The discussion board 4-chan has come to the spotlight due to the recent political events. In particular, /pol/, the “Politically Incorrect” board, has been a central figure in the outlandish 2016 US election season, as it has often been linked to the alt-right movement and its rhetoric of hate and racism.

The authors provide a large scale analysis of /pol/’s posting behavior, shows the impact of 4chan’s unique features, that /pol/ users are spread around the world, and that, although posters remain anonymous, /pol/ is filled with many different voices. Next, authors show that /pol/ users post many links to YouTube videos, tend to favor “right-wing” news. Finally, the authors found evidence that there are numerous instances of individual YouTube videos being “raided,” and provide a first metric for measuring such activity.

4-chan is discussion board where users are anonymous, with multiple boards, users post comments with images, post come with flags of different country which shows the origin of user that posted, the threads last based on the bumping factor through deleted after seven days and finally the moderation policy is extremely lax.

Here authors analyze the types of media (links and images) shared on the board, then, study the use of hate words, and show how /pol/ users can be clustered into geo-political regions. While doing media analysis links of mainstream and alternative site found, images of different category also discovered though very few of those images become meme.

To determine the hate speech, the authors done sentiment analysis on the board /pol/ to find the positive vs negative attitude. To identify the hate words the authors use hatebase dictionary and also used NLTK framework to identify words in various form. The authors also manually filtered some of the hate words to deal with the ambiguous and context sensitive words. They have seen that 12% of the post in /pol/ thread contain hateful terms.

The authors also showed the hateful speech differs from country to country. To find whether there is any meaning of country flag within the post they have done TFIDF (Term Frequency Inverse document frequency) analysis. TFIDF vectors generated for all the N countries after filtering (like the proxy or vpn from those countries are searched and filtered out). Though it is quite impossible to filter out all of the post done by proxy ip address, but from the analysis it is clear that most of the discussion matched with the geographical situation of that time like in US it was about trump, in turkey it was about attempted coup.

To find the evidence that the /pol/ thread is geo-politically diverse the authors have done some text classification to find whether those are from similar topics. The authors apply spectral clustering over the vectors using the Eigengap heuristic to automatically identify the number of target clusters. The number of countries used for analysis set different set of cluster. Filtering out fewer country do change the clustering block of countries. Though the discussion board is mainly for english users the non english speaking users also influence the /pol/ result. It is also

found that, the overall picture remains consistent: the flags associated with /pol/ posts are meaningful in terms of the topics those posts talk about.

While doing analysis it is found that, /pol/ is often used to post links to other sites: some are posted to initiate discussion or provide additional commentary, but others serve to call /pol/ users to certain coordinated actions, including attempts to skew post-debate polls as well as “raids”. A raid is an attempt to disrupt another site, not from a network perspective (as in a DDoS attack), but from a content point of view. I.e., raids are not an attempt to directly attack a 3rd party service itself, but rather to disrupt the community that calls that service home. The authors have shown that synchronization between /pol/ threads and YouTube comments is correlated with an increase in hate speech in the YouTube comments. They further show evidence that the synchronization is correlated with a high degree of overlap in YouTube commenters.

Rather than looking for a particular trigger on /pol/ , authors look for elevated activity in comments on YouTube videos linked from /pol/ . In a nutshell, they expect raids to exhibit synchronized activity between comments in a /pol/ thread, a YouTube link appears in and the amount of comments it receives on YouTube. Authors also expect the rate of hateful comments to increase after a link is posted on /pol/ .

To model synchronized activities, authors use signal processing techniques. They normalize the duration of the /pol/ thread’s lifetime.They consider only /pol/ posts that occur after the YouTube mention, while, for computational complexity reasons, we consider only YouTube comments that occurred within the (normalized) [−10, +10] period, which accounts for 35% of YouTube comments in our dataset. From the list of YouTube comment timestamps, they compute the corresponding Probability Density Function (PDF) using the Kernel Density Estimator method (Silverman 1986), and estimate the position of the absolute maximum of the distribution.

In many cases, /pol/ seems to have a strong influence on YouTube activity, suggesting that the YouTube link posted on /pol/ might have a triggering behavior, even though this analysis does not necessarily provide evidence of a raid taking place. However, if a raid is taking place, then the comments on both /pol/ and YouTube are likely to be “synchronized.”

Building on the above insights, authors provide large-scale evidence of raids. If a raid is taking place, we expect the estimated lag to be close to zero, and we can validate this by looking at the content of the YouTube comments. From the experiment the trend is quite clear: as the rate of hateful comments on YouTube increases, the synchronization lag between /pol/ and YouTube comments decreases. This shows that almost all YouTube videos affected by (detected) hateful comments during the /pol/ thread lifetime are likely related to raids.