

Package ‘peacesciencer’

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Type Package

Title Various Tools and Data for Quantitative Peace Science

Version 0.2.0

Depends R (>= 3.5.0)

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Description These are useful tools and data sets for the study of quantitative peace science. The goal for this package is to include tools and data sets for doing original research that mimics well what a user would have to previously get from a software package that may not be well-sourced or well-supported. Those software bundles were useful the extent to which they encourage replications of long-standing analyses by starting the data-generating process from scratch. However, a lot of the functionality can be done relatively quickly and more transparently in the R programming language.

License GPL-2

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

URL <https://github.com/svmiller/peacesciencer>

BugReports <https://github.com/svmiller/peacesciencer/issues/>

Imports lubridate, magrittr, dplyr, geosphere, tidyr, stringr, rlang

Suggests countrycode, tibble, testthat

NeedsCompilation no

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add_capital_distance *Add capital-to-capital distance to a dyad-year or state-year data frame*

Description

add_capital_distance() allows you to add capital-to-capital distance to a dyad-year or state-year data frame. The capitals are coded in the capitals data frame, along with their latitudes and longitudes. The distance variable that emerges capdist is calculated using the "Vincenty" method (i.e. "as the crow flies") and is expressed in kilometers.

Usage

```
add_capital_distance(data)
```

Arguments

data a dyad-year data frame (either "directed" or "non-directed") or state-year data frame

Details

The function leans on attributes of the data that are provided by the `create_dyadyear()` or `create_stateyear()` function. Make sure that function (or data created by that function) appear at the top of the proverbial pipe.

Value

`add_capital_distance()` takes a dyad-year or state-year data frame and adds the capital-to-capital distance between the first state and the second state (in dyad-year data) or the minimum capital-to-capital distance for a given state in a given year. A minor note about this function: cases of capital transition are recorded in the `capitals` data but, in the conversion to capital-years (and eventual merging into a dyad-year data frame), the Jan. 1 capital is used for calculating distances.

Author(s)

Steven V. Miller

Examples

```
## Not run:
library(magrittr)
library(peacesciencer)

cow_ddy %>% add_capital_distance()

create_stateyears() %>% add_capital_distance()

## End(Not run)
```

add_contiguity	<i>Add Correlates of War direct contiguity information to a dyad-year or state-year data frame</i>
----------------	--

Description

`add_contiguity()` allows you to add Correlates of War contiguity data to a dyad-year or state-year data frame.

Usage

```
add_contiguity(data)
```

Arguments

`data` a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame

Details

The contiguity codes in the dyad-year data range from 1 to 6. 1 = direct land contiguity. 2 = separated by 12 miles of water or fewer (a la Stannis Baratheon). 3 = separated by 24 miles of water or fewer (but more than 12 miles). 4 = separated by 150 miles of water or fewer (but more than 24 miles). 5 = separated by 400 miles of water or fewer (but more than 150 miles). 6 = separated by more than 400 miles of water (i.e. not contiguous).

For additional clarity, the "master records" produce duplicates for cases when the contiguity relationship changed in a given year. This function returns the *minimum* contiguity relationship observed in that given year. There should be no duplicates in the returned output.

Value

`add_contiguity()` takes a dyad-year data frame and adds information about the contiguity relationship based on the "master records" for the Correlates of War direct contiguity data (v. 3.2). If the data are dyad-year, the function returns the lowest contiguity type observed in the dyad-year (if contiguity is observed at all). If the data are state-year, the data return the total number of land and sea borders calculated from these master records.

Author(s)

Steven V. Miller

References

Stinnett, Douglas M., Jaroslav Tir, Philip Schafer, Paul F. Diehl, and Charles Gochman (2002). "The Correlates of War Project Direct Contiguity Data, Version 3." *Conflict Management and Peace Science* 19 (2):58-66.

Examples

```
## Not run:
library(magrittr)
library(peacesciencer)

cow_ddy %>% add_contiguity()

create_stateyears() %>% add_contiguity()

## End(Not run)
```

add_cow_alliance	<i>Add Correlates of War alliance data to a dyad-year data frame</i>
------------------	--

Description

add_cow_alliance() allows you to add Correlates of War alliance data to a dyad-year data frame

Usage

```
add_cow_alliance(data)
```

Arguments

data a dyad-year data frame (either "directed" or "non-directed")

Details

Duplicates in the original directed dyad-year alliance data were pre-processed. Check cow_alliance for more information.

Value

add_cow_alliance() takes a dyad-year data frame and adds information about the alliance pledge in that given dyad-year. These include whether there was an alliance with a defense pledge, neutrality pledge, non-aggression pledge, or pledge for consultation in time of crisis (entente).

Author(s)

Steven V. Miller

References

Gibler, Douglas M. 2009. *International Military Alliances, 1648-2008*. Congressional Quarterly Press.

Examples

```
## Not run:  
library(magrittr)  
cow_ddy %>% add_cow_alliance()  
  
## End(Not run)
```

add_cow_majors	<i>Add Correlates of War major power information to a dyad-year or state-year data frame</i>
----------------	--

Description

add_cow_majors() allows you to add Correlates of War major power variables to a dyad-year or state-year data frame.

Usage

```
add_cow_majors(data)
```

Arguments

data	a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame.
------	--

Details

The function leans on attributes of the data that are provided by the create_dyadyear() or create_stateyear() function. Make sure that function (or data created by that function) appear at the top of the proverbial pipe.

Value

add_cow_majors() takes a dyad-year data frame or state-year data frame and adds information about major power status for the given state or dyad in that year. If the data are dyad-year, the function returns two columns for whether the first state (i.e. ccode1) or the second state (i.e. ccode2) are major powers in the given year, according to the Correlates of War. 1 = is a major power. 0 = is not a major power. If the data are state-year, the functions returns just one column (cowmaj) for whether the state was a major power in a given dyad-year.

Author(s)

Steven V. Miller

References

Correlates of War Project. 2017. "State System Membership List, v2016." Online, <https://correlatesofwar.org/data-sets/state-system-membership>

Examples

```
## Not run:  
library(magrittr)  
library(peacesciencer)
```

```
cow_ddy %>% add_cow_majors()

## End(Not run)
```

add_cow_trade	<i>Add Correlates of War trade data to a dyad-year or state-year data frame</i>
---------------	---

Description

add_cow_trade() allows you to add Correlates of War alliance data to a dyad-year data frame

Usage

```
add_cow_trade(data)
```

Arguments

data	a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame
------	---

Details

For the dyad-year data, there must be some kind of information loss in order to work within the limited space available to this package. This package loads a truncated version of the data from my website. It will also load these data every time you use the function for dyad-year data. This implies 1) you probably should not use this function unless you earnestly want these data, 2) this function won't work for you without an active internet connection, and 3) this will be one of the slowest functions in the entire package.

Value

add_cow_trade() takes a dyad-year data frame or state-year data frame and adds information about the volume of trade in that given dyad-year or state-year. For the state-year data, these are minimally the sum of all imports and the sum of all exports. For dyad-year data, this function returns the value of imports in current million USD in the first country from the second country (and vice-versa) along with their "smooth" equivalents.

Author(s)

Steven V. Miller

References

Barbieri, Katherine, Omar M. G. Keshk, and Brian Pollins. 2009. "TRADING DATA: Evaluating our Assumptions and Coding Rules." *Conflict Management and Peace Science*. 26(5): 471-491.

Examples

```
## Not run:  
library(magrittr)  
cow_ddy %>% add_cow_trade()  
  
## End(Not run)
```

add_democracy	<i>Add democracy information to dyad-year or state-year data.</i>
---------------	---

Description

add_democracy() allows you to add estimates of democracy to either dyad-year or state-year data.

Usage

```
add_democracy(data)
```

Arguments

data	a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame.
------	--

Details

The function leans on attributes of the data that are provided by the create_dyadyear() or create_stateyear() function. Make sure that function (or data created by that function) appear at the top of the proverbial pipe.

Value

add_democracy() takes a dyad-year data frame or state-year data frame and adds information about the level of democracy for the state or two states in the dyad in a given year. If the data are dyad-year, the function adds six total columns for the first state (i.e. ccode1) and the second state (i.e. ccode2) about the level of democracy measured by the Varieties of Democracy project (v2x_polyarchy), the Polity project (polity2), and Xavier Marquez' QuickUDS extensions/estimates. If the data are state-year, the function returns three additional columns to the original data that contain that same information for a given state in a given year.

Author(s)

Steven V. Miller

References

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Adam Glynn, Allen Hicken, Anna Luhrmann, Kyle L. Marquardt, Kelly McMann, Pamela Paxton, Daniel Pemstein, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Agnes Cornell, Lisa Gastaldi, Haakon Gjerløw, Valeriya Mechkova, Johannes von Römer, Aksel Sundtröm, Eitan Tzelgov, Luca Uberti, Yi-ting Wang, Tore Wig, and Daniel Ziblatt. 2020. "V-Dem Codebook v10" Varieties of Democracy (V-Dem) Project.

Marshall, Monty G., Ted Robert Gurr, and Keith Jagers. 2017. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2017." Center for Systemic Peace.

Marquez, Xavier, "A Quick Method for Extending the Unified Democracy Scores" (March 23, 2016). doi: [10.2139/ssrn.2753830](https://doi.org/10.2139/ssrn.2753830)

Pemstein, Daniel, Stephen Meserve, and James Melton. 2010. Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type. *Political Analysis* 18 (4): 426-449.

Examples

```
## Not run:
library(magrittr)
cow_ddy %>% add_democracy()

create_stateyears() %>% add_democracy()

## End(Not run)
```

add_gwcode_to_cow	<i>Add Gleditsch-Ward state system codes to dyad-year or state-year data with Correlates of War state codes.</i>
-------------------	--

Description

add_gwcode_to_cow() allows you to add estimates of democracy to either dyad-year or state-year data.

Usage

```
add_gwcode_to_cow(data)
```

Arguments

data a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame.

Details

The data-raw directory on the project's Github contains more information about the underlying data that assists in merging in these codes.

The user will invariably need to be careful and ask why they want these data included. The issue here is that both have a different composition and the merging process will not (and cannot) be perfect. We can note that a case like Serbia/Yugoslavia is not too difficult to handle (since "Serbia" never overlaps with "Yugoslavia" in the Gleditsch-Ward data and Correlates of War understands Serbia as the predecessor state, dominant state, and successor state to Yugoslavia). However, there is greater weirdness with a case like Yemen/Yemen Arab Republic. The script will *not* create state-year or dyad-year duplicates for the Correlates of War codes. The size of the original data remain unchanged. However, there will be some year duplicates for various Gleditsch-Ward codes (e.g. Yemen, again). Use with care. You can also use the countrycode package. Whether you use this function or the countrycode package, do *not* do this kind of merging without assessing the output.

Value

add_gwcode_to_cow() takes a dyad-year data frame or state-year data frame that already has Correlates of War state system codes and adds their corollary Gleditsch-Ward codes.

Author(s)

Steven V. Miller

Examples

```
## Not run:
library(magrittr)
library(peacesciencer)

cow_ddy %>% add_gwcode_to_cow()

create_stateyears() %>% add_gwcode_to_cow()

## End(Not run)
```

add_igos

Add Correlates of War international governmental organizations (IGOs) data to dyad-year or state-year data.

Description

add_igos() allows you to add information from the Correlates of War International Governmental Organizations data to dyad-year or state-year data, matching on Correlates of War system codes.

Usage

```
add_igos(data)
```

Arguments

`data` a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame.

Details

The function leans on attributes of the data that are provided by the `create_dyadyear()` or `create_stateyear()` function. Make sure that function (or data created by that function) appear at the top of the proverbial pipe.

Value

`add_igos()` takes a dyad-year data frame or state-year data frame and adds information available from the Correlates of War International Governmental Organizations data. If the data are dyad-year, the function returns the original data with just one additional column for the total number of mutual IGOs for which both members of the dyad are full members. If the data are state-year, the function returns the original data with four additional columns. These are the number of IGOs for which the state is a full member, the number of IGOs for which the state is an associate member, the number of IGOs for which the state is an observer, and the number of IGOs for which the state is involved in any way (i.e. the sum of the other three columns).

Author(s)

Steven V. Miller

References

Pevehouse, Jon C.W., Timothy Nordstrom, Roseanne W McManus, Anne Spencer Jamison, "Tracking Organizations in the World: The Correlates of War IGO Version 3.0 datasets", *Journal of Peace Research* 57(3): 492-503.

Wallace, Michael, and J. David Singer. 1970. "International Governmental Organization in the Global System, 1815-1964." *International Organization* 24: 239-87.

Examples

```
## Not run:  
library(magrittr)  
cow_ddy %>% add_igos()  
  
create_stateyears() %>% add_igos()  
  
## End(Not run)
```

add_mids	<i>Add Gibler-Miller-Little (GML) Militarized Interstate Dispute (MID) data to dyad-year data frame</i>
----------	---

Description

add_mids() merges in GML's MID data to a dyad-year data frame. The current version of the GML MID data is 2.1.1.

Usage

```
add_mids(data, keep)
```

Arguments

data	a dyad-year data frame (either "directed" or "non-directed")
keep	an optional parameter, specified as a character vector, passed to the function in a select(one_of(.)) wrapper. This allows the user to discard unwanted columns from the directed dispute data so that the output does not consume too much space in memory. Note: the Correlates of War system codes (ccode1, ccode2), the observation year (year), the presence or absence of an ongoing MID (midongoing), and the presence or absence of a unique MID onset (midonset) are <i>*always*</i> returned. It would be foolish and self-defeating to eliminate those observations. The user is free to keep or discard anything else they see fit.

If keep is not specified in the function, the ensuing output returns everything.

Details

Dyads are capable of having multiple disputes in a given year, which can create a problem for merging into a complete dyad-year data frame. Consider the case of France and Italy in 1860, which had three separate dispute onsets that year (MID#0112, MID#0113, MID#0306), as illustrative of the problem. This merging process employs the following rules to whittle down these duplicate dispute-year observations. It first selects on MID onsets, then selecting highest fatality level, then highest hostility level, then the longest estimating minimum dispute duration, and finally, in the event of duplicates still outstanding, selecting the MID that came first. This is how GML present their full directed and non-directed dyad-year data.

Value

add_mids() takes a dyad-year data frame and adds dyad-year dispute information from the GML MID data.

Author(s)

Steven V. Miller

References

Gibler, Douglas M., Steven V. Miller, and Erin K. Little. 2016. "An Analysis of the Militarized Interstate Dispute (MID) Dataset, 1816-2001." *International Studies Quarterly* 60(4): 719-730.

Examples

```
## Not run:
library(magrittr)
cow_ddy %>% add_mids()

# keep just the dispute number and Side A/B identifiers
cow_ddy %>% add_mids(keep=c("dispnum", "sidea1", "sidea2"))

## End(Not run)
```

add_nmc

Add Correlates of War National Military Capabilities Data

Description

add_nmc() allows you to add the Correlates of War National Material Capabilities data to dyad-year or state-year data.

Usage

```
add_nmc(data)
```

Arguments

data a dyad-year data frame (either "directed" or "non-directed") or a state-year data frame.

Details

The function leans on attributes of the data that are provided by the create_dyadyear() or create_stateyear() function. Make sure that function (or data created by that function) appear at the top of the proverbial pipe.

Value

add_nmc() takes a dyad-year data frame or state-year data frame and adds information about the national material capabilities for the state or two states in the dyad in a given year. If the data are dyad-year, the function adds 12 total columns for the first state (i.e. ccode1) and the second state (i.e. ccode2) for all estimates of national military capabilities provided by the Correlates of War project. If the data are state-year, the function returns six additional columns to the original data that contain that same information for a given state in a given year.

Author(s)

Steven V. Miller

References

Singer, J. David, Stuart Bremer, and John Stuckey. (1972). "Capability Distribution, Uncertainty, and Major Power War, 1820-1965." in Bruce Russett (ed) Peace, War, and Numbers, Beverly Hills: Sage, 19-48.

Singer, J. David. 1987. "Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816-1985" International Interactions, 14: 115-32.

Examples

```
## Not run:
library(magrittr)
cow_ddy %>% add_nmc()

create_stateyears() %>% add_nmc()

## End(Not run)
```

capitals	<i>A complete list of capitals and capital transitions for Correlates of War state system members</i>
----------	---

Description

This is a complete list of capitals and capital transitions for Correlates of War state system members. I use it internally for calculating capital-to-capital distances in the `add_capital_distances()` function.

Usage

```
capitals
```

Format

A data frame with 252 observations on the following 7 variables.

`ccode` a numeric vector for the Correlates of War state code

`statenme` a character vector for the state

`capital` a character vector for the name of the capital

`styear` a character vector for the start year. See details section for more information.

`endyear` a character vector for the end year. See details section for more information.

`lat` a numeric vector of the latitude coordinates for the capital

`lng` a numeric vector of the longitude coordinates for the capital

Details

For convenience, the start year for most states is 1816. Samoa, for example, was not a state in 1816. However, the functions that use the capitals data will not create observations for states that did not exist at a given point in time.

The data should be current as of the end of 2019.

Cases where a start year is not 1816 indicate a capital transition. For example, Brazil's capital moved from Rio de Janeiro to Brasilia (a planned capital) in 1960. Only 25 states in the data experienced a capital transition. The most recent was Burundi in 2018. Indonesia, as of writing, is planning on a capital transition, but this has not been completed yet.

Kazakhstan renamed its capital for the state leader in 2019. These data retain the name of Astana.

The capitals data are not without some peculiarities. Prominently, Portugal transferred the Portuguese court from Lisbon to Rio de Janeiro from 1808 to 1821. *This is recorded in the data.* A knowledge of the inter-state conflict data will note there was no war or dispute between, say, Portugal and Spain (or Portugal and any other country) at any point during this time, but it does create some weirdness that would suggest a massive distance between two countries, like Portugal and Spain, that are otherwise land-contiguous.

On Spain: the republican government moved the capital at the start of the civil war (in 1936) to Valencia. However, it abandoned this capital by 1937. I elect to not record this capital transition.

The data also do some (I think) reasonable back-dating of capitals to coincide with states in transition without necessarily formal capitals by the first appearance in the state system membership data. These concern Lithuania, Kazakhstan, and the Philippines. Kaunas is the initial post-independence capital of Lithuania. Almaty is the initial post-independence capital of Kazakhstan. Quezon City is the initial post-independence capital of the Philippines. This concerns, at the most, one or two years for each of these three countries.

ccode_democracy

Democracy data for all Correlates of War states

Description

These are democracy data for all Correlates of War state system members.

Usage

ccode_democracy

Format

A data frame with 16536 observations on the following 5 variables.

ccode the Correlates of War system code

year a numeric vector for the year

v2x_polyarchy the Varieties of Democracy "polyarchy" estimate

polity2 the the polity2 score from the Polity project

xm_qudsest an extension of the Unified Democracy Scores (UDS) estimates, made possibly by the QuickUDS package from Xavier Marquez.

Details

Missing data connote data that are unavailable for various reasons. Either there is no democracy data to code or, in the case of the Polity project, the state system member is outright not evaluated for the variable.

The Polity data are from 2017. The Varieties of Democracy data are version 10. Xavier Marquez' QuickUDS estimates (i.e. extensions of Pemstein et al. (2010)) come from a package Marquez makes available on his Github (<https://github.com/xmarquez/QuickUDS>).

References

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Adam Glynn, Allen Hicken, Anna Luhrmann, Kyle L. Marquardt, Kelly McMann, Pamela Paxton, Daniel Pemstein, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Agnes Cornell, Lisa Gastaldi, Haakon Gjerløw, Valeriya Mechkova, Johannes von Römer, Aksel Sundtröm, Eitan Tzelgov, Luca Uberti, Yi-ting Wang, Tore Wig, and Daniel Ziblatt. 2020. "V-Dem Codebook v10" Varieties of Democracy (V-Dem) Project.

Marshall, Monty G., Ted Robert Gurr, and Keith Jagers. 2017. "Polity IV Project: Political Regime CHaracteristics and Transitions, 1800-2017." Center for Systemic Peace.

Marquez, Xavier, "A Quick Method for Extending the Unified Democracy Scores" (March 23, 2016). doi: [10.2139/ssrn.2753830](https://doi.org/10.2139/ssrn.2753830)

Pemstein, Daniel, Stephen Meserve, and James Melton. 2010. Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type. *Political Analysis* 18 (4): 426-449.

citations

Citations for Data/Functions Used in peacesciencer

Description

This is a master list of references for data/functions used in this package. Do check it out to make sure you're faithfully citing what you're using.

Usage

citations

Format

A data frame with two variables:

`data_function` the data or function used or referenced in the package

`citation` an appropriate (text) citation you should include in your manuscript

`cow_alliance`*Correlates of War directed dyad-year alliance data*

Description

These are version 4.1 of the Correlates of War directed dyad-year alliance data.

Usage`cow_alliance`**Format**

A data frame with 120784 observations on the following 7 variables.

`ccode1` a numeric vector for the Correlates of War state code for the first state

`ccode2` a numeric vector for the Correlates of War state code for the second state

`year` a numeric vector for the year

`defense` a numeric vector that equals 1 if the alliance included a defense pledge

`neutrality` a numeric vector that equals 1 if the alliance included a neutrality pledge

`nonaggression` a numeric vector that equals 1 if the alliance included a non-aggression pledge

`entente` a numeric vector that equals 1 if the alliance included a pledge to consult if a crisis occurred

Details

The directed dyad-year alliance data are for alliance initiations, not straight dyad-years, "per se." This suggests the presence of duplicate directed dyad-years. For computing ease, given the intended use, I take care of these duplicate dyad-years behind the scenes. Consider the case of the U.S. and Canada in 1958. Therein, there were apparently two separate alliance initiations that included defense pledges. My behind-the-scenes cleaning process groups by `ccode1`, `ccode2`, and `year` and summarizes those alliance pledge variables. I then replace any value greater than 1 with 1. This indicates the presence or absence of a defense pledge in a given directed dyad-year.

References

Gibler, Douglas M. 2009. *International Military Alliances, 1648-2008*. Congressional Quarterly Press.

`cow_contdir`*Correlates of War Direct Contiguity Data (v. 3.2)*

Description

These contain an abbreviated version of the "master records" for the Correlates of War direct contiguity data. Data contain a few cosmetic changes to assist with some functions downstream from it.

Usage`cow_contdir`**Format**

A data frame with 2025840 observations on the following 4 variables.

`ccode1` a numeric vector for the Correlates of War state code for the first state

`ccode2` a numeric vector for the Correlates of War state code for the second state

`conttype` a numeric vector for the contiguity relationship

`begin` the year-month when this contiguity relationship begins (YYYYMM)

`end` the year-month when this contiguity relationship ends (YYYYMM)

Details

The "master record" provided by the Correlates of War is "non-directed." I make these data "directed" for convenience.

For clarity, the contiguity codes range from 1 to 5. 1 = direct land contiguity. 2 = separated by 12 miles of water or fewer (a la Stannis Baratheon). 3 = separated by 24 miles of water or fewer (but more than 12 miles). 4 = separated by 150 miles of water or fewer (but more than 24 miles). 5 = separated by 400 miles of water or fewer (but more than 150 miles). Cases of separation by more than 400 miles of water are not included in the master record (but are easily discerned based on complete dyad-year data).

References

Stinnett, Douglas M., Jaroslav Tir, Philip Schafer, Paul F. Diehl, and Charles Gochman (2002). "The Correlates of War Project Direct Contiguity Data, Version 3." *Conflict Management and Peace Science* 19 (2):58-66.

cow_ddy	<i>A directed dyad-year data frame of Correlates of War state system members</i>
---------	--

Description

This is a complete directed dyad-year data frame of Correlates of War state system members. I offer it here as a shortcut for various other functions.

Usage

```
cow_ddy
```

Format

A data frame with 2025840 observations on the following 4 variables.

ccode1 a numeric vector for the Correlates of War state code for the first state

ccode2 a numeric vector for the Correlates of War state code for the second state

year a numeric vector for the year

Details

Data are a quick generation from the `create_dyadyears()` function in this package.

cow_gw_years	<i>Correlates of War and Gleditsch-War states, by year</i>
--------------	--

Description

This is a complete (I believe) data set on Correlates of War states and Gleditsch-Ward states, a byproduct of a `full_join()` between `gw_states` and `cow_states` that leans largely on the state abbreviation variable

Usage

```
cow_gw_years
```

Format

A data frame with 18656 observations on the following 8 variables.

stateabb the state abbreviation, which was the greatest source of agreement between both data sets

year a numeric vector for the year

gwcode a Gleditsch-Ward state code

ccode a Correlates of War state code

gw_statename the state name as it appears in the Gleditsch-Ward data

cow_statename the state name as it appears in the Correlates of War data

Details

The data-raw directory on the project's Github contains more information about how these data were created. I'm going to use it for internal stuff. The workflow is going to treat the Correlates of War state system membership codes as more of the "master" codes, for which the user can add Gleditsch-Ward identifiers as they see fit.

cow_igo_ndy	<i>Correlates of War Non-Directed Dyad-Year International Governmental Organizations (IGOs) Data</i>
-------------	--

Description

This is a non-directed dyad-year version of the Correlates of War IGOs data. I use it internally for merging IGOs data into dyad-year data.

Usage

cow_igo_ndy

Format

A data frame with 917695 observations on the following 4 variables.

ccode1 the Correlates of War state system code for the first state

ccode2 the Correlates of War state system code for the second state

year the year

dyadigos the sum of mutual IGOs for which each state appears as a full member in a given year

Details

The data-raw directory on the project's Github contains additional information about how these data were generated from the otherwise enormous dyad-year IGOs data provided by the Correlates of War project. Given the size of that data, and the size limitations of R packages for CRAN, the data I provide here can only be simpler summaries. If you want specifics, you'll need to consult the underlying raw data provided on the Correlates of War project.

References

Pevehouse, Jon C.W., Timothy Nordstron, Roseanne W McManus, Anne Spencer Jamison, "Tracking Organizations in the World: The Correlates of War IGO Version 3.0 datasets", *Journal of Peace Research* 57(3): 492-503.

Wallace, Michael, and J. David Singer. 1970. "International Governmental Organization in the Global System, 1815-1964." *International Organization* 24: 239-87.

cow_igo_sy	<i>Correlates of War State-Year International Governmental Organizations (IGOs) Data</i>
------------	--

Description

This is a state-year version of the Correlates of War IGOs data. I use it internally for merging IGOs data into state-year data.

Usage

```
cow_igo_sy
```

Format

A data frame with 1557 observations on the following 5 variables.

ccode the Correlates of War state system code for the state

year the year

sum_igo_full the sum of IGOs for which the state is a full member in a given year

sum_igo_associate the sum of IGOs for which the state is just an associate member in a given year

sum_igo_observer the sum of IGOs for which the state is just an observer in a given year

sum_igo_anytype the sum of IGOs for which the state is a member of any kind in a given year.

Details

The data-raw directory on the project's Github contains additional information about how these data were generated from the otherwise enormous dyad-year IGOs data provided by the Correlates of War project. Given the size of that data, and the size limitations of R packages for CRAN, the data I provide here can only be simpler summaries. If you want specifics, you'll need to consult the underlying raw data provided on the Correlates of War project.

References

Pevehouse, Jon C.W., Timothy Nordstron, Roseanne W McManus, Anne Spencer Jamison, "Tracking Organizations in the World: The Correlates of War IGO Version 3.0 datasets", *Journal of Peace Research* 57(3): 492-503.

Wallace, Michael, and J. David Singer. 1970. "International Governmental Organization in the Global System, 1815-1964." *International Organization* 24: 239-87.

`cow_majors`*Correlates of War Major Powers Data (1816-2016)*

Description

These are the Correlates of War major powers data.

Usage`cow_majors`**Format**

A data frame with 14 observations on the following 8 variables.

`ccode` a numeric vector for the Correlates of War country code

`styear` the start year as a major power

`stmonth` the start month as a major power

`stday` the start day as a major power

`endyear` the end year as a major power

`endmonth` the end month as a major power

`endday` the end day as a major power

`version` a version identifier

Details

Data are provided "as-is" with no additional re-cleaning before inclusion into this data set (beyond eliminating the state abbreviation).

References

Correlates of War Project. 2017. "State System Membership List, v2016." Online, <https://correlatesofwar.org/data-sets/state-system-membership>

cow_mindist	<i>The Minimum Distance Between States in the Correlates of War System, 1946-2015</i>
-------------	---

Description

These are non-directed dyad-year data for the minimum distance between states in the Correlates of War state system from 1946 to 2015. The data are generated from the `cshapes` package.

Usage

```
cow_mindist
```

Format

A data frame with 817053 observations on the following 4 variables.

`ccode1` the Correlates of War state system code for the first state

`ccode2` the Correlates of War state system code for the second state

`year` the year

`mindist` the minimum distance between states on Dec. 31 of the year, in kilometers

Details

The data are generated from the `cshapes` package. The package authors purport that the data are generated to be compatible with Correlates of War system codes, but a review I did several years ago for an unrelated project (published in 2017 in *Conflict Management & Peace Science*, which you should cite for all your articles if you're reading this) suggested the output does not seem to perfectly meet that billing. These included oddball cases like Zanzibar, United Arab Republic, Comoros, East Germany, and a few others. I pre-process these as outlined in the associated file in the `data-raw` directory on the project's Github.

Data are automatically generated (by default) as directed dyad-years. I elect to make them non-directed for space considerations. Making non-directed dyad-year data into directed dyad-year data isn't too difficult in R. It just looks weird to see the code that does it.

Most of the data I prove elsewhere in this package are to be understood as the data as they were at the `*start*` of the year. This is how I process, for example, the `capitals` data as they get merged in the `add_capital_distance()` function. However, the script that generates these data are set at Dec. 31 of the year and not Jan. 1. I do this for concerns of maximizing data coverage. If you wanted the same effect, just lag the data a year.

References

Weidmann, Nils B. and Kristian Skrede Gleditsch. 2010. "Mapping and Measuring Country Shapes: The `cshapes` Package." *The R Journal* 2(1): 18-24

cow_nmc

*Correlates of War National Military Capabilities Data***Description**

These are version 5.0 of the Correlates of War National Military Capabilities data. Data omit the state abbreviation and version identifier for consideration.

Usage

cow_nmc

Format

A data frame with 15171 observations on the following 9 variables.

ccode a numeric vector for the Correlates of War country code

year the year

milex an estimate of military expenditures (in thousands). See details section for more.

milper an estimate of the size of military personnel (in thousands) for the state

irst an estimate of iron and steel production (in thousands of tons)

pec an estimate of primary energy consumption (thousands of coal-ton equivalents)

tpop an estimate of the total population size of the state (in thousands)

upop an estimate of the urban population size of the state (in thousands). See details section for more.

cinc The Composite Index of National Capability ("CINC") score. See details section for more.

Details

The user will want to be a little careful with how some of these data are used, beyond the typical caveat about how difficult it is to pin-point how many thousands of coal-tons a state like Baden was producing in the 19th century.

First, military expenditures are denominated in British pounds sterling for observations between 1816 and 1913. The observations from 1914 and beyond are denominated in current United States dollars. This is according to the manual.

Second, urban population size is an estimate based on, well, an estimate of the size of the population living in an area with 100,000 or more people.

Third, the Composite Index of National Capability score is calculated as each state's world share of each of the six composite indicators also included in the data in a given year. It theoretically is bound between 0 and 1. A state with a 1 is 100 in the world, 2) is the only state with a military, 3) does all the iron and steel production, 4) all the world's primary energy consumption, and 5) is the only state in the world with a population and an urban population. Incidentally, the maximum scores observed in the data belong to the United States in 1945.

References

Singer, J. David, Stuart Bremer, and John Stuckey. (1972). "Capability Distribution, Uncertainty, and Major Power War, 1820-1965." in Bruce Russett (ed) *Peace, War, and Numbers*, Beverly Hills: Sage, 19-48.

Singer, J. David. 1987. "Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816-1985" *International Interactions*, 14: 115-32.

cow_states

Correlates of War State System Membership Data (1816-2016)

Description

These are the Correlates of War state system membership data.

Usage

cow_states

Format

A data frame with 243 observations on the following 10 variables.

stateabb a character vector for the state abbreviation

ccode a numeric vector for the Correlates of War country code

statenme a character vector for the state name

styear the start year in the system

stmonth the start month in the system

stday the start day in the system

endyear the end year in the system

endmonth the end month in the system

endday the end day in the system

version a version identifier

Details

Data are provided "as-is" with no additional re-cleaning before inclusion into this data set.

References

Correlates of War Project. 2017. "State System Membership List, v2016." Online, <https://correlatesofwar.org/data-sets/state-system-membership>

 cow_trade_sy

Correlates of War National Trade Data Set (v. 4.0)

Description

These are state-year-level data for national trade from the Correlates of War project.

Usage

```
cow_trade_sy
```

Format

A data frame with 14410 on the following four variables.

cocode the Correlates of War state system code

year the year

imports total imports of the state in current million USD

exports total exports of the state in current million USD

Details

The data-raw directory on the project's Github shows how the data were processed.

References

Barbieri, Katherine and Omar M.G. Keshk. 2016. Correlates of War Project Trade Data Set Cde-book, Version 4.0. Online: <https://correlatesofwar.org>

Barbieri, Katherine, Omar M.G. Keshk, and Brian Pollins. 2009. "TRADING DATA: Evaluating Our Assumptions and Coding Rules." *Conflict Management and Peace Science*, 26(5): 471-491.

 create_dyadyears

Create dyad-years from state system membership data

Description

create_dyadyears() allows you to dyad-year data from either the Correlates of War (CoW) state system membership data or the Gleditsch-Ward (gw) system membership data. The function leans on internal data provided in the package.

Usage

```
create_dyadyears(system = "cow", mry = TRUE, directed = TRUE)
```

Arguments

system	a character specifying whether the user wants Correlates of War state-years ("cow") or Gleditsch-Ward ("gw") state-years. Correlates of War is the default.
mry	optional, defaults to TRUE. If TRUE, the function extends the script beyond the most recent system membership updates to include observation to the most recently concluded calendar year. For example, the Gleditsch-Ward data extend to the end of 2017. When mry == TRUE, the function returns more recent years (e.g. 2018, 2019) under the assumption that states alive at the end of 2017 are still alive today. Use with some care.
directed	optional, defaults to TRUE. If TRUE, the function returns so-called "directed" dyad-year data. In directed dyad-year data, France-Germany (220-255) and Germany-France (255-220) are observationally different. If FALSE, the function returns non-directed data. In non-directed data, France-Germany and Germany-France in the same year are the same observation. The standard here is to drop cases where the country code for the second observation is less than the country code for the first observation.

Value

create_dyadyears() takes state system membership data provided by either Correlates of War or Gleditsch-Ward and returns a dyad-year data frame.

Author(s)

Steven V. Miller

References

Miller, Steven V. 2019. "Create Country-Year and (Non)-Directed Dyad-Year Data With Just a Few Lines in R" <http://svmiller.com/blog/2019/01/create-country-year-dyad-year-from-country-data/>

Examples

```
## Not run:
# CoW is default, will include years beyond 2016 (most recent CoW update)
create_dyadyears()

# Gleditsch-Ward, include most recent years
create_dyadyears(system="gw")

# Gleditsch-Ward, don't include most recent years
create_dyadyears(system="gw", mry=FALSE)

# Gleditsch-Ward, don't include most recent years, directed = FALSE
create_dyadyears(system="gw", mry=FALSE, directed = FALSE)

## End(Not run)
```

create_statedays *Create state-days from state system membership data*

Description

create_statedays() allows you to create state-day data from either the Correlates of War (CoW) state system membership data or the Gleditsch-Ward (gw) system membership data. The function leans on internal data provided in the package.

Usage

```
create_statedays(system = "cow", mry = TRUE)
```

Arguments

system	a character specifying whether the user wants Correlates of War state-years ("cow") or Gleditsch-Ward ("gw") state-years. Correlates of War is the default.
mry	optional, defaults to TRUE. If TRUE, the function extends the script beyond the most recent system membership updates to include observation to the most recently concluded calendar year. For example, the Gleditsch-Ward data extend to the end of 2017. When mry == TRUE, the function returns more recent years (e.g. 2018, 2019) under the assumption that states alive at the end of 2017 are still alive today. Use with some care.

Value

create_statedays() takes state system membership data provided by either Correlates of War or Gleditsch-Ward and returns a simple state-day data frame.

Author(s)

Steven V. Miller

References

Miller, Steven V. 2019. "Create Country-Year and (Non)-Directed Dyad-Year Data With Just a Few Lines in R" <http://svmiller.com/blog/2019/01/create-country-year-dyad-year-from-country-data/>

Examples

```
## Not run:
library(peacesciencer)
library(magrittr)

# CoW is default, will include years beyond 2016 (most recent CoW update)
create_statedays()

# Gleditsch-Ward, include most recent years
```

```
create_statedays(system="gw")

# Gleditsch-Ward, don't include most recent years
create_statedays(system="gw", mry=FALSE)

## End(Not run)
```

create_stateyears *Create state-years from state system membership data*

Description

create_stateyears() allows you to generate state-year data from either the Correlates of War (CoW) state system membership data or the Gleditsch-Ward (gw) system membership data. The function leans on internal data provided in the package.

Usage

```
create_stateyears(system = "cow", mry = TRUE)
```

Arguments

system	a character specifying whether the user wants Correlates of War state-years ("cow") or Gleditsch-Ward ("gw") state-years. Correlates of War is the default.
mry	optional, defaults to TRUE. If TRUE, the function extends the script beyond the most recent system membership updates to include observation to the most recently concluded calendar year. For example, the Gleditsch-Ward data extend to the end of 2017. When mry == TRUE, the function returns more recent years (e.g. 2018, 2019) under the assumption that states alive at the end of 2017 are still alive today. Use with some care.

Value

create_stateyears() takes state system membership data provided by either Correlates of War or Gleditsch-Ward and returns a simple state-year data frame.

Author(s)

Steven V. Miller

References

Miller, Steven V. 2019. "Create Country-Year and (Non)-Directed Dyad-Year Data With Just a Few Lines in R" <http://svmiller.com/blog/2019/01/create-country-year-dyad-year-from-country-data/>

Examples

```
## Not run:
library(peacesciencer)
library(magrittr)

# CoW is default, will include years beyond 2016 (most recent CoW update)
create_stateyears()

# Gleditsch-Ward, include most recent years
create_stateyears(system="gw")

# Gleditsch-Ward, don't include most recent years
create_stateyears(system="gw", mry=FALSE)

## End(Not run)
```

filter_prd

Filter dyad-year data to include just politically relevant dyads

Description

filter_prd() filters a dyad-year data frame to just those that are "politically relevant." This is useful for discarding unnecessary (and unwanted) observations that just consume space in memory.

Usage

```
filter_prd(data)
```

Arguments

data a dyad-year data frame (either "directed" or "non-directed")

Details

"Political relevance" can be calculated a few ways. Right now, the function considers only "direct" contiguity and Correlates of War major power status. You can employ maximalist definitions of "direct contiguity" to focus on just the land-contiguous. This function is inclusive of any type of contiguity relationship.

It will not take much effort to generalize this, though.

Value

filter_prd() takes a dyad-year data frame, assuming it has columns for major power status and contiguity type, calculates whether the dyad is "politically relevant", and subsets the data frame to just those observations.

Author(s)

Steven V. Miller

References

Weede, Erich. 1976. "Overwhelming preponderance as a pacifying condition among contiguous Asian dyads." *Journal of Conflict Resolution* 20: 395-411.

Lemke, Douglas and William Reed. 2001. "The Relevance of Politically Relevant Dyads." *Journal of Conflict Resolution* 45(1): 126-144.

Examples

```
## Not run:
library(magrittr)
cow_ddy %>% add_contiguity() %>% add_cow_majors() %>% filter_prd()

## End(Not run)
```

gml_dirdisp

Directed dispute-year data (Gibler, Miller, and Little, 2016)

Description

These are directed dispute-year data from the most recent version (2.1.1) of the Gibler-Miller-Little (GML) militarized interstate dispute (MID) data. They are used internally for merging into full dyad-year data frames.

Usage

```
gml_dirdisp
```

Format

A data frame with 10330 observations on the following 39 variables.

dispnum the dispute number

cocode1 a numeric vector for the Correlates of War state code for the first state

cocode2 a numeric vector for the Correlates of War state code for the second state

year a numeric vector for the year

midongoing a constant of 1 for ongoing disputes

midonset a numeric vector that equals 1 for the onset year of a given dispute

sidea1 is the first state (in cocode1) on the side that took the first militarized action?

sidea2 is the second state (in cocode2) on the side that took the first militarized action?

revstate1 is the first state (in ccode1) a revisionist state in the dispute?
 revstate2 is the second state (in ccode2) a revisionist state in the dispute?
 revtype11 what is the revtype1 value for ccode1?
 revtype12 what is the revtype1 value for ccode2?
 revtype21 what is the revtype2 value for ccode1?
 revtype22 what is the revtype2 value for ccode2?
 fatality1 what is the fatality value for ccode1?
 fatality2 what is the fatality value for ccode2?
 fatalpre1 what is the fatalpre value for ccode1?
 fatalpre2 what is the fatalpre value for ccode2?
 hiact1 what is the hiact value for ccode1?
 hiact2 what is the hiact value for ccode2?
 hostlev1 what is the hostlev value for ccode1?
 hostlev2 what is the hostlev value for ccode2?
 orig1 is ccode1 an originator (1) of the dispute or a joiner (0)?
 orig2 is ccode2 an originator (1) of the dispute or a joiner (0)?
 hiact the highest level of action observed in the dispute
 hostlev the hostility level of action observed in the dispute
 mindur the minimum length of the dispute (in days)
 maxdur the maximum length of the dispute (in days)
 outcome the dispute-level outcome
 settle the settlement value for the dispute
 fatality the ordinal fatality level for the dispute
 fatalpre the fatalities (with precision, if known) for the dispute
 stmon the start month of the dispute (dispute-level)
 endmon the end month of the dispute (dispute-level)
 recip was the dispute reciprocated (i.e. did Side B also have a militarized action)?
 numa the number of participants on Side A
 numb the number of participants on Side B
 ongo2010 was the dispute ongoing as of 2010?
 version a version identifier

Details

Data are the directed dispute-year data made available in version 2.1.1 of the GML MID data.

I would caution against using the revtype variables. They are not informative. They are however included for legacy reasons.

References

Gibler, Douglas M., Steven V. Miller, and Erin K. Little. 2016. "An Analysis of the Militarized Interstate Dispute (MID) Dataset, 1816-2001." *International Studies Quarterly* 60(4): 719-730.

gw_ddy	<i>A directed dyad-year data frame of Gleditsch-Ward state system members</i>
--------	---

Description

This is a complete directed dyad-year data frame of Gleditsch-Ward state system members. I offer it here as a shortcut for various other functions.

Usage

```
gw_ddy
```

Format

A data frame with 1999558 observations on the following 4 variables.

gwcode1 a numeric vector for the Correlates of War state code for the first state

gwcode2 a numeric vector for the Correlates of War state code for the second state

year a numeric vector for the year

Details

Data are a quick generation from the `create_dyadyears(system="gw")` function in this package.

gw_mindist	<i>The Minimum Distance Between States in the Gleditsch-Ward System, 1946-2015</i>
------------	--

Description

These are non-directed dyad-year data for the minimum distance between states in the Gleditsch-Ward state system from 1946 to 2015. The data are generated from the `cshapes` package.

Usage

```
gw_mindist
```

Format

A data frame with 868813 observations on the following 4 variables.

gwcode1 the Gleditsch-Ward state system code for the first state

gwcode2 the Gleditsch-Ward state system code for the second state

year the year

mindist the minimum distance between states on Dec. 31 of the year, in kilometers

Details

The data are generated from the `cshapes` package. The package authors purport that the data are generated to be compatible with the Gleditsch-Ward system. I trust them on this; indeed, Gleditsch is one of the authors of the `cshapes` package. However, I'm not sure how exhaustive the coverage is. For example, Tibet is missing in these data and it should not be. I do not use Gleditsch-Ward codes for my own research, so my quality control here for functions using these data will be minimal. I can only confirm there are no duplicates in the data.

Data are automatically generated (by default) as directed dyad-years. I elect to make them non-directed for space considerations. Making non-directed dyad-year data into directed dyad-year data isn't too difficult in R. It just looks weird to see the code that does it.

Most of the data I prove elsewhere in this package are to be understood as the data as they were at the `*start*` of the year. This is how I process, for example, the `capitals` data as they get merged in the `add_capital_distance()` function. However, the script that generates these data are set at Dec. 31 of the year and not Jan. 1. I do this for concerns of maximizing data coverage. If you wanted the same effect, just lag the data a year.

References

Weidmann, Nils B. and Kristian Skrede Gleditsch. 2010. "Mapping and Measuring Country Shapes: The `cshapes` Package." *The R Journal* 2(1): 18-24

gw_states	<i>Gleditsch-Ward (Independent States) System Membership Data (1816-2017)</i>
-----------	---

Description

These are the independent states in Gleditsch and Ward's data.

Usage

```
gw_states
```

Format

A data frame with 216 observations on the following 5 variables.

`gwcode` a numeric vector for the Gleditsch-Ward country code

`stateabb` a character vector for state abbreviation

`statename` a character vector for the state name

`startdate` the start date in the data

`enddate` the end date in the data

Details

Data originally provided by Gleditsch with no column names. Column names were added before some light re-cleaning in order to generate these data.

References

Gleditsch, Kristian S. and Michael D. Ward. 1999. "A Revised List of Independent States since the Congress of Vienna" 25(4): 393–413.

maoz_powers

Zeev Maoz' Regional/Global Power Data

Description

These are Zeev Maoz' data for what states are regional or global powers at a given point time. They are extensions of the Correlates of War major power data, which only codes "major" power without consideration of regional or global distinctions. Think of Austria-Hungary as intuitive of the issue here. Austria-Hungary is a major power in the Correlates of War data, but there is good reason to treat Austria-Hungary as a major power only within Europe. That is what Zeev Maoz tries to do here.

Usage

maoz_powers

Format

A data frame with 20 observations on the following 5 variables.

ccode a numeric vector for the Correlates of War country code

regstartdate the start date for regional power status

regenddate the end date for regional power status

globstartdate the start date for global power status

globenddate the end date for global power status

References

Maoz, Zeev. 2010. Network of Nations: The Evolution, Structure, and Impact of International Networks, 1816-2001. Cambridge University Press.

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