

Exploratory Data Analysis: Song & Jury Data from Eurovision Song Contests (2009-2024)

Synopsis

The Eurovision Song Contest (ESC), started as a way to unify Europe in the post-war era, ease political tensions from the Cold War, and sell radio and telecommunication services that had been greatly expanded on during the second World War. The contest has been running from 1956, first hosted in Switzerland and inviting two entries from participating countries. As more countries joined the European Broadcasting Union and subsequently gained eligibility to participate in ESC, many measures were implemented, such as the first viewer televotes in 1997, an attempt to balance televotes and jury votes in 2009, and even more recently, the addition of a “Rest Of The World” televote for citizens whose countries did not participate. These changes were brought by political tensions among states who did not feel “European” enough, and were discouraged from participation in the EU and UN by their low scores. As such, data visualization of the results of the ESC over time can reflect relevant patterns– just ask [Dean Vuletic](#), author of *Postwar Europe and the Eurovision Song Contest*, and my greatest inspiration for this project.

This project initially served a training purpose– learn R syntax, research data visualization practices, and probe the currently (limited) expanse of ESC data publicly available. This project is also my first time on Github, so learning about Git, pushing, committing, and the R-Studio console were unintended consequences that I will carry into future projects. While I did not fully utilize the collaborative power of Github, I hope that improved Github literacy will help me collaborate with groups in the future. These exercises also helped me probe my available data and make more sense of what variables could prove most relevant for my larger goal– applying deep learning algorithms to predict winners of the contest from song input.

The data used was taken from Kaggle, [linked here](#) (ODI6s). The data covered a wide range of information, including information from fan polls, news outlets, and individual juries. If I were to expand on this project in the future, I would incorporate more data sets including the GDP, happiness report, or other indicators of political instability and compare those to yearly results.

The below visualizations are the result of code from `esc_scatter_plots.R` and `esc_bar_plots.R` in the repository. Note that the 2017 onwards decision to give the jury more power is central to the year choices.

Scatter plots

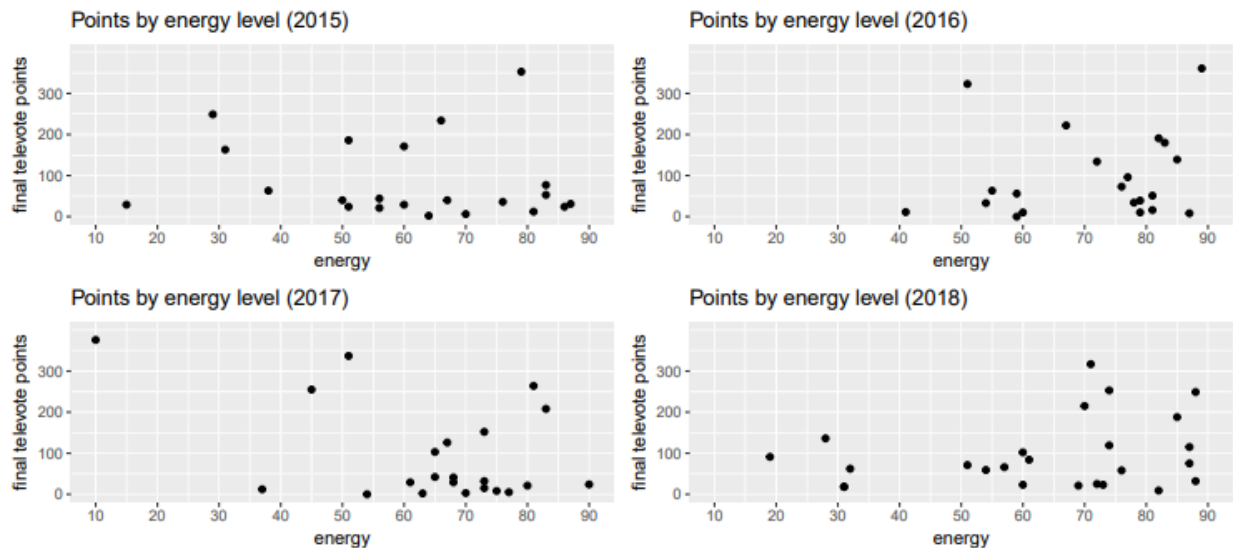


Figure 1: This figure compares 4 years of televote points to the energy level of each entry that year. Only the results from the finals are shown, as the points awarded by televote in the semifinals do not count to the final score. The energy data is derived from Spotify, which uses a combination of tempo, loudness, timbre, and onset rate to quantify a song from 0-100 energy. From these graphs, a lot of information is clear. For example, a majority of entries every year are concentrated between 50-80 energy. For the most part, as energy level increases, so do the total points awarded (particularly in 2016). Notable outliers include 2017's Amar Pelos Dois (Portugal) representing the 376 points awarded to 10 energy.

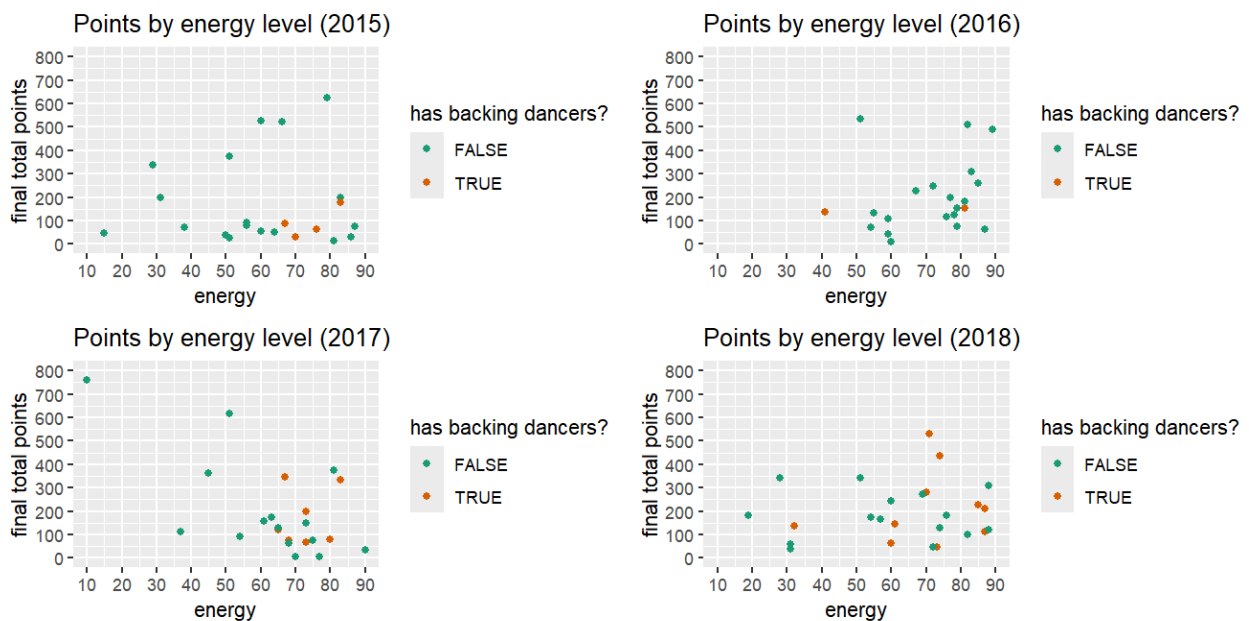


Figure 2: This figure compares 4 years of total points (sum of jury & televote points) across two variables– energy and the presence of backing dancers. This variable came from an idea I had about energy level. The energy level alone isn't sufficient to determine what thematic concerns the televote most appreciated. Did they like powerful but sad ballads, or energetic dance themes? I approached this by adding the backing dancers variable. From my experience watching the ESC, dancier, happier performances tend to incorporate backing dancers, while emotional pieces single out the artist.

What this figure showed was that in 2015 and 2016, when televotes were the primary source of points, more points were awarded to songs without backing dancers. However, in 2017 and 2018, more entries with backing dancers scored higher, showing that juries potentially weigh choreography and dance more than the televote in their decisions.

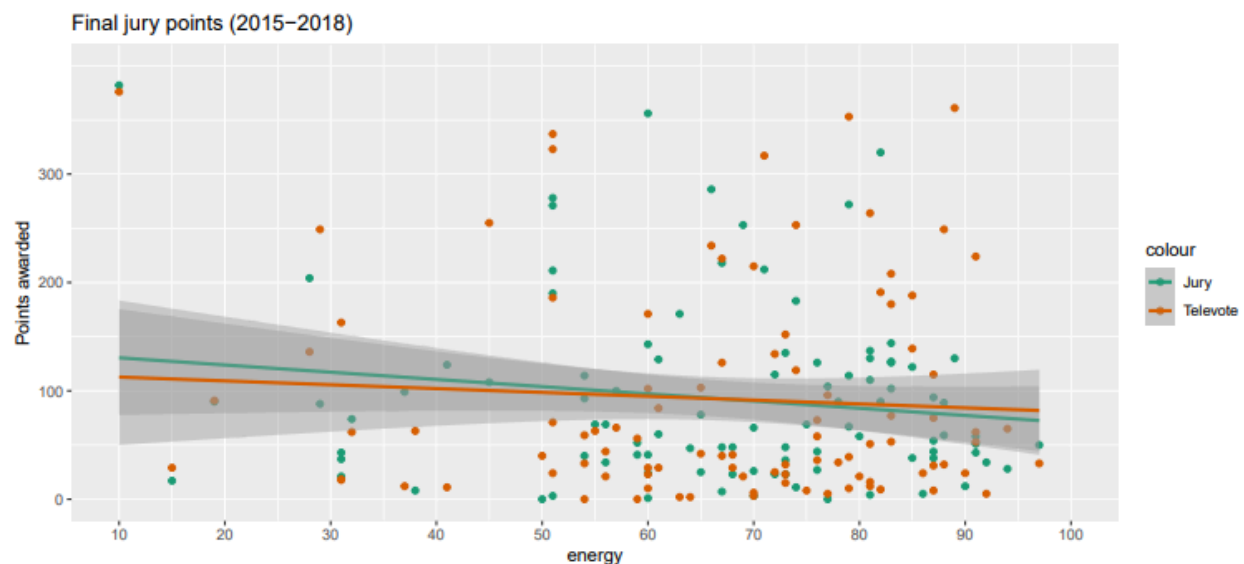


Figure 3: This figure demonstrates two lines of best fit, comparing jury and televote point awards by energy. This plot reveals that both juries and televotes tend to vote more in favor of less energetic entries, while televotes vote more for energetic entries than the jury do. This may be an important infographic for states who don't have a national selection competition, who would want to balance their potential entry across 60-80 energy, where televotes and juries agree. This data is supported by the fact that Spotify cumulatively ranks the Europop genre at 64.27912 energy, and the ESC is known for the uprise of Europop.

Bar charts

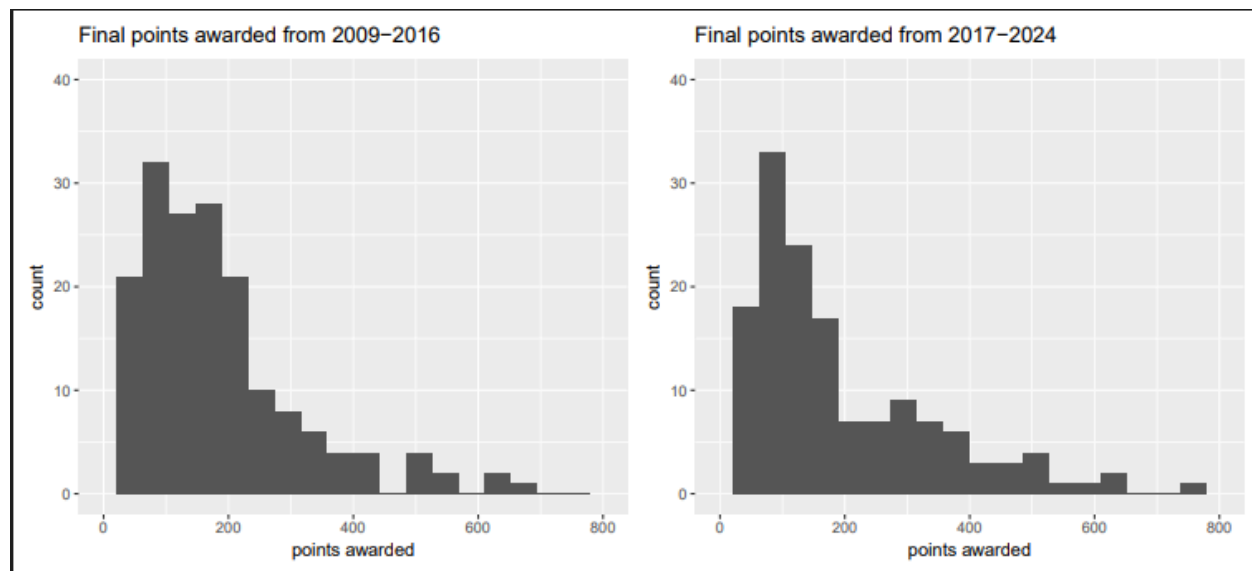


Figure 4: This histogram is meant to reflect the distribution of total awarded points before and after the shift in voting that occurred in 2016, which weighed the jury vote more heavily in the final outcome. The new system has been shown to reduce, on average, the amount of total points given. However, there are more entries in the 700-800 range from 2017-2024, than from 2009-2016, showing instances where the jury and televote agreed on a high score.

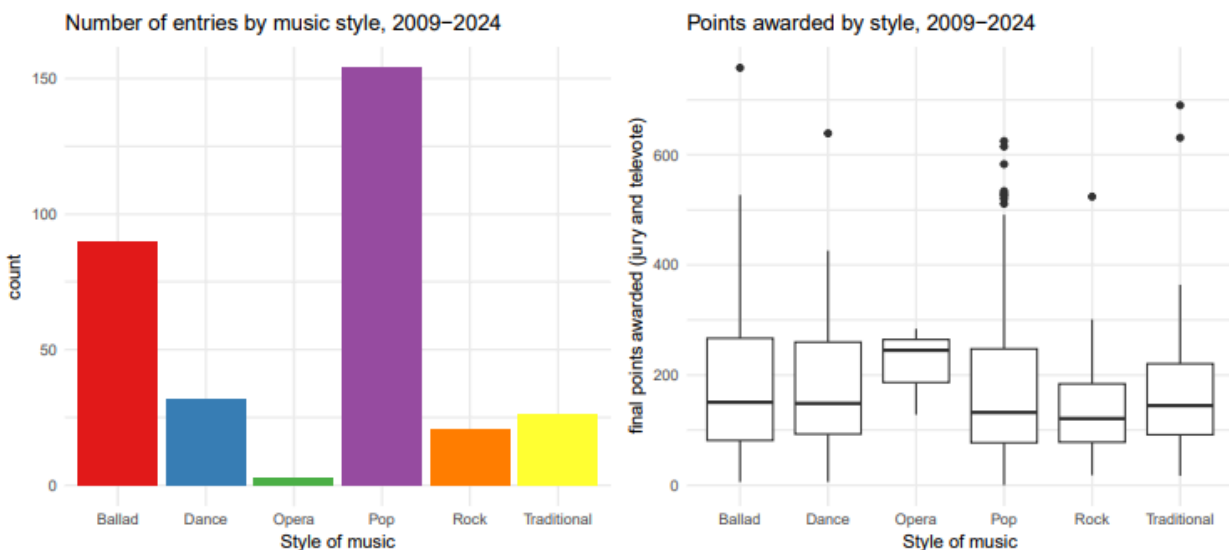


Figure 5: This final figure is by far one that surprised me the most and tells the most interesting story of votes. This graph reveals that while a majority of entries are pop, the median score for a pop entry is not the highest. Ballad and dance genres score slightly higher median scores, while operatic pieces score consistently higher than any other genre, despite being the least represented. This may have to do with the

high learning curve for opera— if it is performed well, it is performed exceptionally, and if it is not performed well, then it probably didn't make it to the final and thus wouldn't have been represented here.