

Interactive Calendar of the Conflict-Cooperation Relationship

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Abstract. We design an interactive calendar to demonstrate the temporal density of international events. Circular relationship charts are used to display the daily conflict-cooperation events. Due to the amount of labels of counties to be displayed on the circle, we introduce a resolution threshold (RT) to filter countries by Goldstein scale, which allows us understand the international relationship intuitively.

Keywords: data visualization conflict-cooperation resolution threshold

1 Introduction

The amount of data in our world has been exploding, and analyzing large data sets, so-called big data, will become a key basis of competition. This deluge of data lies a wealth of valuable information on how we conduct our businesses, governments, and personal lives. Considering the conflict-cooperation events happening both between different countries and inside out country, We get the data from the GDELT project. The Goldstein scale are used to represent the importance and impact of every event, which assigns a numeric score from -10 to +10, capturing the theoretical potential impact that type of event will have on the stability of a country.

2 The Conflict-Cooperation Calendar

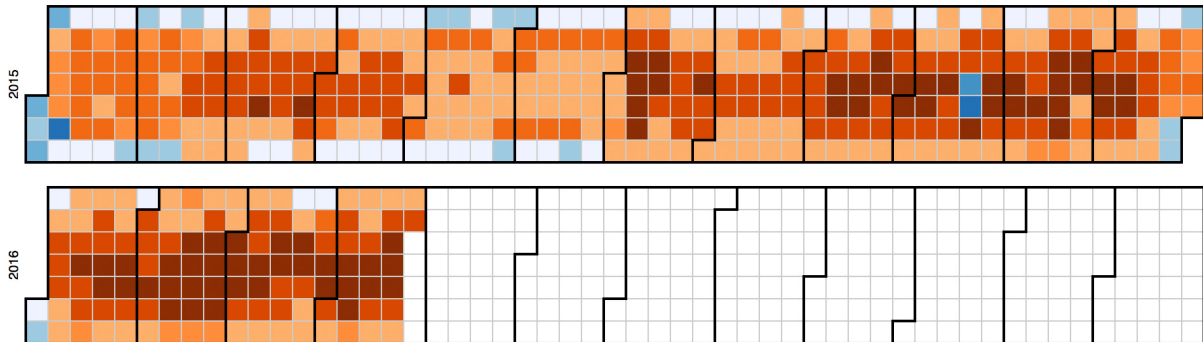


Fig. 1. The Conflict-Cooperation Calendar.

This automatic updating calendar shows the density of everyday's conflict-cooperation events which are decorated by ten types of color. The duller the blue is, the "colder" the day is, on the contrary the duller red suggests a "hotter" day with massive drastic international conflict-cooperation events. In the calendar, the columns set out seven days of a week, while the thick lines circle every month. Obviously it is more peaceful in weekends and busy days appear more often in the work days. We are also aware of the tend to burst of busy days in the calendar.

3 Relationship Circle and Resolution Threshold

By clicking every block in this calendar, we can get the relationship circular in detail as in Fig.2(a)(b)(c). Three character codes around the arc are used to represent the different countries. More than one hundred countries are recorded in the GDELT project, so it will be messy if we present all of them as in Fig.2(c). So, we introduce a resolution threshold to filter the countries. The Goldstein scale suggests the impact of the event to the corresponding country and we can use it to show the activeness of countries in international conflict-cooperation events. The bar and round on the lower right corner of every picture in Fig.2 is used to to change the resolution threshold. Pull the round to the right when need to observe the top active countries and pulling the round to the left will show the worldwide interaction. Furthermore we can view all the international events that a specific country engage in, as in Fig.2(d)(e).

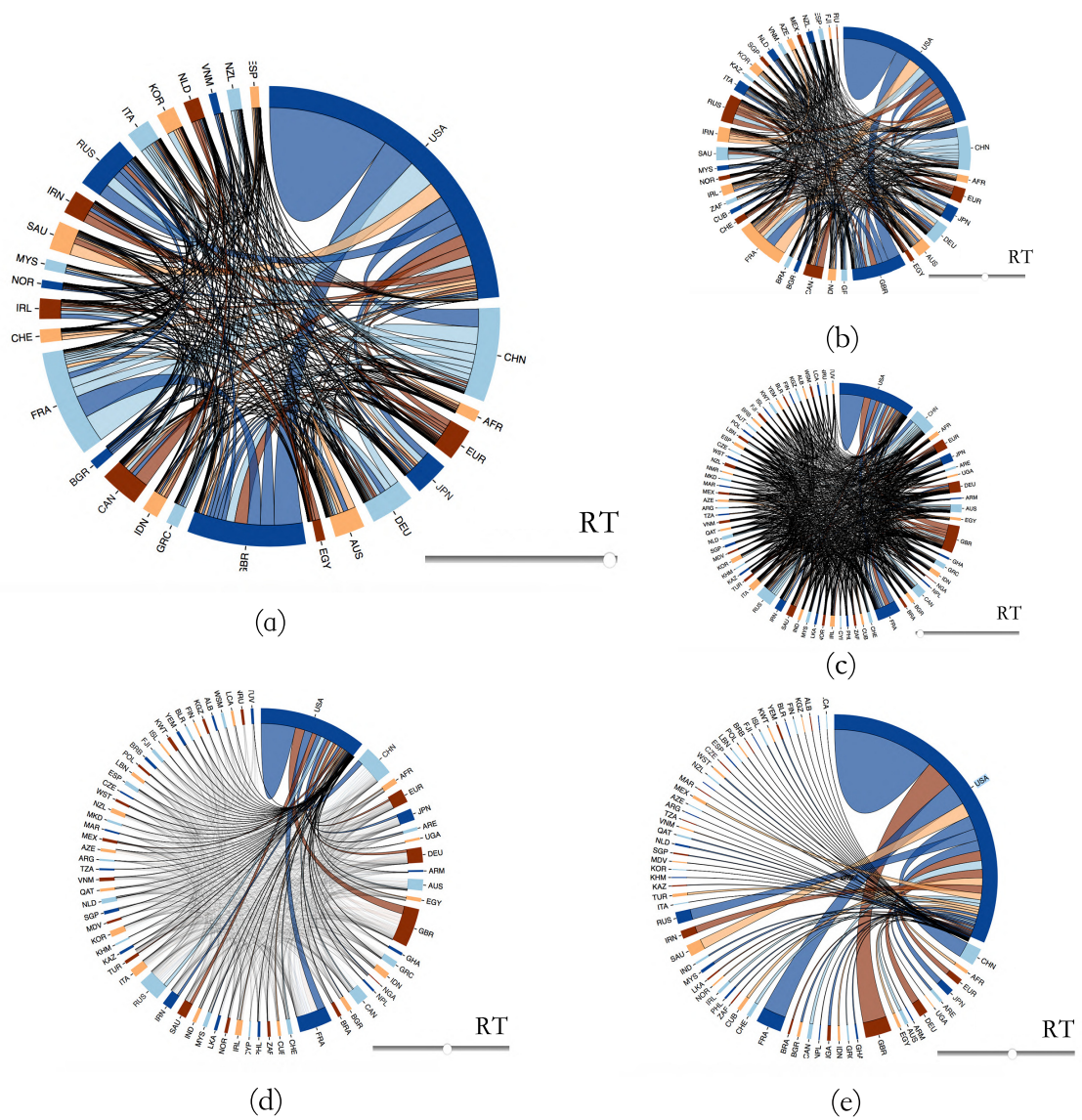


Fig. 2. Relationship Circle and Resolution Threshold.(a) With the resolution threshold as 95%. (b) With the resolution threshold as 50%. (c) With the resolution threshold as 5%. (d) Select the USA related events, (e) and only the USA related events visible.

4 Conclusion

With the calendar, it is easy for us to understand intuitively the general picture of the global conflict-cooperation relationship. The circle is a good way to display the data of events between countries, and the resolution threshold help filter the data and improve the visualization.

References

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