The Visuality of Musical Form

UTSA's Music Theory Club

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Methodology

Members of the UTSA Music Theory Club, comprised of music majors and non-music majors with varying degrees of formal instruction, listened to pieces from 3 different time periods while mapping perceived changes in form. Blank templates were provided to each participant in which time stamps appeared along the x-axis, and instrumental groupings (woodwinds, brass, percussion, and strings) or functional layers (such as melodic, harmonic, bass, and beat layers) appeared along the y-axis.

The pieces included:

-Tame Impala, "The Less I know the Better," instrumental
-Beethoven, Symphony No. 5, i
-Shostakovich, Waltz No. 2

The only instructions provided were to listen to select pieces and use different colors and shapes to indicate changes in musical parameters. Each piece was listened to numerous times in order to complete the task. For the Beethoven, which is much longer and more complex, we listened to a recording in real time as well as one that was slowed down 50%.

We analyzed our own maps to observe structural phenomenon that indicated changes within the musical structure. Then, maps were compared and analyzed for similarities and discrepancies.

The final step involved analyzing the colored charts to determine section changes within the form. These included general same-different designations, such as ABA, as well as form labels, such as exposition, development, recapitulation, sequence, variation, and reprise.

Works Cited

Beavers, Jennifer. 2021. "Ravel's Sound: Timbre and Orchestration in his Late Works." *Music Theory Online* 27(1).

McAdams, Stephen. 1999. "Perspectives on the Contribution of Timbre to Musical Structure." *Computer Music Journal* 23, no. 3 (Autumn): 85–102.

Abstract

Music cognitive research suggests that musical parameters such as texture, timbre, contour, and dynamics play integral roles in our perception of form (McAdams 1999). If listening to form is largely contingent on these parameters, then listeners of all types of musical experience should be able to perceive musical form without formal training. This poster reveals the results of a listening experiment in which participants were asked to listen to pieces from various genres and create visual representations of changes within the music. Results show strong similarity between color-coded maps produced by musicians with and without formal music theory instruction.

Scan to see more graphs

Results

PROS	CONS
User-friendly	Can be difficult to perform in real time
Jargon free	Easy to fixate on specific events
Can focus on interesting moments	Hard to physically track both graph, and time axes
Confidence building seeing similar features	The opening and closing of phrases were often blurred.
Teamwork generated great conversations	
Encourages curiosity	

Analysis

Analysis of the Shostakovich and Beethoven pieces revealed a great similarity between different graphs.

Shostakovich:
Individual graphs for this piece showed clear divisions between sections based on timbre, texture, and dynamics. By looking at one graph, one observes a noted A-B-A, ternary design. In comparing all the students graphs, a great deal of similarity is observed, reiterating the musical structure was clearly detected by changes in musical parameters.

Beethoven:
This piece was longer and more complicated, which necessitated numerous playbacks. Formal sections were harder to detect due to more active textures. Additionally, cadences often occurred with drastic orchestral growth, which revealed a music marker at the ends of sections. The result of this was that 2 timbral markers did not coordinate with 2 musical events, but rather a beginning and an end. This made the graphs more difficult to decipher.

Conclusion

The results from our experiment align with research that places an emphasis on so-called secondary parameters. We found numerous advantages to this approach, the greatest of which revealed the strength shared between maps and positive psychological advantages of not letting terminology discourage observations and the joy this activity brought by using colors and shapes. Some disadvantages include the challenge one faces when creating the map in real time and labeling sections that were less-clearly depicted on the map. In general, participants benefited from an unintimidating approach to abstract form.

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