Data Visualisation Coursework: Eurovision Voting Patterns 1975 - 2010

1. Research Question(s):

- From 1975 to 2010, were there any patterns in how countries vote for each other?
  - ◇ Regional voting patterns according to geographical locations
  - ◇ Relationship between events during the year and voting patterns
  - ◇ Relationship between cultural and language similarities and voting patterns
- What does the voting pattern signify about the countries and their relationships?
- How does the regional voting blocks influence the competition results?

2. Data Source(s):

Eurovision 2011: how to find out who will win - plus the winners list and full voting history (http://www.theguardian.com/news/datablog/2011/may/13/eurovision-winners-list-data)

3. User Instructions:

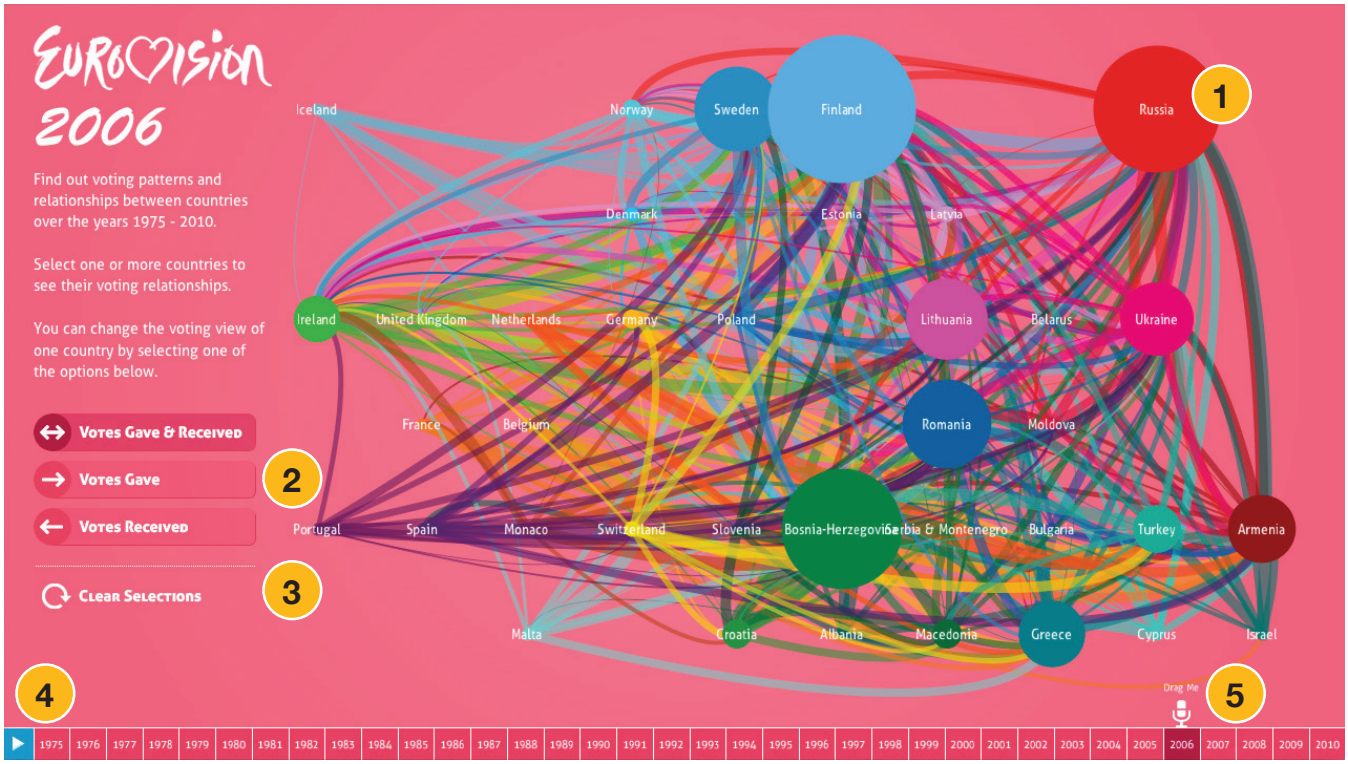

Figure 1: Screenshot of Eurovision data visualisation

1. By clicking on a country, you can see the votes that the country gave and received for the year. Clicking on the country again will deselect it. On mouseover, you can also see the total number of received votes. By clicking and selecting more than one country, you can see the voting relationship between the selected countries.
2. When a country has been selected, you can switch between three viewing options. By default, it'll show all the votes the country gave and received. Viewing only the votes cast to other countries and only the votes received are also available as options.
3. You can clear the selected countries and go back to the default view of all participating countries.
4. By clicking on the "Play" button, the entire timeline will play from current selected year to 2010. If

the year is already at 2010, it'll autoplay from 1975. "Play" button will switch to "Pause" button when clicked. You can pause at any time during the timeline autoplay.

5. You can scrub the timeline and view the changes by dragging the microphone over the timeline. You can also click on any of the years to view the voting patterns for the clicked year.

4. Design Justification:

4.1 Colour:

Each country has been assigned its own colour. If at all possible, a country was assigned a colour that it is strongly associated with - green for Ireland, orange for the Netherlands. However, this was not possible to do so for every country. It was decided that being able to visualise regional votes was more important, in order to illustrate regional voting patterns. Hence, countries share similar colours within a region. When a country has been selected and it is in "Votes received" mode, you'll be able to distinguish where the votes are coming from by the colours of the voting lines and group votes into regions by similarities between the colours.

Following regions have been identified for colour assignments:

- Scandinavia - light blue
- Former Soviet - red
- Iberia - purple
- UK - light green
- Central Europe - yellow
- Benelux - orange
- Eastern Europe - dark blue
- Mediterranean - aquamarine
- Balkan - dark green

Voting line is the colour of the country that cast the vote. This shows the direction of the vote from giver country to recipient country.

4.2 Layout:

Grid system was employed to resemble the European map as closely as possible. Each country was assigned a grid space according to its location on the map. Wherever countries are clustered together, they were spread apart to reduce overlapping as much as possible. The voting lines use curves so that lines in two different directions are clearly separated.

Geographical locations were important to easily visualise where the regional votes are coming from and to see how neighbouring countries vote for one another. Figure 2 shows the two voting views for Greece as an example.

Figure 2: Above screenshot shows where Greece's votes went to. Below shows where Greece's votes came from.

Timeline is placed at the bottom of the screen, acting as a time variable axis for the whole visualisation. It will visualise the data, one year at a time and also create transitions between the years. Timeline displays all the years available and the user will be able to jump between any years or scrub the timeline to display the changes over certain periods of time.

4.3 Symbolisation:

The size of the circle scales to the number of votes that the country has received. By comparing the circle sizes, you will be able to see how well each country does in the competition. By using the timeline, how well each country does from year to year can also be seen by the changes in circle size.

Each voting line's thickness is indicative of number of votes cast. The thicker the line is, the more points have been given. When viewing relationships between countries, thicker lines indicate strong voting relationships. Country that received no votes but voted for other countries are still present on the map so that you can see the source of each voting line.

4.4 Interaction:

There are two main interactive components that can visualise voting relationships and how they evolve over the years.

Timeline can be scrubbed by mouse dragging action so that the user can pick certain points in time periods and see how changes happen over the years. Autoplay was implemented so that the users can easily visualise the changes over time. Instead of displaying all-time data, a timeline was deemed more useful in seeing how the competition changes and how events and political factors influence the votes. One example is the start of Turkish immigration to Germany in timeline and how it has influenced German votes toTurkey.

Selection and mouseover interactions highlight information for the user. Specific country relationships can be hard to see without selection for highlighting. Selecting interaction was also important in letting the users choose countries of interest to them.

Even with selection, sometimes voting lines can be hard to distinguish from each other. This is especially the case when the country does well in the competition and receives many votes from everywhere. Mode selection was implemented to highlight how the votes have been cast for a single country. "Votes gave" mode will only show how the country voted for others, and "Votes received" mode shows where the votes came from. In combination with timeline autoplay, you can see how the votes change over time - is there consistency or is there no pattern? You can also see non-relationships when you select countries that you suspect do not have any favouritism towards each other.

5. Further Work:

Currently, it's hard to see which countries share strong or weak links at a quick glance, unless they have been selected for viewing. Repositioning of the countries would help in this regard to space out countries that share weak voting patterns. One solution would be to create a network of countries that float away from each other if they share little to no votes between them. Repositioning of the circles would also have been useful for spacing apart countries that are too close to each other. This is not a problem when the

countries have received little votes and the circle sizes are small.

The direction of the voting lines can be difficult to see only by the colour at times. Since a colouring system was used to symbolise regions and countries, flags were not used. However, another visualisation system using flags could be explored as an option.

There is no efficient way of ranking the countries per year. User ranks the countries visually by the size of the circles. Viewing option to see the circles either by their geographic location or by re-ordering according to the points could make a useful addition.

All time data for rankings and total number of votes would also show another interesting aspect of the data. It was not incorporated in this visualisation since the size of the circles for all time data will not scale to the same scale as single year's data. For a single year, the range of votes per country can only be from 0 to about 200 plus at most. All time data would have to be a separate view as the scale of the votes will be in the thousands.

6. Data Insights

There are clear regional votings that take place over the years. Regional votings may indicate political alliances. It could also be that neighbouring countries share language similarities and musical tastes. For example, Greece-Cyprus pair, and Turkey-Azerbaijan pair consistently give high votes to each other.

The following lists noted regional voting patterns from the visualisation:

- Former Soviet Union, Warsaw Pact countries, such as Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. There are strong voting relationships between every country in this block. One exception is between Armenia and Azerbaijan who are technically still at war with each other. (Figure 3)
- Nordic countries - Iceland, Norway, Sweden, Finland and Denmark
- Baltic states - Estonia, Latvia and Lithuania. There is also a strong relationship between Baltic states and former Soviet countries. It's interesting to note that Russia does not reciprocate votes to Baltic states at the same level as it receives votes from them. This can be explained by a large Russian population in Baltic states.
- United Kingdom and Ireland
- Balkan countries - Croatia, Slovenia, Bosnia-Herzegovina, Albania, Serbia and Macedonia

Regional votings become more clearly visualised during the years they do not receive votes from anywhere else and thus do not do very well in the competition. They will receive votes mostly from the region they belong to.

Relationship also becomes more obvious when you add a country that has no close association with regional voting block and see the emerging voting patterns. Figure 3 shows voting patterns between former Soviet and

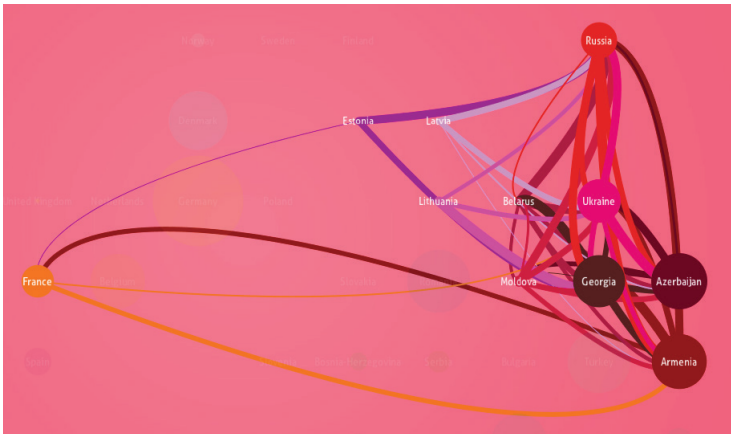

Figure 3: Voting patterns between former Soviet countries and France.

Baltic countries. France has also been selected to compare the voting relationships. You can see clear cluster of thick voting lines within the region but a weak link to France. One notable relationship shown here is between France and Armenia. Over the years, France has voted for Armenia the most out of any of the other former Soviet countries. This may be explained by the large Armenian population in France. Armenia also votes for France consistently.

France and Armenia shows an example of diaspora effect when there is a sizable immigration population in a country. Figure 4 shows another example of diaspora effect. Since 2000, Turkey has done much better in the competition when it could depend on high number of votes coming from Germany, France and the Netherlands where large Turkish population lives.

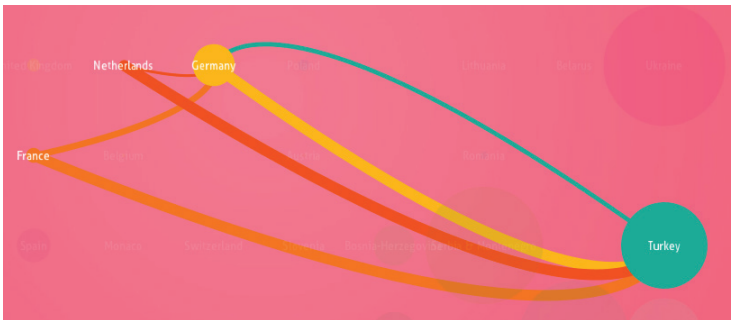

Figure 4: Diaspora effect on Turkey's ranking in the competition

The impact of regional voting on the final results seem to be more clear after 2000. Since 2004, there is a shift in the size and cluster of circles from being concentrated around Central Europe to Eastern Europe. (See figure 5.) The year Russia won the competition, it has clearly received more votes from Eastern block, while receiving much less support from Scandinavia and Central Europe. Having a large number of countries in a regional block does help, as was the case for Russia in 2008.

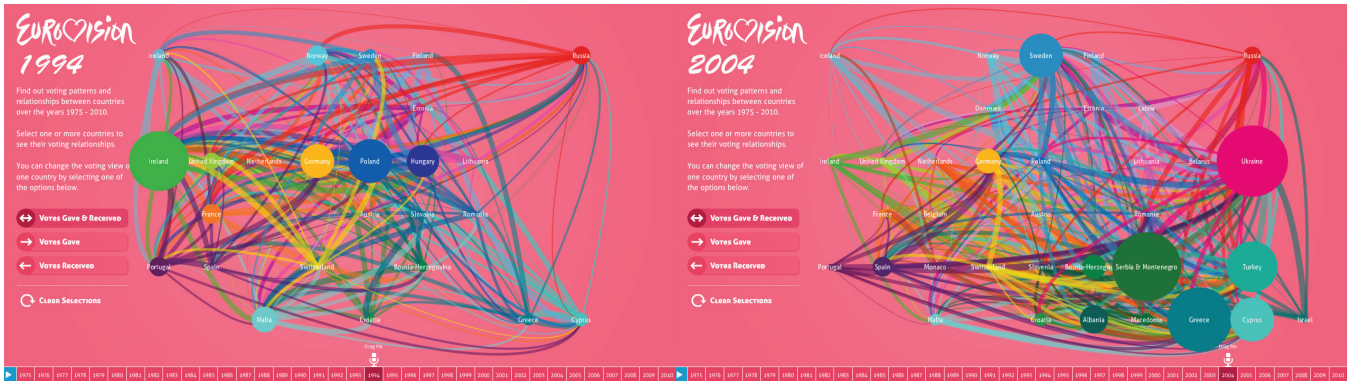

Figure 5: Shift from Central to Eastern Europe from 1994 to 2004.

However, regional voting still does not guarantee a win. In the years following Russia's win, Russia's ranking was lower in the competition despite continued regional support. Countries that do not have any strong affiliations with other countries do win the competition. Germany is such an example in 2010. There are other factors at play for winning the competition - certainly the quality of the song and quality of the performance are variables and so is shared musical tastes between countries.