# Package ‘events’

**Type**  Package  
**Title**  Store and manipulate event data  
**Version**  0.5  
**Date**  2011-12-03  
**Author**  Will Lowe  
**Maintainer**  Will Lowe <will.lowe@uni-mannheim.de>  
**Depends**  R (>= 2.10)  
**Description**  Stores, manipulates, aggregates and otherwise m"esses with event data from KEDS/TABARI or any other extraction tool with similar output  
**License**  GPL  
**Collate**  'events.R'  
**Repository**  CRAN  
**Date/Publication**  2012-01-07 17:47:40  
**NeedsCompilation**  no

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actors

Description

Lists actor codes

Usage

actors(edo)

Arguments

edo Event data

Details

Lists all the actor codes that occur in the event data in alphabetical order.

Value

Array of actor codes

Author(s)

Will Lowe

See Also

sources, targets, codes
add_eventscale

---

**add_eventscale**  
*Apply eventscale to event data*

---

**Description**

Applies an eventscale to event data

**Usage**

```r
add_eventscale(edo, sc)
```

**Arguments**

<table>
<thead>
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<td>edo</td>
<td>Event data</td>
</tr>
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**Details**

Applies an eventscale to event data. This adds a new field in the event data with the same name as the eventscale. Add as many as you want to keep around.

**Value**

Event data with a scaling

**Author(s)**

Will Lowe

---

**balkans.weis**  
*Balkans conflict events in WEIS encoding*

---

**Description**

Event data on the conflict during the collapse of Yugoslavia. Events are coded according to an extended WEIS scheme by the KEDS Project. The event stream contains 72953 events occurring between 2 April 1989 and 31 July 2003 involving 325 actors.

**Author(s)**

KEDS Project

**References**

[http://web.ku.edu/~keds/data.dir/balk.html](http://web.ku.edu/~keds/data.dir/balk.html)
**cameo.scale**  
*CAMEO codes to conflict-cooperation scale*

**Description**
A mapping of CAMEO event codes to [-10,10] representing a scale of conflict and cooperation, developed by the KEDS project. Taken from the documentation of the KEDS_Count software.

**Details**
The version of CAMEO used here is 0.9B5 [08.04.15].

**Author(s)**
KEDS Project

**References**
http://web.ku.edu/~keds/

---

**codes**  
*List event codes*

**Description**
Lists event codes

**Usage**
codes(edo)

**Arguments**
edo Event data

**Details**
Lists all the event codes that appear in the event data

**Value**
Array of event codes

**Author(s)**
Will Lowe
events

Description
Stores, manipulates, scales, aggregates and creates directed dyadic time series from event data generated by KEDS, TABARI, or any other extraction tool with similarly structured output.

Details
Events offers simple methods for aggregating and renaming actors and event codes, applying event scales, and constructing regular time series at a choice of temporal scales and measurement levels.

Author(s)
Will Lowe <will.lowe@uni-mannheim.de>

filter_actors

Description
Discards all but relevant actors

Usage

```r
filter_actors(edo, fun = function(x) { return(TRUE) }, which = c("both", "target", "source"))
```

Arguments

- `edo`: Event data
- `fun`: Function that returns TRUE for actor codes that should not be discarded.
- `which`: What actor roles should be filtered

Details

The `which` parameter specifies whether the filter should be applied only to targets, only to sources, or to all actors in the event data.

Value

Event data containing only actors that pass through `fun`
filter_codes

Discard all but relevant event codes

**Description**

Discards all but relevant event codes

**Usage**

```r
filter_codes(edo, fun = function(x) { return(TRUE) })
```

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edo</td>
<td>Event data</td>
</tr>
<tr>
<td>fun</td>
<td>Function that returns TRUE or event codes that should not be discarded</td>
</tr>
</tbody>
</table>

**Details**

Applies the filter function to each event code to see whether to keep the observation.

**Value**

Event data containing only events that pass through fun

**Author(s)**

Will Lowe

**See Also**

`filter_actors, filter_time`
filter_eventdata  Filter events data

Description
Applies a generic field filter to event data

Usage
filter_eventdata(edo, fun, which)

Arguments
- edo  Events data object
- fun  Function that should be applied
- which Which field should be filtered

Details
This function applies a filter function to event data. It is the workhorse function behind the filter_ functions. You should use these in ordinary use.

Value
Event data

Author(s)
Will Lowe

filter_time  Restrict events to a time period

Description
Restricts events to a time period

Usage
filter_time(edo, start = min(edo$)date),
    end = max(edo$)date)
Arguments

edo  Event data
start  Something convertible to a Date object
end   Something convertible to a Date object

Details

Restricts events on or after start and before or on end.

Value

Event data restricted to a time period

Author(s)

Will Lowe

See Also

filter_codes, filter_actors

make_dyads  Aggregate events to a regular time interval

Description

Aggregates events to a regular time interval

Usage

make_dyads(edo, scale = NULL,
    unit = c("week", "day", "month", "quarter", "year"),
    monday = TRUE, fun = mean, missing.data = NA)

Arguments

edo  Event data
scale Name of an eventscale or NULL to create counts
unit  Temporal aggregation unit
monday Whether weeks start on Monday. If FALSE, they start on Sunday
fun   Aggregation function. Should take a vector and return a scalar
missing.data  What weeks with no data are assigned
**make_fun_from_list**

**Details**
In an event data set \( S \), assume that \( A = \text{length}(\text{actors}(S)) \) actors \( K = \text{length}(\text{codes}(S)) \) event codes occur. This function creates \( A^2 \) data streams labelled by the combination of source and target actors. If \( \text{scale} \) is NULL these are \( K \)-dimensional time series of event counts. If \( \text{scale} \) names a scale that has been added to the event data \( \text{fun} \) is used to aggregate the events falling into each temporal interval. This creates a univariate interval valued time series for each directed dyad.

**Value**
A list of named dyadic aggregated time series

**Author(s)**
Will Lowe

---

**Description**
Creates a mapping function from list

**Usage**

\[
\text{make_fun_from_list}(\text{lst})
\]

**Arguments**

- \( \text{lst} \) A list

**Details**

Turns a list of the form \( \text{list}(a=c(1,2), \ b=3) \) into a function that returns 'a' when given 1 or 2 as argument, 'b' when given 3 and otherwise gives back its argument unchanged.

This is a convenience function to make it possible to specify onto mappings using lists. The \text{map}_* \) functions use it internally, but you might find a a use for it.

**Value**
A function that inverts the mapping specified by \( \text{lst} \)

**Author(s)**
Will Lowe
make_scale  

**Make an event scale**

**Description**

Makes an event scale

**Usage**

```r
make_scale(nameL types = NULL, values = NULL,
   file = NULL, desc = "", default = NA, sep = "",")
```

**Arguments**

- **name**
  - Name of scale
- **types**
  - Array of event codes
- **values**
  - Array of event code values
- **file**
  - Input file defining event codes and their values
- **desc**
  - Optional description of the scale
- **default**
  - What to assign event codes that have no mapping in the scale. Defaults to NA.
- **sep**
  - Separator in file

**Details**

Makes an event scale from a specification found in a file or using the `types` and `values` parameters. If a file is specified it is assumed to be headerless and to contain event codes in the first column and numerical values in the second column.

Scales must be assigned a name and may also be assigned a description. If you wish to assign codes without a specified value to some particular value, set `default` to something other than NA.

**Value**

An event scale object

**Author(s)**

Will Lowe
### map_actors

**Aggregate actor codes**

#### Description

Aggregates actor codes

#### Usage

```r
map_actors(edo, fun = function(x) { return(x) })
```

#### Arguments

- `edo` Event data
- `fun` Function or list specifying the aggregation mapping

#### Details

The function relabels actor codes according to the filter. The filter may either be a function that returns the new name of an event when handed the old one, or a list structured like `list(fruit=c(‘tomato’, ‘orange’), veg=c(‘red pepper’, ‘carrot’))`. This function can also be used as a renaming function, but it is most useful when multiple codes should be treated as equivalent.

#### Value

Event data with new actor codes

#### Author(s)

Will Lowe

#### See Also

- `map_codes`

### map_codes

**Aggregate event codes**

#### Description

Aggregates event codes

#### Usage

```r
map_codes(edo, fun = function(x) { return(x) })
```
one_a_day

Arguments
- edo: Event data
- fun: Function or list specifying the aggregation mapping

Details
This function relabels event codes according to fun, which may either be a function that returns the new name of an event when handed the old one, or a list with entries of the form: `lst[[newname]] = c(oldname1, oldname2)`.

It can also be used as a renaming function, but it is most useful when multiple codes should be treated as equivalent.

Value
Event data with new event codes

Author(s)
Will Lowe

See Also
- `map_actors`

---

one_a_day  
Apply the one-a-day filter

Description
Tries to remove duplicate events

Usage
one_a_day(edo)

Arguments
- edo: Event data object

Details
This function removes duplicates of any event that occurs to the same source and target with the same event code, on the assumption that these are in fact the same event reported twice.

This function can also be applied as part of `read_keds`
Value

New event data object with duplicate events removed

Author(s)

Will Lowe

See Also

read_keds

Description

Plots scaled directed dyad

Usage

plot_dyad(dyad, ...)

Arguments

dyad One directed dyadic time series from the make_dyads function
...
Extra arguments to plot

Details

A convenience function to plot the named scale within a directed dyad against time.

Value

Nothing, used for side effect

Author(s)

Will Lowe
read_eventdata  Read event data files

Description

Reads event data output files in free format

Usage

read_eventdata(d, col.format = "D.STC", one.a.day = TRUE,
scrub.keds = TRUE, date.format = "%y%m%d",
sep = "\t", head = FALSE)

Arguments

d  Names of event data files
col.format  Format for columns in d (see details)
one.a.day  Whether to apply the duplicate event remover
scrub.keds  Whether to apply the data cleaner
date.format  How dates are represented in the orginal file
sep  File separator
head  Whether there is a header row in d

Details

Reads event data output and optionally applies the scrub.keds cleaning function and the one.a.day duplicate removal filter.

This function assumes that d is a vector of output files. These are assumed to be sep-separated text files. The column ordering is given by the col.format parameter:

- D the date field
- S the source actor field
- T the target actor field
- C the event code field
- L the event code label field (optional)
- Q the quote field (optional)
- . (or anything not shown above) an ignorable column

e.g. the default "D.STC" format means that column 1 is the date, column 2 should be ignored, column 3 is the source, column 4 is the target, and column 5 is the event code. The optional quote and label column are not searched for.

The code plucks out just these columns, formats them appropriately and ignores everything else in the file. Only D, S, T, C, and L are required.

The format of the date field is given by format.date
**Value**

An event data set

**Author(s)**

Will Lowe

---

**Description**

Reads KEDS event data output files

**Usage**

```r
read_keds(d, keep.quote = FALSE, keep.label = TRUE,
          one.a.day = TRUE, scrub.keds = TRUE,
          date.format = "%ym%d")
```

**Arguments**

- `d`: Names of files of KEDS/TABARI output
- `keep.quote`: Whether the exact noun phrase be retained
- `keep.label`: Whether the label for the event code should be retained
- `one.a.day`: Whether to apply the duplicate event remover
- `scrub.keds`: Whether to apply the data cleaner
- `date.format`: How dates are represented in the first column

**Details**

Reads KEDS output and optionally applies the `scrub_keds` cleaning function and the `one_a_day` duplicate removal filter. This function is thin wrapper around `read.csv`.

This function assumes that `d` are a vector of KEDS/TABARI output files. These are assumed to be tab separated text files wherein the first field is a date in `ymmd` format or as specified by `date.format`, the second and third fields are actor codes, the fourth field is an event code, and the fifth field is a text label for the event type, and the sixth field is a quote - some kind of text from which the event code was inferred. Label and quote are optional and can be discarded when reading in.

**Value**

An event data set

**Author(s)**

Will Lowe
## scale_codes

*Show which events are scaleable*

### Description

Shows which events codes are covered by a scale

### Usage

```plaintext
scale_codes(es)
```

### Arguments

- `es` : Eventscale

### Details

Returns an array of event codes to which an eventscale assigns a value.

### Value

Array of scaleable event codes

### Author(s)

Will Lowe

## scale_coverage

*Check coverage of scale for event data*

### Description

Checks coverage of scale for event data

### Usage

```plaintext
scale_coverage(sc, edo)
```

### Arguments

- `sc` : An eventscale
- `edo` : Event data

### Details

Returns an array of event codes that occur in an event data set but are not assigned values by the scale. These are the codes that will, in subsequent processing, be assigned the scale’s default value.
score

Value

Array of unscaleable event codes

Author(s)

Will Lowe

---

| score   | Score event codes with an event scale |

Description

Gets scale scores for event codes

Usage

score(eventscale, codes)

Arguments

- eventscale: An event scale
- codes: Event codes

Details

Returns an array of scores corresponding to the second argument’s scale values or the scale’s default value if not recognized.

You should use this function to avoid relying on the internal structure of event scales. They are currently lists, but this may change.

Value

Numerical values for each event codes from the scale

Author(s)

Will Lowe
**scrub_keds**

*Remove well-known noise from KEDS event data file*

**Description**

Removes well-known noise from KEDS output files

**Usage**

```r
scrub_keds(edo)
```

**Arguments**

- `edo` An event data object

**Details**

This function applies the regular expression based cleaning routine from the KEDS website. This is a direct translation from the original PERL which replaces capital 'O's and small 'l's with 0 and 1 respectively and removes the event code '—]', on the assumption that these are all output noise.

**Value**

Event data

**Author(s)**

Will Lowe

**See Also**

- `read_keds`

---

**sources**

*List source actor codes*

**Description**

Lists source actor codes

**Usage**

```r
sources(edo)
```

**Arguments**

- `edo` Event data
spotter

Details
Lists all the actor codes that appear as a source in the event data in alphabetical order.

Value
Array of actor codes

Author(s)
Will Lowe

See Also
actors, targets, codes

Description
Hands back a function to spot the items it was given in (...)

Usage
spotter(...) 

Arguments
... The items for which the new function should return TRUE

Details
This is a convenience function for creates a function that returns true for exact matches to its arguments.

Value
A function

Author(s)
Will Lowe
**summary.eventdata**  
*Summarise event data*

**Description**

Summarises a set of event data

**Usage**

```r
## S3 method for class 'eventdata'
summary(object, ...)
```

**Arguments**

- `object` Event data object
- `...` Not used

**Details**

This is a compact summary of an event data object. For more detail consult the object itself. Currently it is simply a data.frame with conventionally named column names, but that almost certainly will change to deal with larger datasets in later package versions. If your code uses the package’s accessor functions then you won’t feel a thing when this happens.

**Value**

A short description of the event data

**Author(s)**

Will Lowe

**summary.eventscale**  
*Summarise an eventscale*

**Description**

Summarise an eventscale

**Usage**

```r
## S3 method for class 'eventscale'
summary(object, ...)
```
Arguments
  object Scale
  ... Not used

Details
  Print summary statistics for an eventscale.

Value
  Nothing, used for side effect

Author(s)
  Will Lowe

---

targets  Lists target actor codes

Description
  Lists target actor codes

Usage
  targets(edo)

Arguments
  edo Event data

Details
  Lists all the actor codes that appear as a target in the event data in alphabetical order.

Value
  Array of actor codes

Author(s)
  Will Lowe

See Also
  sources, actors, codes
weis.goldstein.scale  WEIS codes to Goldstein conflict-cooperation scale

Description

A mapping of WEIS event codes to [-10,10] representing a scale of conflict and cooperation, developed by Joshua Goldstein and slightly extended for the KEDS project. Note: This mapping does not cover all the event codes in balkans.weis. Taken from the KEDS Project’s documentation.

Author(s)

KEDS Project

References

http://web.ku.edu/~keds/
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