chronos_data_intro

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Contents

1 Load libraries and set the working directory

```r
rm(list = ls()) # clear objects in memory
library(plyr)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:plyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(dbplyr)
```

```
##
## Attaching package: 'dbplyr'

## The following objects are masked from 'package:dplyr':
##
##     ident, sql
```

```r
library(tidyverse)
```

```
## -- Attaching packages ----------------------------------------------------------- tidyverse 1.2.1 --

## v ggplot2 3.1.0     v readr   1.3.1
## v tibble  2.0.1     v purrr   0.3.0
## v tidyr   0.8.2     v stringr 1.4.0
## v ggplot2 3.1.0     v forcats 0.4.0

## -- Conflicts -------------------------------------------------------------- tidyverse_conflicts() --
## x dplyr::arrange()   masks plyr::arrange()
## x purrr::compact()   masks plyr::compact()
## x dplyr::count()     masks plyr::count()
## x dplyr::failwith()  masks plyr::failwith()
## x dplyr::filter()    masks stats::filter()
## x dplyr::id()        masks plyr::id()
## x dbplyr::ident()    masks dplyr::ident()
## x dplyr::lag()       masks stats::lag()
## x dplyr::mutate()    masks plyr::mutate()
## x dplyr::rename()    masks plyr::rename()
## x dbplyr::sql()      masks dplyr::sql()
## x dplyr::summarise() masks plyr::summarise()
## x dplyr::summarize() masks plyr::summarize()
```

```r
library(RMySQL) #For connecting to the databse
```

```
## Loading required package: DBI
```

```r
library(htmlTable) #For creating Word-compatible tables
library(lubridate) #For temporal variables
```

```
##
## Attaching package: 'lubridate'

## The following object is masked from 'package:plyr':
##
##     here

## The following object is masked from 'package:base':
##
##     date
```

```r
library(zoo) #For temporal variables
```

```
##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```

```r
library(foreign)
library(ggplot2)
library(countrycode) #For reconciling different country codes across dataset
library(ISOcodes) #A package for ISO country codes
library(stargazer)
```

```
##
## Please cite as:

##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.

##  R package version 5.2.2. https://CRAN.R-project.org/package=stargazer
```

```r
library(rowr) #For cbind with fill
```

```
##
## Attaching package: 'rowr'

## The following objects are masked from 'package:dplyr':
##
##     coalesce, count

## The following object is masked from 'package:plyr':
##
##     count
```

```r
library(gridExtra)
```

```
##
## Attaching package: 'gridExtra'

## The following object is masked from 'package:dplyr':
##
##     combine
```

```r
library(janitor)
```

2 Databases and external datasets

2.1 MySQL databases

- declassification_cables
- declassification_ddrs
- declassification_frus
- declassification_kissinger
- declassification_pdb
- declassification_clinton
- declassification_cabinet
- declassification_cpdoc

2.2 Key fields/variables in the database 'declassification_frus'

- body
- subject
- date (year)
- classification
- urgency
- length
- (handling)
- (page_count)
- (line_count)
- office
- from_field
- to_field
- tag

2.3 Key fields/variables in the database 'declassification_cables'

- body
- subject
- date (year)
- classification
- urgency
- length
- (handling)
- (page_count)
- (line_count)
- office
- from_field
- to_field
- tag

2.4 External dataset sources:

- Download the following datasets in the folder "external_data"
- COW country codes (cow): http://www.correlatesofwar.org/data-sets/cow-country-codes/cow-country-codes/at_download/file
- National Material Capabilities (v5.0) (nmc): http://www.correlatesofwar.org/data-sets/national-material-capabilities

3 Data Overview

3.1 List the collections

```
setwd("/Users/clarahsuong/chronos_data_intro")

#Re-connect to the database
driver = dbDriver("MySQL")
connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
dbGetQuery(connection, 'show databases;')
```

```
##                             Database
## 1                 information_schema
## 2                     authentication
## 3                         bookwormDB
## 4                       clinton_test
## 5                     clinton_test_2
## 6                        ddrs_equity
## 7                   declassification
## 8               declassification_api
## 9          declassification_api_test
## 10       declassification_api_update
## 11          declassification_cabinet
## 12           declassification_cables
## 13          declassification_clinton
## 14  declassification_clinton_staging
## 15            declassification_cpdoc
## 16             declassification_ddrs
## 17         declassification_foia_dod
## 18             declassification_frus
## 19      declassification_frus_update
## 20        declassification_kissinger
## 21              declassification_pdb
## 22         declassification_pdb_test
## 23                               etc
## 24       historylab_user_information
## 25                             mysql
## 26                performance_schema
## 27                   predict_history
## 28               predict_history_new
## 29                 predictify_source
## 30                 predictify_target
## 31                               sys
## 32                  user_information
## 33                    visualizations
```

3.2 Download the table "docs" for all databases

```
setwd("/Users/clarahsuong/chronos_data_intro")

db_docs <- function(mydb) {
  mydb2 = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname=mydb)
  docs<-dplyr::tbl(mydb2, 'docs') %>%
    collect(n = Inf) %>%
    distinct()
  return(docs)
}

#cables_docs<-db_docs('declassification_cables')
load("./data/cables_docs.RData")
#cables_docs<-docs
load("./data/frus_docs.RData")
#frus_docs<-db_docs('declassification_frus')
clinton_docs<-db_docs('declassification_clinton')
pdb_docs<-db_docs('declassification_pdb')
kissinger_docs<-db_docs('declassification_kissinger')
ddrs_docs<-db_docs('declassification_ddrs')
cabinet_docs<-db_docs('declassification_cabinet')
cpdoc_docs<-db_docs('declassification_cpdoc')
```

```
## Warning in .local(conn, statement, ...): Decimal MySQL column 3 imported as
## numeric

## Warning in .local(conn, statement, ...): Decimal MySQL column 3 imported as
## numeric
```

3.3 TABLE 1: Overview of the Corpora

3.3.1 Number of documents and date ranges for each collection

```
db_doc_no_date <- function(mydb) {
mydb2<-eval(parse(text=paste(mydb, sep = "")), env=.GlobalEnv)
mydb2<-mydb2  %>%
  select(id, date) %>%
  collect() %>%
  distinct()

  return(c(nrow(mydb2), range(mydb2$date, na.rm = TRUE)))
}

db_doc_no_date('cables_docs')
```

```
## [1] "3214293"    "1973-01-01" "1979-12-31"
```

```
db_doc_no_date('frus_docs')
```

```
## [1] "209046"              "1861-05-02 00:00:00" "1985-04-05 19:00:00"
```

```
db_doc_no_date('pdb_docs')
```

```
## [1] "5011"                "1961-06-17 00:00:00" "1977-01-20 00:00:00"
```

```
db_doc_no_date('kissinger_docs')
```

```
## [1] "4552"                "1973-01-02 00:00:00" "1976-12-24 13:15:00"
```

```
db_doc_no_date('clinton_docs')
```

```
## [1] "54149"               "2009-03-09 13:48:00" "2013-07-07 08:39:00"
```

```
db_doc_no_date('ddrs_docs')
```

```
## [1] "117509"              "1900-06-15 00:00:00" "2008-05-12 00:00:00"
```

```
db_doc_no_date('cabinet_docs')
```

```
## [1] "42539"               "1907-10-19 00:00:00" "1990-12-13 00:00:00"
```

```
db_doc_no_date('cpdoc_docs')
```

```
## [1] "10279"               "1973-11-15 00:00:00" "1979-11-24 00:00:00"
```

3.3.2 Frequency tables for full text vs. non-full text

```
sum(!is.na(cables_docs$body))
```

```
## [1] 2654414
```

```
sum(!is.na(frus_docs$body))
```

```
## [1] 209046
```

```
sum(!is.na(pdb_docs$body))
```

```
## [1] 5011
```

```
sum(!is.na(kissinger_docs$body))
```

```
## [1] 4552
```

```
sum(!is.na(clinton_docs$body))
```

```
## [1] 54149
```

```
sum(is.na(ddrs_docs$body))
```

```
## [1] 0
```

```
sum(!is.na(cabinet_docs$body))
```

```
## [1] 42539
```

```
sum(!is.na(cpdoc_docs$body))
```

```
## [1] 10279
```

```
sum(sum(!is.na(cables_docs$body)),
sum(!is.na(frus_docs$body)),
sum(!is.na(pdb_docs$body)),
sum(!is.na(kissinger_docs$body)),
sum(!is.na(clinton_docs$body)),
sum(is.na(ddrs_docs$body)),
sum(!is.na(cabinet_docs$body)),
sum(!is.na(cpdoc_docs$body))
)
```

```
## [1] 2979990
```

```r
sum(sum(!is.na(cables_docs$body)),
sum(!is.na(frus_docs$body)),
sum(!is.na(pdb_docs$body)),
sum(!is.na(kissinger_docs$body)),
sum(!is.na(clinton_docs$body)),
sum(is.na(ddrs_docs$body)),
sum(!is.na(cabinet_docs$body)),
sum(!is.na(cpdoc_docs$body))
)
```

```
## [1] 2979990
```

```r
sum(is.na(cables_docs$body))
```

```
## [1] 559879
```

```r
sum(is.na(frus_docs$body))
```

```
## [1] 0
```

```r
sum(is.na(pdb_docs$body))
```

```
## [1] 0
```

```r
sum(is.na(kissinger_docs$body))
```

```
## [1] 0
```

```r
sum(is.na(clinton_docs$body))
```

```
## [1] 0
```

```r
sum(!is.na(ddrs_docs$body))
```

```
## [1] 117509
```

```r
sum(is.na(cabinet_docs$body))
```

```
## [1] 0
```

```r
sum(is.na(cpdoc_docs$body))
```

```
## [1] 0
```

```r
sum(sum(is.na(cables_docs$body)),
sum(is.na(frus_docs$body)),
sum(is.na(pdb_docs$body)),
sum(is.na(kissinger_docs$body)),
sum(is.na(clinton_docs$body)),
sum(!is.na(ddrs_docs$body)),
sum(is.na(cabinet_docs$body)),
sum(is.na(cpdoc_docs$body))
)
```

```
## [1] 677388
```

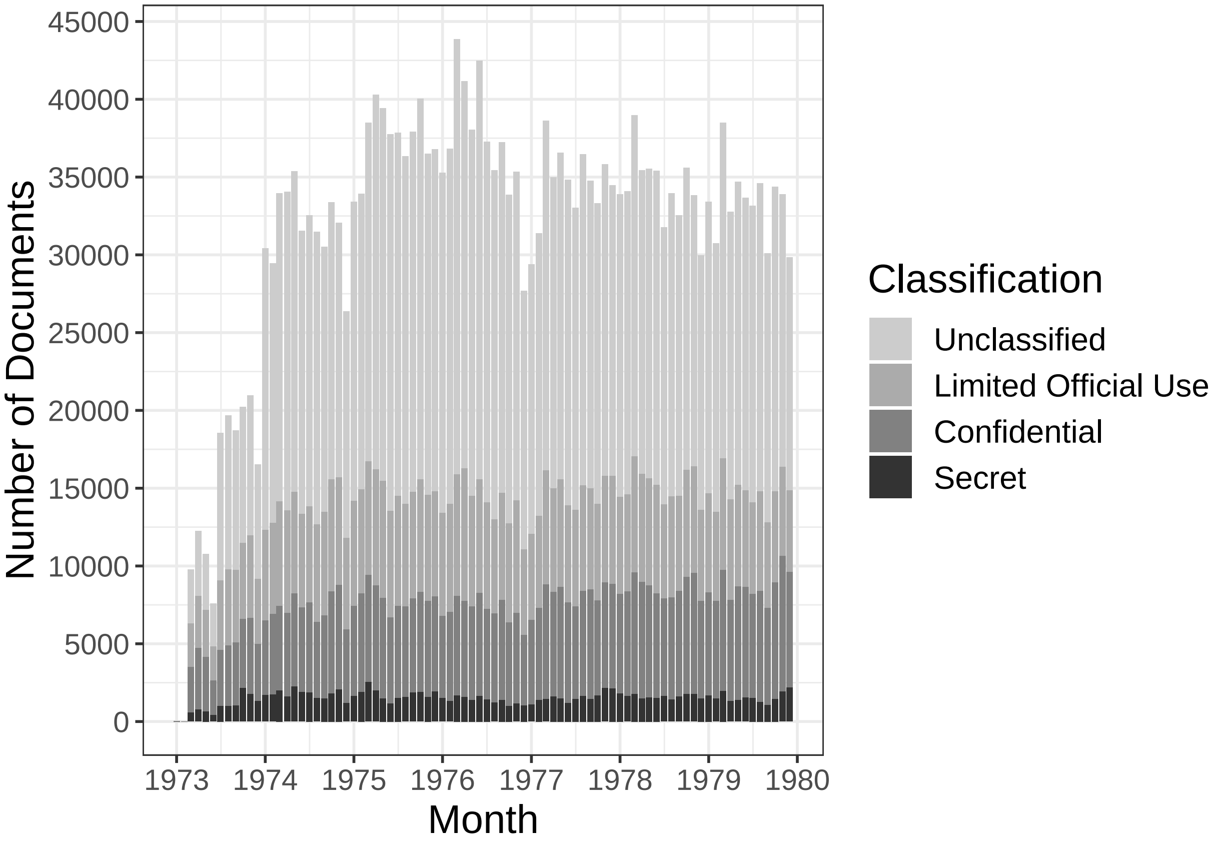
```r
sum(sum(is.na(cables_docs$body)),
sum(is.na(frus_docs$body)),
sum(is.na(pdb_docs$body)),
sum(is.na(kissinger_docs$body)),
sum(is.na(clinton_docs$body)),
sum(!is.na(ddrs_docs$body)),
sum(is.na(cabinet_docs$body)),
sum(is.na(cpdoc_docs$body)))
```

```
## [1] 677388
```

4 CFPF Collection (declassification_cables)

4.1 FIGURE 2: Number of Cables by Month

```r
setwd("/Users/clarahsuong/chronos_data_intro")

cables_db = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='de

classification_doc_month <-
  tbl(cables_db,'classification_doc') %>%
  collect() %>%
  distinct() %>%
  mutate(
    date=as_date(date),
    month = as_date(cut(date, breaks = "month")),
    classification=ifelse(classification_id==1,"Secret",
                              ifelse(classification_id==2,"Confidential",
                                     ifelse(classification_id==5,"Unclassified",
                                            ifelse(classification_id==7,"Limited Official Use", NA)
                                            )
                                    )
                              ),
    classification =factor(classification, levels = c("Unclassified", "Limited Official Use", "Confiden

        ) %>%
  select(classification, month)

#png("./data_analysis_output/cables_n_month_class.png", width = 600, height = 450)
ggplot(classification_doc_month, aes(month)) +
  geom_bar(aes(fill=classification)) +
  scale_x_date(breaks=scales::pretty_breaks(10)) +
  scale_y_continuous(breaks=scales::pretty_breaks(10)) +
  labs(#title = "",
          #subtitle = "Data Plotted by Year",
           y = "Number of Documents",
           x = "Month") +
  scale_fill_grey(start=0.8, end=0.2) +
  theme_bw() +
  theme(text = element_text(size=15),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11)#,
        #legend.title=element_blank()#,
        #legend.position = c(0.1, 0.9),
        #legend.justification = c(0.1, 0.9)
        ) + labs(fill = "Classification")
```



```
#scale_fill_manual(
#    values = cols,
#    aesthetics = c("colour","fill"),
#    breaks=c("Secret","Confidential","Limited Official Use","Unclassified")
#   )

#dev.off()
```

4.2 Example Cable

```
#cables_db = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='d

dbListTables(cables_db)
```

```
##  [1] "classification_countries" "classification_doc"
##  [3] "classifications"          "concept_doc"
##  [5] "concepts"                 "countries"
##  [7] "country_doc"              "doc_counts"
##  [9] "docs"                     "from_to_sum"
## [11] "network_docs"             "network_nodes"
## [13] "office_doc"               "offices"
## [15] "person_doc"               "persons"
## [17] "reference_doc"            "tag_doc"
## [19] "tag_doc_staging"          "tagname_doc"
## [21] "tagnames"                 "tags"
## [23] "tags_staging"             "tokens"
## [25] "top_classifications"      "top_countries"
## [27] "top_network"              "top_persons"
## [29] "top_topics"               "topic_doc"
## [31] "topic_token"              "topics"
## [33] "urgency"                  "urgency_doc"
```

```
tbl(cables_db,'tag_doc') %>%
  filter(doc_id=="1976ECBRU06967")
```

```
## # Source:   lazy query [?? x 2]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
##   tag_id doc_id
##    <int> <chr>
## 1     68 1976ECBRU06967
## 2     88 1976ECBRU06967
## 3    183 1976ECBRU06967
```

```
tbl(cables_db,'tags') %>%
  filter(id==68 | id==88 | id==183)
```

```
## # Source:   lazy query [?? x 7]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
##      id tag   title          description              class   category action
##   <int> <chr> <chr>          <chr>                    <chr>   <chr>    <chr>
## 1    68 EAGR  Agriculture ~ Use for papers dealing~ econom~ subject  <NA>
## 2    88 EPAP  Plant, Anima~ Use for processed and ~ econom~ subject  <NA>
## 3   183 EEC   European Com~ <NA>                     <NA>    organiz~ <NA>
```

```
tbl(cables_db,'country_doc') %>%
  filter(doc_id=="1976ECBRU06967")
```

```
## # Source:   lazy query [?? x 4]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
## # ... with 4 variables: country_id <chr>, doc_id <chr>,
## #   country_count <int>, date <chr>
```

```
#tbl(cables_db,'countries') %>%
#  filter(id==368)

tbl(cables_db,'topic_doc') %>%
  filter(topic_id==49) %>%
  collect() %>%
  arrange(desc(topic_score))
```

```
## # A tibble: 107,831 x 3
##    doc_id         topic_id topic_score
##    <chr>             <int>       <dbl>
##  1 1973MOSCOW03985       49       0.392
##  2 1978HONGK15154        49       0.390
##  3 1976MOSCOW06748       49       0.378
##  4 1973MOSCOW03519       49       0.334
##  5 1979BRUSSE18064       49       0.332
##  6 1979BRUSSE09801       49       0.329
##  7 1977BUENOS03390       49       0.325
##  8 1976STATE303087       49       0.323
##  9 1973MOSCOW11379       49       0.314
## 10 1976MOSCOW03356       49       0.309
## # ... with 107,821 more rows
```

```
tbl(cables_db,'topic_doc') %>%
  filter(doc_id=="1976ECBRU06967")
```

```
## # Source:   lazy query [?? x 3]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
##   doc_id         topic_id topic_score
##   <chr>             <int>       <dbl>
## 1 1976ECBRU06967       56      0.0262
## 2 1976ECBRU06967       30      0.170
## 3 1976ECBRU06967       49      0.175
```

```
# filter(doc_id=="1974ANKARA09370")
#filter(doc_id=="1979HELSIN05792")
#filter(doc_id=="1977BONN09230")
#filter(doc_id=="1976DACCA06254")
#filter(doc_id=="1978OTTAWA02190")
#filter(doc_id=="1977TEHRAN01142")
#filter(doc_id=="1977TEHRAN01142")
#filter(doc_id=="1978BANGKO19143")

tbl(cables_db,'topics') %>%
  filter(id==49 | id==30 | id==56)
```

```
## # Source:   lazy query [?? x 3]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
##      id title                    name
##   <int> <chr>                    <chr>
## 1    30 {tax, billion, pct}      International financial developments
## 2    49 {refugee, food, deficit} Agricultural productivity estimates
## 3    56 {ton, vessel, gulf}      Natural resource distribution data
```

```
#topics<-tbl(cables_db,'topics') %>% collect()

#tbl(cables_db,'topic_doc') %>%
#  group_by(doc_id) %>%
#  summarise(median = median(topic_score, na.rm = TRUE)) %>%
#  ungroup() %>%
#  arrange(desc(median)) %>%
#  collect()

#topic_doc<-tbl(cables_db,'topic_doc') %>% collect()

#topic_doc %>%
#  group_by(doc_id) %>%
#  summarise(median = median(topic_score, na.rm = TRUE)) %>%
#  ungroup() %>%
#  arrange(desc(median))

tbl(cables_db,'topic_doc') %>% arrange(desc(topic_score)) %>% print(n=40)
```

```
## # Source:     table<topic_doc> [?? x 3]
## # Database:   mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_cables]
## # Ordered by: desc(topic_score)
##    doc_id          topic_id topic_score
##    <chr>              <int>       <dbl>
##  1 1974MADRID04313       84       0.503
##  2 1976BANGKO08780       99       0.490
##  3 1976MANAMA01822        1       0.487
##  4 1977BONN12881          9       0.460
##  5 1979BANJUL00434       30       0.453
##  6 1979BUENOS07291       72       0.431
##  7 1976MEXICO13884       39       0.423
##  8 1975HONGK10824         1       0.422
##  9 1975BUENOS03393       31       0.422
## 10 1978STATE297799        4       0.421
## 11 1976HONGK10787         1       0.414
## 12 1975STATE399853        7       0.414
## 13 1975STATE299853        7       0.414
## 14 1978JIDDA04182         0       0.413
## 15 1978BOGOTA07256       30       0.408
## 16 1979BANGKO50174       76       0.404
## 17 1975HONGK04001         1       0.398
## 18 1979AMMAN01480         0       0.394
## 19 1977HONGK10809         1       0.392
## 20 1973MOSCOW03985       49       0.392
## 21 1976BANGKO08779       99       0.392
## 22 1978HONGK15154        49       0.390
## 23 1979STATE088365       70       0.389
## 24 1978ROME08114         13       0.388
## 25 1978CARACA04977       39       0.385
## 26 1976HONGK11715         1       0.382
## 27 1978MEXICO19859       15       0.381
## 28 1978BANGKO19143       76       0.379
## 29 1978PARIS11281        88       0.378
## 30 1976MOSCOW06748       49       0.378
## 31 1977HONGK04155         1       0.377
## 32 1977STATE117100       34       0.377
## 33 1978STATE229764       39       0.377
## 34 1975HONGK11522         1       0.377
## 35 1977LAPAZ09686        39       0.376
## 36 1975HONGK10592         1       0.375
## 37 1979PRETOR01141       30       0.375
## 38 1977HONGK10614         1       0.374
## 39 1976LIMA09027         39       0.372
## 40 1978SOFIA02558        31       0.372
## # ... with more rows
```

4.3 Frequency Tables

4.3.1 TABLE 2: Number of Cables with Non-Missing Values by Variable

```
#driver = dbDriver("MySQL")
#connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
#mydb = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='declas

setwd("/Users/clarahsuong/chronos_data_intro")

docs<-
  cables_docs %>%
  dplyr::select("collection",
      "id",
      "body",
      "date",
      "classification",
      "subject",
      "from_field",
      "to_field",
      #"tags",
      "concepts",
      "office",
      "handling",
      "type")

C1<-c("collection",
      "id",
      "body",
      "date",
      "classification",
      "subject",
      "from_field",
      "to_field",
      #"tags",
      "concepts",
      "office",
      #"handling",
      "type")

C2<-c(
sum(!is.na(docs$collection)),
sum(!is.na(docs$id)),
sum(!is.na(docs$body)),
sum(!is.na(docs$date)),
sum(!is.na(docs$classification)),
sum(!is.na(docs$subject)),
sum(!is.na(docs$from_field)),
sum(!is.na(docs$to_field)),
sum(!is.na(docs$concepts)),
sum(!is.na(docs$office)),
sum(!is.na(docs$type))
)
```

```
table_cables_n_na<-cbind(C1, C2)
colnames(table_cables_n_na) <- c("Variable","Number of Documents with Non-Missing Values")

stargazer(table_cables_n_na,
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Documents with Non-Missing Values by Variable",
          digits=1,
          out="./data_analysis_output/table_cables_n_na.txt"
          )
```

```
##
## Number of Documents with Non-Missing Values by Variable
## ==========================================================
## Variable       Number of Documents with Non-Missing Values
## ----------------------------------------------------------
## collection                       3214293
## id                               3214293
## body                             2654414
## date                             3214293
## classification                   2654414
## subject                          2876678
## from_field                       3214094
## to_field                         3213050
## concepts                         3063262
## office                           2654414
## type                             2654414
## ----------------------------------------------------------
```

```
#stargazer(table_cables_n_na,
#           summary = FALSE,
#           rownames = FALSE,
#           type = "html",
#           title="Number of Documents with Non-Missing Values by Variable",
#           digits=1,
#           out="./data_analysis_output/table_cables_n_na.html"
#           )
```

4.3.2 TABLE 3: Number of Cables by Year

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_cables_n_year<-
  cables_docs %>%
  mutate(year=lubridate::year(date)) %>%
  group_by(year) %>%
  tally() %>%
  mutate(total_n = sum(n),
        rel.freq = paste0(round(100 * n/total_n, 2), "%")) %>%
  select(year, n, rel.freq) %>%
  adorn_totals("row")
```

```
stargazer(table_cables_n_year[c("year","n", "rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Cables By Year",
          digits=1,
          out="./data_analysis_output/table_cables_n_year.txt",
          covariate.labels=c("Year","Number of Cables", "Relative Frequency")
          )
```

```
##
## Number of Cables By Year
## =========================================
## Year  Number of Cables Relative Frequency
## -----------------------------------------
## 1973       179253            5.58%
## 1974       442301            13.76%
## 1975       531102            16.52%
## 1976       554864            17.26%
## 1977       474671            14.77%
## 1978       500577            15.57%
## 1979       531525            16.54%
## Total     3214293              -
## -----------------------------------------
```

```
#stargazer(table_cables_n_year[c("year","n", "rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Number of Cables By Year",
#          digits=1,
#          out="./data_analysis_output/table_cables_n_year.html",
#          covariate.labels=c("Year","Number of Cables", "Relative Frequency")
#          )
```

4.3.3 TABLE 4: Number of Cables by Classification Level

```
setwd("/Users/clarahsuong/chronos_data_intro")

#driver = dbDriver("MySQL")
#connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
#cables_db = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='d

classification_doc <- tbl(cables_db,'classification_doc') %>%
  collect() %>%
  distinct() %>%
  group_by(classification_id) %>%
  tally() %>%
  ungroup() %>%
  mutate(total_n = sum(n),
        rel.freq = paste0(round(100 * n/total_n, 2), "%"),
        classification=ifelse(classification_id==1,"Secret",
                              ifelse(classification_id==2,"Confidential",
                                     ifelse(classification_id==5,"Unclassified",
                                            ifelse(classification_id==7,"Limited Official Use", NA)
                                            )
                                    )
                              )
        ) %>%
  select(classification, n, rel.freq) %>%
  adorn_totals("row")

#classification_doc=apply_labels(classification_doc,
#                                classification_id="Classification",
#                                classification_id=num_lab("1 Secret
#                                                          2 Confidential
#                                                          7 Limited Official Use
#                                                          5 Unclassified")
#                                )

#table_classification = fre(classification_doc$classification_id) %>%
#  set_caption("Table: Documents by Classification") %>%
#  htmlTable()

stargazer(classification_doc[c("classification","n", "rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Documents By Classification Level",
          digits=1,
          out="./data_analysis_output/table_cables_n_class.txt",
          covariate.labels=c("Classification","Number of Documents", "Relative Frequency"))
```

```
##
## Number of Documents By Classification Level
## ===========================================================
## Classification       Number of Documents Relative Frequency
## -----------------------------------------------------------
## Secret                     127332              4.8%
## Confidential               494823             18.64%
## Unclassified               1518305            57.2%
## Limited Official Use       513769             19.36%
## Total                      2654229              -
## -----------------------------------------------------------
```

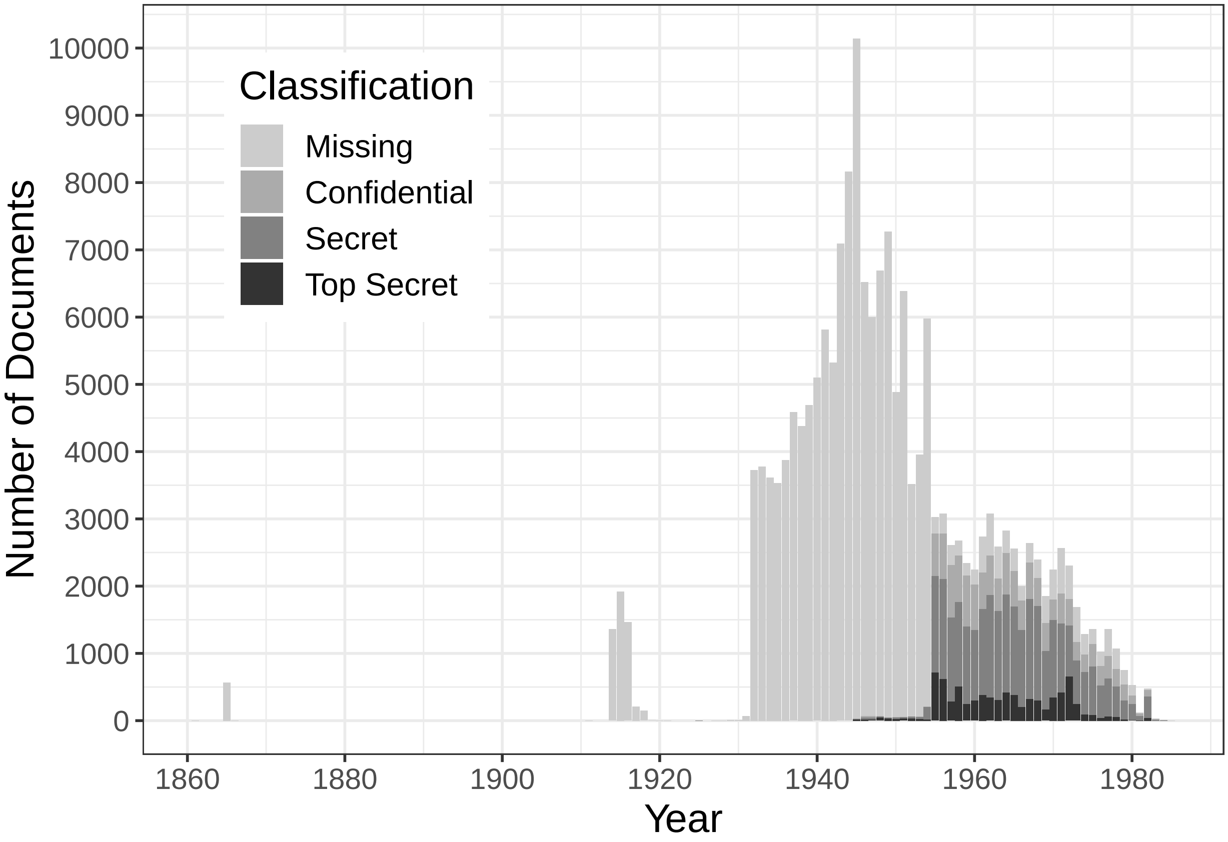
```
#stargazer(classification_doc[c("classification","n", "rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Number of Documents By Classification Level",
#          digits=1,
#          out="./data_analysis_output/table_cables_n_class.html",
#          covariate.labels=c("Classification","Number of Documents", "Relative Frequency"))
```

5 FRUS Collection

5.1 FIGURE 3: Number of FRUS Documents by Year

```r
setwd("/Users/clarahsuong/chronos_data_intro")

frus_n_date<-
  frus_docs %>%
  dplyr::select(id, date, classification) %>%
  mutate(date=as_date(date),
         Classification = replace_na(classification, "Missing"),
         year = as_date(cut(date, breaks = "year")),
         Classification =factor(Classification, levels = c("Missing", "Confidential","Secret","Top Secr

#cols <- c(
#          #"Confidential" =
#            "#999999",
#          #"Missing" =
#            "#CCCCCC",
#          #"Secret" =
#          "#666666",
#          #"Top Secret" =
#          "#333333")

#png("./data_analysis_output/frus_n_year_class.png", width = 600, height = 450)
#layout(matrix(c(1:3), 3, 1,
# byrow = TRUE))
ggplot(frus_n_date, aes(year)) +
  #geom_bar()
  geom_bar(aes(fill=Classification)) +
  scale_x_date(breaks=scales::pretty_breaks(10)) +
  scale_y_continuous(breaks=scales::pretty_breaks(10)) +
  labs(#title = "",
          #subtitle = "Data Plotted by Year",
           y = "Number of Documents",
           x = "Year") +
#  scale_fill_manual(
#    values = cols,
#    aesthetics = c("colour","fill"),
#    breaks=c("Top Secret","Secret","Confidential","Missing")
#  ) +
  theme_bw() +
  theme(text = element_text(size=15),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11),
        #legend.title=element_blank(),
        legend.position = c(0.1, 0.9),
        legend.justification = c(0.1, 0.9))   +
  scale_fill_grey(start=0.8, end=0.2) #+
```

```
## Warning: Removed 22767 rows containing non-finite values (stat_count).
```



```
#  scale_fill_discrete(breaks=c("Missing","Confidential","Secret","Top Secret"))
#dev.off()
```

5.2 Example Document

```
#driver = dbDriver("MySQL")
#connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
frus_db = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='decla

dbListTables(frus_db)
```

```
##  [1] "authorship"                "classification_countries"
##  [3] "classification_doc"        "classification_persons"
##  [5] "classification_topics"     "classifications"
##  [7] "countries"                 "country_doc"
##  [9] "country_doc_bak"           "country_doc_staging"
## [11] "curated_topics"            "doc_counts"
## [13] "docs"                      "docs_bak"
## [15] "old_classification_topics" "old_top_topics"
## [17] "old_topic_doc"             "old_topics"
## [19] "person_doc"                "persons"
## [21] "persons_master"            "refs"
## [23] "term_doc"                  "terms"
## [25] "tokens"                    "top_classifications"
## [27] "top_countries"             "top_persons"
## [29] "top_topics"                "topic_doc"
## [31] "topic_token"                 "topics"
## [33] "volumes"
```

```
tbl(frus_db,'country_doc') %>%
  filter(doc_id=="frus1945v02d128")
```

```
## # Source:   lazy query [?? x 4]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_frus]
##   country_id doc_id          country_count date
##   <chr>      <chr>                   <int> <chr>
## 1 156        frus1945v02d128             3 1945-09-22 00:00:00
## 2 250        frus1945v02d128             3 1945-09-22 00:00:00
```

```
tbl(frus_db,'countries') %>%
  filter(id==156 | id==250)
```

```
## # Source:   lazy query [?? x 4]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_frus]
##   id    name   deleted official
##   <chr> <chr>    <int>    <int>
## 1 156   China        0        1
## 2 250   France       0        1
```

```
tbl(frus_db,'topic_doc') %>%
  filter(doc_id=="frus1945v02d128")
```

```
## # Source:   lazy query [?? x 4]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_frus]
##   doc_id          topic_id topic_score date
##   <chr>              <int>       <dbl> <chr>
## 1 frus1945v02d128     1059      0.0426 1945-09-22 00:00:00
## 2 frus1945v02d128     1062      0.0567 1945-09-22 00:00:00
## 3 frus1945v02d128     1069      0.0426 1945-09-22 00:00:00
```

```
tbl(frus_db,'topics') %>% #Replace with 'curated_topics' later.
  filter(id==1059 | id==1062 | id==1069)
```

```
## # Source:   lazy query [?? x 3]
## # Database: mysql 5.7.26-0ubuntu0.16.04.1
## #   [de_reader@history-lab.org:/declassification_frus]
##      id title                    name
##   <int> <chr>                    <chr>
## 1  1059 {each, missile, threat}  Conventions Conferences and Negotiations
## 2  1062 {system, message, radio} <NA>
## 3  1069 {bank, price, credit}    Eximbank and Foreign Credit
```

```
a<-frus_docs %>%
  filter(id=="frus1945v02d128")
```

5.3 Frequency Tables

5.3.1 TABLE 5: Number of FRUS Documents with Non-Missing Values by Variable

```
setwd("/Users/clarahsuong/chronos_data_intro")

C1<-c("collection",
      "id",
      "body",
      "date",
      "classification",
      "volume_id",
      "chapt_title",
      "title",
      #"subject",
      #"location",
      "p_from",
      "p_to",
      "source"
)

C2<-c(sum(!is.na(frus_docs$collection)),
sum(!is.na(frus_docs$id)),
sum(!is.na(frus_docs$body)),
sum(!is.na(frus_docs$date)),
sum(!is.na(frus_docs$classification)),
sum(!is.na(frus_docs$volume_id)),
sum(!is.na(frus_docs$chapt_title)),
sum(!is.na(frus_docs$title)),
sum(!is.na(frus_docs$p_from)),
sum(!is.na(frus_docs$p_to)),
sum(!is.na(frus_docs$source))
)

table_frus_n_na<-cbind(C1, C2)
colnames(table_frus_n_na) <- c("Variable","Number of Documents with Non-Missing Values")

htmlTable(table_frus_n_na,
          ctable=c("solid", "double"),
          caption="Number of Documents with Non-Missing Values")
```

Number of Documents with Non-Missing Values

Variable

Number of Documents with Non-Missing Values

collection

209046

id

209046

body

209046

date

186279

classification

52580

volume_id

209046

chapt_title

178050

title

209034

p_from

97657

p_to

51797

source

59028

```
stargazer(table_frus_n_na,
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Documents with Non-Missing Values by Variable",
          digits=1,
          out="./data_analysis_output/table_frus_n_na.txt"
          )
```

```
##
## Number of Documents with Non-Missing Values by Variable
## ===========================================================
## Variable       Number of Documents with Non-Missing Values
## -----------------------------------------------------------
## collection                        209046
## id                                209046
## body                              209046
## date                              186279
## classification                     52580
## volume_id                         209046
## chapt_title                       178050
## title                             209034
## p_from                             97657
## p_to                               51797
## source                             59028
## -----------------------------------------------------------
```

```
#stargazer(table_frus_n_na,
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Number of Documents with Non-Missing Values by Variable",
#          digits=1,
#          out="./data_analysis_output/table_frus_n_na.html"
#          )
```

5.3.2 TABLE: Number of Documents by Year

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_frus_n_year<-
  frus_docs %>%
  mutate(year=lubridate::year(date)) %>%
  group_by(year) %>%
  tally() %>%
  mutate(total_n = sum(n),
        rel.freq = paste0(round(100 * n/total_n, 2), "%")) %>%
  ungroup() %>%
  adorn_totals("row")

stargazer(table_frus_n_year[c("year","n", "rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Documents By Year",
          digits=1,
          out="./data_analysis_output/table_frus_n_year.txt",
          covariate.labels=c("Year","Number of Documents", "Relative Frequency")
          )
```

```
##
## Number of Documents By Year
## ============================================
## Year  Number of Documents Relative Frequency
## --------------------------------------------
## 1861           1                  0%
## 1865          565                0.27%
## 1866           3                  0%
## 1911           2                  0%
## 1914         1360                0.65%
## 1915         1921                0.92%
## 1916         1464                 0.7%
## 1917          209                 0.1%
## 1918          147                0.07%
## 1919           6                  0%
## 1920           1                  0%
## 1921           1                  0%
## 1925           1                  0%
## 1927           2                  0%
## 1928           1                  0%
## 1929          10                  0%
## 1930          11                 0.01%
## 1931          71                 0.03%
## 1932         3726                1.78%
## 1933         3777               1.81%
## 1934         3616               1.73%
## 1935         3533               1.69%
## 1936         3877               1.85%
## 1937         4584               2.19%
## 1938         4380                2.1%
## 1939         4692               2.24%
## 1940         5099               2.44%
## 1941         5817               2.78%
## 1942         5327               2.55%
## 1943         7094               3.39%
## 1944         8162                3.9%
## 1945         10144              4.85%
## 1946         6519               3.12%
## 1947         6005               2.87%
## 1948         6689                3.2%
## 1949         7275               3.48%
## 1950         4887               2.34%
## 1951         6390               3.06%
## 1952         3514               1.68%
## 1953         3953               1.89%
## 1954         5975               2.86%
## 1955         3026               1.45%
## 1956         3083               1.47%
## 1957         2613               1.25%
## 1958         2677               1.28%
## 1959         2341               1.12%
## 1960         2248               1.08%
## 1961         2741               1.31%
## 1962         3078               1.47%
## 1963         2589               1.24%
## 1964         2827               1.35%
## 1965         2558               1.22%
## 1966         1998               0.96%
## 1967         2638               1.26%
## 1968         2393               1.14%
## 1969         1852               0.89%
## 1970         2244               1.07%
## 1971         2565               1.23%
## 1972         2303                1.1%
## 1973         1686               0.81%
## 1974         1284               0.61%
## 1975         1362               0.65%
## 1976         1023               0.49%
## 1977         1360               0.65%
## 1978         1073               0.51%
## 1979          753               0.36%
## 1980          527               0.25%
## 1981          117               0.06%
## 1982          474               0.23%
## 1983          25                0.01%
## 1984           8                  0%
## 1985           2                  0%
##              22767              10.89%
## Total       209046                -
## --------------------------------------------
```

```
#stargazer(table_frus_n_year[c("year","n", "rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Number of Documents By Year",
#          digits=1,
#          out="./data_analysis_output/table_frus_n_year.html",
#          covariate.labels=c("Year","Number of Documents", "Relative Frequency")
#          )
```

5.3.3 TABLE 6: Number of FRUS Documents by Classification Level

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_frus_n_class<-
  frus_docs %>%
  mutate(year=lubridate::year(date)) %>%
  group_by(classification) %>%
  tally() %>%
  mutate(total_n = sum(n),
        rel.freq = paste0(round(100 * n/total_n, 2), "%")) %>%
  ungroup() %>%
  adorn_totals("row")

stargazer(table_frus_n_class[c("classification","n", "rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Number of Documents By Classification Level",
          digits=1,
          out="./data_analysis_output/table_frus_n_class.txt",
          covariate.labels=c("Classification","Number of Documents", "Relative Frequency"))
```

```
##
## Number of Documents By Classification Level
## =====================================================
## Classification Number of Documents Relative Frequency
## -----------------------------------------------------
##                      156466              74.85%
## Confidential          13512              6.46%
## Secret                29937              14.32%
## Top Secret            9131               4.37%
## Total                209046                -
## -----------------------------------------------------
```

```
#stargazer(table_frus_n_class[c("classification","n", "rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Number of Documents By Classification Level",
#          digits=1,
#          out="./data_analysis_output/table_frus_n_class.html",
#          covariate.labels=c("Classification","Number of Documents", "Relative Frequency"))
```

6 Country TAG Traffic

6.1 Examine the different country codes across datasets

```
setwd("/Users/clarahsuong/chronos_data_intro")

#Re-connect to the database
driver = dbDriver("MySQL")
connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
mydb = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='declass

#A list of countries according to our database
countries<-
  tbl(mydb, 'countries') %>%
  collect()
#save(countries, file = "./data/countries.RData")

#This table is incomplete. Note that there is no tag for "South Vietnam" but tag "VM" (id: 557) for "Vi
#US is included.
#Note there is no tag_id for the Soviet Union but one for Russia.

#Merge ISO_3166_1 and ISO_3166_3 (ISO country codes for withdrawn countries). Note that this list often
iso_3166<-
  tibble::as_tibble(full_join(ISO_3166_1, ISO_3166_3, by = c("Alpha_3","Numeric","Name")))%>%
  mutate(Numeric=as.integer(Numeric)) %>%
  dplyr::select("Alpha_3",
         "Numeric",
         "Name",
         "Official_name",
         "Common_name")

#Generate a dataframe for all (former and existing) countries according to COW. Note that this includes
all_states<-
  read_csv("./external_data/cow/states2016.csv") %>%
  dplyr::select("stateabb","ccode","statenme") %>%
  #filter(!ccode==2) %>% #Leave out the US
  rename(cow_ccode=ccode,
         cow_stateabb=stateabb,
         cow_statename=statenme) %>%
  mutate(cow_stateabb=as.character(cow_stateabb),
         cow_statename=as.character(cow_statename)) %>%
  distinct() #There are duplicates. e.g. countries that existed, disappeared, and then re-appeared. Ser
```

```
## Parsed with column specification:
## cols(
##   stateabb = col_character(),
##   ccode = col_double(),
##   statenme = col_character(),
##   styear = col_double(),
##   stmonth = col_double(),
##   stday = col_double(),
##   endyear = col_double(),
##   endmonth = col_double(),
##   endday = col_double(),
##   version = col_double()
## )
```

```
#Generate a dataframe for all (former and existing) countries for years 1973-79. Note that this include
all_states_year<-
  all_states %>%
  rowr::cbind.fill(c(1973:1979),fill = NA) %>%
  rename(year=object) %>%
  expand(year = 1973:1979, nesting(cow_stateabb,
                                   cow_ccode,
                                   cow_statename))

#Generate a dataframe for countries existing during the period of 1973-79. Note that the universe of co
states_70s_year<-
  read_csv("./external_data/cow/system2016.csv") %>%
  dplyr::select("stateabb","ccode","year") %>%
  filter(year>1972 & year<1980) %>%
  rename(cow_ccode=ccode,
         cow_stateabb=stateabb) %>%
  left_join(all_states, by=c("cow_ccode","cow_stateabb")) #Include COW state names.
```

```
## Parsed with column specification:
## cols(
##   stateabb = col_character(),
##   ccode = col_double(),
##   year = col_double(),
##   version = col_double()
## )
```

```
states_70s<-
  states_70s_year %>%
  dplyr::select(-year) %>%
  distinct()
```

6.2 Create a dataframe linking country codes and tag_ids

```
#Re-connect to the database
driver = dbDriver("MySQL")
connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
mydb = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='declass

#Note that this includes country codes and tag_id for the US.
country_code_tag<-
  tbl(mydb, 'countries') %>%
  collect() %>%
  mutate(country_id=as.integer(id)) %>%
  dplyr::select(-id) %>%
  mutate(cow_ccode=countrycode(name, 'country.name', 'cown')) %>% #Derive COW country codes from the va
  mutate(iso3n=countrycode(name, 'country.name', 'iso3n')) #Derive iso numeric country codes from the v
```

```
## Warning in countrycode(name, "country.name", "cown"): Some values were not matched unambiguously: Al

## Warning in countrycode(name, "country.name", "iso3n"): Some values were not matched unambiguously: Al

## Warning in countrycode(name, "country.name", "iso3n"): Some strings were matched more than once, and
```

```
#Check whether the variable "country_id" in the table "countries" is from ISO 3166.
#cow_ccode for Vietnam should be 816, not 817 (error in the package countrycode) and cow_ccode for West
#iso3n for South Vietnam should not be 704 (country code of Vietnam) but 714 (error in the R package co
#country_code_tag$cowid2<-countrycode(country_code_tag$country_id, 'iso3n', 'cown')

all(country_code_tag$country_id %in% iso_3166$Numeric)
```

```
## [1] FALSE
```

```
all(iso_3166$Numeric %in% country_code_tag$country_id)
```

```
## [1] FALSE
```

```
setdiff(country_code_tag$country_id, iso_3166$Numeric)
```

```
##  [1]  80 230 274 280 282 284 532 590 594 650 658 698 714 736 830 886 890
## [18] 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916
## [35] 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932
```

```
country_code_tag[country_code_tag$country_id %in% setdiff(country_code_tag$country_id, iso_3166$Numeric)
```

```
## # A tibble: 50 x 7
##    name                  deleted official tag_id country_id cow_ccode iso3n
##    <chr>                   <int>    <int>  <int>      <int>     <int> <int>
##  1 British Antarctic Te~       1        0     NA         80        NA    NA
##  2 Ethiopia                    1        0    405        230       530   231
##  3 Gaza Strip                  0        0    417        274        NA   275
##  4 West Germany                1        0    418        280       255   276
##  5 East Berlin                 0        0     NA        282        NA    NA
##  6 West Berlin                 0        0    560        284        NA    NA
##  7 Netherlands Antilles~       1        0    484        532        NA   533
##  8 Panama                      1        0     NA        590        95   591
##  9 Panama Canal Zone           1        0    378        594        95   591
## 10 Ryukyu Islands              0        0    511        650        NA    NA
## # ... with 40 more rows
```

```
#Most of the items with a discrepancy between the database's country_id and iso-3166 numeric seem to be

#Replace the wrong COW country codes and tag_id
country_code_tag<-
  country_code_tag %>%
  mutate(cow_ccode= replace(cow_ccode, name=="Vietnam", 816), #Fix cow_ccode for Vietnam
         cow_ccode= replace(cow_ccode, name=="West Germany", 260), #Fix cow_ccode for West Germany (Ger
         tag_id=replace(tag_id, name=="South Vietnam", 1973), #Insert tag_id for South Vietnam
         tag_id=replace(tag_id, name=="Ethiopia", 405),
         country_id=replace(country_id, name=="Ethiopia", 231)) %>% #Insert tag_id for South Vietnam
  rbind(c("Vietnam",
          0,
          1,
          1976,
          704,
          816,
          704
          )
        ) %>% #Insert the second tag_id value (1976) for Vietnam
  filter(!(name=="Panama" & country_id==590)) %>%
  mutate(cow_ccode=as.integer(cow_ccode),
         tag_id=as.integer(tag_id)) %>%
  right_join(all_states, by="cow_ccode") %>% #Include state names from the COW list of all states that
  rename(country_name=name) %>%
  #filter(!is.na(cow_ccode) & !is.na(tag_id)) %>% #Drop the observations with missing COW country code
  dplyr::select(-iso3n, -country_name,-deleted,-official) %>% #Note the 2 tags for Vietnam.
  distinct()
```

6.3 Download, save, or load the tables for tags and docs (doc_id and date) in the working directory and count the number of cables tagged for each country

```
setwd("/Users/clarahsuong/chronos_data_intro")

#Re-connect to the database
driver = dbDriver("MySQL")
connection = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader')
mydb = dbConnect(driver,host='history-lab.org', password='XreadF403', user='de_reader', dbname='declass

tags<-
  tbl(mydb, 'tags') %>%
  dplyr::select(id, tag, category) %>%
  collect()

tag_doc<-
  tbl(mydb, 'tag_doc') %>%
  collect() #This table includes cables tagged with South Vietnam (tag_id 1973) and Vietnam (tag_id: 19
#tag_doc %>% filter(tag_id==1973)
#tag_doc %>% filter(tag_id==1976)
#tag_doc %>% filter(tag_id==557)

doc_date2<-
  tbl(mydb, 'docs') %>%
  dplyr::select(id, date) %>%
  rename(doc_id=id) %>%
  collect()

country_tag_doc2<-
  tag_doc %>%
  inner_join(doc_date2, by = "doc_id") %>%
  inner_join(tags, by = c("tag_id"="id")) %>%
  inner_join(country_code_tag, by="tag_id") %>%
  mutate(year=lubridate::year(date),
         month=lubridate::month(date),
         date=lubridate::ymd(date),
         ym=as.yearmon(paste(year, month),"%Y %m")
         )
#save(country_tag_doc2, file = "./data/country_tag_doc2.RData")
#load("./data/country_tag_doc2.RData")

cable_n_day<-
  country_tag_doc2 %>%
  group_by(.dots=c("cow_ccode",
                   "cow_statename",
                   "country_id",
                   "date")) %>%
  tally() %>%
  ungroup()
#save(cable_n_day, file = "./data/cable_n_day.RData")
#load("./data/cable_n_day.RData") #Note that this includes neither all dates nor all countries on the C

#The table country_doc attempts to add West Germany and South Vietnam based on regex matching in body.
#country_doc<-
#  tbl(mydb, 'country_doc') %>% collect()
#However, this table is also missing South Vietnam (country_id 714 or tag_id 1973). It seems to group (
#country_doc %>% filter(country_id==714)
#country_doc %>% filter(country_id==704)
#It is meaningful to distinguish cables related to South Vietnam from those about (North) Vietnam. Thus

#Yearly tag traffic by state-year, including 0 cables by some countries that did not exist in the 1970s
cable_n_all_states_year<-
  country_tag_doc2 %>%
  group_by(year, cow_ccode, cow_statename, cow_stateabb) %>%
  tally() %>%
  right_join(all_states_year, by=c("year", "cow_ccode", "cow_stateabb","cow_statename")) %>%
  rename(n_c_y=n) %>%
  mutate(n_c_y= replace(n_c_y, is.na(n_c_y), 0)) %>%
  ungroup() %>%
  mutate(total_n = sum(n_c_y)) %>%
  arrange(year, cow_ccode)
```

```
## Warning: Column `cow_stateabb` joining character vector and factor,
## coercing into character vector
```

```
## Warning: Column `cow_statename` joining character vector and factor,
## coercing into character vector
```

```
#save(cable_n_all_states_year, file = "./data/cable_n_all_states_year.RData")
#load("./data/cable_n_all_states_year.RData")

#Tag traffic by state, including 0 cables by some countries that did not exist in the 1970s. Note that
cable_n_all_states<-
  country_tag_doc2 %>%
  group_by(cow_ccode, cow_statename, cow_stateabb) %>%
  tally() %>%
  right_join(all_states, by=c("cow_ccode", "cow_stateabb","cow_statename")) %>%
  rename(n_c=n) %>%
  mutate(n_c= replace(n_c, is.na(n_c), 0)) %>%
  ungroup() %>%
  mutate(total_n = sum(n_c)) %>%
  arrange(desc(n_c))
```

```
#save(cable_n_all_states, file = "./data/cable_n_all_states.RData")
#load("./data/cable_n_all_states.RData")

#Yearly tag traffic by state-year, excluding 0 cables by some countries that did not exist in the 1970s
cable_n_states_70s_year<-
  country_tag_doc2 %>%
  group_by(year, cow_ccode, cow_statename, cow_stateabb) %>%
  tally() %>%
  right_join(states_70s_year, by=c("year", "cow_ccode", "cow_stateabb","cow_statename")) %>%
  rename(n_c_y=n) %>%
  mutate(n_c_y= replace(n_c_y, is.na(n_c_y), 0)) %>%
  ungroup() %>%
  mutate(total_n = sum(n_c_y)) %>%
  arrange(year, cow_ccode)
#save(cable_n_states_70s_year, file = "./data/cable_n_states_70s_year.RData")
#load("/Users/clarahsuong/chronos_data_intro/data/cable_n_states_70s_year.RData")

#Tag traffic by state, excluding 0 cables by some countries that did not exist in the 1970s. Note that
cable_n_states_70s<-
  country_tag_doc2 %>%
  group_by(cow_ccode, cow_statename, cow_stateabb) %>%
  tally() %>%
  right_join(states_70s, by=c("cow_ccode", "cow_stateabb","cow_statename")) %>%
  rename(n_c=n) %>%
  mutate(n_c= replace(n_c, is.na(n_c), 0)) %>%
  ungroup() %>%
  mutate(total_n = sum(n_c)) %>%
  arrange(desc(n_c))
#save(cable_n_states_70s, file = "./data/cable_n_states_70s.RData")
#load("/Users/clarahsuong/chronos_data_intro/data/cable_n_states_70s.RData")

#Note that the differences in total ns for each dataset.
```

6.4 TABLE 7: Summary Statistics by Country-Year (Only Contemporary Non-US Countries)

```
setwd("/Users/clarahsuong/chronos_data_intro")

stargazer(as.data.frame(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,])[c("year", "cow_
          type = "text",
          title="Summary Statistics of Tag Traffic by Country-Year (Only Contemporary Non-US Countries)
          digits=1,
          out="./data_analysis_output/desc_cable_n_nonus_states_70s_year.txt",
          covariate.labels=c("Year", "COW Codes of Countries", "Country TAG Traffic"))
```

```
##
## Summary Statistics of Tag Traffic by Country-Year (Only Contemporary Non-US Countries)
## ============================================================================
## Statistic                N    Mean   St. Dev.  Min  Pctl(25) Pctl(75)  Max
## ----------------------------------------------------------------------------
## Year                   1,040 1,976.1   2.0    1,973  1,974    1,978   1,979
## COW Codes of Countries 1,040  460.3   247.3    20    253.8     663     990
## Country TAG Traffic    1,040 2,545.4 3,019.4   21    678.2   3,394.5  24,856
## ----------------------------------------------------------------------------
```

```
#stargazer(as.data.frame(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,])[c("year", "cow_
#          type = "html",
#          title="Summary Statistics of Tag Traffic by Country-Year (Only Contemporary Non-US Countries
#          digits=1,
#          out="./data_analysis_output/desc_cable_n_nonus_states_70s_year.html",
#          covariate.labels=c("Year", "COW Codes of Countries", "Country TAG Traffic"))
```

6.5 TABLE 8: Summary Statistics by Country (Only Contemporary Non-US Countries)

```
setwd("/Users/clarahsuong/chronos_data_intro")

stargazer(as.data.frame(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,])[c("cow_ccode", "n_c")],
          type = "text",
          title="Summary Statistics of Tag Traffic by Country (Only Contemporary Non-US Countries)",
          digits=1,
          out="./data_analysis_output/desc_cable_n_nonus_states_70s.txt",
          covariate.labels=c("COW Codes of Countries", "Country TAG Traffic"))
```

```
##
## Summary Statistics of Tag Traffic by Country (Only Contemporary Non-US Countries)
## ==========================================================================
## Statistic               N    Mean   St. Dev. Min Pctl(25) Pctl(75)   Max
## --------------------------------------------------------------------------
## COW Codes of Countries 156  459.6    253.6    20   233.8     663.8    990
## Country TAG Traffic    156 17,036.6 19,338.0 277 4,643   22,983.2 144,726
## --------------------------------------------------------------------------
```

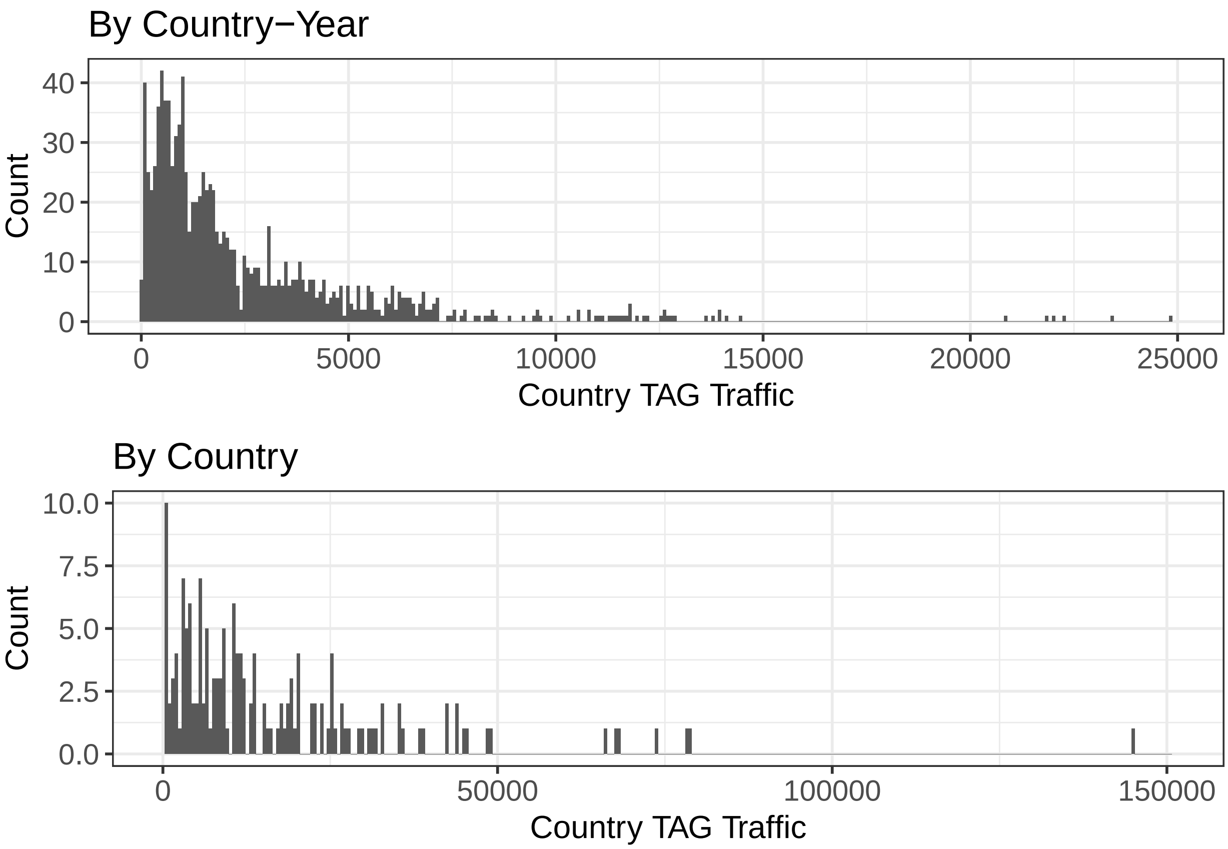
```
#stargazer(as.data.frame(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,])[c("cow_ccode", "n_c")],
#          type = "html",
#          title="Summary Statistics of Tag Traffic by Country (Only Contemporary Non-US Countries)",
#          digits=1,
#          out="./data_analysis_output/desc_cable_n_nonus_states_70s.html",
#          covariate.labels=c("COW Codes of Countries", "Country TAG Traffic"))
```

6.6 FIGURE 4: Country TAG Traffic at Country-Year and Country Levels

```
setwd("/Users/clarahsuong/chronos_data_intro")

options(scipen=10000000)

p1<-ggplot(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,], aes(n_c_y)) +
  #geom_freqpoly(bins = 300) +
  geom_histogram(bins = 300) +
  theme_bw() +
  labs(title = "By Country-Year",
       #subtitle = "Data Plotted by Year",
    y = "Count",
    x = "Country TAG Traffic"
```

```r
    ) +
    theme(text = element_text(size=12),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11)#,
        #legend.title=element_blank()#,
        #legend.position = c(0.1, 0.9),
        #legend.justification = c(0.1, 0.9)
        )

p2<-ggplot(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,], aes(n_c)) +
  geom_histogram(bins = 300) +
  #  geom_freqpoly(bins = 300) +
  theme_bw() +
  labs(title = "By Country",
       #subtitle = "Data Plotted by Year",
    y = "Count",
    x = "Country TAG Traffic") +
    theme(text = element_text(size=12),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11)#,
        #legend.title=element_blank()#,
        #legend.position = c(0.1, 0.9),
        #legend.justification = c(0.1, 0.9)
        ) +
    xlim(0, 151000)

#png("./data_analysis_output/cable_n_nonus_states_70s_year_freq.png")
grid.arrange(p1, p2)
```

```
## Warning: Removed 2 rows containing missing values (geom_bar).
```



```
#dev.off()
```

6.7 Percentile for Specific Values

```
ecdf_fun <- function(x,perc) ecdf(x)(perc)
ecdf_fun(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,]$n_c_y,5000)
```

```
## [1] 0.8586538
```

```
ecdf_fun(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,]$n_c_y,10000)-ecdf_fun(cable_n_s
```

```
## [1] 0.1048077
```

```
1-ecdf_fun(cable_n_states_70s_year[cable_n_states_70s_year$cow_ccode!=2,]$n_c_y,10000)
```

```
## [1] 0.03653846
```

```
ecdf_fun(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,]$n_c,25000)
```

```
## [1] 0.7692308
```

```
ecdf_fun(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,]$n_c,75000)-ecdf_fun(cable_n_states_70s[cal
```

```
## [1] 0.2115385
```

```
1-ecdf_fun(cable_n_states_70s[cable_n_states_70s$cow_ccode!=2,]$n_c,75000)
```

```
## [1] 0.01923077
```

6.8 TABLE 9: Summary Statistics by Country-Year (Incl. Non-Contemporary Countries and the US)

```
setwd("/Users/clarahsuong/chronos_data_intro")

stargazer(as.data.frame(cable_n_all_states_year)[c("year", "cow_ccode", "n_c_y")],
          type = "text",
          title="Summary Statistics of Country TAG Traffic by Country-Year (Incl. Former Countries and t
          digits=1,
          out="./data_analysis_output/desc_cable_n_all_states_year.txt",
          covariate.labels=c("Year", "COW Codes of Countries", "Country TAG Traffic"))
```

```
##
## Summary Statistics of Country TAG Traffic by Country-Year (Incl. Former Countries and the US)
## =============================================================================
## Statistic                N    Mean   St. Dev.  Min  Pctl(25) Pctl(75)   Max
## -----------------------------------------------------------------------------
## Year                   1,519 1,976.0   2.0    1,973  1,974    1,978    1,979
## COW Codes of Countries 1,519  460.0   256.6     2     271      670      990
## Country TAG Traffic    1,519 2,220.0 7,652.6    0     33.5   2,224.5  138,438
## -----------------------------------------------------------------------------
```

```
#stargazer(as.data.frame(cable_n_all_states_year)[c("year", "cow_ccode", "n_c_y")],
#          type = "html",
#          title="Summary Statistics of Country TAG Traffic by Country-Year (Incl. Former Countries and
#          digits=1,
#          out="./data_analysis_output/desc_cable_n_all_states_year.html",
#          covariate.labels=c("Year", "COW Codes of Countries", "Country TAG Traffic"))
```

6.9 TABLE 10: Summary Statistics by Country (Incl. Non-Contemporary Countries and the US)

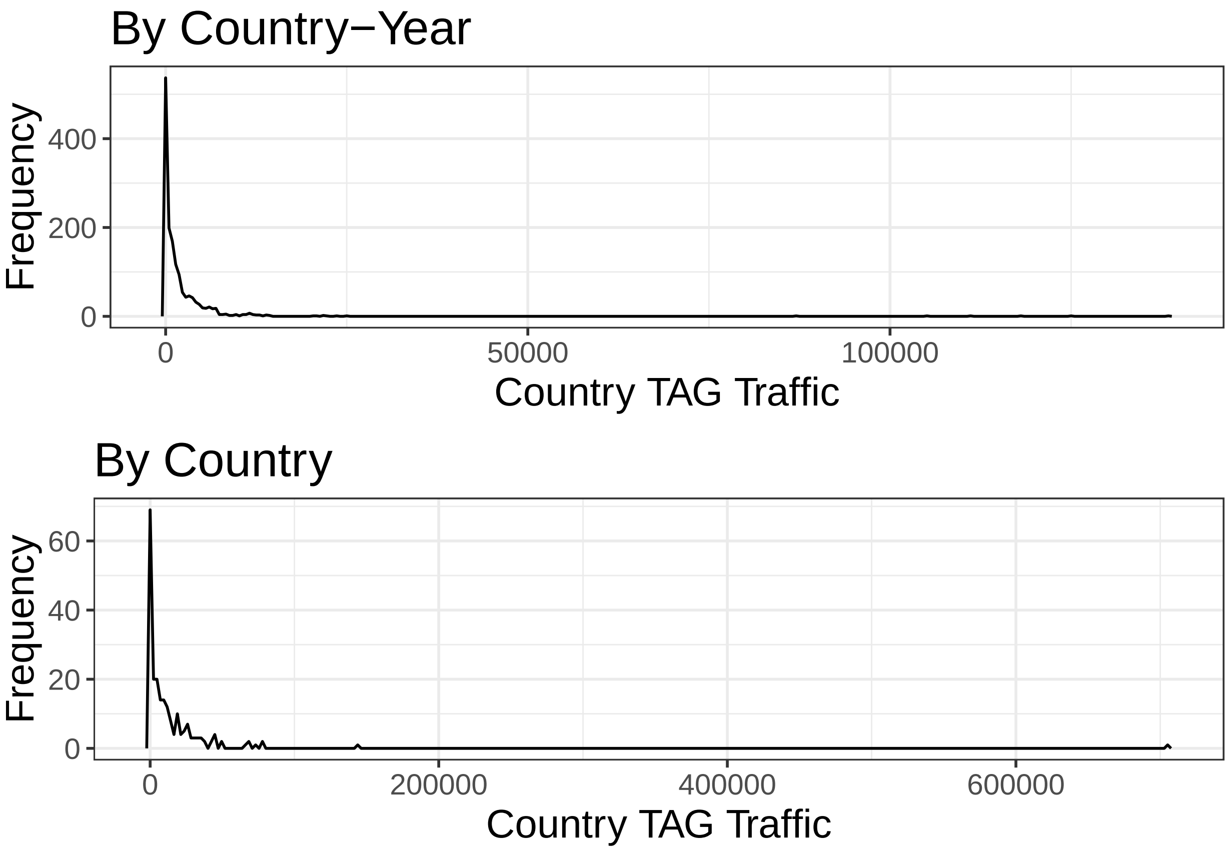
```
setwd("/Users/clarahsuong/chronos_data_intro")

stargazer(as.data.frame(cable_n_all_states)[c("cow_ccode", "n_c")],
          type = "text",
          title="Summary Statistics of Country TAG Traffic by Country (Incl. Former Countries and the U
          digits=1,
          out="./data_analysis_output/desc_cable_n_all_states.txt",
          covariate.labels=c("COW Codes of Countries", "Country TAG Traffic"))
```

```
##
## Summary Statistics of Country TAG Traffic by Country (Incl. Former Countries and the US)
## ==========================================================================
## Statistic               N    Mean   St. Dev. Min Pctl(25) Pctl(75)   Max
## --------------------------------------------------------------------------
## COW Codes of Countries 217  460.0    257.1    2    271      670      990
## Country TAG Traffic    217 15,540.2 50,372.7  0    277     18,121  705,142
## --------------------------------------------------------------------------
```

```
#stargazer(as.data.frame(cable_n_all_states)[c("cow_ccode", "n_c")],
#          type = "html",
#          title="Summary Statistics of Country TAG Traffic by Country (Incl. Former Countries and the
#           digits=1,
#           out="./data_analysis_output/desc_cable_n_all_states.html",
#           covariate.labels=c("COW Codes of Countries", "Country TAG Traffic"))
```

6.10 FIGURE: Country TAG Traffic at Country-Year and Country Levels (All Countries)

```
options(scipen=10000000)

p3<-
  ggplot(cable_n_all_states_year, aes(n_c_y)) +
# geom_histogram(bins = 300) +
  geom_freqpoly(bins = 300) +
  theme_bw() +
  labs(title = "By Country-Year",
       #subtitle = "Data Plotted by Year",
    y = "Frequency",
    x = "Country TAG Traffic") +
    theme(text = element_text(size=15),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11)#,
        #legend.title=element_blank()#,
        #legend.position = c(0.1, 0.9),
        #legend.justification = c(0.1, 0.9)
        )

p4<-
  ggplot(cable_n_all_states, aes(n_c)) +
# geom_histogram(bins = 300) +
  geom_freqpoly(bins = 300) +
  theme_bw() +
  labs(title = "By Country",
       #subtitle = "Data Plotted by Year",
    y = "Frequency",
    x = "Country TAG Traffic") +
    theme(text = element_text(size=15),
        axis.text.x = element_text(size=11),
        axis.text.y = element_text(size=11)#,
        #legend.title=element_blank()#,
        #legend.position = c(0.1, 0.9),
        #legend.justification = c(0.1, 0.9)
        )

#png("./data_analysis_output/cable_n_all_states_year_freq.png")
grid.arrange(p3, p4)
```



```
#dev.off()
```

6.11 Comparison between different datasets

```
#country_tag_doc2$cow_statename[country_tag_doc2$cow_statename %in% setdiff(cable_n_all_states$cow_stat

sort(cable_n_all_states$cow_statename[cable_n_all_states$cow_statename %in% setdiff(cable_n_all_states$
```

```
##  [1] "Andorra"                        "Antigua & Barbuda"
##  [3] "Armenia"                        "Austria-Hungary"
##  [5] "Azerbaijan"                     "Baden"
##  [7] "Bavaria"                        "Belarus"
##  [9] "Belize"                         "Bosnia and Herzegovina"
## [11] "Brunei"                         "Croatia"
## [13] "Czech Republic"                 "East Timor"
## [15] "Eritrea"                        "Estonia"
## [17] "Federated States of Micronesia" "Georgia"
## [19] "Germany"                        "Hanover"
## [21] "Hesse Electoral"                "Hesse Grand Ducal"
## [23] "Kazakhstan"                     "Kiribati"
## [25] "Korea"                          "Kosovo"
## [27] "Kyrgyzstan"                     "Latvia"
## [29] "Liechtenstein"                  "Lithuania"
## [31] "Macedonia"                      "Marshall Islands"
## [33] "Mecklenburg Schwerin"           "Modena"
## [35] "Moldova"                        "Monaco"
## [37] "Montenegro"                     "Namibia"
## [39] "Nauru"                          "Palau"
## [41] "Papal States"                   "Parma"
## [43] "San Marino"                     "Saxony"
## [45] "Slovakia"                       "Slovenia"
## [47] "South Sudan"                    "St. Kitts and Nevis"
## [49] "Tajikistan"                     "Tonga"
## [51] "Turkmenistan"                   "Tuscany"
## [53] "Tuvalu"                         "Two Sicilies"
## [55] "Ukraine"                        "Uzbekistan"
## [57] "Vanuatu"                        "Wuerttemburg"
## [59] "Yemen"                          "Zanzibar"
```

```
table(cable_n_all_states_year$cow_statename[cable_n_all_states_year$cow_statename %in% setdiff(cable_n_a
```

```
##
##                        Andorra              Antigua & Barbuda
##                              7                              7
##                        Armenia                Austria-Hungary
##                              7                              7
##                     Azerbaijan                          Baden
##                              7                              7
##                        Bavaria                        Belarus
##                              7                              7
##                         Belize         Bosnia and Herzegovina
##                              7                              7
##                         Brunei                        Croatia
##                              7                              7
##                 Czech Republic                     East Timor
##                              7                              7
##                        Eritrea                        Estonia
##                              7                              7
## Federated States of Micronesia                        Georgia
##                              7                              7
##                        Germany                        Hanover
##                              7                              7
##                Hesse Electoral              Hesse Grand Ducal
##                              7                              7
##                     Kazakhstan                       Kiribati
##                              7                              7
##                          Korea                         Kosovo
##                              7                              7
##                     Kyrgyzstan                         Latvia
##                              7                              7
##                  Liechtenstein                      Lithuania
##                              7                              7
##                      Macedonia               Marshall Islands
##                              7                              7
##           Mecklenburg Schwerin                         Modena
##                              7                              7
##                        Moldova                         Monaco
##                              7                              7
##                     Montenegro                        Namibia
##                              7                              7
##                          Nauru                          Palau
##                              7                              7
##                   Papal States                          Parma
##                              7                              7
##                     San Marino                         Saxony
##                              7                              7
##                       Slovakia                       Slovenia
##                              7                              7
##                    South Sudan            St. Kitts and Nevis
##                              7                              7
##                     Tajikistan                          Tonga
##                              7                              7
##                   Turkmenistan                        Tuscany
##                              7                              7
##                         Tuvalu                   Two Sicilies
##                              7                              7
##                        Ukraine                     Uzbekistan
##                              7                              7
##                        Vanuatu                   Wuerttemburg
##                              7                              7
##                          Yemen                       Zanzibar
##                              7                              7
```

6.12 TABLE 11: Country TAG Traffic vs. Cable Traffic (USSR Case)

```r
setwd("/Users/clarahsuong/chronos_data_intro")

russia_cable_traffic_1<-
  cables_docs %>%
  filter(str_detect(to_field, "MOSCOW") |
         str_detect(to_field, "LENINGRAD") |
         str_detect(from_field, "MOSCOW") |
         str_detect(from_field, "LENINGRAD")) %>%
  mutate(year=lubridate::year(date)) %>%
  group_by(year) %>%
  tally()

russia_cable_traffic_2<-
  cables_docs %>%
  filter(str_detect(to_field, "MOSCOW") |
         #str_detect(to_field, "LENINGRAD") |
         str_detect(from_field, "MOSCOW") #|
         #str_detect(from_field, "LENINGRAD")
           )%>%
  mutate(year=lubridate::year(date)) %>%
  group_by(year) %>%
  tally()

russia_cable_traffic_3<-
  cables_docs %>%
  filter(#str_detect(to_field, "MOSCOW") |
         str_detect(to_field, "LENINGRAD") |
         #str_detect(from_field, "MOSCOW") |
         str_detect(from_field, "LENINGRAD")
           )%>%
  mutate(year=lubridate::year(date)) %>%
  group_by(year) %>%
  tally()

russia_tag<-
  cable_n_states_70s_year %>%
  filter(cow_statename=="Russia")

russia_tag_cable_traffic<-cbind(russia_tag[c("year", "n_c_y")],
                                #russia_cable_traffic_1["n"],
                                russia_cable_traffic_2["n"],
                                russia_cable_traffic_3["n"]
                                )

#colnames(russia_tag_cable_traffic) <- c("Year","Country TAG Traffic", "Cable Traffic")

stargazer(russia_tag_cable_traffic,
          type = "text",
          #flip = TRUE,
          summary = FALSE,
          rownames = FALSE,
          title="Comparison of Country TAG Traffic and Cable Traffic",
          digits=1,
          out="./data_analysis_output/russia_tag_cable_traffic.txt",
          covariate.labels=c("Year",
                             "Number of Cables Tagged<br>with the USSR",
                             #"Number of Cables Sent by/to<br>the US Embassy in Moscow<br>and the Consu
                             "Number of Cables Sent by/to<br>the US Embassy in Moscow",
                             "Number of Cables Sent by/to<br>the US Consulate General in Leningrad")
          )
```

```
##
## Comparison of Country TAG Traffic and Cable Traffic
## ====================================================================================================
## Year  Number of Cables Tagged<br>with the USSR Number of Cables Sent by/to<br>the US Embassy in Mosc
## ----------------------------------------------------------------------------------------------------
## 1,973                  9,532                                           10,149
## 1,974                  20,876                                          17,246
## 1,975                  23,404                                          20,217
## 1,976                  24,856                                          21,598
## 1,977                  21,836                                          11,867
## 1,978                  22,244                                          13,616
## 1,979                  21,978                                          13,196
## ----------------------------------------------------------------------------------------------------
```

```
#stargazer(russia_tag_cable_traffic,
#          type = "html",
#          summary = FALSE,
#          rownames = FALSE,
#          title="Comparison of Country TAG Traffic and Cable Traffic",
#          digits=1,
#          out="./data_analysis_output/russia_tag_cable_traffic.html",
#           covariate.labels=c("Year",
#                             "Number of Cables Tagged with the USSR",
#                             #"Number of Cables Sent by/to<br>the US Embassy in Moscow<br>and the Cons
#                             "Number of Cables Sent by/to the US Embassy in Moscow",
#                             "Number of Cables Sent by/to< the US Consulate General in Leningrad")
#           )
```

6.13 Country TAG Traffic for Certain Countries

```
## # A tibble: 2 x 2
##    year     n
##   <dbl> <int>
## 1  1973  3521
## 2  1974 10551
```

```
## # A tibble: 6 x 2
##    year     n
##   <dbl> <int>
## 1  1974  2028
## 2  1975  3054
## 3  1976  1907
## 4  1977  4148
## 5  1978  4830
## 6  1979  8384
```

```
## # A tibble: 1 x 2
##    year     n
##   <dbl> <int>
## 1  1978  3903
```

6.14 TABLE 12: Non-US Country-Years with Highest Country TAG Traffic

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_tag_state_year_top20<-
  cable_n_states_70s_year %>%
  filter(cow_ccode!=2) %>%
  mutate(rel.freq = paste0(round(100 * n_c_y/total_n, 2), "%")) %>%
  arrange(desc(n_c_y)) %>%
  top_n(n = 20, wt = n_c_y) %>%
  mutate(cow_statename= replace(cow_statename, cow_statename=="Russia", "Soviet Union")) #Replace "Russ

stargazer(table_tag_state_year_top20[c("year", "cow_statename", "n_c_y","rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Non-US Country-Years with Highest Tag Traffic",
          digits=1,
          out="./data_analysis_output/table_tag_state_year_top20.txt",
          covariate.labels=c("Year","Tagged Country", "Number of Cables", "Relative Frequency"))
```

```
##
```

```
## Non-US Country-Years with Highest Tag Traffic
## ===================================================================
## Year       Tagged Country       Number of Cables Relative Frequency
## -------------------------------------------------------------------
## 1976        Soviet Union             24856             0.74%
## 1975        Soviet Union             23404              0.7%
## 1978        Soviet Union             22244             0.66%
## 1979        Soviet Union             21978             0.66%
## 1977        Soviet Union             21836             0.65%
## 1974        Soviet Union             20876             0.62%
## 1979            Iran                 14433             0.43%
## 1977       United Kingdom            14145             0.42%
## 1979           Israel                13974             0.42%
## 1978           Israel                13918             0.42%
## 1976 German Democratic Republic      13775             0.41%
## 1977 German Democratic Republic      13606             0.41%
## 1976       United Kingdom            12885             0.38%
## 1979           Egypt                 12764             0.38%
## 1978 German Democratic Republic      12733             0.38%
## 1978       United Kingdom            12630             0.38%
## 1979       United Kingdom            12605             0.38%
## 1975    Republic of Vietnam          12551             0.37%
## 1975 German Democratic Republic      12228             0.36%
## 1975           Japan                 12087             0.36%
## -------------------------------------------------------------------
```

```r
#stargazer(table_tag_state_year_top20[c("year", "cow_statename", "n_c_y","rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Non-US Country-Years with Highest Tag Traffic",
#          digits=1,
#          out="./data_analysis_output/table_tag_state_year_top20.html",
#          covariate.labels=c("Year","Tagged Country", "Number of Cables", "Relative Frequency"))
```

6.15 TABLE 13: Non-US Country-Years with Lowest Country TAG Traffic

```r
setwd("/Users/clarahsuong/chronos_data_intro")

table_tag_state_year_bottom20<-
  cable_n_states_70s_year %>%
  filter(cow_ccode!=2) %>%
  mutate(rel.freq = paste0(round(100 * n_c_y/total_n, 2), "%")) %>%
  arrange(desc(n_c_y)) %>%
  top_n(n = -20, wt = n_c_y) %>%
  mutate(cow_statename= replace(cow_statename, cow_statename=="Russia", "Soviet Union")) #Replace "Russ


stargazer(table_tag_state_year_bottom20[c("year", "cow_statename", "n_c_y","rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Non-US Country-Years with Lowest Tag Traffic",
          out="./data_analysis_output/table_tag_state_year_bottom20.txt",
          covariate.labels=c("Year","Tagged Country", "Number of Cables", "Relative Frequency"))
```

```
##
## Non-US Country-Years with Lowest Tag Traffic
## ==============================================================
## Year    Tagged Country     Number of Cables Relative Frequency
## --------------------------------------------------------------
## 1977       Mongolia               75                0%
## 1979       Maldives               75                0%
## 1978   Equatorial Guinea          72                0%
## 1979        Bhutan                68                0%
## 1977 Sao Tome and Principe        67                0%
## 1975       Mongolia               66                0%
## 1974        Bhutan                63                0%
## 1977   Equatorial Guinea          57                0%
## 1973        Albania               55                0%
## 1975       Maldives               55                0%
## 1978       Mongolia               50                0%
## 1979       Mongolia               48                0%
## 1973   Equatorial Guinea          45                0%
## 1973        Bhutan                35                0%
## 1975        Bhutan                31                0%
## 1977        Bhutan                31                0%
## 1976        Bhutan                28                0%
## 1973       Maldives               27                0%
## 1973         Congo                23                0%
## 1978        Bhutan                21                0%
## --------------------------------------------------------------
```

```
#stargazer(table_tag_state_year_bottom20[c("year", "cow_statename", "n_c_y","rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Non-US Country-Years with Lowest Tag Traffic",
#          out="./data_analysis_output/table_tag_state_year_bottom20.html",
#          covariate.labels=c("Year","Tagged Country", "Number of Cables", "Relative Frequency"))
```

6.16 TABLE 14: Non-US Countries Most Frequently Tagged in Cables

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_tag_state_top20<-
  cable_n_states_70s %>%
  filter(cow_ccode!=2) %>%
  #group_by(cow_ccode, cow_stateabb, cow_statename) %>%
  #summarise(n_c = sum(n_c)) %>%
  #ungroup %>%
  mutate(rel.freq = paste0(round(100 * n_c/total_n, 2), "%")) %>%
  arrange(desc(n_c)) %>%
  top_n(n = 20, wt = n_c) %>%
  mutate(cow_statename= replace(cow_statename, cow_statename=="Russia", "Soviet Union")) #Replace "Russ
```

```
stargazer(table_tag_state_top20[c("cow_statename", "n_c","rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Non-US Countries Most Frequently Tagged in Cables",
          out="./data_analysis_output/table_tag_state_top20.txt",
          covariate.labels=c("Country", "Number of Cables", "Relative Frequency"))
```

```
##
## Non-US Countries Most Frequently Tagged in Cables
## ==============================================================
## Country                    Number of Cables Relative Frequency
## --------------------------------------------------------------
## Soviet Union                    144726             4.3%
## United Kingdom                  78832             2.34%
## German Democratic Republic      78192             2.33%
## Japan                           73518             2.19%
## Israel                          68113             2.03%
## Egypt                           67582             2.01%
## France                          65907             1.96%
## Mexico                          48875             1.45%
## Canada                          48519             1.44%
## Iran                            45385             1.35%
## Italy                           44763             1.33%
## China                           43965             1.31%
## India                           43688              1.3%
## Thailand                        42668             1.27%
## German Federal Republic         42379             1.26%
## South Korea                     38899             1.16%
## Turkey                          38411             1.14%
## South Africa                    35767             1.06%
## Philippines                     35227             1.05%
## Poland                          35157             1.05%
## --------------------------------------------------------------
```

```
#stargazer(table_tag_state_top20[c("cow_statename", "n_c","rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Non-US Countries Most Frequently Tagged in Cables",
#          out="./data_analysis_output/table_tag_state_top20.html",
#          covariate.labels=c("Country", "Number of Cables", "Relative Frequency"))
```

6.17 TABLE 15: Non-US Countries Least Frequently Tagged in Cables

```
setwd("/Users/clarahsuong/chronos_data_intro")

table_tag_state_bottom20<-
  cable_n_states_70s %>%
  filter(cow_ccode!=2) %>%
  mutate(rel.freq = paste0(round(100 * n_c/total_n, 0), "%")) %>%
  arrange(desc(n_c)) %>%
  top_n(n = -20, wt = n_c) %>%
  mutate(cow_statename= replace(cow_statename, cow_statename=="Russia", "Soviet Union")) #Replace "Russ

stargazer(table_tag_state_bottom20[c("cow_statename", "n_c","rel.freq")],
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Non-US Countries Least Frequently Tagged in Cables",
          digits=1,
          out="./data_analysis_output/table_tag_state_bottom20.txt",
          covariate.labels=c("Country", "Number of Cables", "Relative Frequency"))
```

```
##
## Non-US Countries Least Frequently Tagged in Cables
## ==================================================================
## Country                        Number of Cables Relative Frequency
## ------------------------------------------------------------------
## Gambia                               2401               0%
## Congo                                2082               0%
## Seychelles                           1897               0%
## Guinea-Bissau                        1786               0%
## Yemen People's Republic              1772               0%
## Grenada                              1745               0%
## Albania                              1571               0%
## Cape Verde                           1332               0%
## Djibouti                             1188               0%
## Equatorial Guinea                    950                0%
## Samoa                                665                0%
## Dominica                             621                0%
## Maldives                             577                0%
## Comoros                              577                0%
## Mongolia                             553                0%
## Sao Tome and Principe                541                0%
## Solomon Islands                      521                0%
## St. Lucia                            496                0%
## St. Vincent and the Grenadines       354                0%
## Bhutan                               277                0%
## ------------------------------------------------------------------
```

```
#stargazer(table_tag_state_bottom20[c("cow_statename", "n_c","rel.freq")],
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Non-US Countries Least Frequently Tagged in Cables",
#          digits=1,
#          out="./data_analysis_output/table_tag_state_bottom20.html",
#          covariate.labels=c("Country", "Number of Cables", "Relative Frequency"))
```

6.18 TABLE 16: Rank in Country TAG Traffic vs. Rank in Population

```
setwd("/Users/clarahsuong/chronos_data_intro")
```

```
nmc_c_y<-
  read_csv("./external_data/NMC_5_0/NMC_5_0.csv") %>%
  dplyr::select("stateabb", "ccode", "year","tpop")
```

```
## Parsed with column specification:
## cols(
##   stateabb = col_character(),
##   ccode = col_double(),
##   year = col_double(),
##   milex = col_double(),
##   milper = col_double(),
##   irst = col_double(),
##   pec = col_double(),
##   tpop = col_double(),
##   upop = col_double(),
##   cinc = col_double(),
##   version = col_double()
## )
```

```
pop_c <-
  read_csv("./external_data/NMC_5_0/NMC_5_0.csv") %>%
  dplyr::select("year","ccode", "tpop") %>%
  filter(1972<year & year<1980 & ccode!=2) %>%
  left_join(states_70s_year, by = c("year"="year","ccode" = "cow_ccode")) %>%
  mutate(tpop=1000*tpop) %>%
  group_by(ccode,cow_statename) %>%
  summarise(mean_tpop=mean(tpop, na.rm = TRUE)) %>%
  ungroup() %>%
  arrange(desc(mean_tpop)) %>%
  mutate(mean_tpop_rank=row_number(),
         cow_statename= replace(cow_statename, cow_statename=="Russia", "Soviet Union")) #Replace "Russ
```

```
## Parsed with column specification:
## cols(
##   stateabb = col_character(),
##   ccode = col_double(),
##   year = col_double(),
##   milex = col_double(),
##   milper = col_double(),
##   irst = col_double(),
##   pec = col_double(),
##   tpop = col_double(),
##   upop = col_double(),
##   cinc = col_double(),
##   version = col_double()
## )
```

```
table_tag_state_top20<-
  table_tag_state_top20 %>%
  mutate(tag_rank=row_number())

table_tag_pop_state_top20_comp<-
  table_tag_state_top20 %>%
  left_join(pop_c, by="cow_statename") %>%
  dplyr::select("cow_statename","tag_rank","mean_tpop_rank")
```

```r
stargazer(table_tag_pop_state_top20_comp,
          summary = FALSE,
          rownames = FALSE,
          type = "text",
          title="Country TAG Traffic vs. Population",
          out="./data_analysis_output/table_tag_pop_state_top20_comp.txt",
          covariate.labels=c("Top 20 Countries in Country TAG Traffic", "Rank in Country TAG Traffic",
```

```
##
## Country TAG Traffic vs. Population
## ===========================================================================================
## Top 20 Countries in Country TAG Traffic Rank in Country TAG Traffic Rank in Mean Population
## -------------------------------------------------------------------------------------------
## Soviet Union                                         1                         3
## United Kingdom                                       2                        12
## German Democratic Republic                           3                        35
## Japan                                                4                         5
## Israel                                               5                        95
## Egypt                                                6                        19
## France                                               7                        14
## Mexico                                               8                        11
## Canada                                               9                        30
## Iran                                                10                        23
## Italy                                               11                        13
## China                                               12                         1
## India                                               13                         2
## Thailand                                            14                        16
## German Federal Republic                             15                        10
## South Korea                                         16                        21
## Turkey                                              17                        17
## South Africa                                        18                        27
## Philippines                                         19                        15
## Poland                                              20                        22
## -------------------------------------------------------------------------------------------
```

```r
#stargazer(table_tag_pop_state_top20_comp,
#          summary = FALSE,
#          rownames = FALSE,
#          type = "html",
#          title="Country TAG Traffic vs. Population",
#          out="./data_analysis_output/table_tag_pop_state_top20_comp.html",
#          covariate.labels=c("Top 20 Countries<br>in Country TAG Traffic", "Rank<br>in Country TAG Tra
```