Co-voting and retweeting in the European Parliament

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We analyze and compare the co-voting and retweeting behavior of the Members of the current European Parliament (MEPs). This work continues our research on communities of influence that MEPs (and their followers) form on Twitter [2]. We define the influence of a MEP by the number of retweets of his posts (i.e., endorsements).
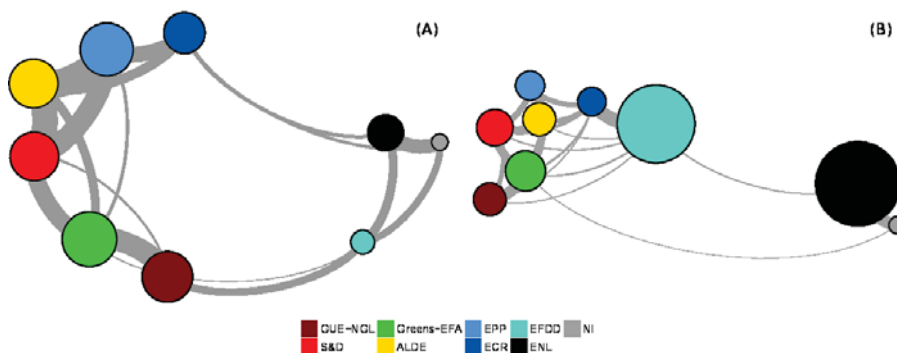

Fig. 1: **Networks of roll-call votes and retweets:** (A) co-voting agreement within and between the political groups, (B) average retweets within and between the political groups.

We collected the results of 2,535 roll-call votes in the EP [3], from October 1, 2014 to February 29, 2016. MEPs are members of different political groups (see Table 1). The same voting within the groups shows their cohesion, while co-voting of different groups indicates their tendency to form coalitions. In the social media context, retweeting gives an alternative view on cohesion and coalitions (see Fig 1).

We apply two different methodologies to analyze the cohesion and coalitions. The first one is Krippendorff's *Alpha* [5], a measure of the co-voting agreement. The second one is Exponential Random Graph Model (ERGM) [4], a network-based approach, often used in social-network analyses. ERGM estimates factors which influence the formation of links in the network. The results are in Figs 2 and 3.

Even though the two methodologies come with different sets of techniques and are based on different assumptions, they provide consistent results. The differences are due to different concepts of chance, and treatment of non-attending and abstaining MEPs. *Alpha* is computed only from the yes/no votes of MEPs. $Alpha = 1$ indicates perfect co-voting agreement, and 0 indicates co-voting by chance. ERGM, on the other hand,

Table 1: Distribution of MEPs by political groups, ordered from the left to the right wing.

Political group	Number of MEPs	Twitter accounts	Retweet network nodes
GUE-NGL	61	43	41
S&D	193	162	135
Greens-EFA	51	48	44
ALDE	77	62	54
EPP	223	166	141
ECR	82	64	48
EFDD	45	39	34
ENL	38	29	27
NI	17	9	6
Total	787	622	530
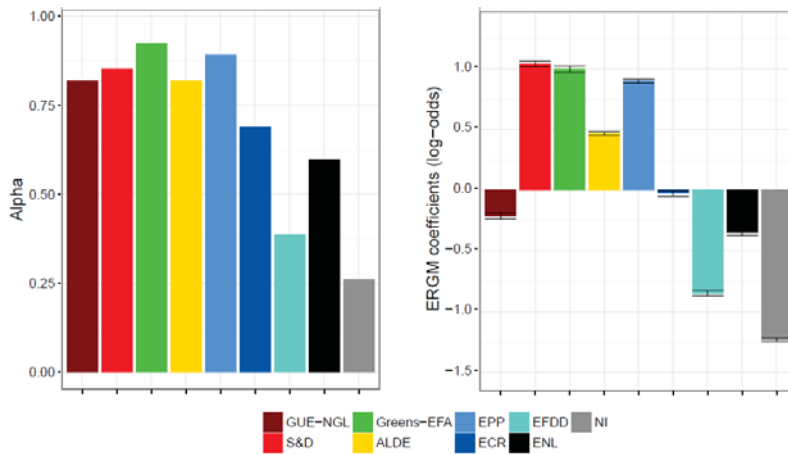
Fig. 2: **Cohesion** of the political groups in terms of roll-call votes as measured by Krippendorff's *Alpha* (left) and by ERGM (right).

considers potential links between all the MEPs, voting, abstaining and non-attending. Co-voting by chance (ERGM coefficients $= 0$) is computed from the average values over a large portion of randomly generated networks.

A novel contribution of this work is the relationship between the co-voting and the retweeting patterns (see Figs 4 and 1). Results reveal a very similar structure on the left-to-center side of the political spectrum. On the other hand, the strongest retweeting cohesion and coalitions are observed on the right side of the EP. We speculate this to be the result of a well-designed propaganda apparatus of the right-wing leaders, and the euroscepticism they tend to spread across the network. Full details of the applied methodologies and interpretation of the results can be found in [1].

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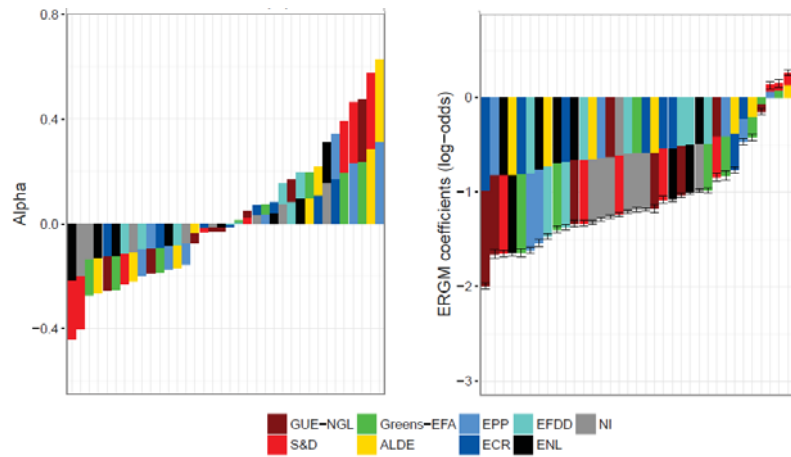
Fig. 3: **Coalitions** between the political groups in terms of roll-call votes as measured by Krippendorff's *Alpha* (left) and by ERGM (right).
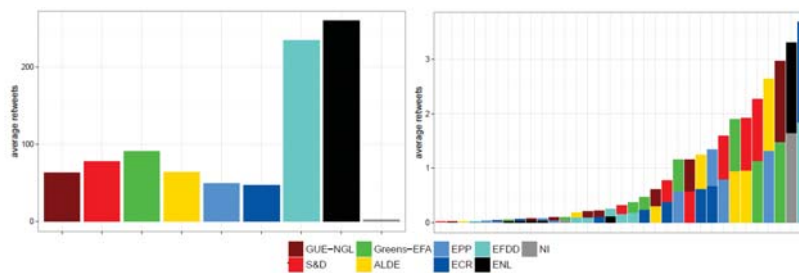

Fig. 4: **Average retweets** within (left) and between (right) the political groups.

References

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