

# The Order of Performance and the Voting Outcome

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We investigate how the order of performance of the competition participants affects their results. We analyze voting results of the 2017 and 2018 editions of the Eurovision song contest. At Eurovision, the successful participants perform the same song in the semifinal and the final. However, the order of performance in the semifinal and the final differs. We look at the relative difference in the order of their performance between these two rounds, and the voters' reaction. There are two types of voters that vote separately: the professional jury and the TV audience. We show that for the TV audience (non-professionals on average) there is a strong relationship between the order of performance of the participant and the score — there exists a significant last-mover advantage. For the professional jury, there is no such effect. Figure 1 summarizes our findings.

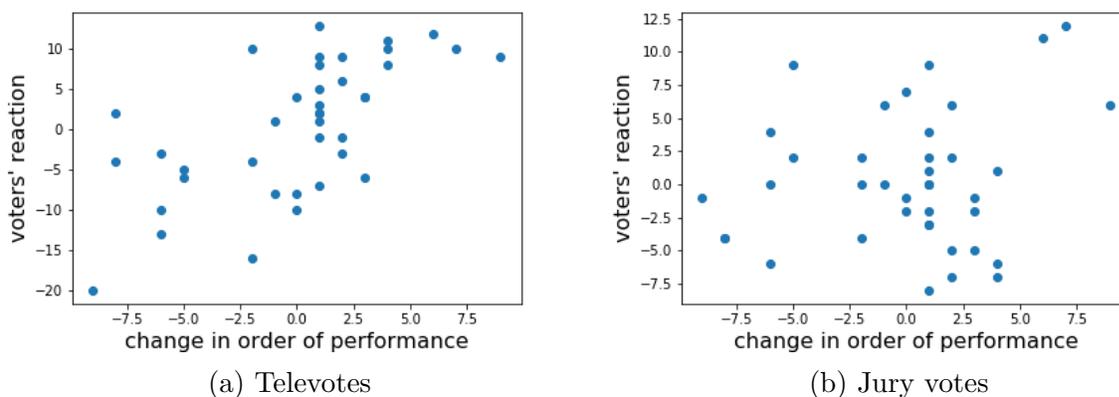


Figure 1: Change in order of performance vs voters' reaction, 2017 — 2018

Eurovision is a song competition among the countries, primarily the members of the European Broadcasting Union (EBU). As a result of the national selection, every country submits a song for the competition. A song must be performed live on stage. All participating countries can vote for any song except for the one from their country. Currently,

the votes from the TV viewers and the professional jury are counted. The winner is a song that collects the most points.

Starting from 2004, Eurovision comprises two semifinals and a final. Five countries that organized the first Eurovision (France, Germany, Great Britain, Italy, Spain) as well as the host country automatically qualify for the final (we will call them countries with wild cards). All other countries must participate in one of the semifinals. In semifinals, the artists present their songs for the first time. Then, 10 winners from each semi-final qualify for the final where they perform the same song for the second time.

For each country, the semifinal to participate is determined through a draw.<sup>1</sup> The order of performance both in the semi-finals and in the final, however, is determined not at random.<sup>2</sup> Since 2013, the countries are distributed between two halves of the show randomly, but the final decision about the order of performance is made by Eurovision producers. It is claimed by EBU that their decision is based only on concerns of attractiveness of the show and not on the songs' quality.

We split all countries into six groups with respect to their roles in the competition: Winners, Losers, and countries with Wild Cards ( $W_i, L_i, WC_i, i \in \{1, 2\}$ ). Figure 2 summarizes the rules of participation for these groups of countries. Then we focus on the countries from the sets  $W_1$  and  $W_2$  that participate in both the corresponding semifinal and the final. However, the order of performance of the countries within these groups is not the same in the semifinal and in the final.

	Winners 1	Losers 1	WC 1	Winners 2	Losers 2	WC 2
Semifinal 1						
Semifinal 2						
Final						

participates

votes

does not participate

does not vote

Figure 2: An illustration of participation and voting in the competition.

We look at the changes in the performance order within each group (within  $W_1$  for countries from  $W_1$  and within  $W_2$  for countries from  $W_2$ ) and the changes of the relative rankings within these groups after voting. Our hypothesis is the following: if the country presents earlier in the final than in the semifinal, then the majority of the voters will give it worse score in the final, then in the semifinal.

<sup>1</sup>See <https://eurovision.tv/story/results-of-the-semi-final-allocation-draw-2018> for more details. Retrieved October 9, 2018.

<sup>2</sup>See <https://eurovision.tv/story/exclusive-running-order-producers-decide-2017> for more details. Retrieved October 9, 2018.

**Example.** Consider Armenia results at Eurovision-2017. In the semifinal, Armenia was presenting the last among 10 winners of the semifinal. In the final, Armenia was performing the second among the same 10 countries. Then, the relative change of order of performance for Armenia is  $\Delta = 2 - 10 = -8$ . Now, look how the viewers changed their opinion. There are 5 countries that evaluated Armenia better in the final than in the semifinal within the set  $W_1$ . At the same time, there are 9 countries that evaluated Armenia worse in the final than in the semifinal within the set  $W_1$ . We introduce parameter  $\chi$  that is equal to the former minus latter countries. In this example,  $\chi = 5 - 9 = -4$  for Armenia.

Figure 1 shows that for the televotes there is a strong relationship between  $\Delta$  and  $\chi$ . If the country performs earlier in the final, then the majority of the countries is likely to put it on a worse place in the final. The earlier the country performs in the final than in the semifinal, the more countries will put it on a lower position. However, there is no such an effect for the jury votes.