The `PublicOpinion` package is a simple means to create plots of the Media Framing and Public Opinion data. It is not intended for wide release, but rather is a means to quickly share the plotting code in an easy manner.

1 Installation

To install this package, you must first install a helper package that will allow installation directly from github.com:

```
> install.packages("devtools")
```

After that is installed, you can use this command to install PublicOpinion:

```
> devtools::install_github("dsidavis/PublicOpinion")
```

2 Basic Use

First, you need to set an option in your R sessions that tells `PublicOpinion` where it can find the data. For my system, this is under `/home/matt/DSI/Projects/MediaFraming/MediaFram`

```
> options("PublicOpinionDataDir" = "/home/matt/DSI/Projects/MediaFraming/MediaFramingData/pu
>
```

Now, the package will look in that directory for both the frame data, and the public opinion data.

Let's start with loading the framing data:

```
> gc.articles = readTopicData("guncontrol")
```

Next we can read in the polling data:

```
> gc.poll = readPollData("guncontrol")
>
```

If you want to inspect these data, you can do any normal R operation, such as the look at the top

```
> head(gc.articles)
```

```
                    X                               Source Year Month Day
1     gun_control2.0-1       st. petersburg times (florida) 1993     9  11
2    gun_control2.0-10       st. petersburg times (florida) 1990     8  12
3   gun_control2.0-100       st. petersburg times (florida) 1989     4  12
4  gun_control2.0-1000                    tampa bay times 2015    10   6
5 gun_control2.0-10000 saint paul pioneer press (minnesota) 2003     3   4
6 gun_control2.0-10001 saint paul pioneer press (minnesota) 2003     3   5
  FullDate       Pro    Neutral      Anti    Implicit    Explicit          p0
```

```
1 19930911 0.3765850 0.03153390 0.5918811 0.997109484 0.002890516 0.015121299
2 19900812 0.3900203 0.22153580 0.3884439 0.945036527 0.054963473 0.072686610
3 19890412 0.2067948 0.12846183 0.6647433 0.006643582 0.993356418 0.050369033
4 20151006 0.1607494 0.28848165 0.5507689 0.565597594 0.434402406 0.031646329
5 20030304 0.1297324 0.19520259 0.6750650 0.000403869 0.999596131 0.004020330
6 20030305 0.5203225 0.02596554 0.4537120 0.997458976 0.002541024 0.002784092
           p1          p2          p3          p4         p5          p6
1 0.001582697 0.005007967 0.010848302 0.005742975 0.20330847 0.005892277
2 0.004958407 0.016416121 0.006625803 0.018692917 0.15308554 0.291223956
3 0.004421202 0.012126592 0.004687516 0.083277288 0.09991880 0.095063930
4 0.002507589 0.032138670 0.006294560 0.031386212 0.08630694 0.112834988
5 0.001355251 0.001893835 0.003192976 0.208887120 0.26117454 0.018543189
6 0.001494049 0.007966544 0.002494683 0.062282075 0.27925600 0.442036118
          p7          p8          p9        p10         p11       p12
1 0.06862077 0.013275683 0.024631164 0.31732721 0.008255428 0.3059097
2 0.02322126 0.122502365 0.025271502 0.07540371 0.040466313 0.1425726
3 0.05285529 0.005833447 0.008297519 0.01177595 0.019789332 0.5441776
4 0.17519680 0.017578242 0.008185524 0.02774530 0.014576633 0.3266062
5 0.24527688 0.010437693 0.002301201 0.02780833 0.001795010 0.2055303
6 0.06234269 0.032428417 0.019939510 0.03111334 0.015506736 0.0270568
          p13 p14         b0          b1         b2          b3        b4
1 0.014476091   0 0.09534372 0.013432666 0.79648460 0.093128970 0.7913465
2 0.006872926   0 0.30122408 0.008883445 0.14954402 0.031667522 0.5623510
3 0.007406525   0 0.46453566 0.025398182 0.07850468 0.010665262 0.3684863
4 0.126996001   0 0.25260032 0.018740782 0.07888715 0.009776639 0.5248138
5 0.007783310   0 0.09687112 0.009032261 0.10478219 0.030086206 0.4808646
6 0.013298953   0 0.17331078 0.013810006 0.12704567 0.032171295 0.6495731
         b5        b6        b7        b8         b9       b10       b11
1 0.5171270 0.4457200 0.5400448 0.7222799 0.12404809 0.6694690 0.5912719
2 0.8499649 0.8508944 0.5086303 0.3873874 0.05767053 0.2767994 0.7621879
3 0.6248346 0.3423869 0.1263404 0.1795702 0.04639939 0.1956043 0.8426116
4 0.8727312 0.9775070 0.9511680 0.6255532 0.22212572 0.3672997 0.2302903
5 0.7749390 0.9241604 0.9606871 0.9163189 0.09362538 0.2614064 0.3967733
6 0.7634245 0.8682073 0.2306799 0.6346391 0.11889750 0.1870933 0.5824187
        b12         b13        b14       date Week_start            top_frame
1 0.6528477 0.047111051 0.25593238 1993-09-11 1993-09-06    Cultural_identity
2 0.6884087 0.043273605 0.14697261 1990-08-12 1990-08-06 Crime_and_punishment
3 0.9874644 0.014702222 0.07266611 1989-04-12 1989-04-10            Political
4 0.6620928 0.091531645 0.07380864 2015-10-06 2015-10-05            Political
5 0.8719519 0.009731364 0.01331594 2003-03-04 2003-03-03  Policy_prescription
6 0.9340095 0.030156235 0.08744357 2003-03-05 2003-03-03 Crime_and_punishment
  tone
1 Anti
2  Pro
3 Anti
4 Anti
```

```
5 Anti
6  Pro

>
```

or a summary of the whole thing

```
> summary(gc.articles)
```

```
      X                Source               Year          Month
 Length:18036       Length:18036       Min.   :1980   Min.   : 1.000
 Class :character   Class :character   1st Qu.:1997   1st Qu.: 3.000
 Mode  :character   Mode  :character   Median :2003   Median : 5.000
                                       Mean   :2004   Mean   : 5.978
                                       3rd Qu.:2013   3rd Qu.: 9.000
                                       Max.   :2016   Max.   :12.000

      Day            FullDate             Pro              Neutral
 Min.   : 1.00   Min.   :19800605   Min.   :0.005227   Min.   :0.005764
 1st Qu.: 9.00   1st Qu.:19971222   1st Qu.:0.139213   1st Qu.:0.060654
 Median :16.00   Median :20030820   Median :0.241396   Median :0.099050
 Mean   :15.72   Mean   :20039420   Mean   :0.274848   Mean   :0.121123
 3rd Qu.:23.00   3rd Qu.:20130123   3rd Qu.:0.381292   3rd Qu.:0.157256
 Max.   :31.00   Max.   :20161228   Max.   :0.895319   Max.   :0.605638

      Anti            Implicit            Explicit               p0
 Min.   :0.03192   Min.   :0.0000019   Min.   :0.0000031   Min.   :0.0000165
 1st Qu.:0.47404   1st Qu.:0.0075660   1st Qu.:0.2160337   1st Qu.:0.0045387
 Median :0.62752   Median :0.0649388   Median :0.9350612   Median :0.0118430
 Mean   :0.60403   Mean   :0.3242364   Mean   :0.6757636   Mean   :0.0386125
 3rd Qu.:0.75573   3rd Qu.:0.7839663   3rd Qu.:0.9924340   3rd Qu.:0.0325188
 Max.   :0.96040   Max.   :0.9999969   Max.   :0.9999981   Max.   :0.7611751

       p1                 p2                 p3                 p4
 Min.   :0.0005971   Min.   :0.0000173   Min.   :0.000427   Min.   :0.0000171
 1st Qu.:0.0015906   1st Qu.:0.0021289   1st Qu.:0.003042   1st Qu.:0.0061336
 Median :0.0024907   Median :0.0056549   Median :0.004987   Median :0.0215740
 Mean   :0.0033121   Mean   :0.0161342   Mean   :0.008755   Mean   :0.1102765
 3rd Qu.:0.0044662   3rd Qu.:0.0154455   3rd Qu.:0.008750   3rd Qu.:0.0892340
 Max.   :0.0377715   Max.   :0.4693498   Max.   :0.522878   Max.   :0.9237077

       p5                 p6                 p7
 Min.   :0.0000435   Min.   :0.0000404   Min.   :0.0001836
 1st Qu.:0.0166946   1st Qu.:0.0068845   1st Qu.:0.0143195
 Median :0.0570462   Median :0.0261763   Median :0.0354231
 Mean   :0.1184691   Mean   :0.0894464   Mean   :0.0722942
 3rd Qu.:0.1685702   3rd Qu.:0.0953749   3rd Qu.:0.0870810
```

```
Max.   :0.8225640   Max.   :0.8300807   Max.   :0.8040760

      p8                  p9                  p10
Min.   :0.0000856   Min.   :0.0001104   Min.   :0.0000147
1st Qu.:0.0034443   1st Qu.:0.0028101   1st Qu.:0.0057088
Median :0.0084133   Median :0.0062774   Median :0.0210388
Mean   :0.0261655   Mean   :0.0131116   Mean   :0.0612325
3rd Qu.:0.0226190   3rd Qu.:0.0143697   3rd Qu.:0.0712743
Max.   :0.7149333   Max.   :0.4067498   Max.   :0.7368003

     p11                 p12                 p13                 p14
Min.   :0.0000541   Min.   :0.0000209   Min.   :0.0004125   Min.   :0
1st Qu.:0.0073577   1st Qu.:0.0529955   1st Qu.:0.0106696   1st Qu.:0
Median :0.0201418   Median :0.2544425   Median :0.0213994   Median :0
Mean   :0.0576080   Mean   :0.3440418   Mean   :0.0405408   Mean   :0
3rd Qu.:0.0576105   3rd Qu.:0.6307143   3rd Qu.:0.0455390   3rd Qu.:0
Max.   :0.8712895   Max.   :0.9761245   Max.   :0.8367899   Max.   :0

      b0                  b1                  b2                  b3
Min.   :0.0000801   Min.   :0.007056   Min.   :0.008505   Min.   :0.003072
1st Qu.:0.1496360   1st Qu.:0.009560   1st Qu.:0.059259   1st Qu.:0.016094
Median :0.2395855   Median :0.013807   Median :0.088254   Median :0.024781
Mean   :0.3225935   Mean   :0.015156   Mean   :0.114758   Mean   :0.037653
3rd Qu.:0.4284991   3rd Qu.:0.016926   3rd Qu.:0.136036   3rd Qu.:0.040222
Max.   :0.9999999   Max.   :0.300227   Max.   :0.865029   Max.   :0.921443

      b4                  b5                  b6                  b7
Min.   :0.006904   Min.   :0.04991   Min.   :0.03331   Min.   :0.006173
1st Qu.:0.196739   1st Qu.:0.46972   1st Qu.:0.46457   1st Qu.:0.143800
Median :0.446595   Median :0.62588   Median :0.68384   Median :0.308612
Mean   :0.501777   Mean   :0.61390   Mean   :0.64872   Mean   :0.389112
3rd Qu.:0.830667   3rd Qu.:0.76847   3rd Qu.:0.85551   3rd Qu.:0.617876
Max.   :0.999998   Max.   :0.99889   Max.   :0.99957   Max.   :0.998658

      b8                  b9                  b10                 b11
Min.   :0.0203   Min.   :0.008068   Min.   :0.01185   Min.   :0.001205
1st Qu.:0.1894   1st Qu.:0.058457   1st Qu.:0.16242   1st Qu.:0.270052
Median :0.3040   Median :0.084481   Median :0.26045   Median :0.413044
Mean   :0.3564   Mean   :0.096432   Mean   :0.29870   Mean   :0.454344
3rd Qu.:0.4837   3rd Qu.:0.120522   3rd Qu.:0.39959   3rd Qu.:0.608833
Max.   :0.9989   Max.   :0.747112   Max.   :0.98981   Max.   :0.999978

     b12                 b13                 b14                 date
Min.   :0.00935   Min.   :0.000665   Min.   :0.005891   Min.   :1980-06-05
1st Qu.:0.55214   1st Qu.:0.015143   1st Qu.:0.028828   1st Qu.:1997-12-22
Median :0.92715   Median :0.028349   Median :0.054072   Median :2003-08-19
```

```
Mean   :0.75914   Mean   :0.052591   Mean   :0.070361   Mean   :2004-05-02
3rd Qu.:0.99512   3rd Qu.:0.055427   3rd Qu.:0.101495   3rd Qu.:2013-01-23
Max.   :1.00000   Max.   :0.986563   Max.   :0.364086   Max.   :2016-12-28

  Week_start                          top_frame         tone
Min.   :1980-06-02   Political            :8401   Pro    : 3305
1st Qu.:1997-12-20   Legality_jurisdiction:2293   Neutral:  226
Median :2003-08-18   Policy_prescription  :2137   Anti   :14505
Mean   :2004-04-29   Crime_and_punishment :1724
3rd Qu.:2013-01-21   Cultural_identity    : 930
Max.   :2016-12-26   Security_and_defense : 808
                     (Other)              :1743
```

3 Plotting

The `PublicOpinion` package is primarily for creating interactive visualizations using the `plotly` package. The most basic plot is shows the frames over time,

```
> plot_frames(df = gc.articles, main = "Gun Control")
```

by default this will create the plot and open a browser window to view it in, but will not save the plot for later. To save, you need to pass in an outfile, which is simply the file path and name of the file you want to save into,

```
> plot_frames(df = gc.articles, main = "Gun Control", outfile="guncontrol.html")
```

Note that the browser will still open, but a new file is also *created in your current working directory* with the name you specified.

```
> list.files(pattern = "html")
```

If you want to include the polling data in the plot, just include it in the call to `plot_frames`,

```
> plot_frames(df = gc.articles, main = "Gun Control", df_polls = gc.poll)
```

3.1 Adding events

Events can be adding to the plots by specifying the optional `events` and `eventHover` arguments. For illustrative purposes, the package includes data on gun violence events,

```
> data(GunViolenceEvents)
> plot_frames(gc.articles, "Gun Control", gc.poll, events = GunViolenceEvents$date)
```

The event argument is the date of the event you want to add to the plot (Note: this has to be of class `Date`).

```
> plot_frames(gc.articles, gc.poll, "Gun Control", events = GunViolenceEvents$date, eventHov
>
```

`eventHover` is text that you want to appear when you mouse over that event. You can combine pieces of data together with the `paste` command. Make sure you include `</br>` if you want the items to be on their own lines in the hover.

```
> plot_frames(df = gc.articles, main = "Gun Control", df_polls = gc.poll,
+             events = GunViolenceEvents$date,
+             eventHover = paste("</br> Location: ", GunViolenceEvents$location,
+                                "</br> Date: ", as.character(GunViolenceEvents$date),
+                                "</br> Num. Killed: ", GunViolenceEvents$numKilled,
+                                "</br> Num. Injured: ", GunViolenceEvents$numInjured))
>
```