# Preliminary Results

*Group 3*

*April 25, 2016*

The data in this document were pulled from a database on May 03 2016 at 10:09. As like and tweet data is collected on a rolling basis, not all likes and tweets made up to that time are included.

## Descriptive Statistics

We show summary statistics for the treatment and control groups in the period before the treatment started, and plot frequency density plots of followers and friends counts.

Table 1: Summary statistics - treatment group

| variable | mean | median | SE |
|---|---:|---:|---:|
| average_keywords | 2.0332154 | 0.8333333 | 0.1030229 |
| average_likes | 0.3802083 | 0.1666667 | 0.0211053 |
| average_MAGA | 0.1509434 | 0.0000000 | 0.0113916 |
| average_mentions | 1.1469143 | 0.5000000 | 0.0672784 |
| average_rts | 0.4648192 | 0.0000000 | 0.0497358 |
| followers_count | 114.1304348 | 51.5000000 | 5.4161810 |
| friends_count | 204.4468599 | 91.0000000 | 11.0715042 |

Table 2: Summary statistics - control group

| variable | mean | median | SE |
|---|---:|---:|---:|
| average_keywords | 2.0608506 | 0.8333333 | 0.0581374 |
| average_likes | 0.3915789 | 0.1666667 | 0.0116415 |
| average_MAGA | 0.1656473 | 0.0000000 | 0.0074941 |
| average_mentions | 1.1774833 | 0.4166667 | 0.0373574 |
| average_rts | 0.4752803 | 0.0000000 | 0.0258443 |
| followers_count | 120.4876950 | 54.0000000 | 3.0384874 |
| friends_count | 210.4776430 | 93.0000000 | 5.8492802 |
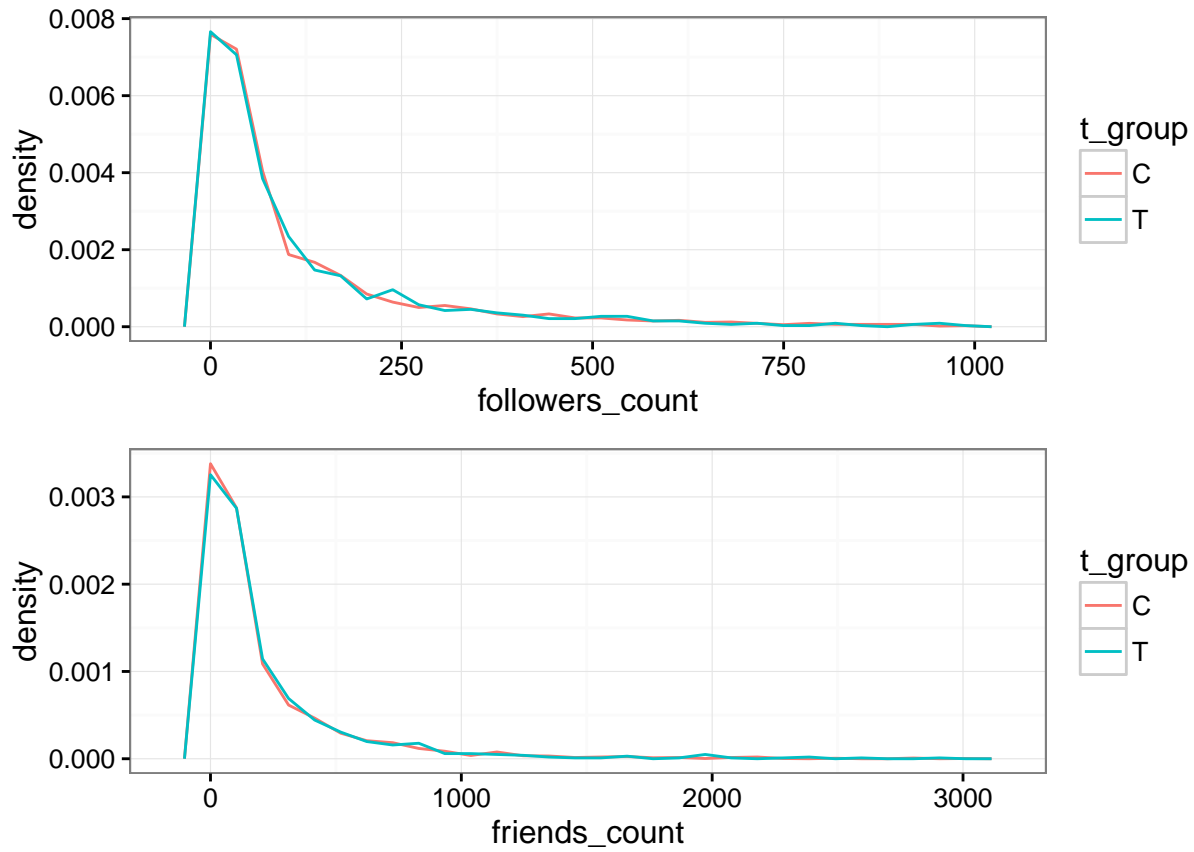
## Treatment

We sent the following tweets to our treatment group

## Results

We measure likes of trump tweets on each day, compare treatment and control groups, and show the fraction of the treatment group receiving treatment on each day with colour coded bars. The truth values of the bars are colour coded according to the following schema

| Truth | Truth value |
|-------|-------------|
| True | 2 |
| Mostly true | 1 |
| Half true | 0 |
| Mostly false | -1 |
| False | -2 |

We also collect all tweets sent by each member of our observation group (removing those which are a retweet or a reply to one of our accounts). We categorise those tweets to measure various indicators of engagement with Trump. These are shown below.
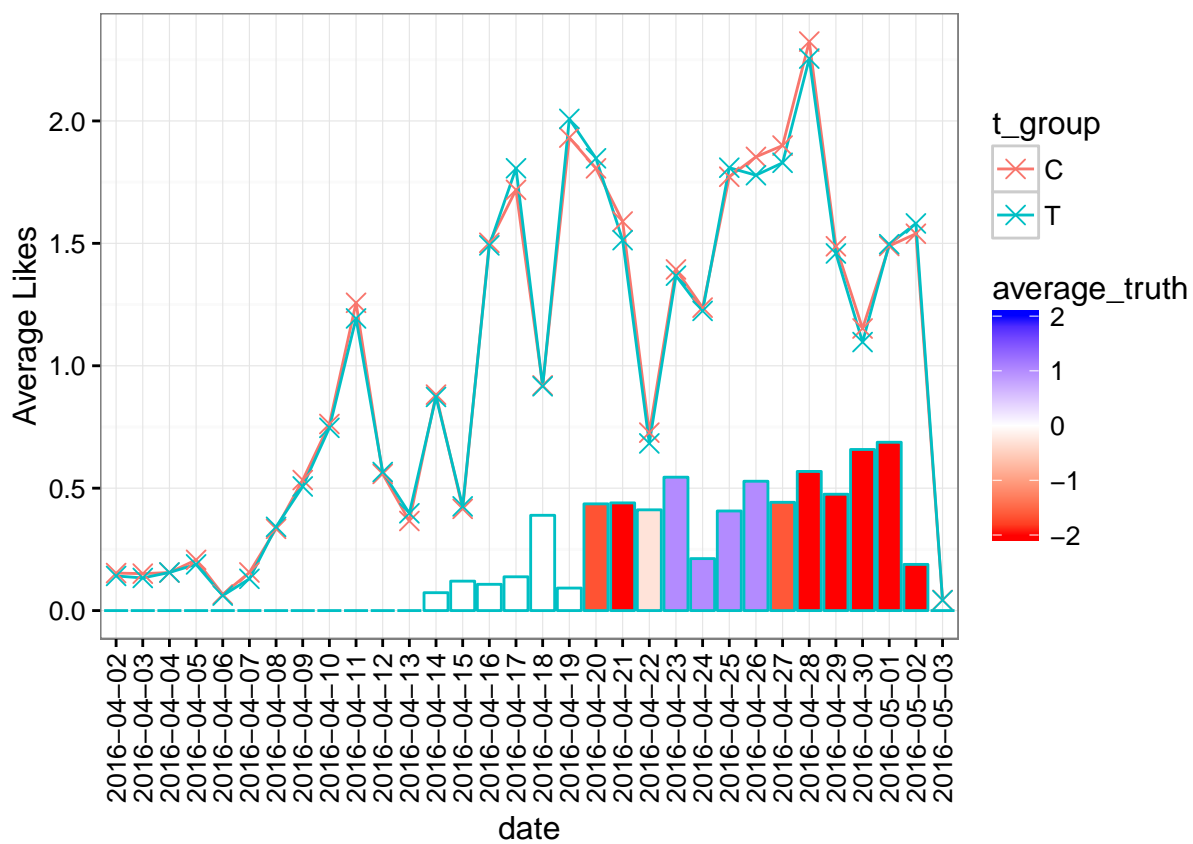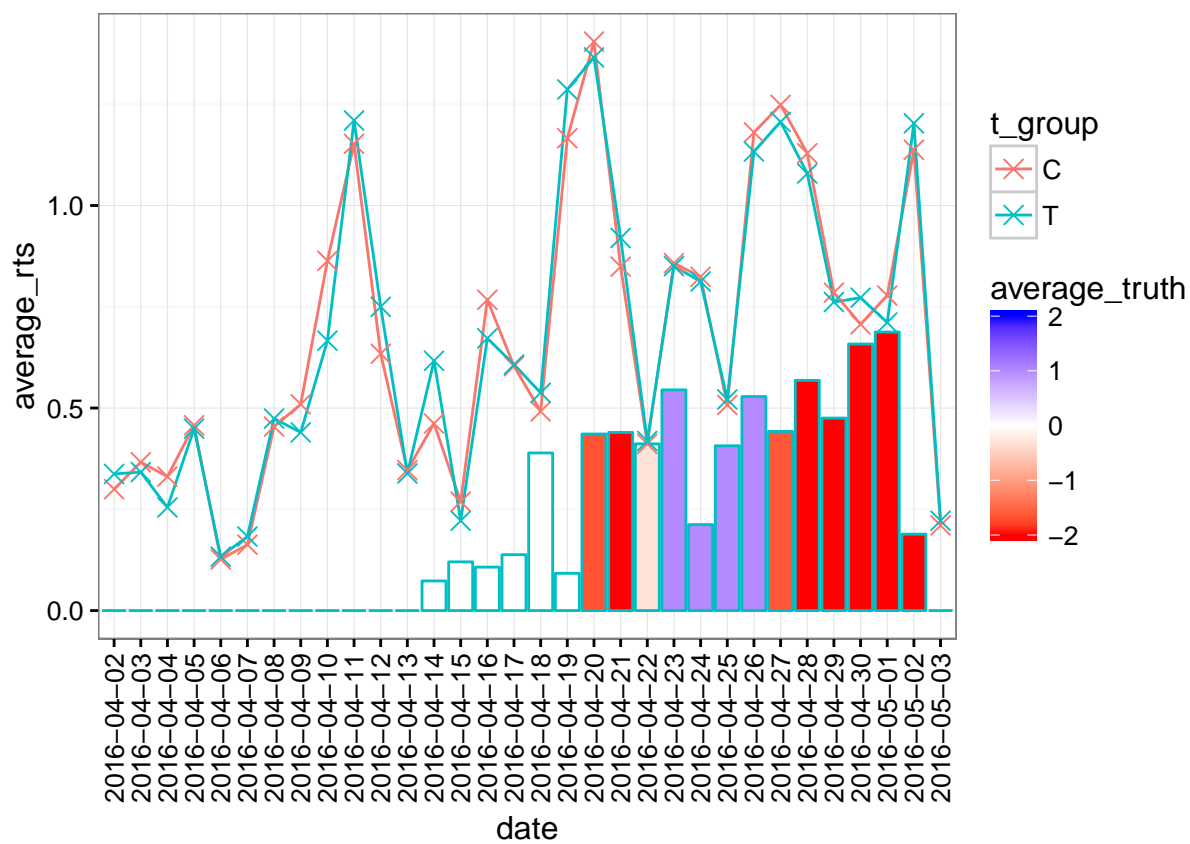
Figure 1: Average likes of Trump tweets

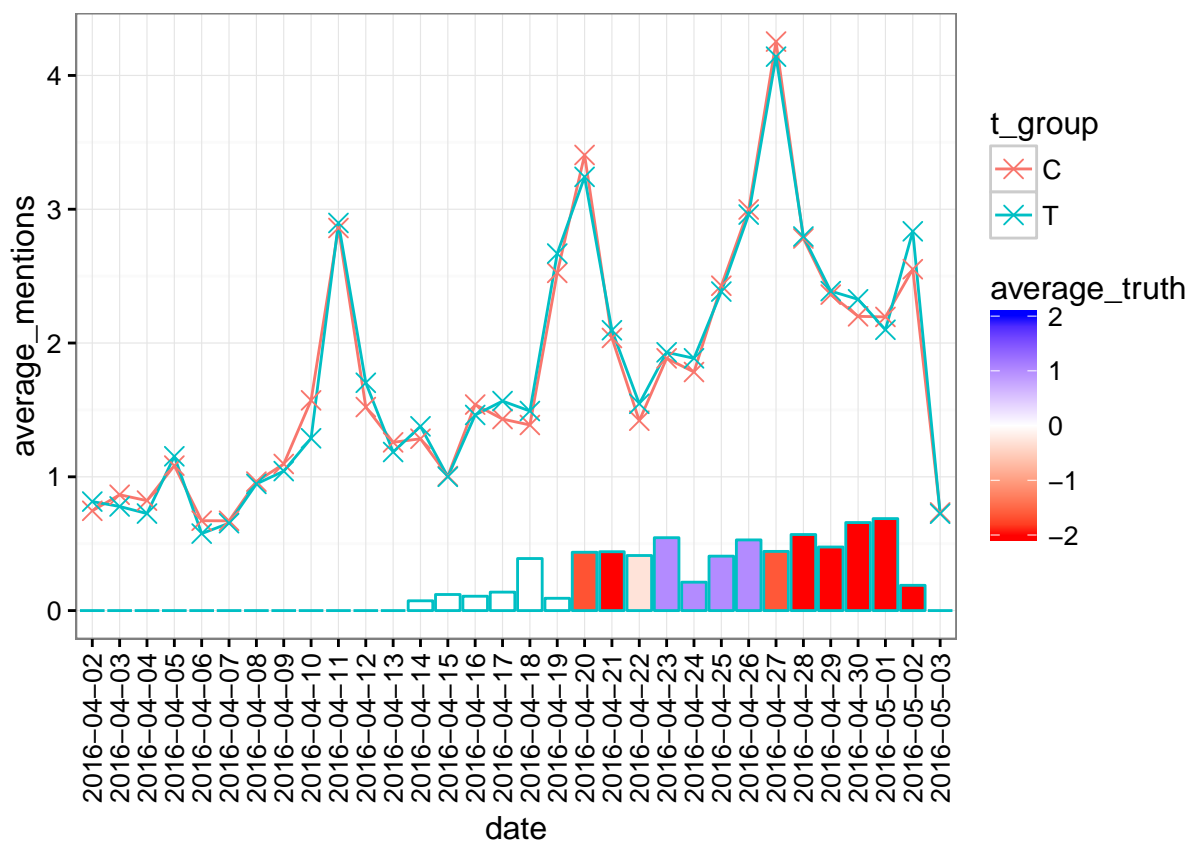Figure 2: Average retweets of Trump

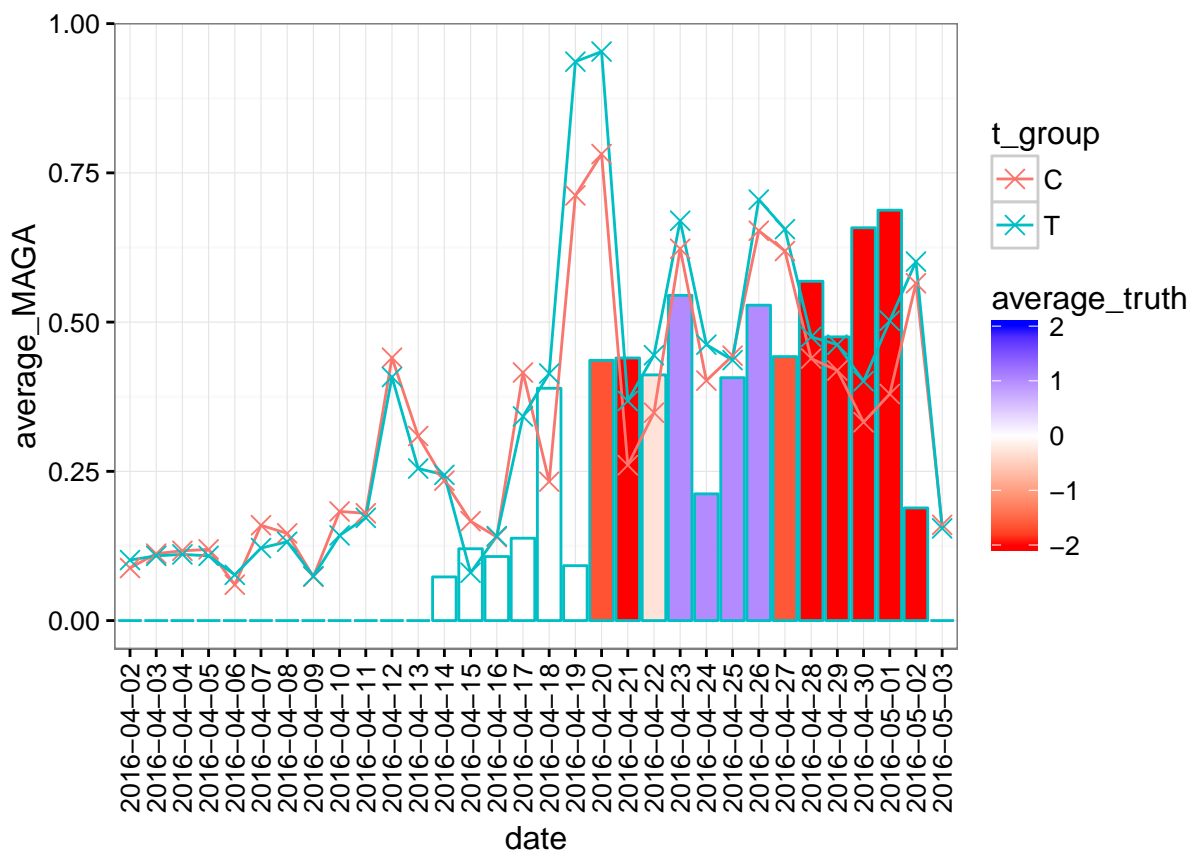Figure 3: Averages tweets containing @RealDonaldTrump

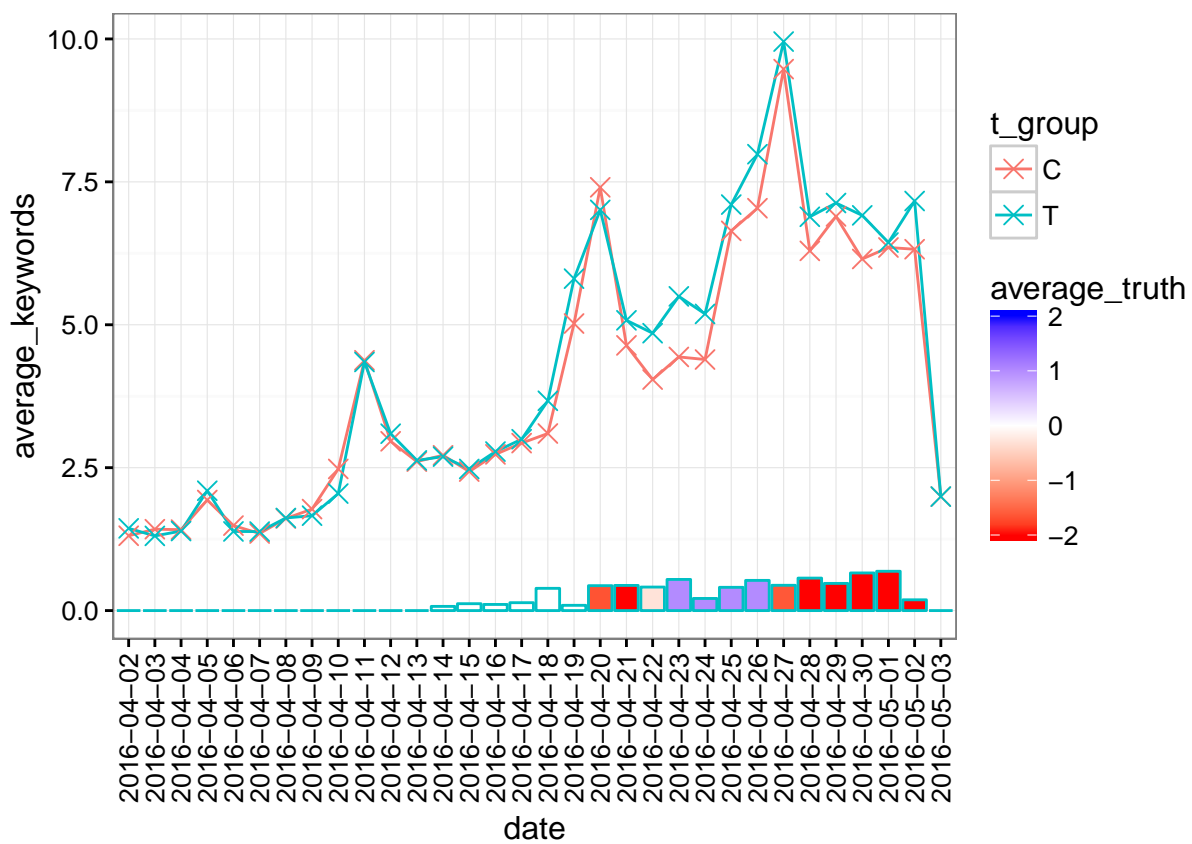Figure 4: Average tweets using the hashtag #MakeAmericaGreatAgain

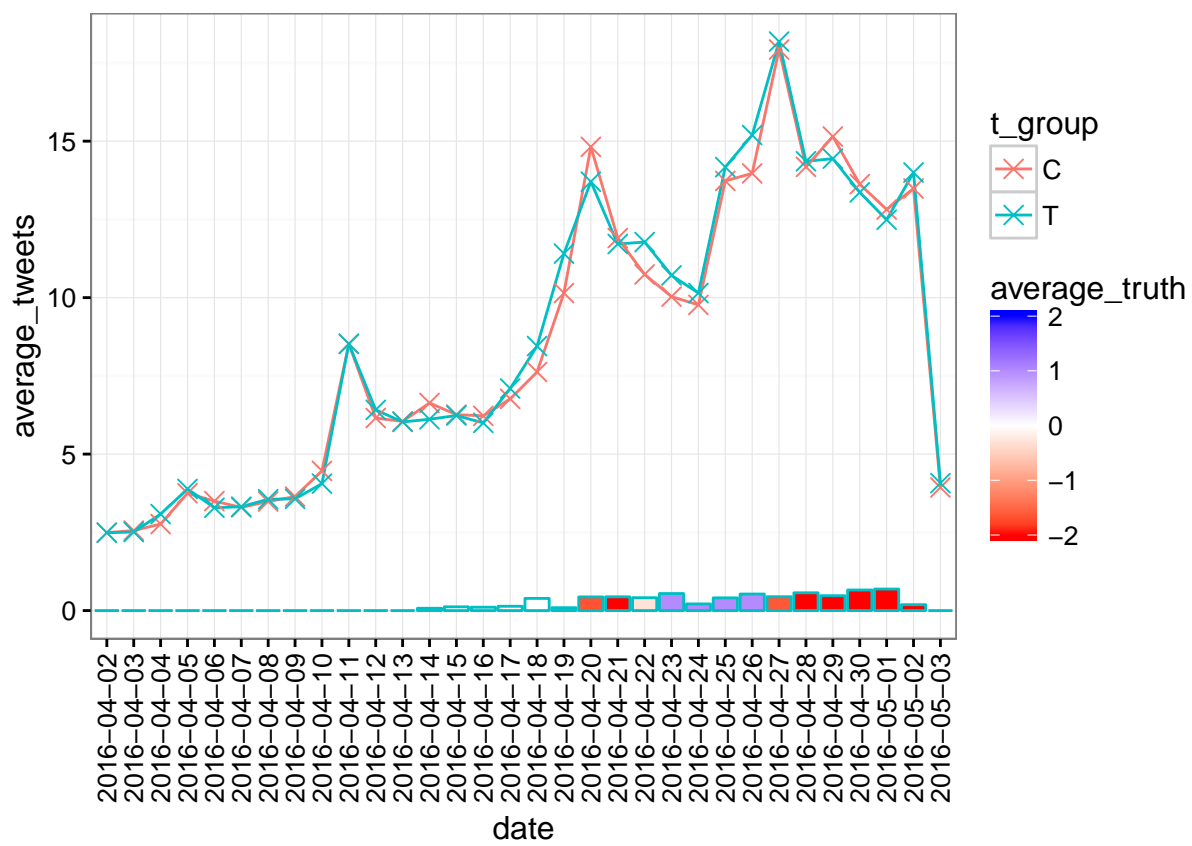Figure 5: Average tweets containing the word Trump

Figure 6: Average tweets

| tweet_no | text | truth | start date |
|---|---|---|---|
| 1 | @LostinMemphis Trump says most wire transfers to Mexico from undocumented immigrants- half true says award-winning website Politifact | 0 | 2016-04-14 |
| 2 | @LostinMemphis Trump says his deficit to Clinton much smaller than Reagan's against Carter- false says award-winning website Politifact | -2 | 2016-04-20 |
| 3 | @LostinMemphis Trump says Ted Cruz is mathematically out of winning the race - mostly true says politifact | 1 | 2016-04-22 |
| 4 | @LostinMemphis Trump says PA lost 35%, and Harrisburg 40%, of manufacturing jobs since 2001 - Mostly true says politifact | 1 | 2016-04-25 |
| 5 | @LostinMemphis Trump says football coach Rex Ryan won championships in NY twice - false says Politifact. He never did | -2 | 2016-04-27 |
| 6 | @LostinMemphis Trump says ISIS makes millions of dollars a week by selling Libyan oil - false says Politifact | -2 | 2016-04-29 |
| 7 | @LostinMemphis Trump says he fully opposed war in Iraq arguing for years it would destabilize the Middle East - false says Politifact | -2 | 2016-04-30 |

Table 3: Example tweets

**Numerical results**

We have run simple regressions interacting the time variable and the treatment variable, to see if the differences between T and C groups on each day were significant.

Table 5:

| | like_n | trump_rt_n | MAGA_n | trump_keyword_n |
|---|---|---|---|---|
| | *Dependent variable:* | | | |
| | (1) | (2) | (3) | (4) |
| t_groupT | −0.012 (0.085) | 0.038 (0.095) | 0.013 (0.072) | 0.129 (0.476) |
| t_groupT:date2016-04-03 | −0.006 (0.120) | −0.062 (0.134) | −0.017 (0.101) | −0.247 (0.674) |
| t_groupT:date2016-04-04 | 0.012 (0.120) | −0.114 (0.134) | −0.019 (0.101) | −0.154 (0.674) |
| t_groupT:date2016-04-05 | −0.007 (0.120) | −0.046 (0.134) | −0.024 (0.101) | 0.033 (0.674) |
| t_groupT:date2016-04-06 | 0.007 (0.120) | −0.031 (0.134) | 0.003 (0.101) | −0.232 (0.674) |
| t_groupT:date2016-04-07 | −0.014 (0.120) | −0.018 (0.134) | −0.052 (0.101) | −0.096 (0.674) |
| t_groupT:date2016-04-08 | 0.020 (0.120) | −0.018 (0.134) | −0.027 (0.101) | −0.120 (0.674) |
| t_groupT:date2016-04-09 | −0.014 (0.120) | −0.107 (0.134) | −0.013 (0.101) | −0.244 (0.674) |
| t_groupT:date2016-04-10 | −0.004 (0.120) | −0.235* (0.134) | −0.054 (0.101) | −0.560 (0.674) |
| t_groupT:date2016-04-11 | −0.052 (0.120) | 0.020 (0.134) | −0.021 (0.101) | −0.159 (0.674) |
| t_groupT:date2016-04-12 | 0.019 (0.120) | 0.078 (0.134) | −0.046 (0.101) | 0.004 (0.674) |
| t_groupT:date2016-04-13 | 0.043 (0.120) | −0.046 (0.134) | −0.068 (0.101) | −0.109 (0.674) |
| t_groupT:date2016-04-14 | 0.002 (0.120) | 0.117 (0.134) | −0.004 (0.101) | −0.153 (0.674) |
| t_groupT:date2016-04-15 | 0.022 (0.120) | −0.085 (0.134) | −0.100 (0.101) | −0.084 (0.674) |
| t_groupT:date2016-04-16 | 0.001 (0.120) | −0.133 (0.134) | −0.012 (0.101) | −0.081 (0.674) |
| t_groupT:date2016-04-17 | 0.100 (0.120) | −0.034 (0.134) | −0.087 (0.101) | −0.061 (0.674) |
| t_groupT:date2016-04-18 | 0.008 (0.120) | 0.008 (0.134) | 0.168* (0.101) | 0.442 (0.674) |
| t_groupT:date2016-04-19 | 0.088 (0.120) | 0.083 (0.134) | 0.211** (0.101) | 0.655 (0.674) |
| t_groupT:date2016-04-20 | 0.053 (0.118) | −0.077 (0.133) | 0.158 (0.100) | −0.524 (0.666) |
| t_groupT:date2016-04-21 | −0.064 (0.120) | 0.033 (0.134) | 0.094 (0.101) | 0.309 (0.674) |
| t_groupT:date2016-04-22 | −0.032 (0.120) | −0.030 (0.134) | 0.083 (0.101) | 0.681 (0.674) |
| t_groupT:date2016-04-23 | −0.014 (0.120) | −0.045 (0.134) | 0.034 (0.101) | 0.930 (0.674) |
| t_groupT:date2016-04-24 | −0.002 (0.120) | −0.049 (0.134) | 0.047 (0.101) | 0.668 (0.674) |
| t_groupT:date2016-04-25 | 0.049 (0.120) | −0.024 (0.134) | −0.021 (0.101) | 0.330 (0.674) |
| t_groupT:date2016-04-26 | −0.063 (0.120) | −0.085 (0.134) | 0.039 (0.101) | 0.815 (0.674) |
| t_groupT:date2016-04-27 | −0.059 (0.120) | −0.080 (0.134) | 0.023 (0.101) | 0.352 (0.674) |
| t_groupT:date2016-04-28 | −0.058 (0.120) | −0.087 (0.134) | 0.023 (0.101) | 0.467 (0.674) |
| t_groupT:date2016-04-29 | −0.017 (0.120) | −0.061 (0.134) | 0.030 (0.101) | 0.105 (0.674) |
| t_groupT:date2016-04-30 | −0.044 (0.120) | 0.028 (0.134) | 0.055 (0.101) | 0.634 (0.674) |
| t_groupT:date2016-05-01 | 0.019 (0.120) | −0.104 (0.134) | 0.109 (0.101) | −0.042 (0.674) |
| t_groupT:date2016-05-02 | 0.054 (0.120) | 0.028 (0.134) | 0.023 (0.101) | 0.714 (0.674) |
| t_groupT:date2016-05-03 | 0.011 (0.120) | −0.026 (0.134) | −0.019 (0.101) | −0.129 (0.674) |
| Constant | 0.153*** (0.040) | 0.300*** (0.045) | 0.088*** (0.034) | 1.309*** (0.225) |
| Observations | 121,361 | 121,361 | 121,361 | 121,361 |
| $R^2$ | 0.089 | 0.020 | 0.013 | 0.033 |
| Adjusted $R^2$ | 0.088 | 0.020 | 0.013 | 0.032 |
| Residual Std. Error (df = 121297) | 2.170 | 2.430 | 1.836 | 12.220 |
| F Statistic (df = 63; 121297) | 186.943*** | 39.646*** | 25.764*** | 65.377*** |

*Note:* *p<0.1; **p<0.05; ***p<0.01