

A Study on the Impact of Crowd-Based Voting Schemes in the 'Eurovision' European Contest *

Gema Bello Orgaz, Raul Cajias and David Camacho
Computer Science Department
Escuela Politécnica Superior
Universidad Autónoma de Madrid
Madrid, Spain
{gema.bello, raul.cajias, david.camacho}@uam.es

ABSTRACT

The Eurovision contest has been the reference on european song contests for the past 50 years. Countries in the European Union can shows the rest of the participants their current music tendencies. This phenomena has been studied in domains like physic and social sciences to find correlations between contests and current political and socio-economy trends in EU. The inclusion of web and social technologies some years ago, have caused a disruption in the traditional voting system whereby the audience is encouraged to participate by casting votes for their favorite song. As a result, this system yields new, relevant information that may be extrapolated to social and political tendencies in Europe with a higher degree accuracy than by data collected using the previous jury-based system. This paper provides an initial data analysis in crowd behavior to assess the impact of the *televote* system, in the Eurovision voting dynamic, by focusing on two distinct five years periods that can successfully contrast each voting scheme. Analyzing these periods separately, we can observe results from the *televoting* contests and then compare to the jury to see if there is a change in voting patterns. Finally, we study the underlying community structure of the voting network using the Cluster Percolation Method and Edge Betweenness to discover stable core communities spanning a number of years in the contest. The clusters obtained using these algorithms are then used to compare how these stable communities have evolving during the considered periods.

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Keywords

Graph Based Algorithms, Network, Web Mining, Social Mining

1. INTRODUCTION

The Eurovision Song contest can be understood as a complex system [2], where interactions between countries are heavily influenced by factors like geography, shared history, culture and migration patterns. Voting patterns for each country seem to be dictated, not by the artistic value of the song, but by a latent affinity between countries, which revalues the contest as more than song a search for current trends in music, but socio-economical barometer of sort, providing valuable insight into forces shaping the landscape of Europe. It has been regarding as a healthy exercise in the unification of Europe, because it provides an active forum, where countries are free to give opinions about the rest of the participants without fear of economic or political backlash [6][13]. Our interest in the contest therefore, is rooted not in the artistic value of the songs *per se*, but on the potential for this contest to be used as a measure of the overall composition of the European Union.

1.1 Historical Background

The Eurovision song contest is an annual competition among members of the 'European Broadcasting Union' [4], running continuously ever since it's inauguration in 1956. The contest is executed in the following fashion: each country submits a song and performer with which to compete. All songs are then performed live, in a transmission available to all participating countries. Once all songs have been performed, votes are casted—previously by jury panel, currently through *televotes*—and a winner is selected.

The contest has undergone a series of changes throughout the years, in an effort to keep it fresh and maximize viewer attention. From 1956 to 1996, votes were casted by a jury of representatives sent from each of participating countries.

Jurors then casted all of ten individual point-votes ranging from 1-8, 10 and 12 points—with no repetitions. In 1997 *televoting* was introduced in five countries, to gradually displace the jury-based system until 2004 when *televoting* was made mandatory for all participants.

Televote technology allows viewers to cast their votes via phone, sms or the internet for a set window of time—normally within the live broadcast. After the voting window closes, all votes are tallied and points are given in decreasing order: the participant with most votes receives 12 points, the next highest receives 10, and so on.

In 2004 a *semi-finals* round was introduced to offset the increasing number of participant in the contest. In order to participate in the Eurovision contest, participants must clear this preliminary round, thereby limiting the number of participants to a manageable size. That year’s host-country and the so-called “Big Four” are exempt from this filter—the “Big Four” being the four highest contest contributors: France, Germany, Spain and the United Kingdom. However, all countries, finalists and not, are allowed to vote in the final round, which inflates the number of countries that vote and overall score of the winners each year. Critics contested that because of migration patterns, *televoting* had a tendency to favor certain countries, 2009 saw the implementation of the current voting system—a hybrid system of *televoting* and a jury was implemented, whereby each part contributes half of the total vote tally for each country.

1.2 Related Work

Past studies on the Eurovision contest have centered around social and historical facts, coupled with data clusterization methods [14], [15], regression analysis [10], dynamical networks [6], or analytical identification of statistically significant trends [9], all of which were able to group the participating countries into blocs of like behavior. In [14] and [15]—one of the earliest analyses—the Eurovision community was split into three blocs: The *Mediterranean Bloc*, the *North Bloc* and the *West Bloc*. In this model, the west bloc consistently amassed the highest number of votes, and was the largest of the three. In [9], two large blocs are identified—*The Viking Empire* (Scandinavian and Baltic countries) and *The Warsaw Pact* (Russia, Romania and the old republic of Yugoslavia)—and a number of other smaller blocs. The work of [6] uses dynamic network analysis to study voting partnerships, observing that these may not be static, but are instead susceptible to change over time.

In order to distinguish the impact *televoting* has had on the Eurovision contest, we represent countries and votes as a directed graph. This abstraction allows us to better detect community structures—sets of nodes in the graph that share more connections between them than the rest—using so called *Community-Finding Algorithms* (CFA) [7]. We show that as a result of the *televote* voting system, the Eurovision participants gravitate towards neighboring countries, regardless of the song. The main contribution of this work is to assess the impact of the *televote* voting system in regards to the voting pattern of each country, by comparing their behavior before and after the change was made. Additionally, we investigate the factors influencing this change, such as neighboring countries or large migrations—the dias-

pora effect[12], which seem to be enhanced by *televoting*.

The paper is structured as follows. Section 2 offers a description about how the contest data was prepared before the analysis, as well as the algorithms used to detect communities in the contest, and the process used to find the core members of the communities. Section 3 presents a discussion of the results obtained. Finally, we present our conclusions and some future research lines of work.

2. METHODOLOGY

Building on the work presented in [14, 15], we begin with the hypothesis that Eurovision is not a fair contest, and voting patterns can be detected. In order to find voting communities, contests are modeled as a directed graph $G_t = (V_t, E_t)$, where $V_t = \{\text{set of participating countries in year } t\}$ and $E_t = \{\text{set of all votes casted in year } t\}$. The points country u votes to v is denoted by the function $w(e_u) = (u, v)$, which may return one of the possible values $\{0-8, 10, 12\}$, 0 indicating a vote was not casted for a that country (see Figure 2).

We are only interested in finding communities of countries that tend to give top vote amongst each other, so only the 20th percentile votes are represented in the graph, that is edges for which $w(e_t) > 7$. We place this restriction because (a) it allows a more straight-forwards comparison between the CFAs chosen and (b) it reduces noise in the data produced by low-point votes that may be not accurately represent tendencies in the country.

2.1 Eurovision Contest Data Preparation

In order to fairly compare the impact of *televoting* to the traditional voting system, periods used in the comparison must be carefully picked so as to prevent noise produced by the many evolutions of the voting system. Looking at the history of Eurovision, the periods which we consider most representative of the two schemes are:

- 1992–1996: Jury-based voting system was used exclusively.
- 2004–2008: *Televoting* was used exclusively, as well as having the *semi-finals* round.

Because the period from 1997 to 2003 saw a slow adoption of the *televote* system, the data is not representative, and has is not included in this study.

2.2 Finding Communities

We rely on the directed variant of the *Clique Percolation Method* (CPM) for overlapping community detection, proposed by [3] and the *Edge Betweenness and community structure* (EBC) algorithm [11].

CPM is a link density-based module finding technique that allows modules (also known as cluster or community) overlapping—Figure 1. The strongest possible coupling of k nodes with unweighted links is a k -clique—the $k(k-1)/2$ possible pairs are all all connected. In practice however, when detecting

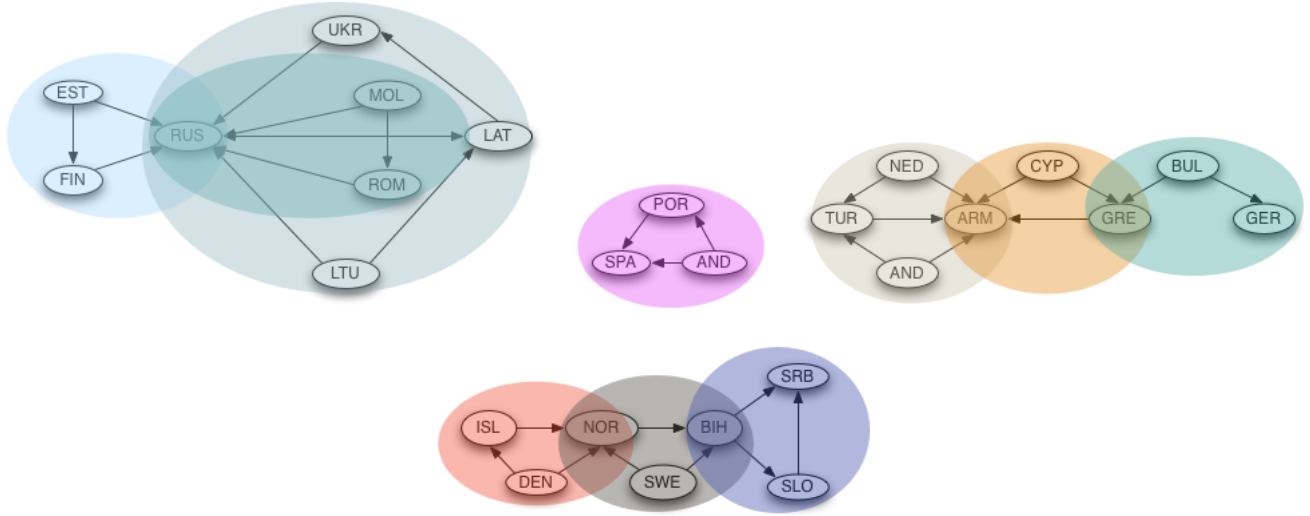


Figure 1: Sample communities found of the 2008 Eurovision song contest applying CPM algorithm. Relationships between countries can be appreciated by the directed edges between them, while overlaps between communities are visualized as overlapping hyper-graphs

	5 years	4 years	3 years	2 years	1 year
CPM <i>before</i> Televoting		5	5	2	2
EBC <i>before</i> Televoting	1	<u>4</u>	8	2	2
CPM <i>after</i> Televoting		5	<u>8</u>	13	20
EBC <i>after</i> Televoting	<u>4</u>	<u>5</u>	7	4	2

Table 1: Number of core sub-communities found by years that these countries coincidence in the same communities. Threshold selected are in bold and underline

modules in a complex network, this requirement is somewhat relaxed, to account for the inherent noise found in real social systems. Removing a link from a $(k + 1)$ -clique results in two cliques sharing $(k - 1)$ nodes, called two *adjacent k -cliques*. The *clique percolation cluster* is the maximal set of k -cliques that are connected to each other.

The *EBC* algorithm attempts to overcome some of the shortcomings found in the hierarchical cluster tree method of community detection. Rather than focusing on those edges deemed most central to a community, the algorithm focuses on the least central—most *between* edges. To find these *most between* edges, the algorithm generalizes the betweenness centrality to edges proposed by [8] and defines the *edge betweenness* of an edge as the number of shortest path between pairs of vertices that run along it. If there is more than one shortest path between a pair of vertices, each path is given equal weight such that the total weight of all the paths is unity. If a network contains communities or groups that are only loosely connected by a few inter-group edges, then all shortest paths between different communities must go along one of these few edges. Thus, the edges connecting communities will have high edge betweenness. But removing these edges, and the underlying community structure is revealed.

The *EBC* algorithm can be summarized as follows:

1. Calculate the betweenness for all edges in the network
2. Remove the edge with the highest betweenness
3. Recalculate the betweenness for all edges affected by the removal.
4. Repeat from step 2 until no edges remain

Unlike *CPM*, the *EBC* algorithm does not detect overlaps in communities. Instead attempts to break the graph into smaller, well connected sub-graphs. This fundamental difference is our main reason for selecting these algorithms. By approaching the data set with different CFA algorithms, we can gain a better perspective of the communities that may exist, overlapping or not.

2.3 Data Mining Process

Our goal is to find core members in the communities detected per selected periods. After matching a community detected at time $t = 0$ with its projection at time $t + \alpha$ we define *core-ness* as of a node, as the number of times that node is a member of said community. Node coreness can be interpreted as a measure of loyalty a node has to a given community. Ultimately, analyzing the stable elements of each community will help us better gauge the fairness of *televoting* as a voting scheme.

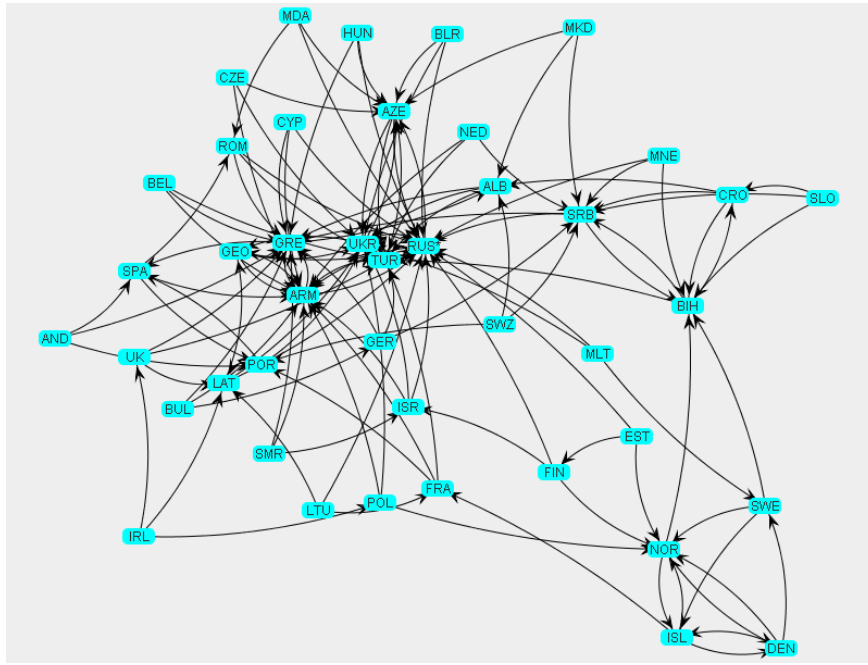


Figure 2: Sample network graph illustrating the outcome of the 2008 Eurovision contest. Each node represents a country participating that year, while edges are votes casted from one country to another. Edges 8 or more points have been rendered and nodes with common neighbors have been made to appear closer to each other. Some community structures can be distinguished: e.g. [Germany, Armenia, Ukraine, Turkey, Russia], [Serbia, Bosnia and Herzegovina, Croatia], [Norway, Sweden, Iceland, Denmark], etc.

For each year in the periods selected, we consider all participating countries and remove votes casted with a value below 7, that is, where $w(e_t) \leq 7$, and construct a directed graph. We then deploy the chosen *CFAs* individually and keep track of the communities found. For the *CPM* algorithm (see Figure 1) we have chosen *k-cliques* of size $k = \{4, 5\}$ as it was empirically found to yield the largest number of good-sized clusters. After all sub-communities in a contest year, we join together and then identify the core members in each community. To pick a good *coreness* threshold we plot different coincidence values against the core-communities that these values yield, settling on a threshold that provides the number of core sub-communities—see Table 1.

Analyzing the core-communities found, we see that many of them do have overlapping countries. Because this overlap may add unnecessary noise to the communities found, we require an overlap threshold between communities. The threshold selected needs to yield communities of manageable size—member count—and numbers, while reducing the amount of redundant information. We approximate an optimal community overlap threshold empirically, by testing different threshold levels and picking one that best fits our requirements. It is this final set of communities what we used to analyze the impact of televoting in the Eurovision contest, these communities and core members are shown, for each considered algorithm, in Tables 4 and 5.

3. EXPERIMENTAL RESULTS

Once the set of possible yearly analyzed communities are extracted, we study the number of core members obtained

by grouping together countries that have belonged to the same community with some level of frequency. In table 1 we present the number of communities obtained using different values for frequency of coincidence, a single year to all five. The desired level of coincidence would have to be both high enough to be meaningful, and yet provide a good number of core sub-communities to study. The boundaries selected are displayed in bold for each case in this table. Table 2 provides a more focalized look at the resulting sub-communities obtained from the coincidence threshold selected in each case for the period before *televoting*. A coincidence boundary of five years is far to low for our analysis, with one or no core communities found given the algorithm used. For a three year coincidence boundary, the number of communities found increases in number and size, but the overlap is too high, so the detected communities are approximately the same. We settle on a boundary of four years for both algorithms, since it provides the best tradeoff between number-size and overlap ratio. It is worth noting the unusually strong partnership between Ireland and Austria, found using the EBC algorithm in this period, suggesting that these two countries follow very similar voting patterns. This partnership is evident again in table 4.

For the period of 2004–2008, different coincidence boundaries were chosen to adjust for the change in core communities found. Using the same method as in the previous period—namely, best community number and size, with the least overlap as possible—we select a boundary of three-year coincidence for CPM and a four- to five-year coincidence boundary EBC communities, as Table 3 shows. We notice

CPM	5 years	4 years	3 years
1		AUT,FRA,NOR	AUT,BEL,BIH,CRO,CYP,DEN,FRA,GRE,IRL,ISL,ISR,ITA NED,NOR,SLO,SWE,TUR,UK
2		AUT,FRA,UK	AUT,BEL,BIH,CRO,DEN,IRL,ISR,LUX,NOR,SLO,SWE,TUR,UK
3		CYP,GRE	FRA,ISL,ITA,NOR,SWZ
4		FRA,NOR,SLO	IRL,LUX,MLT,NED,NOR,SLO,SWE
5		IRL,SWE	IRL,MLT,SPA
EBC	5 years	4 years	3 years
1	AUT,IRL	AUT,BIH,IRL,SPA,SWE	AUT,BEL,BIH,CYP,FIN,FRA,IRL,ISL,ISR NOR,POL,POR,SPA,SWE,SWZ,TUR,UK
2		AUT,FIN,IRL,ISL,NOR,SWE,UK	AUT,BEL,FIN,FRA,GER,IRL,ISL,NOR,SWE, SWZ,UK
3		FIN,FRA,ISL,SWE	AUT,BIH,CRO,IRL,MLT,SPA,SWE,TUR
4		NOR,SWE,SWZ,UK	AUT,BIH,DEN,FIN,GER,IRL,ISL,NOR,POL,POR,SWE, SWZ,UK
5			AUT,BIH,FIN,GRE,IRL,ISL,NOR,POL,POR,SWE,SWZ,UK
6			AUT,BIH,FIN,IRL,ISL,NED,NOR,POL,POR,SPA,SWE,UK
7			CYP,GRE,ISR,SWE,TUR
8			CYP,GRE,NOR

Table 2: Countries contained in the core sub-communities by years of coincidence in the same communities before televoting.

CPM	4 years	3 years
1	BIH,SLO	ARM,BEL,FRA,NED,TUR
2	CYP,GRE,ROM	ARM,BLR,RUS,UKR
3	LAT,LTH	ARM,NED,TUR,UKR
4	NED,TUR	AUT,BIH,CRO,SCG,SLO
5	RUS,UKR	BUL,CYP,GRE,ROM
6		DEN,ISL,NOR,SWE
7		GRE,MOL,ROM
8		IRL,LAT,LTH
9		AND,SPA(*)

EBC	5 years	4 years
1	ALB,BLR,SWE,UKR	ALB,BLR,DEN,ISL,SWE,UKR
2	AND,BEL,FRA,GER,ISR,NED,TUR	ALB,AND,BEL,BLR,CYP,FIN,FRA, GER,GRE,ISR,MLT,NED POL,ROM,SPA,SWE,SWZ,TUR,UK,UKR
3	CYP,GRE,MLT,POL	ALB,AND,BEL,BLR,CYP,FRA,GER,GRE,IRL, ISR,LTU,MLT,NED POL,SWE,TUR,UK,UKR
4	BIH,CRO	ALB,AND,BEL,BLR,CYP,DEN,FRA,GER,GRE,ISR,MLT,NED,NOR
5		BIH,CRO,SLO

Table 3: Countries contained in the core sub-communities by years of coincidence in the same communities after televoting. (*) Two years are taken into account to provide for only the community of Spain and Andorra. This exception was made because the alliance is of known significance to the Eurovision community, but was not found above that threshold because of the years chosen.

Communities	CPM	EBC
1	AUT,FRA, NOR ,UK,SLO	AUT,BIH, IRL ,SPA,SWE
2	CYP,GRE	AUT,FIN,FRA, IRL ,ISL, NOR ,SWE,SWZ,UK
3	IRL ,SWE	

Table 4: Core members of each community found in the period 1992–1996. Past winners are displayed in bold

there is a higher number of core partnership between countries, according to the communities found by EBC. Five sub-communities match their voting patterns over all the years of the period, compared with only one in the previous years.

As an example of this observation, we can see that Croatia and Bosnia Herzegovina that emerges after *televoting*.

The resulting core communities shown previously have amount

Communities	CPM	EBC
1	ARM,BEL,FRA,NED,TUR, UKR	ALB,BLR,DEN,ISL,SWE, UKR
2	ARM,BLR, RUS,UKR	AND,BEL,FRA,GER,ISR,NED,TUR
3	AUT,BIH,CRO, SCG ,SLO	BIH,CRO,SLO
4	BUL,CYP, GRE ,ROM,MOL	CYP, GRE ,MLT,POL
5	DEN,ISL,NOR,SWE	
6	IRL,LAT,LTU	
7	AND,SPA*	

Table 5: Core members of each community found in the period 2004–2008. Past winners are displayed in bold.*Merged with 40% similarity.

of redundant information due to overlap. To filter out these redundancies, we construct a similarity matrix where the level of overlap between communities is measured. Using this matrix, we merge those communities which have a level of overlap above 80%. We then extract the *community core members* from each period, and can begin to consider the impact of *televotes* to the contest dynamics. Table 4 outlines the core communities identified by the process described in the previous section. For the pre-*televote* contest period, three core members communities were identified using CPM, while *EBC* managed to identify two. Although these numbers may not be meaningful enough to indicate tendency or preference in the votes casted during this period, it is worth noting that both algorithms do find a strong relationship between the countries {AUT, FRA, NOR, UK} as can be seen by comparing the *CPM* community 1 and *EBC* community 2 in table 4. This suggests that even before *televoting* was implemented in the contest, certain alliances may have existed. This observation is in line with previous studies that concentrated in pre-*televote* Eurovision contests alone.

Figure 3 plots the communities found in a geographical context. Here, a high correlation between neighboring countries and their membership to like communities can already be appreciated. Meanwhile, the two communities found by *EBC* have high overlapping, which seems to change over time, giving rise to new sub-communities as new members go in and out of these communities. An example of the neighbor effect is the *EBC* community 2, conformed by Greece and Cyprus. A subset of *CPM* community 2 contains the neighboring countries as well: Norway, Sweden, Finland, Iceland. These two communities also happen to have common cultural roots.

When detecting core communities from a post-*televoting* contests however, two important things appear immediately: (a) the number of core communities identified dramatically increases, and (b) the correlation between country adjacency and like membership is more discernible than in the previous experiments. For the post-*televoting* contest period, the *CPM* algorithm detects seven core communities, while the *EBC* algorithm detects four—more than doubling the number of communities found for the previous same-duration period—Table 5. This increase in core communities detected may be attributed to the disturbance of traditional west-bloc hegemony [15], thanks to a scheme that allocates votes with local-based priorities.

The *CPM* communities 1 and 2 disappear, and six new core communities arise. However, the group formed by Greece and Cyprus persists and grows, increasing the number of countries through the incorporation of Bulgaria, Romania and Moldavia, and thus giving rise to the bloc of *Balkan Countries*. Similarly, in *EBC* disappear the previous groups and arise four new where the Balkan bloc is contained. Figure 3(c) and 3(d) show all the core members communities found from 2004 to 2008 deployed in a geographical context. This time period see the emergence of diverse communities. Community 2 formed by Russia, Armenia, Belarus and Ukraine, includes some of the new states that emerged with the break up of the *Old Soviet Union*. Community 3 contained several of the former *Yugoslav States* or neighbours, such as, Bosnia Herzegovina, Croatia, Serbia and Montenegro, Slovenia and Austria. Community 5 is formed by Norway, Sweden, Finland, and Denmark, what we previously called the *Nordic Countries*. This group has lost Finland and has incorporated Denmark in the post-*televote* period. The main core of the community 6 are the *Baltic States*, Lithuania and Latvia, along with Ireland. and finally the community 7 is formed by Spain and Andorra, both countries belonging to the group named *Iberian Peninsula*. After analyzing all these communities, it is clear that there are partnership among neighboring countries and their historical and cultural roots.

The *EBC* results are less fit in the geographical context. Also displayed blocs similar as we have named *Yugoslav States* and *Balkan Countries* to communities 3 (Bosnia Herzegovina, Croatia and Slovenia) and 4 (Greece, Cyprus, Malta and Poland) respectively.

In figures 3(c) and 3(d) we also find two communities worth noting: the NorthWest-Mixed Countries in section (a) {Armenia, Belarus, France, Netherlands, Turkey, Ukraine), and the community in section (b) {Andorra, Belarus, France, Germany, Israel, Netherlands, Turkey). We can see that the two algorithms find communities where the diaspora occurs, as, thanks to the large numbers of Turkish migrants in northwestern European countries [1], Turkey finds itself in a community of countries that it does not share borders with, but instead, has strong cultural ties with. The combination of diaspora and geographical voting during the *televoting* period has resulted in the formation of distinct voting partnership, as shown here.

Finally, we note the effect of *televoting* over the winners of the contest, which can be seen when analyzing the evolution

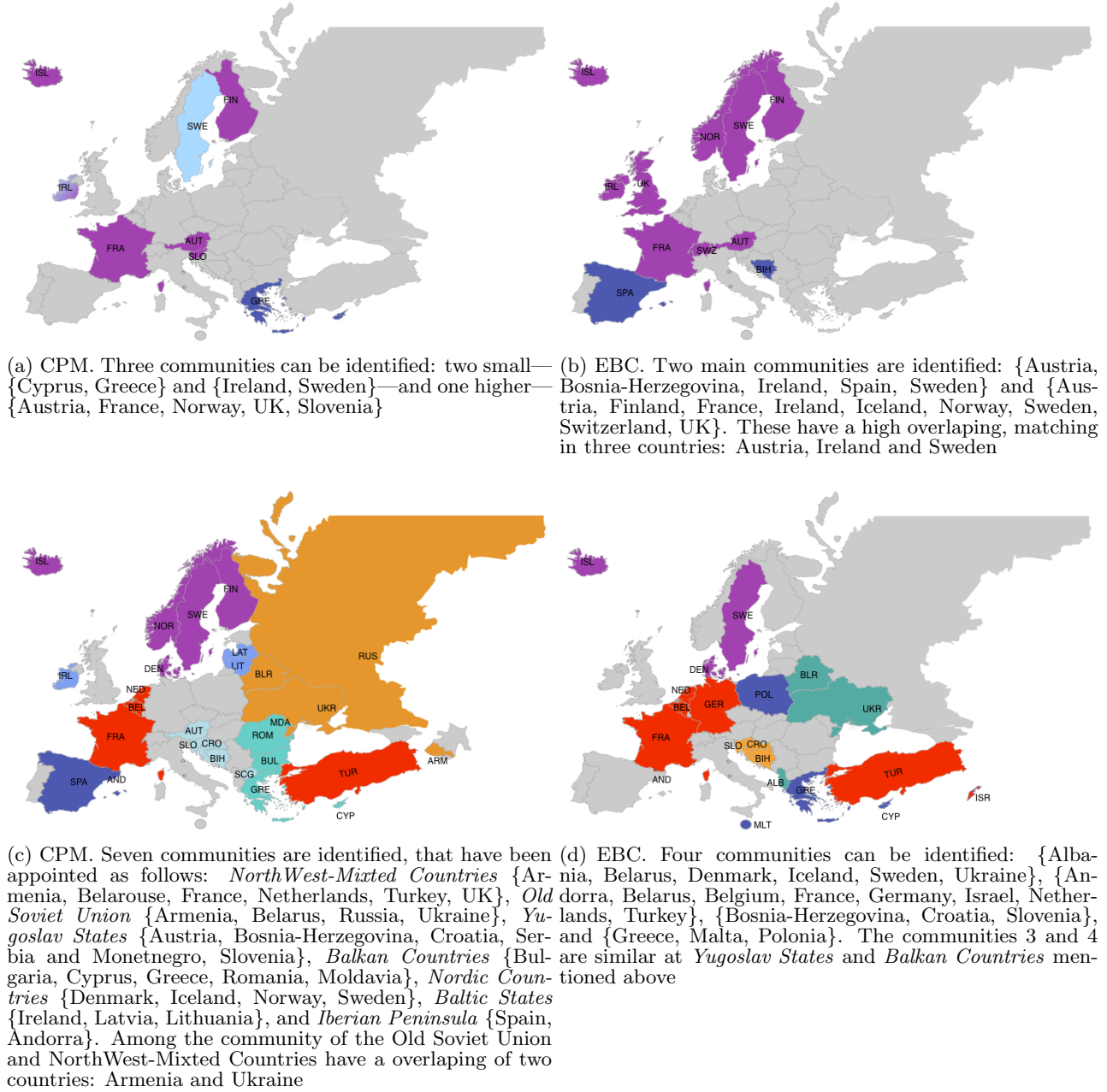


Figure 3: Communities detected in the period before (1992–1996) and after (2004–2008) televoting using the CPM and EBC algorithms

of Ireland: holds the record for the most number of wins, having won the contest seven times, none of which post-televoting. Four years are included at the first period in the completed study (1992, 1993, 1994 and 1996). Contrasted with the pre-televoting period when Ireland could expect a lot of jury-votes, votes in the he post-televoting era have become much more geographically defined. From 2004 to 2008, Ireland received votes from neighbors like the UK and from the Baltic Countries (Lithuania and Estonia), as seen in figure 3(c). These findings make the case for a much more fragmented Eurovision, both geographically and culturally,

post-televoting, disrupting the reign of past classical winners.

4. CONCLUSIONS AND FUTURE WORK

To understand the voting dynamics of the Eurovision contest, and to find a basis for comparing these dynamics before and after televoting was implemented, we have centered our investigation around two the periods of 1992-1996 and 2004-2008. These time period coincide with the last five years of a jury-centric contest and the first five years of the televoting driven contest where individuals may phone in their votes.

We model the yearly outcome as directed graphs, and attempt to find sub-communities within these graphs that may reveal an underlying attraction between countries which prevent a truly unbiased contest to take place. Our findings shows that there indeed are such sub-communities, and that understanding the Eurovision contest as a contest between these communities and not individual countries paints a much more accurate picture of the underlying dynamics of the voting system.

Our findings show that, as a result of the *televoting*, stable communities throughout time can be identified using community-finding algorithms. These communities tend to have countries that share a common past or boarder, or have similar historical and cultural roots.

We also show evidences of *diaspora* in the voting. For instance, the large numbers of turkish migrants in north-west european countries, and the resulting effect it has on the communities Turkey belongs to. Finally, we see a change in the winners of the contest, that is the case of Ireland analyzed in the previous section.

Future work will be centered around a wider look at the communities that form each year, as well as the countries that move in and out of them. This work will be used in the year future to measure how the communities evolve through time, and later to build a learning system. It could be used to predict the future Eurovision contest results.

5. ACKNOWLEDGEMENTS

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APPENDIX

A. EUROVISION DATA

Table 6 shows detailed information to each participant country [5]. The columns show the name and abbreviation used for each country, the year of the debut in the contest, the number of wins before and after the introduction of the *televote* voting system—referred only to the period pertaining to this study. The winners of these ten years, before the *televote* were: Ireland 4 times, and one for Norway. However, once *televoting* is incorporated the new champions are; Finland, Greece, Russia, Serbia and Ukraine. From these last five victories, two of them (Ukraine, Russia) belongs to the Old Union Soviet community, one belongs to old Yugoslav countries (Serbia). That is, three of the five studied victories share some recent historical and cultural roots.

Country	Abbreviation	Debut	Wins Before	Wins After
Albania	ALB	2004	0	0
Andorra	ARM	2004	0	0
Armenia	ARM	2006	0	0
Austria	AUT	1957	0	0
Azerbaijan	AZE	2008	0	0
Belarus	BLR	2004	0	0
Belgium	BEL	1956	0	0
Bosnia Herzegovina	BIH	1993	0	0
Bulgaria	BUL	2005	0	0
Croatia	CRO	1993	0	0
Cyprus	CYP	1981	0	0
Czech Republic	CZE	2007	0	0
Denmark	DEN	1957	0	0
Estonia	EST	1994	0	0
Finland	FIN	1961	0	1
France	FRA	1956	0	0
F.Y.R. Macedonia	MKD	1998	0	0
Georgia	GEO	2007	0	0
Germany	GER	1956	0	0
Greece	GRE	1974	0	1
Hungary	HUN	1994	0	0
Iceland	ISL	1986	0	0
Ireland	IRL	1965	4	0
Israel	ISR	1973	0	0
Italy	ITA	1956	0	0
Latvia	LAT	2000	0	0
Lithuania	LTU	1994	0	0
Malta	MLT	1971	0	0
Moldova	MDA	2005	0	0
The Netherlands	NED	1956	0	0
Norway	NOR	1960	1	0
Poland	NOR	1994	0	0
Portugal	POR	1964	0	0
Romania	ROM	1994	0	0
Russia	RUS	1994	0	1
Serbia	SRB	2007	0	1
Serbia and Montenegro	SCG	2004	0	0
Slovakia	SVK	1994	0	0
Slovenia	SLO	1993	0	0
Spain	SPA	1961	0	0
Sweden	SWE	1958	0	0
Switzerland	SWZ	1956	0	0
Turkey	TUR	1975	0	0
Ukraine	UKR	2003	0	1
United Kingdom	UK	1957	0	0

Table 6: General Information about the participant countries for the two periods studied