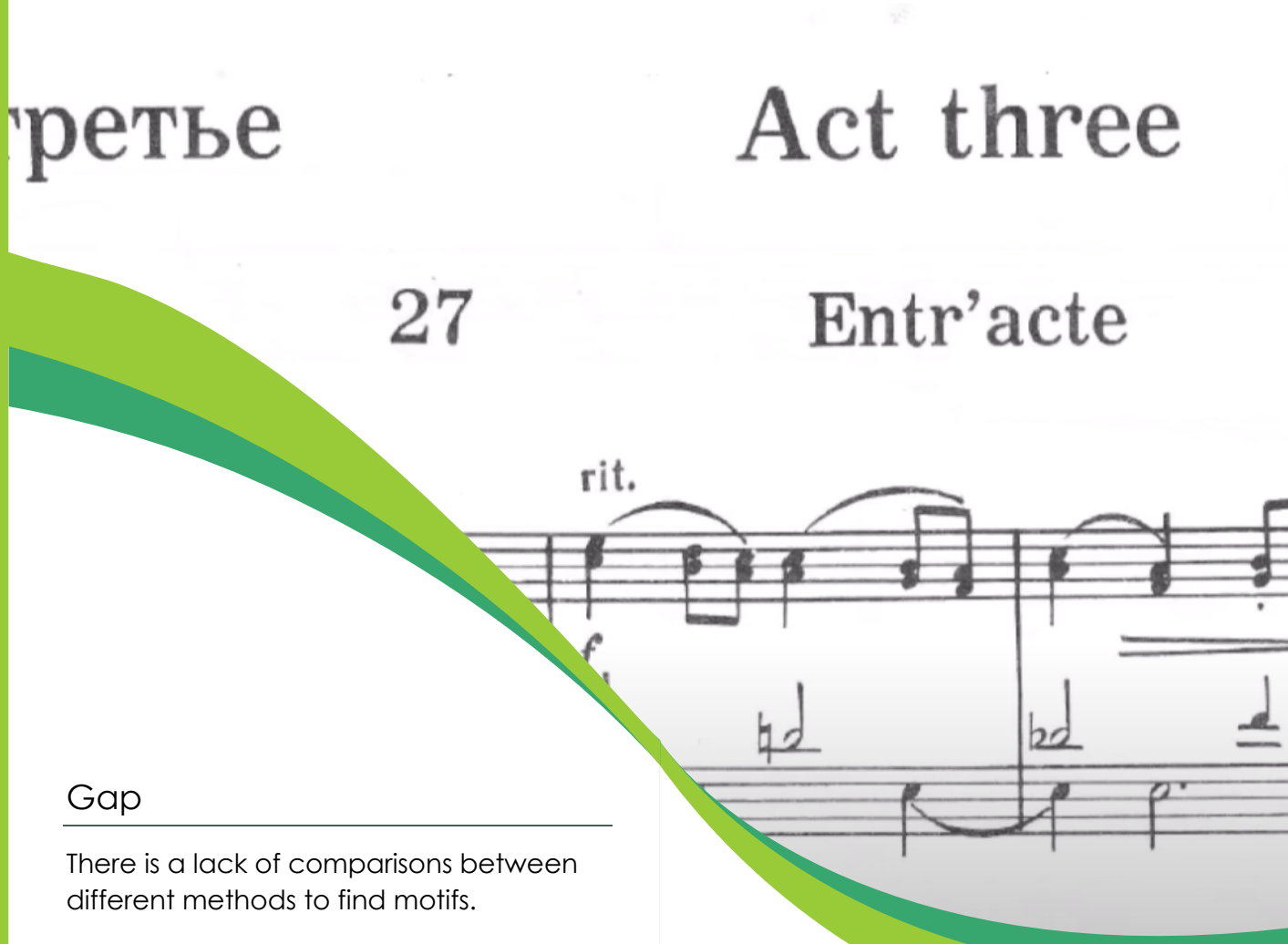
Experimental Method

I'll be comparing different methods on motif analysis. In particular, comparing the family of algorithms which use self-similarity matrices.

In comparing these methods, I'll create a variation which will suit the needs of better analyzing works of Shosikovich while connecting it to historical events.

(cont. Data/Scholarly Work)



Gap

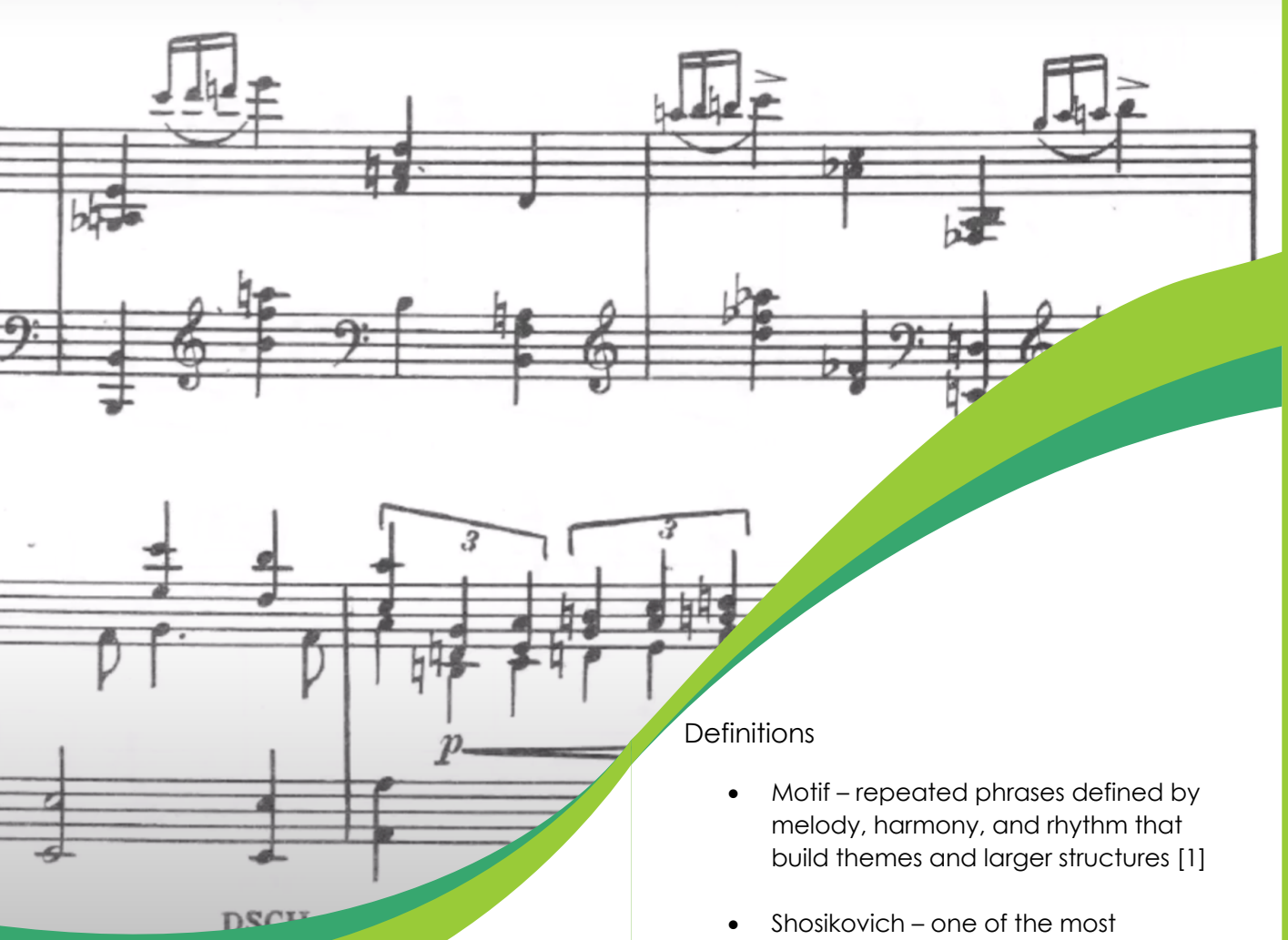
There is a lack of comparisons between different methods to find motifs.

There is also a lack of quantitative data about motifs in Shosikovich's works because of the medium and the fact that it is hard to decipher the ironies in his work.

Therefore, it would help fill these two gaps by creating a better way to analyze Shosikovich while assessing current motif detection algorithms

Exploring Motifs in Works of Shosikovich Algorithmically

How do different methods of identifying motifs compare? And how can this information be used to better data on motifs in Shosikovich works?



Definitions

- Motif – repeated phrases defined by melody, harmony, and rhythm that build themes and larger structures [1]
- Shosikovich – one of the most preeminent Russian composers who used motifs show his double-voicing and irony in his works [2]

Logistical Challenges

Implementing the programs described in the paper and finding samples for testing is tough but using libraries like music21, a toolbox for working with music on Python, can help.

References (key studies)

[1]W. Drabkin, "Motif." Oxford Music Online, pp. 1-2, 2001, doi: 10.1093/gmo/9781561592630.article.19221.

[2]J. Gerstl. "Irony, Deception, and Political Culture in the Works of Dmitri ..." JSTOR. Dec. 1999. https://www.jstor.org/stable/44029848 (accessed: Sep. 07, 2021).

[3]"The concealed motif: analysis and identification." Proceedings of the International Conference on Artificial Intelligence, Knowledge Engineering and Data Bases (AIKED), pp. 44-48, 2013. [Online]. Available: http://www.wseas.us/e-library/conferences/2013/CambridgeUK/AISE/AISE-06.pd

Data/ Scholarly work

I will first find samples which contain motifs from libraries like music21. Different methods will be applied experimentally on these samples to produce data on performance (based on accuracy and speed).

After connecting this data to how these methods are related, I will evaluate which overarching method style works the best. Then I will construct my own method to work with Shosikovich's music specifically and evaluate it against human analysis of his work, possibly supporting certain claims (DSCH having an earlier origin) in my sources with quantitative data.

Self-Similarity Matrix Research

A common way of identifying motifs is using Self-Similarity matrices [3]. This research has germinated other methods, but comparisons between their performances them haven't been made. But this paper will explore this gap.