# A long-term Analysis of Polarization on Twitter

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معهد قطر لبحوث الحوسبة
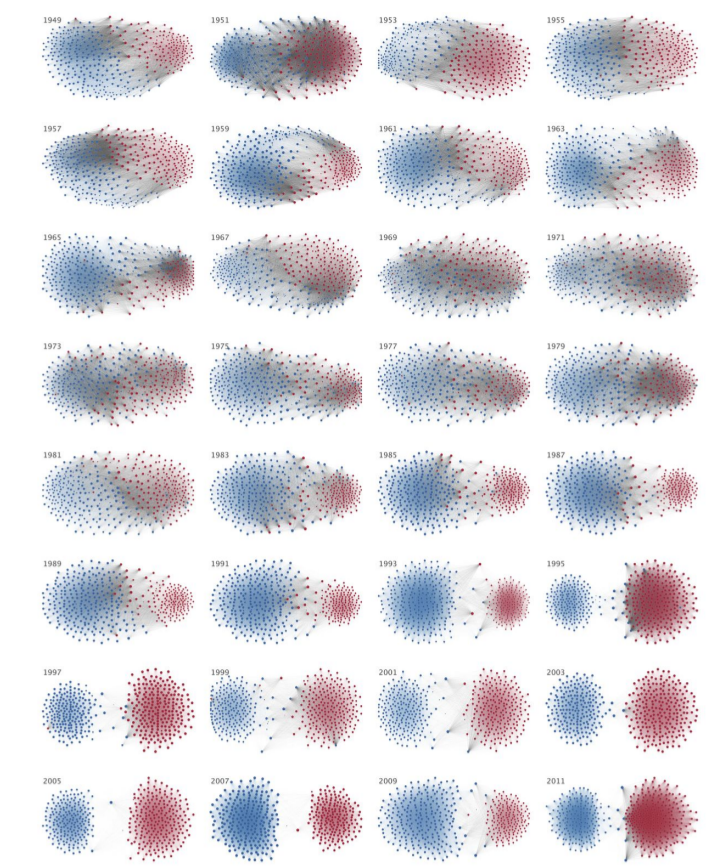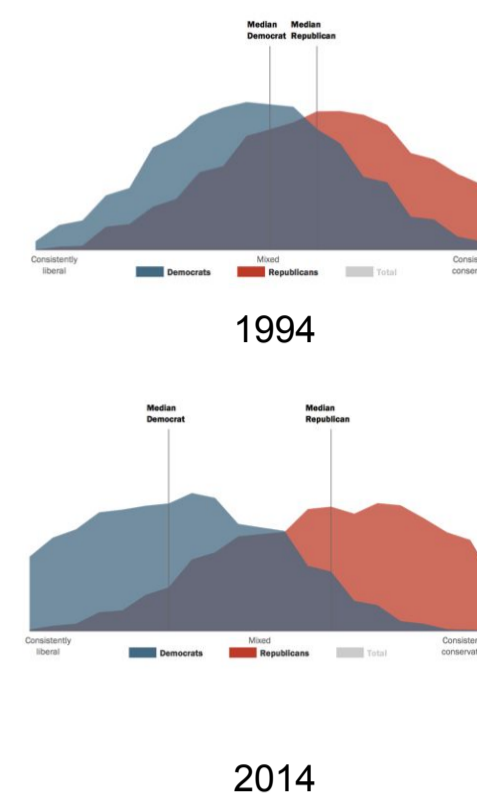Member of Qatar Foundation عضو في مؤسسة قطر

## Polarization

- A tendency to be restricted in terms of obtaining or engaging with political information to one side of the left-vs.-right political spectrum
- Recent trends show increase of offline political polarization.



1994

2014

Source:PEW Research  www.people-press.org/2014/06/12/section-1-growing-ideological-consistency/



The Rise of Partisanship and Super-Cooperators in the U.S. House of Representatives, PLOS ONE 2014

## Research Questions

- Has polarization on Social Media increased over the past decade?
- Are users more/less likely to follow both sides of the political spectrum?
- Are users generating more partisan content?



## Dataset

- Start with a set of seed political and media accounts
  - Presidential and vice presidential candidates
- Data collected
  - Followers and estimated time of follow (140M)
  - Sample of Retweeters (679,000)
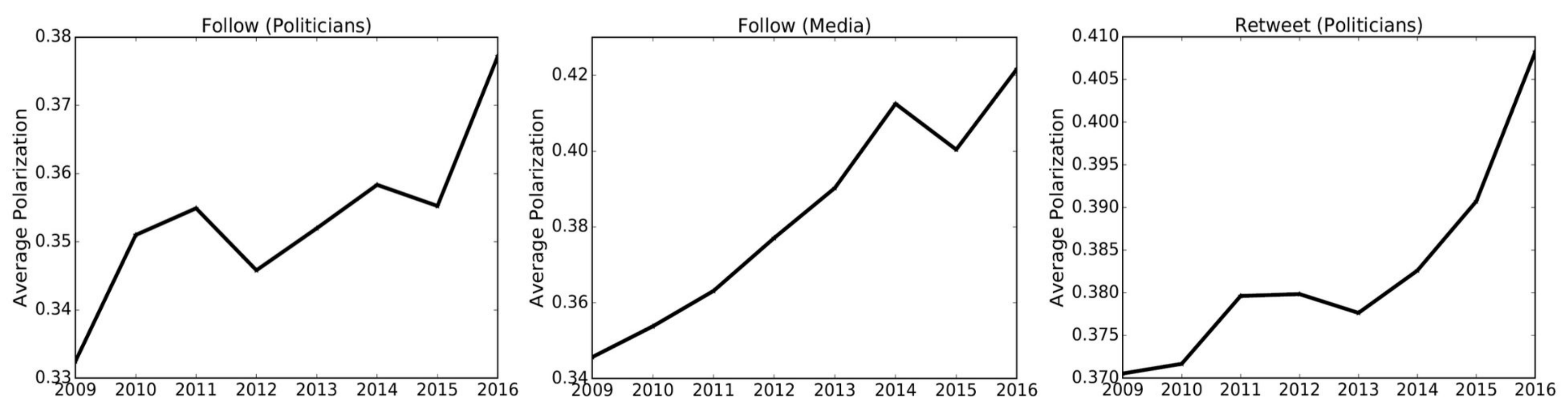  - All their tweets (more than 2 Billion)

## Methodology

- Define measures of polarization
  - Network - Do users follow/retweet both sides of the political spectrum?
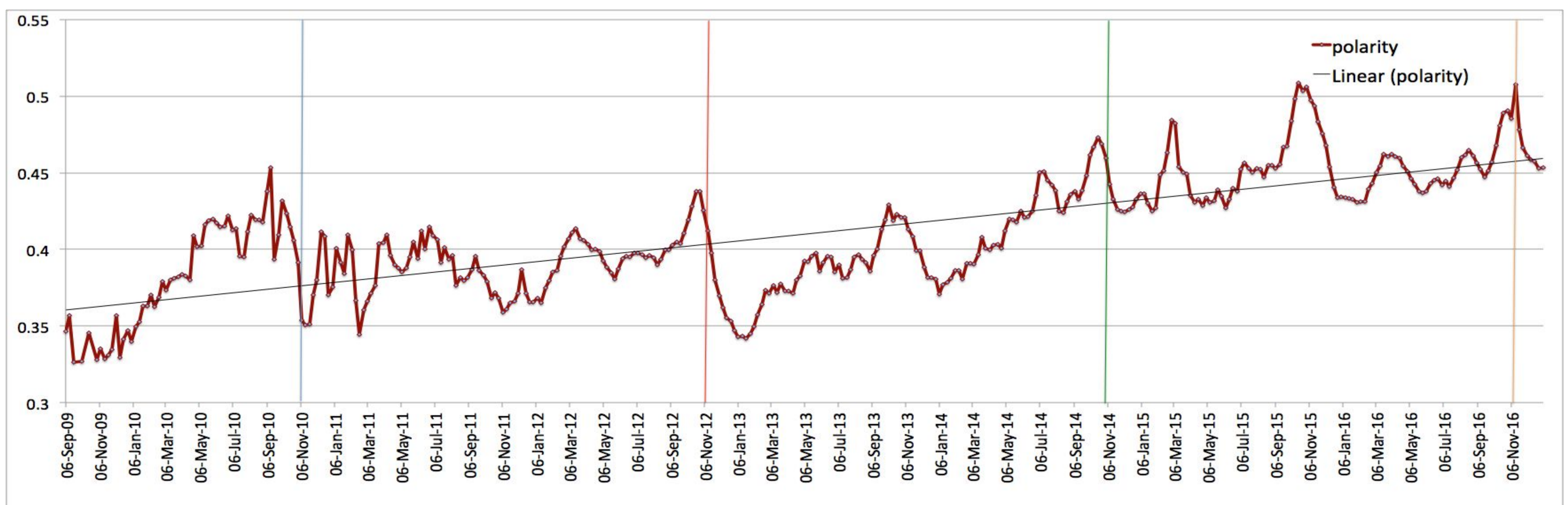  - Content - Do users use hashtags from both sides of the political spectrum?

$$\text{Lean}(h, w) = \frac{\frac{v_L}{V_L} + \frac{2}{V_L + V_R}}{\frac{v_L}{V_L} + \frac{v_R}{V_R} + \frac{4}{V_L + V_R}}$$

## Experiments

1. Follow and Retweet polarization



2. Hashtag polarization



Dataset and code available at https://users.ics.aalto.fi/kiran/polarizationTwitter/