Replication Log for Foster (2023) Subject to Change

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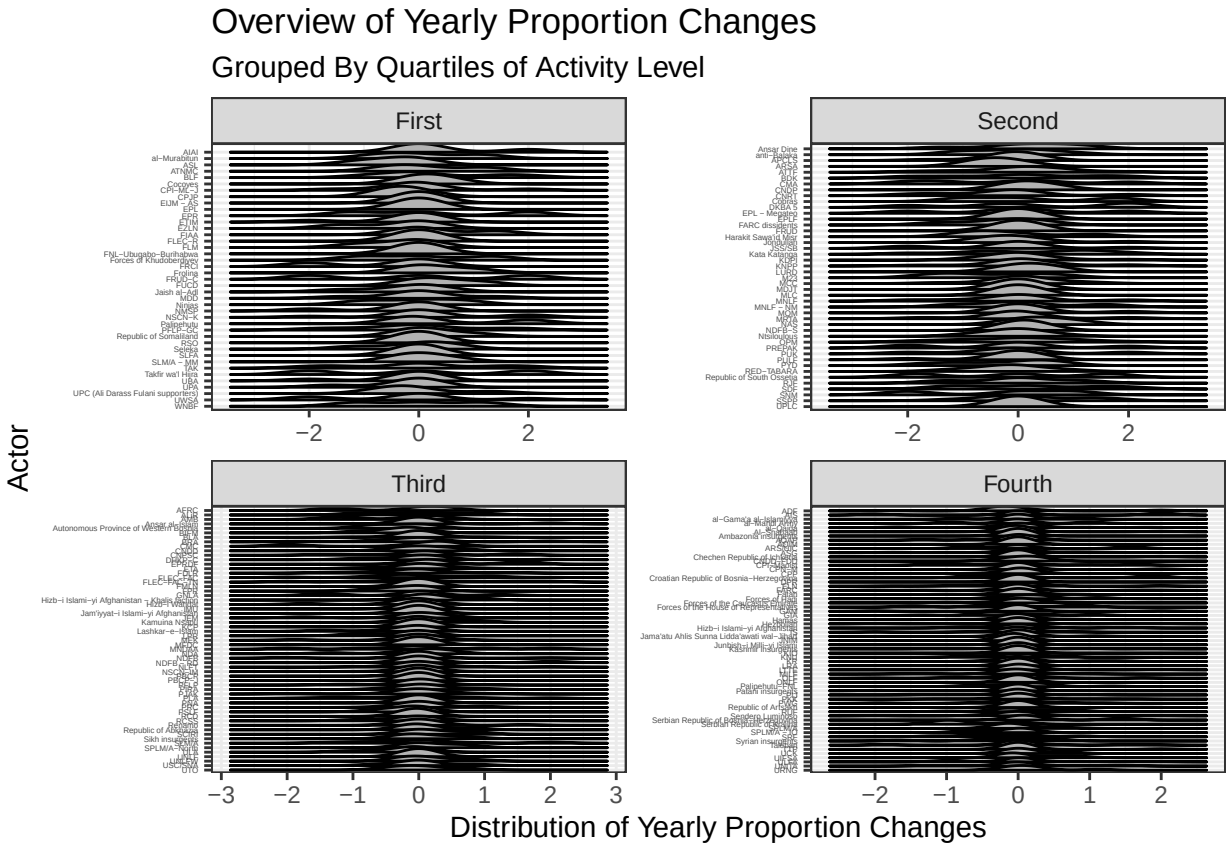
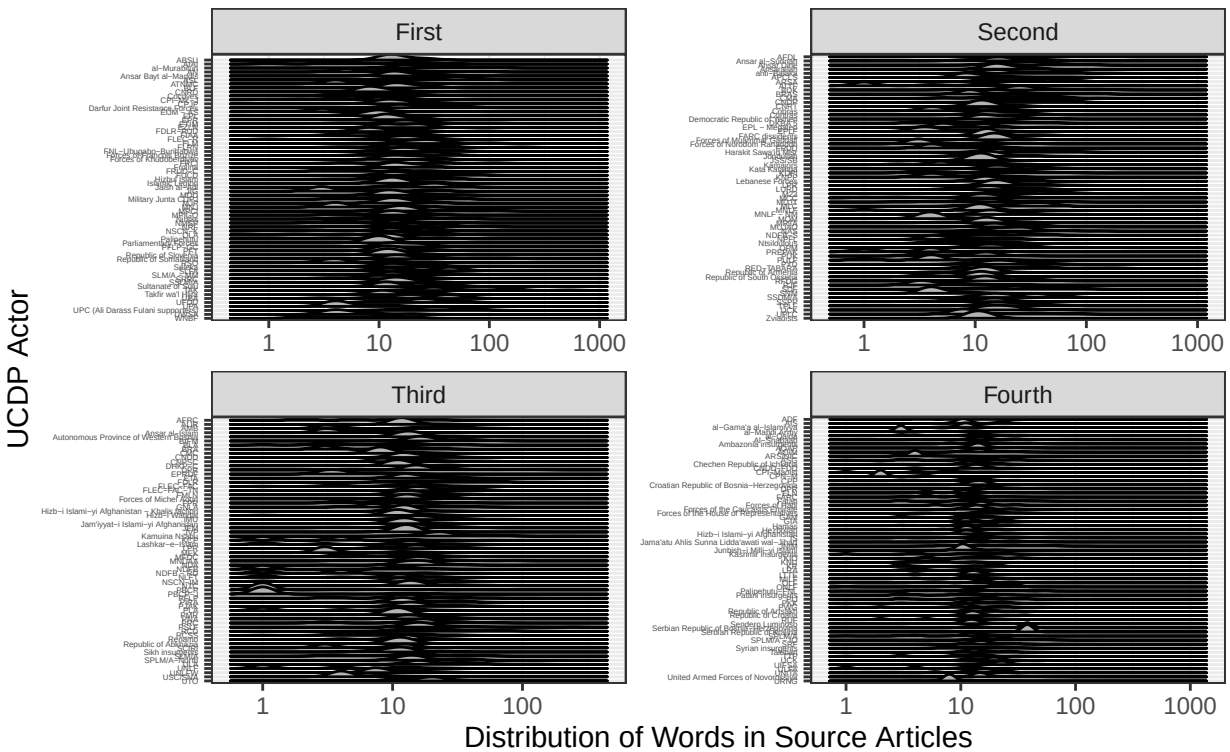
Introduction

This document produces a replication log for the tables and figures made in R for Subject to Change: Quantifying Transformation in Armed Conflict Actors At Scale Using Text. STATA-produced tables are featured in accompanying scripts.

These results are generated from an R data file that was produced as part of the research, 01measurementScaleUpInProgressTiny55.Rdata. Replication code to produce the data can be found in the "01measurementFullDataTinyThreshRep.R" R script. Another data file, 02dfyearsumAndRelatedTinyUpdate.Rdata, is produced by "02tinyThreshTransformVarRep.R" in the replication package.

Manuscript and Appendix Figure 1





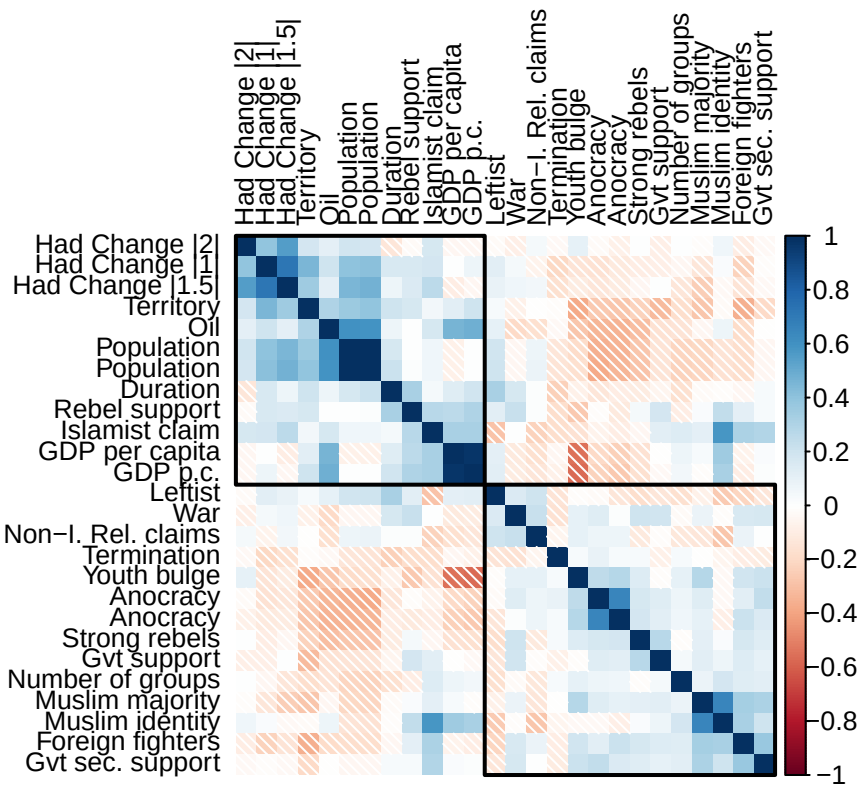
Manuscript Table One and Appendix Figures 11 and 12

The following code prepares the data generated by the Subject To Change measurement for replication of Nilsson and Svensson (2021). The replication log for the Termination and Recurrence models are in the accompanying Stata Markdown output.

The code chunk also produces: - Appendix Figure 11, the correlation plot heatmap for change and ambiguity variables. - Article Figure 2 and Appendix Figure 12, which are summaries of the distribution of the new change variables.

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac a
## % Date and time: Tue, Dec 19, 2023 - 17:10:56
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}} ccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## Variable & No & Yes \\
## \hline \\[-1.8ex]
## Change year & 992 & 126 \\
## Change in Prev. 2 years & 894 & 224 \\
## Had 'Low' Change & 579 & 650 \\
## Had 'Med.' Change & 823 & 406 \\
## Had 'High' Change & 1028 & 201 \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac a
## % Date and time: Tue, Dec 19, 2023 - 17:10:56
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lccccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## Statistic & \multicolumn{1}{c}{N} & \multicolumn{1}{c}{Mean} & \multicolumn{1}{c}{St. Dev.} & \multi
## \hline \\[-1.8ex]
## Number of Changes & 1,114 & 1.061 & 1.166 & 0 & 4 \\
## Years Since Change & 1,118 & 0.830 & 2.057 & 0 & 16 \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```



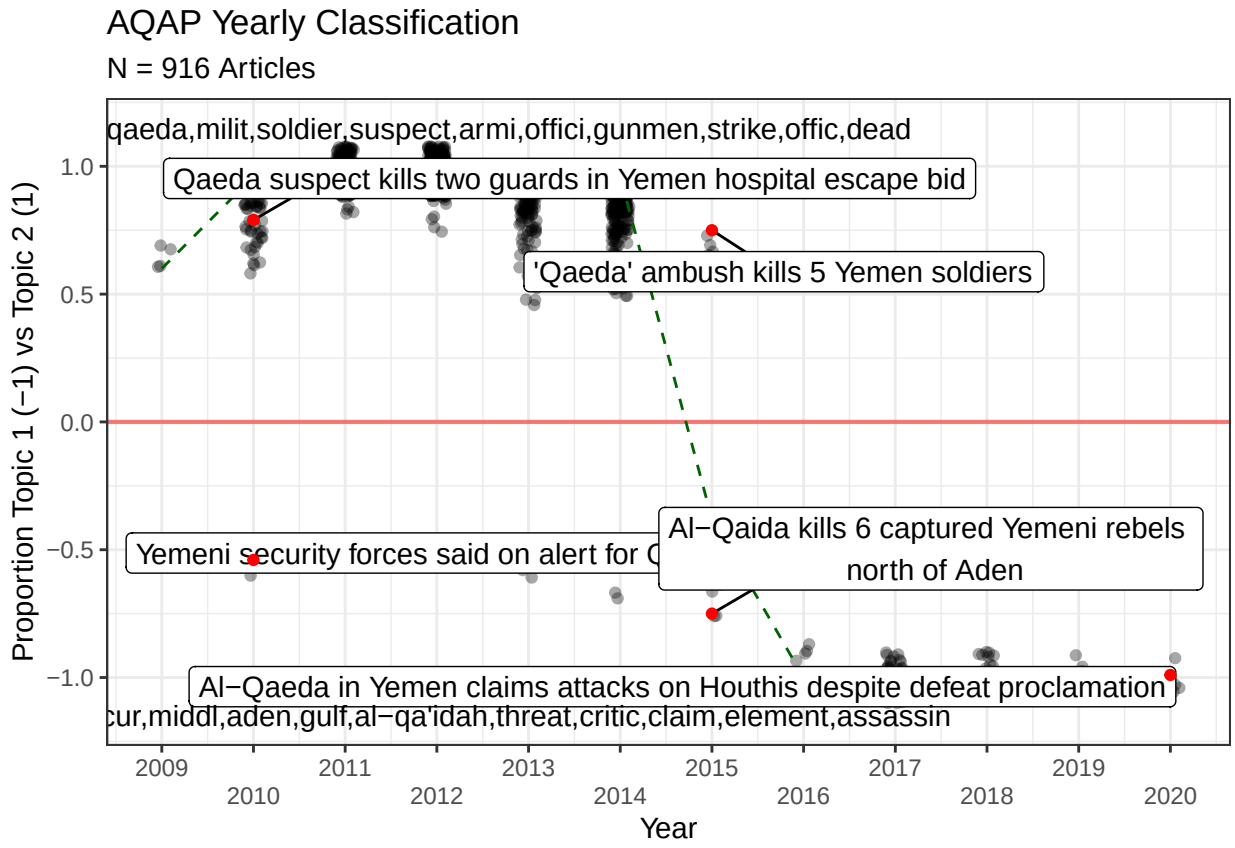

```
## [1] "Finished making figures; Formatting data for STATA"
```

Group Change-Year Plots

The following code replicates the group-year summary plots. These are Appendix Figures 2 (AQAP), 3 (Abu Sayyaf), 4 (ULFA), 5 (LRA), and Appendix Figure 10a (PKK)

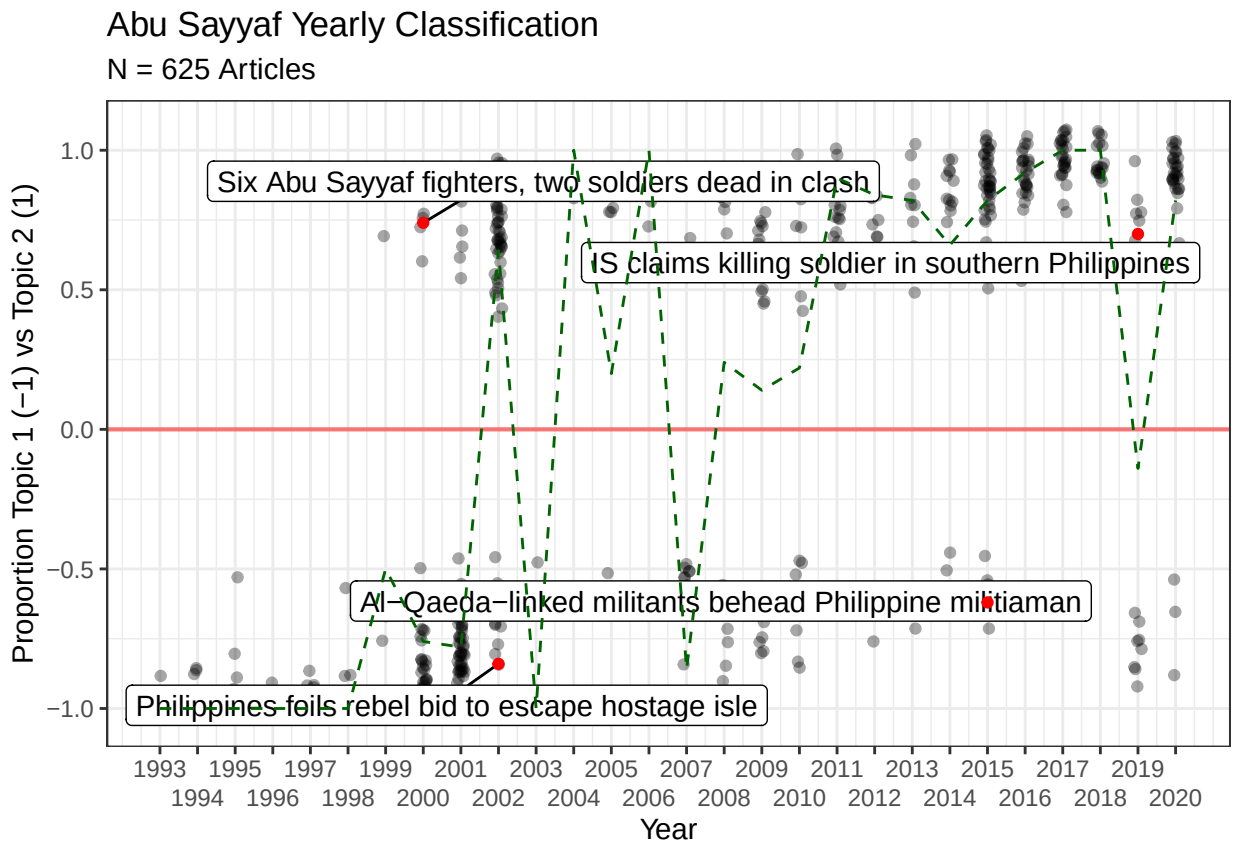
```
## # A tibble: 32 x 2
##     year frexWords
##    <int> <chr>
##  1  1989 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  2  1990 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  3  1991 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  4  1992 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  5  1993 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  6  1994 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  7  1995 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  8  1996 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
##  9  1997 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 10  1998 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 11  1999 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 12  2000 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 13  2001 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 14  2002 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 15  2003 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
```

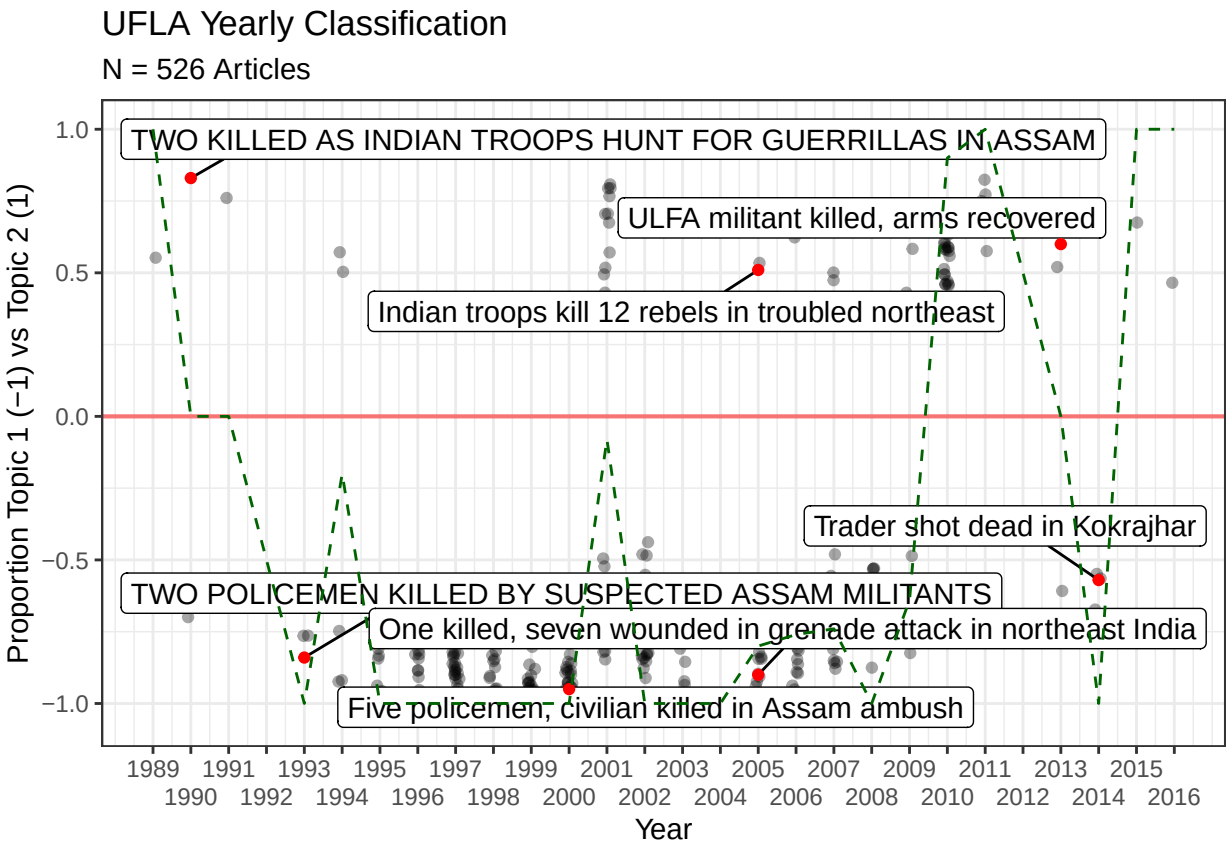
```
## 16  2004 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 17  2005 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 18  2006 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 19  2007 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 20  2008 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 21  2009 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 22  2010 None
## 23  2011 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 24  2012 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 25  2013 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 26  2014 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 27  2015 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 28  2016 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 29  2017 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 30  2018 secur,btselem,oper,sinc,cast,lead,territori,occupi,bt'selem,personnel
## 31  2019 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
## 32  2020 gaza,hama,israel,middl,strike,two,milit,raid,troop,soldier
```

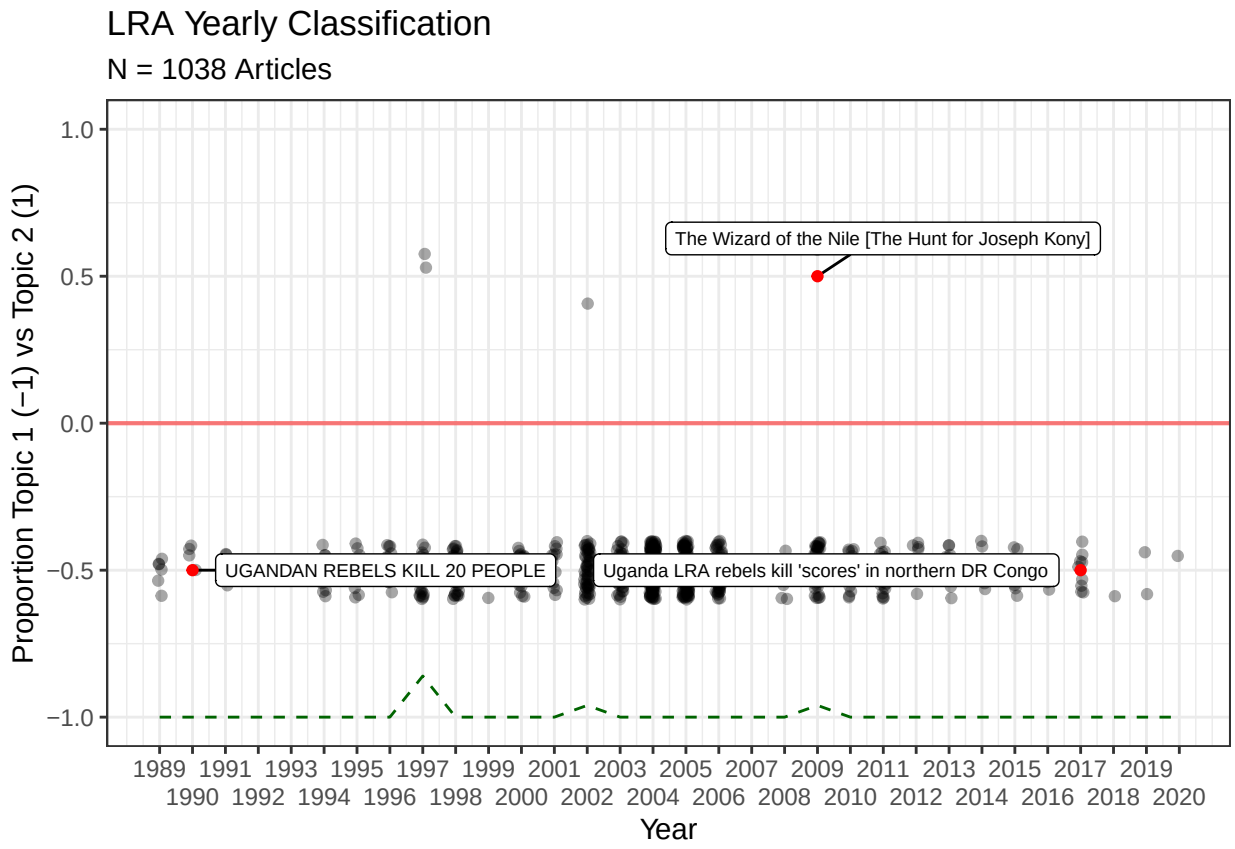


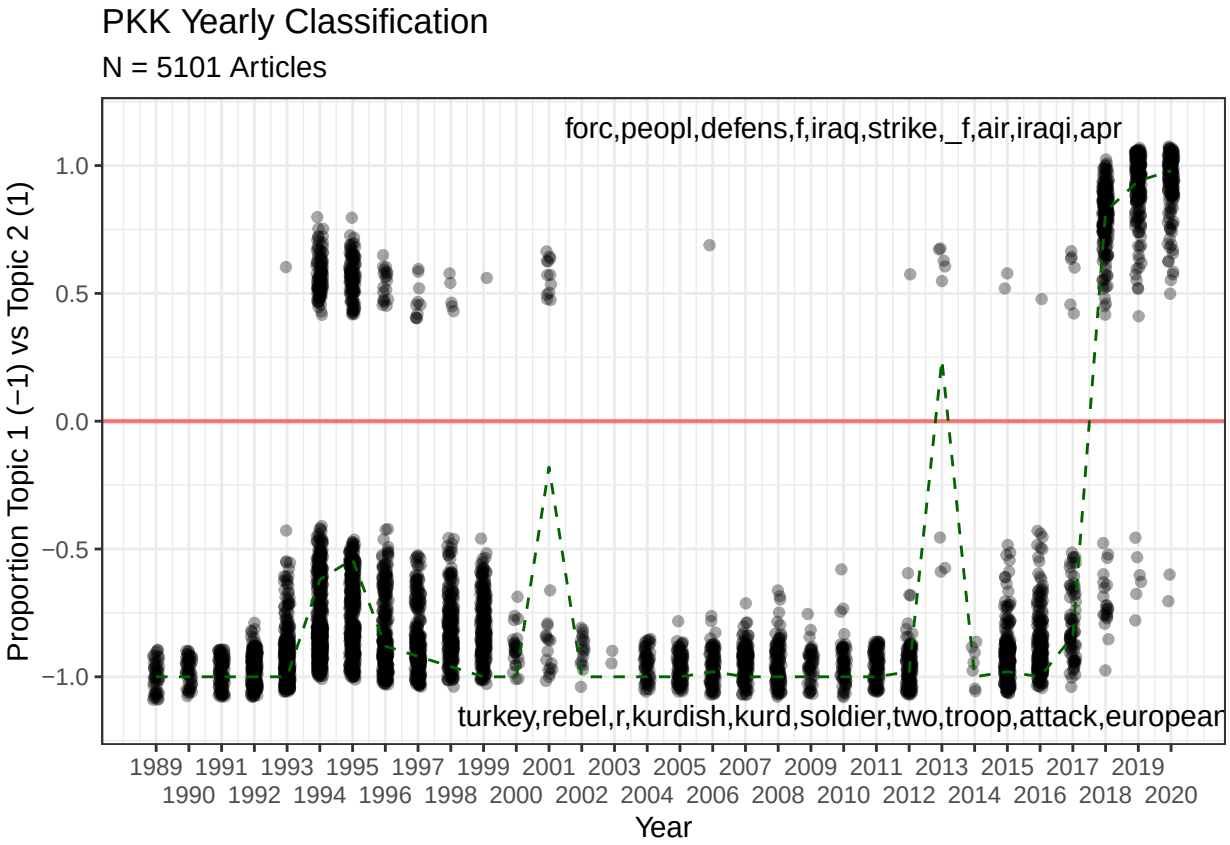

```
## # A tibble: 28 x 21
## # Groups:   groupID [1]
##     year countT1 countT2 propT1 propT2 propdiff propdif.L1 groupID frexWords
##    <int>   <int>   <int>  <dbl>  <dbl>    <dbl>      <dbl>   <int> <chr>
##  1  1993       2       0   1      0       -1         0         277 rebel,r,musl~
##  2  1994       6       0   1      0       -1         0         277 rebel,r,musl~
##  3  1995       6       0   1      0       -1         0         277 rebel,r,musl~
```

```
##  4  1996       6       0   1      0       -1        0          277 rebel,r,musl~
##  5  1997       8       0   1      0       -1        0          277 rebel,r,musl~
##  6  1998      10       0   1      0       -1        0          277 rebel,r,musl~
##  7  1999       3       1   0.75   0.25    -0.5      0.5        277 rebel,r,musl~
##  8  2000      29       4   0.88   0.12    -0.76    -0.26       277 rebel,r,musl~
##  9  2001      49       6   0.89   0.11    -0.78    -0.0200     277 rebel,r,musl~
## 10  2002      11      49   0.18   0.82     0.64     1.42       277 sayyaf,abu,s~
## # i 18 more rows
## # i 12 more variables: modeledarticles <int>, propdif.L2 <dbl>, delta1 <dbl>,
## #   delta1.5 <dbl>, delta2 <dbl>, delta1_L2 <dbl>, delta15_L2 <dbl>,
## #   delta2_L2 <dbl>, gap25 <dbl>, gap50 <dbl>, yearsSinceChange <lgl>,
## #   counter <dbl>
```




UFLA Yearly Classification
N = 526 Articles
Proportion Topic 1 (−1) vs Topic 2 (1)
1.0
0.5
0.0
−0.5
−1.0
TWO KILLED AS INDIAN TROOPS HUNT FOR GUERRILLAS IN ASSAM
ULFA militant killed, arms recovered
Indian troops kill 12 rebels in troubled northeast
Trader shot dead in Kokrajhar
TWO POLICEMEN KILLED BY SUSPECTED ASSAM MILITANTS
One killed, seven wounded in grenade attack in northeast India
Five policemen, civilian killed in Assam ambush
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

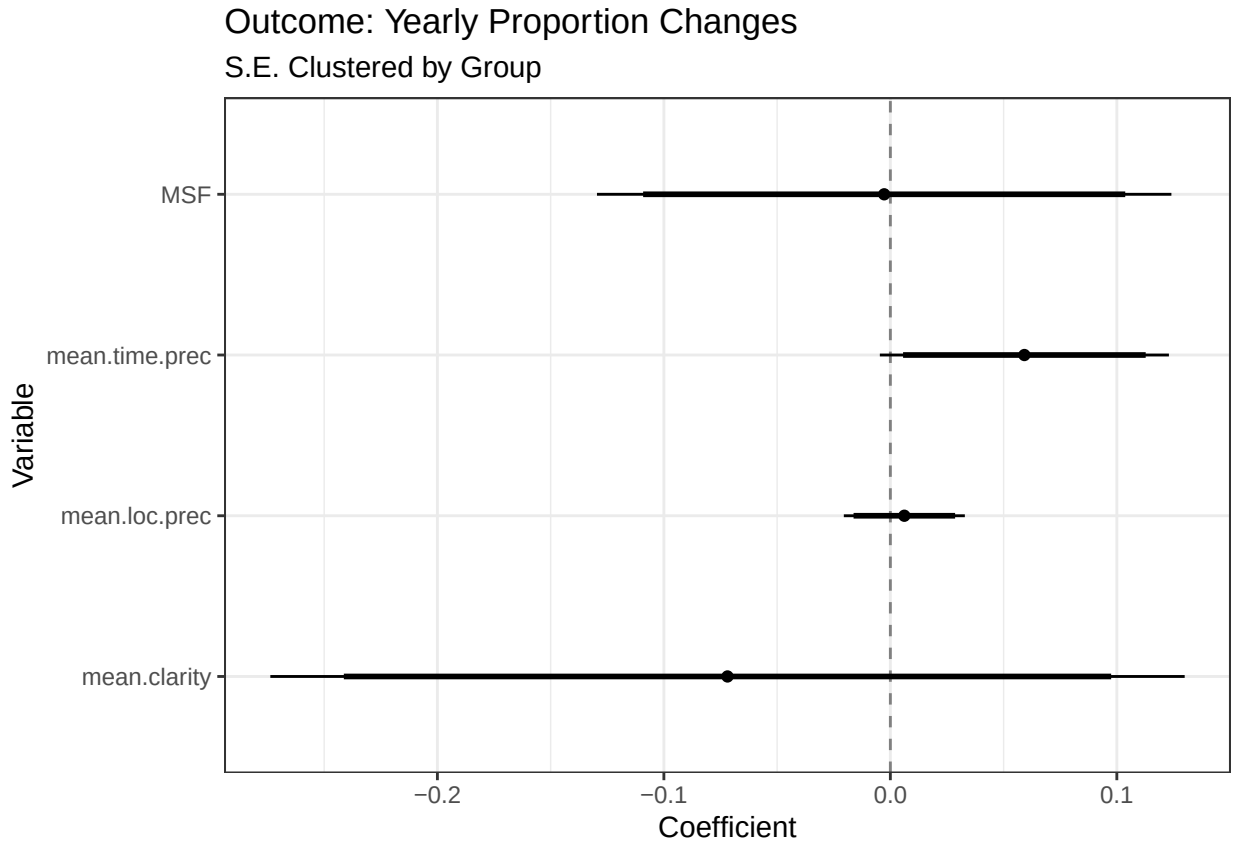

LRA Yearly Classification
N = 1038 Articles
Proportion Topic 1 (−1) vs Topic 2 (1)
1.0
0.5
0.0
−0.5
−1.0
The Wizard of the Nile [The Hunt for Joseph Kony]
UGANDAN REBELS KILL 20 PEOPLE
Uganda LRA rebels kill 'scores' in northern DR Congo
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020
Year

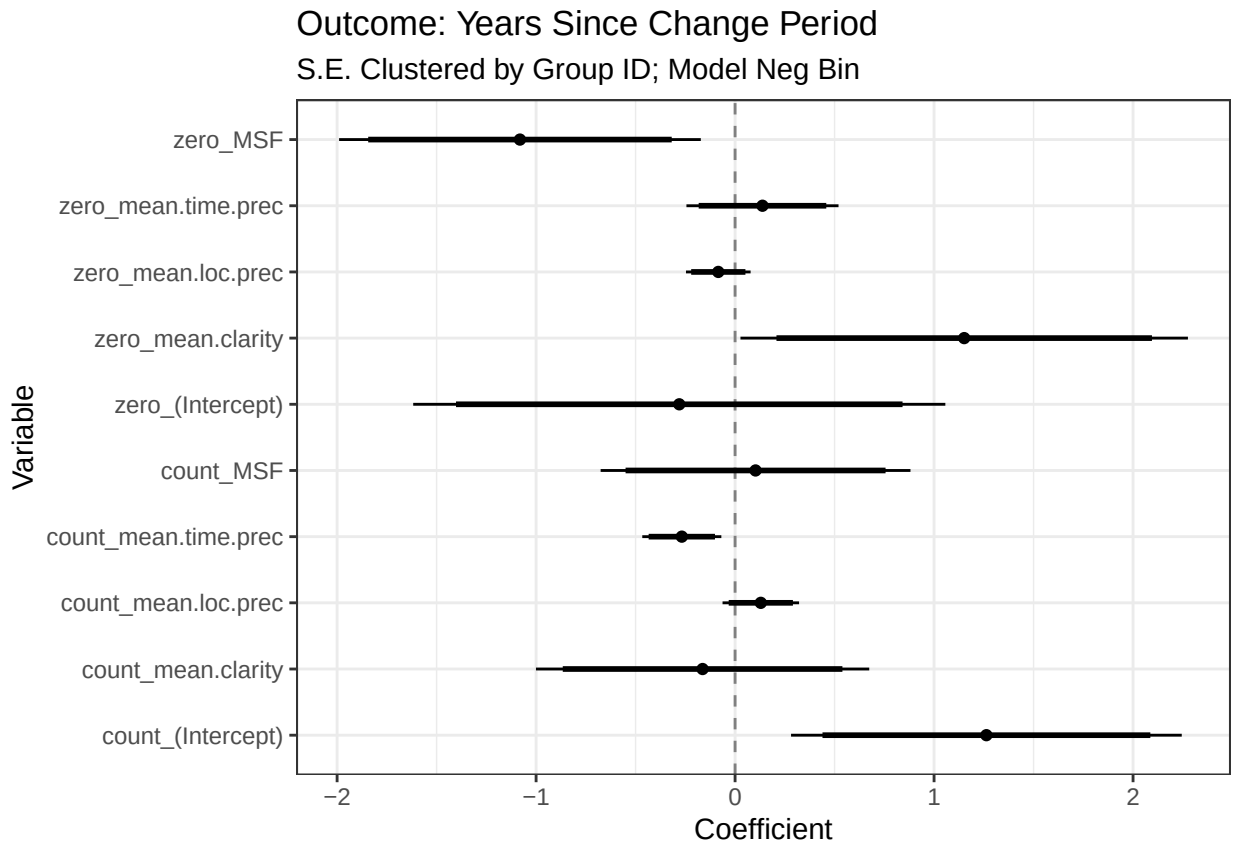


Precision and Media Access Figures

The following code produces Appendix Figures 6 and 7, which evaluate the effect of media access on estimated change points.

These snippets address whether the approach is more likely to find changes in difficult reporting environments, which would suggest that what is being modeled is something other than behavioral changes.


Outcome: Yearly Proportion Changes
S.E. Clustered by Group
MSF
mean.time.prec
mean.loc.prec
mean.clarity
Variable
−0.2
−0.1
0.0
0.1
Coefficient



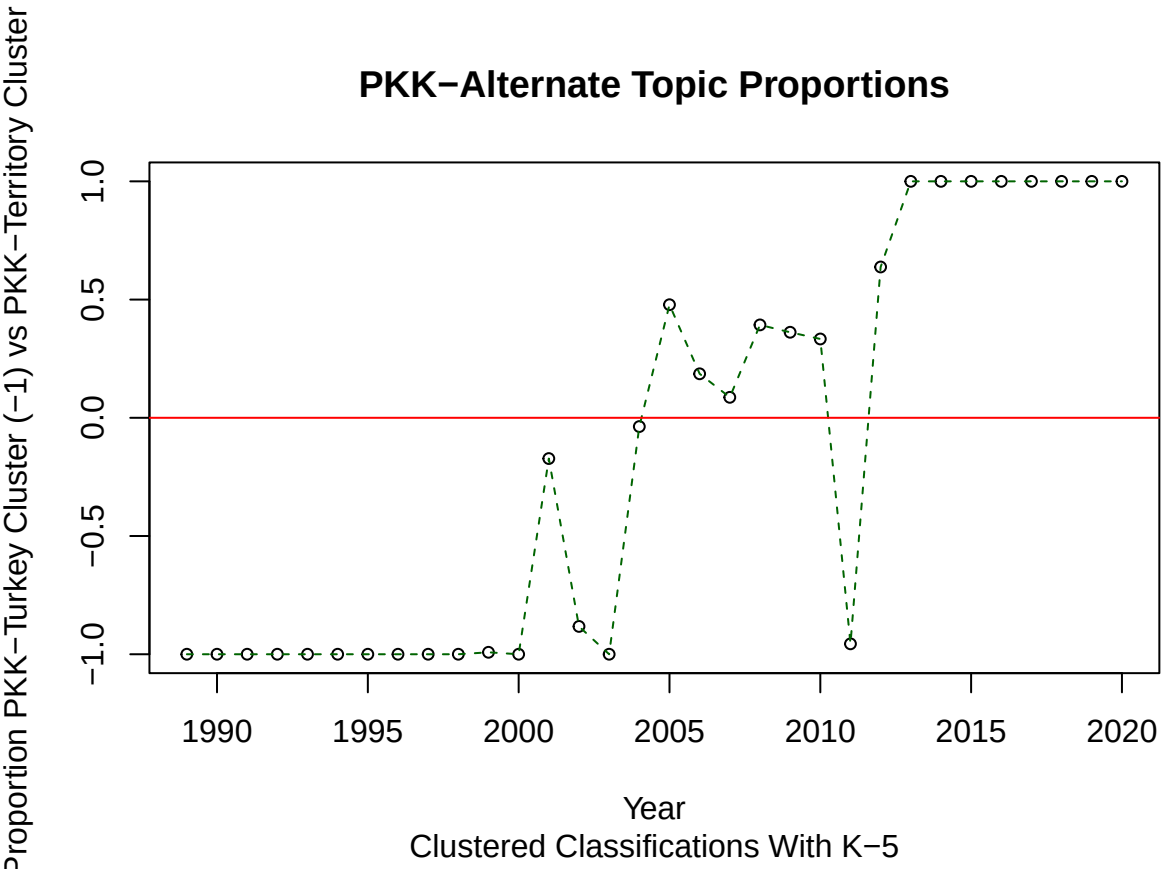
Appendix AQAP Topic Comparison

The following code presents Table One of the Appendix, which presents a yearly summary for alternate model specifications for AQAP.

Appendix AQAP Topic Comparison

The following code presents Table One of the Appendix.

```
## [1] 5101   49
```




```
## [1] 916  49
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac a
## % Date and time: Tue, Dec 19, 2023 - 17:16:09
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}} cccccccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## year & countT1 & countT2 & countT3 & propT1 & propT2 & propT3 & maxTopic \\
## \hline \\[-1.8ex]
## 2009 & 0 & 5 & 0 & 0 & 1 & 0 & 2 \\
## 2010 & 0 & 61 & 0 & 0 & 1 & 0 & 2 \\
## 2011 & 0 & 174 & 0 & 0 & 1 & 0 & 2 \\
## 2012 & 19 & 228 & 0 & 0.08 & 0.92 & 0 & 2 \\
## 2013 & 25 & 101 & 0 & 0.2 & 0.8 & 0 & 2 \\
## 2014 & 4 & 211 & 0 & 0.02 & 0.98 & 0 & 2 \\
## 2015 & 0 & 11 & 5 & 0 & 0.69 & 0.31 & 2 \\
## 2016 & 0 & 0 & 10 & 0 & 0 & 1 & 3 \\
## 2017 & 0 & 0 & 35 & 0 & 0 & 1 & 3 \\
## 2018 & 0 & 0 & 18 & 0 & 0 & 1 & 3 \\
## 2019 & 0 & 0 & 4 & 0 & 0 & 1 & 3 \\
## 2020 & 0 & 0 & 5 & 0 & 0 & 1 & 3 \\
## \hline \\[-1.8ex]
## \end{tabular}
```

```
## \end{table}
```