been done within the genres and what can be done. The following two resources provided insight into Noise music and gave practical examples of pieces and artists. These resources were again helpful in understanding the genre and inspiring creativity when creating the music samples and the long-form piece. Finally, the music examples from these studied genres also provided creativity and inspiration and provided practical and modern examples of what has been done within experimental genres. This information was valuable when moving forward with the project.

Methodology

Introduction

This research design is centred on understanding the average listener's perception of music and noise. Research has been conducted to better understand the topic of 'noise' within music. Three self-made experimental music samples, with two versions each, were created and presented in a survey to an audience where questions regarding their musicality were asked. Their perspective was analysed, and after looking at these results, a long-form piece of music was created. The methodologies in this section focus on obtaining the listener's opinion on what 'music' is and what 'noise' is to them through listening to the samples. It has been discovered using the research resources in the literature review that there is an overlap between music and noise and that they are not black and white. They are both sound and have shared traits, so it was important to remember this. All the research resources in the literature review were utilised and revised throughout the creation process of the samples, the survey, and the long-form piece to inform their creation and inspire creativity.

Methodology - Survey

The primary methodology used when conducting this research project was the creation of a survey, which was handed out and the results of which were analysed. This survey contained music samples created to understand what elements may cause a listener to perceive a piece as music or 'noise.' The samples were created and inspired by the in-depth research previously discussed in the literature review. The techniques and characteristics discussed in *Japanoise* (Novak), typical to Noise music, will be drawn from for certain parts of the samples. The experimental pieces previously discussed, such as Kevin Drumm's "Less Than Half as Loud" and Irene Murphy's "Not Just Rivers", were also used as inspiration when creating the music samples. The preferred sample size for this survey was ten to fifteen people, and there was no specific target audience, as anyone could give their opinion on whether a piece is music or noise. Questions were asked in the survey regarding the samples and their musicality. This survey (Bautch) was used as a model when conducting the survey, as it is also based on music studies and was conducted online, as this survey will be. Samples were compared between two versions by adding sounds, musical instruments, melodies and rhythm to see whether the listener's opinion changed between versions and, if so, what elements caused this change. The results of this survey were collected, analysed, compared with the previous research conducted and used to inform the creation of the long-form piece. This methodology allowed for data collection that informed the question of what the average

listener's opinion of 'music' is. The survey provided a well-rounded view of the research problem as secondary and primary research were obtained.

Methodology – Sounds and Production Techniques

The second methodology used was recording experimental sounds, utilised in the samples. These sounds were implemented into the music created in this research project, including three music samples with two versions each, included in the survey, and a long-form piece. Some sounds and techniques discovered from research resources in the literature review, such as the work of Irene Murphy (Murphy) and Kevin Drumm (Drumm), were used as inspiration. These pieces include unconventional percussive sounds, which were explored in creating the pieces for this project. These sounds were created by recording various objects of different textures being hit, scraped and scratched. David Novak also outlined interesting experimental techniques in *Japanoise*, such as feedback, 'glitches'² and distortion in Noise music. The use of heavily distorted instruments was explored as inspired by the techniques outlined in *Japanoise*. The use of field recordings and percussive sounds in "Kagayaki" by Masakatsu Takagi was used as inspiration for the creation of the long-form piece. Most of the sound was recorded on a Tascam DR-40X, although other microphones were also used. Field recordings were within the pieces, so different locations with different sound environments were explored during this research project. Ableton was used to create all these pieces, and plug-ins and effects were utilised to add more interest. Creative restrictions were that pieces could only be created with the equipment available for the project. Exploring and the recording of unique sounds is essential in any Noise/experimental music. It has aided understanding experimental music, the quality of the samples and the long-form piece created.

Conclusion

These methodologies used the information from the research resources and conducted independent research. Using the survey allowed for an audience perspective to be collected and analysed regarding Noise music / experimental music. The recordings allowed for the research project to be creatively rewarding and exciting while staying true to the research problem.

² "The term glitch is used to describe an audible malfunction of electronic sound..." (p.164, (Novak))

Analysis

Introduction

In this section, the results of the methods used in this project will be presented and analysed. Firstly the music samples used in the survey will be analysed in terms of how they were made and the individual elements of each sample will be described. Succeeding this will be an analysis of the survey regarding how the survey was designed, how the results were collected and the results themselves. Finally, an analysis of the long form piece will be conducted once again describing how the piece was made.

Creation of Music Samples

Three one minute long music samples were created for the survey with each sample having two versions. Two versions were made to compare whether each sample would receive the same or different answers of music or noise with changes made in the second version of the sample. The samples were labelled 01, 02 and 03 with A or B before their designated number to indicate whether the sample is the first version or the second version. Ableton was the DAW used for all the sound design and production in these samples.

Sample A01 – Birdsong Recordings

Sample A01 was created using two recordings of birdsong and a recording of running water from a tap. These sounds were recorded using a Tascam DR-40X recorder. The birdsong recordings were both put into a granulator (Granulator II in Ableton) so that short snippets of the recordings were played randomly and in quick succession. The use of nature recordings being edited and made to sound unique was inspired by “Not Just Rivers” by Irene Murphy. Both recordings had most of the low end removed via EQing as there was excessive wind noise present in them. Both recordings had resonators placed on them with one set to the note C2 and the other set to G#1. These resonators had their gain reduced so they can be heard quietly in the sample. The running water recording was placed into a sampler and recorded into the sample using midi. An EQ was placed on this recording to add slight gain to low and mid frequencies. A resonator was also placed on this recording with the resonator set to the note G#1 and the gain down by -6.19dB so it is heard quietly in the sample. The plug-in Valhalla Supermassive is used to add reverb to the recording. These three recordings were then layered together to create Sample A01.

Sample B01 – Drone Added

Sample B01 had some slight changes. The resonators on the birdsong recordings and the running water recordings had their gain turned up so they are heard clearer. In this version, the running water recording is given a consistent rhythm rather than random notes being played at random intervals. The main difference in this version of the sample is that a drone is added, playing notes quietly beneath the layers of birdsong and running water. This drone was created using the Serum plug-in from Splice. The Valhalla Supermassive plug-in is used to apply strong reverb to the drone. The drone plays drawn out chords and notes throughout this version of the sample.

Sample A02 – Electric Guitar Recordings

Sample A02 was created using six recordings of an electric guitar being put through multiple pedals to create unique and noisy sounds. The six recordings of electric guitar were layered together to create a more random feeling which alludes to the sound of Noise music. The electric guitar was recorded using CM414, SM57 and MD421 microphones and an Orange Crush 100BXT amp, with the CM414 recordings ultimately being chosen for the sample. The guitar was put through a reverb pedal, a drive pedal, a phaser, a delay and a graphic EQ to achieve the quality of the sounds in the sample. The settings of each of the pedals were changed randomly and regularly creating new and interesting timbres in each recording. The only plug-in used in this version of the sample is a glue compressor which was applied to all of the recordings to paste the individual recordings together and create a more unified sound. Volume automation was used in places to enhance interesting sounds or areas of recordings.

Sample B02 – Vocals and Guitars

Sample B02 included six layers of vocals along with the six recordings of electric guitar. These vocals were recorded using an AKG Perception P3 S microphone. The vocals included a bass vocal, two midrange vocals, whistling and two vocals for random flourishes and more experimental sounds. A glue compressor was applied to these vocal tracks as was done to the guitar recordings. Resonant frequencies at 677Hz were removed using an EQ. The plug-in Chow Tape Model was applied to all the vocals to give them a more muffled and interesting sound. Reverb was also applied using the Valhalla Supermassive plug-in. The bass vocal track had its low end frequencies boosted using an EQ to emphasise the lower tones of the track. The midrange vocals had the mid frequencies boosted slightly to bring attention to them.

Sample A03 – Prepared Bass

Sample A03 was created using four different recordings of prepared bass which were recorded using an AKG Perception P3 S microphone. For one of the recordings, the bass was prepared by wrapping Blu Tack around the strings of the bass. The bass was then played as normal and the sound produced was out of tune and percussive sounding with high chime-like sounds being heard as well as the low bass tone being present. This recording consists of four notes being played repetitively at the same tempo for the duration of the sample. EQ was used to remove distracting resonances in the recording. The next recording in the sample featured a glass bottle neck being slid over the bass strings in a repetitive manner. The bottle neck acts as a makeshift slider and produced an interesting timbre when dragged over the strings. The next recording was created by thick wool string being weaved through the bass guitar strings and then repeatedly dragged up and down the length of the strings. This produced a hollow and dark tone with the notes echoing out. A resonator was placed on this recording which was set to the note D1 to lessen some of the reverb in the recording. The CHOWTapeModel plug-in was applied to this track to add a more interesting finish. The final recording was made by taking a thin wool string, placing it underneath all four strings of the bass and sliding it back and forth in a repetitive rhythm. The thinner wool produced a higher pitched sound compared to the thick wool and more ringing timbres can be heard in this recording. The CHOWTapeModel plug-in was also applied to this track. The overall timbre of this sample is dark and reverberant.

Sample B03 – Piano and Prepared Bass

In Sample B03, a piano is added. This piano plays an unstructured melody with inconsistent rhythm. The CHOWTapeModel plug-in was applied to this piano to make it sound more full as well as the track being doubled to add fullness.

Survey Design

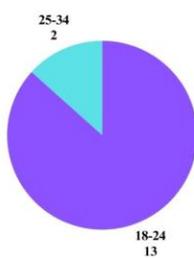
In this section the design of the survey which was conducted as part of the research for this project will be analysed. Data for this survey was collected using the online survey creator Microsoft Forms. This survey was handed out using a link via social media platforms. No specific participant demographics were needed to conduct this survey and the survey was handed out to a mixture of people to obtain a broad perspective. The participants were required to give consent to participate in the survey and they were informed that participation was voluntary and they could withdraw from the survey at any time and for any reason. The survey responses were analysed and used as part of the research for this project. This survey

contained 29 questions with 12 of these questions being multiple choice, 6 being scales, 1 being a Likert scale and 10 being short answer boxes. There were four sections in the survey with the first section including 8 questions collecting information about the participants and their demographics. The following three sections consisted of seven questions each. Each of these sections contained two versions of a one minute long music sample as described previously in this analysis. Each sample followed with questions regarding participants' opinion on the sample's musicality. The survey was anonymous and no information was collected on participants outside of questions asked in the survey.

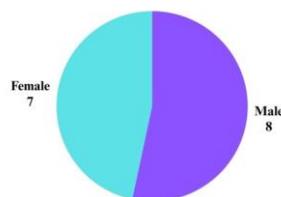
Survey Results

Demographics of Participants

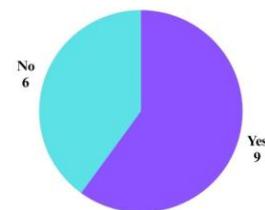
Below are graphs showing the participant demographics involved in this survey.



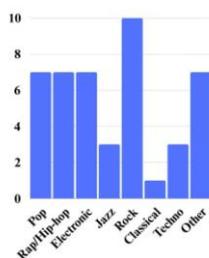
(fig.1, above)



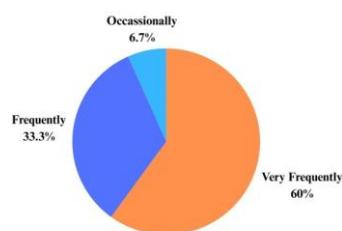
(fig.2, above)



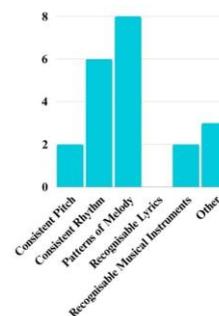
(fig.3, above)



(fig.4, above)



(fig.5, above)



(fig.6, above)

The majority of participants were in the age group 18-24. Gender of participants was mixed with 7 female participants and 6 male. 9 participants have had a formal music education while 6 have not. When asked what genres of music participants most listened to the most popular genres were Pop, Rap/Hip-hop and Electronic. Participants were also asked how frequently or infrequently they listened to music. 60% of participants said they listened to

music very frequently. To finish this section, participants were asked, in their opinion what elements are necessary for a piece to be considered music. The majority of participants indicated that patterns of melody and consistent rhythm were essential for a piece to be considered music.

In the following sections, participants were required to listen to two versions of a one minute long sample and answer questions based on their opinions of the piece's musicality. After listening to the first version of the sample, participants were asked whether they perceived the sample to be music or noise. They were then asked to rate the sample on a scale from 1-5, with 1 indicating not musical and 5 indicating very musical. Participants were then asked why they chose music or noise for the sample. These questions were repeated after participants were asked to listen to the second version of the sample, with the last question in each section asking to explain their reasoning if their opinion changed between the two versions of the samples. Samples will be referred to with an A indicating the first version of the sample and a B indicating the second version of the sample.

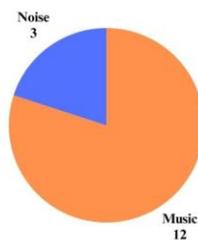
Sample 01 Results

Regarding Sample A01, when asked if they thought the sample was music or noise, 11 out of 15 respondents chose noise. Three people said they believed this because there was a lack of melody and rhythm in the sample and one person stated it was because of the lack of musical instruments. Participants were then asked to listen to Sample B01. 12 out of 15 respondents felt the second version was music and 13 out of 15 people believed the piece had become more musical. Three people said they believed the second version of the sample was more musical because it sounded more intentional and two people said it was because the second version sounded more structured in comparison to the first.

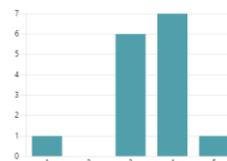
Sample A01 Results below



Sample B01 Results Below



3.47
Average Rating

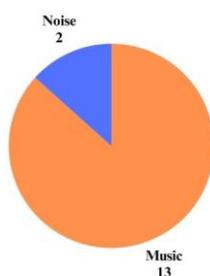


(fig.9, fig.10)

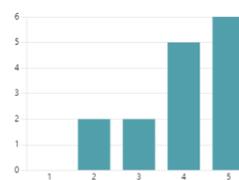
Sample 02 Results

For Sample A02, when asked if they thought the sample was music or noise, 14 out of 15 respondents chose music. When asked why they chose music, seven people said their choice was because they could hear recognisable musical instruments in the sample, six people said it was because they could hear melodies, four people said it was because the piece had intention, three people said it was because the piece had a rhythm, two people said it was because the sample had effects used in it, one person said it was because there was repetition in the sample and one person said their choice was because they could hear harmony. When asked to listen to Sample B02, 9 out of 15 respondents believed it had the same musicality as the first. 5 out of 15 respondents said it was more musical than the first version with two people saying this was because it sounded more intentional and one person saying it was because harmonies were added. 2 out of 15 respondents felt the second version was not as musical with one person saying this answer was because this version was less rhythmic compared to the first.

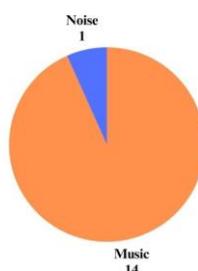
Sample A02 and B02 Results Below



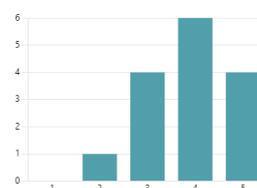
4.00
Average Rating



(fig.11, fig.12)



3.87
Average Rating



(fig.13, fig.14)

Sample 03 Results

Finally, in regards to Sample A03, when asked whether participants believed this sample was music or noise, 15 out of 15 respondents chose music. When asked why they chose music, three people said it was because of the use of recognisable musical instruments in the piece, eight people said it was because the piece had rhythm, eight people said it was because the piece had a consistent melody, five people mentioned how the piece having patterns and progression made it music, one person said it was because the piece had intention and one person said it was because the piece had consistent pitch. 15 out of 15 people also said the second version of the piece was music. 10 out of 15 respondents believed it had the same musicality as the first version, 2 out of 15 believed it was more musical with one person saying it sounded more fleshed out and 3 out of 15 believed it was less musical.

Sample A03 Results Below



Sample B03 Results Below



Long-form piece

The long-form piece was created as a result of the research, the creation of the music samples and the analysis of the survey results. The piece starts off with a recording of a knife scraping glass playing. Ambiguous percussive sounds can be heard in “Not Just Rivers” by Irene Murphy and these sounds served as inspiration for this part of the recording. This recording was put in a granulator, inspired by the use of a granulator in Sample 01. About 40 seconds into the piece, two recordings of children playing and talking, vocals and a ‘whooshing’ ambient sound are introduced. The whooshing sound was created by recording a door dragging along carpet. Around 2 mins and 20 seconds into the piece a new section is

introduced. This section consists of two recordings of prepared bass, a recording of a plastic bag, and a field recording of rain in a park. The use of prepared bass was inspired by its use in Sample 02; for these recordings Blu Tack was attached to the strings of the bass and the bass was played normally to create a percussive sound. Many sounds were experimented with in the creation of this piece and most had to be cut out as the timbre didn't fit the rest of the piece or they didn't add anything of value to the theme or ambience of the piece.

Discussion

Introduction

In this section, the results of the research project and its methodologies will be discussed in detail. Firstly, the music samples will be discussed in terms of how effective their designs were, what was learned from their creation, skills that were gained in their creation and what could have been done differently. Then the survey results will be discussed in terms of how they contribute to the research question and what can be learned from them. Finally, the long form piece will be discussed similarly to the music samples.

Music Samples

In the creation of the music samples, many experimental techniques were discovered in order to achieve interesting timbres. New skills that were obtained through the creation of these samples included the use of a granulator in Sample 01. The utilisation of the granulator allowed for regular birdsong recordings to become new and interesting as the granulator caused the recordings to sound less predictable and have less rhythm. Another new skill that was learned through the creation of the music samples was the use of prepared bass in Sample 03. The purpose of preparing the bass in Sample 03 was to make a recognisable instrument unrecognisable and see what effect this would have on audience's perception of its musicality. Various experimental techniques were used on the bass guitar in order to achieve this. Using objects like a glass bottle neck and string to play the bass added unusual harmonics and tones to the sound of the bass while adding Blu Tack to the strings changed the pitch of the bass so it was less in tune. All of these elements allowed for the bass to become less recognisable and thus less traditionally musical. *Japanoise* (Novak) inspired this use of pedals on electric guitar in Sample 02, as the use of multiple pedals is described in the book as a staple of Noise music. Noise artists were interviewed in *Japanoise* and many of them described using multiple pedals on electric guitars to create a loud, distorted and noisy sound. In order to create the six guitar tracks in Sample 02, multiple guitar pedals, as previously analysed, were experimented with which produced unique sounds coming from the guitar. If this project was conducted again, the second versions of samples 02 and 03 would be done differently. As the opinions of the musicality of samples 02 and 03 did not change drastically between the different versions, if repeated, it would be desirable to create versions of the samples that caused more of a change in the participants' perception. The main knowledge that was obtained in the creation of these music samples was learning how

to make pieces which lie on the border of music and noise. Attempting to make pieces that stretched the boundaries of what listeners perceive to be music allowed for the new skills listed above to be discovered and for a new level of creativity and thinking when it comes to making music to be reached. Overall, it was an enlightening experience creating these samples and opened doors to a different type of creativity when it came to sound.

Survey Design and Results

The survey design was effective. The questions asked allowed for participants to give their opinion on music and noise in an efficient and comprehensible way. A new skill that was gained in this process was collecting data and analysing it. Data was easy to collect from this survey as the questions allowed for clear answers. There were some interesting insights gathered from analysing the survey results.

Effect of Participants' Demographics on Results

Questions regarding the demographics of participants were asked to observe whether they had an impact on participants' answers in the survey. Participants were asked if they had a formal music education as having an educated view of music may impact how open-minded the participants are, thus influencing their answers. After analysing the results and comparing the answers given by participants who had a formal music education and those who didn't, it appeared there was no correlation between participants having a formal music education and being more open-minded in their opinion of what music is. Participants were asked what genres of music they prefer to listen to in order to see whether certain genres being listened to more regularly had an influence on their responses. This information also appeared to have little impact on participants' answers with the exception of two participants. Three participants said that all of the samples and their versions were music. Three participants also responded that jazz was one of their preferred genres to listen to. Two participants belonged to both of these groups and thus there is a point to be made that listening to a more experimental, free-from genre like jazz may cause a listener to be more open minded in their definition of what music is. Gender, age and frequency of listening to music had no impact on participants' responses.

Different Versions of the Music Samples

Each sample had two different versions with changes made in the second version. The purpose of this was to compare the results of the two versions and see whether the changes

made altered the audiences' perception of the sample. In Sample 01, a drone was added to the second version of the sample. The resonators are also more prominent in this version. The purpose of this was to see whether adding a consistent pitch and melody to the sample would cause more people to perceive the sample as music. As shown in the analysis, the majority of participants changed their answers from noise for Sample A01, to music for Sample B01. This shows a presence of consistent pitch and melody was essential for Sample 01 to be perceived as music by the average listener. In Sample 02, vocals were added in the second version of the sample. This was to add a more musical element with melody and harmony to the sample. The results of the majority of participants perceiving Sample A02 as music was unexpected. Thus, the addition of vocals did not change many participants' opinion on the sample as 9 out of 15 participants believed Sample A02 had the same musicality as Sample B02. In the case of Sample 03, piano was added in the second version of the sample to contribute a recognisable musical instrument to the ambiguous prepared bass. Similarly to Sample 02, all participants perceived Sample A03 to be music and so the addition of piano in Sample B03 didn't change the average listener's opinion on the sample's musicality.

Conclusions

One point that was gathered from the analysis was the impact recognisable musical instruments had on participants' opinion of a sample being music over noise. When asked "Which of the following elements do you consider essential for a piece to be considered music?" the option "recognisable musical instruments" was chosen by two participants. Despite this low number, when participants perceived a sample as noise, the most common reasons cited were lack of melody and rhythm and lack of recognisable musical instruments. Sample A02 had a lack of conventional musical structure and melodies; however, it was widely received as being music with the most common reasoning behind this choice being that the sample contained recognisable musical instruments. Sample A03 was perceived as music by every participant with the main reasoning behind this choice being the use of musical instruments in the piece and a consistent rhythm being present throughout. It's clear from this result that even if a piece lacks melody or rhythm, the presence of musical instruments recognisable to the listener is likely to cause the listener to perceive the piece as music. Many participants also stated that a piece having intention behind it was enough for it to be considered music. Sample A01 sounded random and unintentional and so more people perceived it as noise. Thus, from the results of the survey, it can be deduced that melody,

rhythm, recognisable musical instruments and intention to create art are essential elements for a piece to be considered music to the average listener.

Long-Form Piece

This piece centred on a theme of memories, with ideas being taken particularly from “Kagayaki” by Masakatsu Takagi. In “Kagayaki”, Takagi uses many layers of natural sounds under simple, joyful melodies to create an atmosphere and sense of surrounding. This sense of place and emotion was an inspiration in creating this long-form piece. The use of field recordings of rain and children playing was inspired by “Kagayaki” (Takagi), and its desired function was to create a sense of place within the song. As previously discussed in the Music Samples section of this discussion, many new techniques were acquired through the creation of the music samples such as the use of a granulator and the use of prepared bass. Both of these new skills were used in the long-form piece showing these new ideas put to work. Overall, the long-form piece is creatively new and fresh which was one of the main intentions. Due to the survey taking longer to complete than expected, the long-form piece was given less time to be created than what would have been preferred. If this project was repeated, more time would be given to this piece.

Conclusion

One of the main research points of this project has been to gain a better understanding of what 'noise' is within music and what causes sound to be perceived as noise. It can be gathered through the results of the survey that from the average listener's perspective, a piece may be regarded as noise if it contains a lack of or none of the following characteristics: recognisable musical instruments, patterns of melody, consistent rhythm and /or artistic intention. These findings of the survey can be used by experimental musicians in order to better understand how an audience may react to their music as the results display how certain musical characteristics have an impact on an audience's perception of a piece's musicality. Through the research conducted, it has been discovered that sound can be perceived as noise because it is deemed dangerous to the human ears (Mark Reybrouck) or because it is regarded as being 'unwanted' in the piece it is present in (Nort). Noise can also be used within the genre, most commonly defined with glitches, heavy distortion and lack of any conventional musical structure (Novak). Throughout this research project, noise has been heard in examples of music (Murphy) (Drumm) (Takagi) including the use of it in the music samples and the long-form piece created. A broad range of timbres have been discovered and experimented with throughout the course of this project, and thus the use of 'noise' within music has been appropriately investigated through practical means.

As this project contains the creation of pieces of art, limitations may include the personal taste of the artist having a possible affect on the results and what they deem experimental/noise music to sound like according to their personal taste.

If this project was given more time in the future, a more in-depth look into noise and its context within music could yield interesting results. For future research into this topic, it is recommended that the results of this project are analysed and considered. Research resources such as the ones in this thesis' literature review, are recommended to be read and studied when studying the topic of noise and creating experimental music as they provide valuable insight that will improve the understanding of the topic and the quality of the music being made.

Bibliography

Bautch, Katie A. "Personal Music Listening for Regulating Emotions: A Survey Study." Pacific Journal of Health (2019).

Drumm, Kevin. "Less Than Half as Loud." By Kevin Drumm. Chicago, 2017.

Hegarty, Paul. Noise Music: A History. Continuum International Publishing Group, 2007.

John Cage: Journeys in Sound. Dir. Paul Smaczny Allan Miller. Perf. John Cage. 2012.

Mark Reybrouck, Piotr Podlipniak, David Welch. "National Library of Medicine." 25 June 2019. October 2023 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6603256/>>.

Murphy, Irene. "Not Just Rivers." By Irene Murphy. Dublin, 2022.

Nort, Doug Van. "ResearchGate." August 2006. October 2023 <https://www.researchgate.net/publication/231963460_Noisemusic_and_representation_systems>.

Novak, David. Japanoise. Duke University Press, 2013.

Russolo, Luigi. "Chapter One The Art of Noises: Futurist Manifesto." The Art of Noises. New York: Pendagon Press, 1986. 23-30.

Takagi, Masakatsu. "Kagayaki." Japan, 2014.

Appendix

Appendix A – Recording Setup in Studio 1

