

ACOUSTIC PERFORMANCE OF DIFFERENT MODELS OF ACOUSTIC GUITARS

Solent University Live Sound Technology Project Exhibition Poster Presentation Media Technology Project MED601

ABSTRACT

Timbre is that thing that changes the way a sound is different compared to another one. It is mostly due to the harmonic content that a specific sound creates, the way it is created and in what location.

More details on what are the harmonics and how to calculate them for each note that is played for the experiments.

There are different experiments that are made to show the evidence of timbre and how the harmonics affect the way the sound is. Using 5 different guitars, the first experiment is made on one note and then a second on where the guitars are subjected to chord analysis. All the guitars are analysed through a spectrum analyser. Then there are external experimentations where a different point of view can be utilised to have a better understanding of the concept of timbre.

For further data a research on what could also affect the sound, like the components of what the guitar is built, the strings it is wearing, the way the guitar gets played, how the ambience influences it etc..

There is an explained research on what makes an expensive guitar better to a low budget one. Even though there is not a precise answer for this question, there will be experiments made and found to give proof of what differs the two instruments, this also includes that way people judge the sound of a guitar or maybe the general idea of a guitar, for instance the different opinions, experiences, history, memories etc... all these factors play a big though part in giving a straight answer to the question.

It all ends with some conclusion that brought up this report and a list of all references used to create this project.

METHOD

To answer the questions this project asked, a research on timbre was made, moving through harmonics, designs, components and ways to perform an acoustic guitar. This brought a clearer understanding on how a sound even coming from an identical instrument will be different.

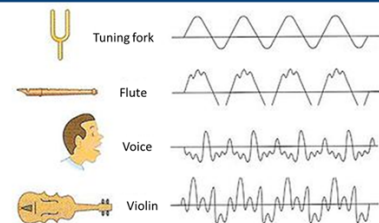
Then further tests and experiments were made to 5 different guitars to have practical results.

The results were examined with a Spectrum analyser and envelope and other plugins inside the DAW Ableton Live.

AIMS AND OBJECTIVES

- Understanding what timbre is
- Creating practical examples of timbre
- What causes timbre to vary
- Understanding the components of acoustic guitars and the way affect the sound and performance
- What makes an expensive better to a low-budget one

TIMBRE



RESULTS

Timbre is caused by the change of harmonic content, and the way the instrument gets played and factors like the way an instrument is built, the design, the components, the structure, the ambience and other smaller conditions.

In most cases an expensive will be better compared to a cheaper one, due to the fact that they are made with higher quality components, better construction and generally better in most characteristics but the way a guitar is judged sometimes can be subjective, and history, fame and memories could affect the preference of the instrument.

