Package: trimr (via r-universe)

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Version 1.1.1.9000

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Title An Implementation of Common Response Time Trimming Methods

Description Provides various commonly-used response time trimming methods, including the recursive / moving-criterion methods reported by Van Selst and Jolicoeur (1994). By passing trimming functions raw data files, the package will return trimmed data ready for inferential testing.

Depends R (>= 4.0)

Imports stats, dplyr

License GPL-3

LazyData true

URL <https://cran.r-project.org/web/packages/trimr/index.html>, <https://github.com/JimGrange/trimr>

BugReports <https://github.com/JimGrange/trimr/issues>

Suggests knitr, rmarkdown

VignetteBuilder knitr

RoxygenNote 7.1.1

Repository https://jimgrange.r-universe.dev

RemoteUrl https://github.com/jimgrange/trimr

RemoteRef HEAD

RemoteSha f35e44dbe7868d5111a48c8a679b9cbcb04c541e

Contents

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absoluteRT   *Absolute RT trimming*

Description

absoluteRT takes a data frame of RT data and returns trimmed rt data that fall between set minimum
and maximum limits.

Usage

```
absoluteRT(
  data,
  minRT,
  maxRT,
  pptVar = "participant",
  condVar = "condition",
  rtVar = "rt",
  accVar = "accuracy",
  omitErrors = TRUE,
  returnType = "mean",
  digits = 3
)
```

Arguments

data	A data frame with columns containing: participant identification number ('pptVar'); condition identification, if applicable ('condVar'); response time data ('rtVar'); and accuracy ('accVar'). The RT can be in seconds (e.g., 0.654) or milliseconds (e.g., 654). Typically, "condition" will consist of strings. Accuracy must be coded as 1 for correct and 0 for error responses.
minRT	The lower criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds).
maxRT	The upper criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds).
pptVar	The quoted name of the column in the data that identifies participants.
condVar	The quoted name of the column in the data that includes the conditions.
rtVar	The quoted name of the column in the data containing reaction times.
accVar	The quoted name of the column in the data containing accuracy, coded as 0 or 1 for incorrect and correct trial, respectively.

omitErrors	If set to TRUE, error trials will be removed before conducting trimming procedure. Final data returned will not be influenced by errors in this case.
returnType	Request nature of returned data. "raw" returns trial- level data excluding trimmed data; "mean" returns mean response times per participant for each experimental condition identified; "median" returns median response times per participant for each experimental condition identified.
digits	How many decimal places to round to after trimming?

Details

By passing a data frame containing raw response time data, together with trimming criteria, the function will return trimmed data, either in the form of trial-level data or in the form of means/medians for each subject & condition.

Examples

```
# load the example data that ships with trimr
data(exampleData)

# perform the trimming, returning mean RT
trimmedData <- absoluteRT(data = exampleData, minRT = 150, maxRT = 2500,
returnType = "mean")
```

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exampleData	*Example response time data set*

Description

An example data set containing multiple participants' data for a response time study involving two experimental conditions. The data set also includes This is a synthetic data set and has no theoretical basis.

Usage

```
exampleData
```

Format

A data frame with 20518 rows and 4 variables:

participant participant identification number

condition the experimental condition (2 in this example)

rt response time, coded in milliseconds

accuracy accuracy of the response; 1 = correct, 0 = error

hybridRecursive	*hybridRecursive trimming procedure.*

Description

hybridRecursive takes a data frame of RT data and returns trimmed rt data. The returned value is the average returned from the nonRecursive and the modifiedRecursive procedures as described in van Selst & Jolicoeur (1994).

Usage

```
hybridRecursive(
  data,
  minRT,
  pptVar = "participant",
  condVar = "condition",
  rtVar = "rt",
  accVar = "accuracy",
  omitErrors = TRUE,
  digits = 3
)
```

Arguments

data	A data frame with columns containing: participant identification number ('pptVar'); condition identification, if applicable ('condVar'); response time data ('rtVar'); and accuracy ('accVar'). The RT can be in seconds (e.g., 0.654) or milliseconds (e.g., 654). Typically, "condition" will consist of strings. Accuracy must be coded as 1 for correct and 0 for error responses.
minRT	The lower criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds). All RTs below this value are removed before proceeding with SD trimming.
pptVar	The quoted name of the column in the data that identifies participants.
condVar	The quoted name of the column in the data that includes the conditions.
rtVar	The quoted name of the column in the data containing reaction times.
accVar	The quoted name of the column in the data containing accuracy, coded as 0 or 1 for incorrect and correct trial, respectively.
omitErrors	If set to TRUE, error trials will be removed before conducting trimming procedure. Final data returned will not be influenced by errors in this case.
digits	How many decimal places to round to after trimming?

References

Van Selst, M. & Jolicoeur, P. (1994). A solution to the effect of sample size on outlier elimination. *Quarterly Journal of Experimental Psychology, 47* (A), 631-650.

Examples

```
# load the example data that ships with trimr
data(exampleData)

# perform the trimming, returning mean RT
trimmedData <- hybridRecursive(data = exampleData, minRT = 150)
```

---

linearInterpolation   *SDs used for the recursive / moving criterion trimming methods*

Description

A data frame containing the SDs used for each sample size as trimming criterion for the nonRecursive function and the modifiedRecursive function

Usage

```
linearInterpolation
```

Format

A data frame with 97 rows and 3 columns:

sampleSize Sample size of the data set being passed

nonRecursive The standard deviation to use as the criterion for the nonRecursive function

modifiedRecursive The standard deviation to use as the criterion for the modifiedRecursive function

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modifiedRecursive   *modifiedRecursive trimming procedure.*

Description

modifiedRecursive takes a data frame of RT data and returns trimmed rt data that fall below a set standard deviation above the each participant's mean for each condition, with the criterion changing as more trials are removed, as described in van Selst & Jolicoeur (1994).

Usage

```
modifiedRecursive(
  data,
  minRT,
  pptVar = "participant",
  condVar = "condition",
  rtVar = "rt",
  accVar = "accuracy",
  omitErrors = TRUE,
  returnType = "mean",
  digits = 3
)
```

Arguments

data	A data frame with columns containing: participant identification number ('pptVar'); condition identification, if applicable ('condVar'); response time data ('rtVar'); and accuracy ('accVar'). The RT can be in seconds (e.g., 0.654) or milliseconds (e.g., 654). Typically, "condition" will consist of strings. Accuracy must be coded as 1 for correct and 0 for error responses.
minRT	The lower criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds). All RTs below this value are removed before proceeding with SD trimming.
pptVar	The quoted name of the column in the data that identifies participants.
condVar	The quoted name of the column in the data that includes the conditions.
rtVar	The quoted name of the column in the data containing reaction times.
accVar	The quoted name of the column in the data containing accuracy, coded as 0 or 1 for incorrect and correct trial, respectively.
omitErrors	If set to TRUE, error trials will be removed before conducting trimming procedure. Final data returned will not be influenced by errors in this case.
returnType	Request nature of returned data. "raw" returns trial- level data excluding trimmed data; "mean" returns mean response times per participant for each experimental condition identified; "median" returns median response times per participant for each experimental condition identified.
digits	How many decimal places to round to after trimming?

References

Van Selst, M. & Jolicoeur, P. (1994). A solution to the effect of sample size on outlier elimination. *Quarterly Journal of Experimental Psychology, 47* (A), 631-650.

Examples

```
# load the example data that ships with trimr
data(exampleData)
```

```
# perform the trimming, returning mean RT
trimmedData <- modifiedRecursive(data = exampleData, minRT = 150,
returnType = "mean")
```

---

nonRecursive   *nonRecursive trimming procedure.*

Description

nonRecursive takes a data frame of RT data and returns trimmed rt data that fall below a set standard deviation above the each participant's mean for each condition. The SD used for trimming is proportional to the number of trials in the data being passed, as described in van Selst & Jolicoeur (1994).

Usage

```
nonRecursive(
  data,
  minRT,
  pptVar = "participant",
  condVar = "condition",
  rtVar = "rt",
  accVar = "accuracy",
  omitErrors = TRUE,
  returnType = "mean",
  digits = 3
)
```

Arguments

data	A data frame with columns containing: participant identification number ('pptVar'); condition identification, if applicable ('condVar'); response time data ('rtVar'); and accuracy ('accVar'). The RT can be in seconds (e.g., 0.654) or milliseconds (e.g., 654). Typically, "condition" will consist of strings. Accuracy must be coded as 1 for correct and 0 for error responses.
minRT	The lower criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds). All RTs below this value are removed before proceeding with SD trimming.
pptVar	The quoted name of the column in the data that identifies participants.
condVar	The quoted name of the column in the data that includes the conditions.
rtVar	The quoted name of the column in the data containing reaction times.
accVar	The quoted name of the column in the data containing accuracy, coded as 0 or 1 for incorrect and correct trial, respectively.
omitErrors	If set to TRUE, error trials will be removed before conducting trimming procedure. Final data returned will not be influenced by errors in this case.

returnType	Request nature of returned data. "raw" returns trial- level data excluding trimmed data; "mean" returns mean response times per participant for each experimental condition identified; "median" returns median response times per participant for each experimental condition identified.
digits	How many decimal places to round to after trimming?

References

Van Selst, M. & Jolicoeur, P. (1994). A solution to the effect of sample size on outlier elimination. *Quarterly Journal of Experimental Psychology, 47* (A), 631-650.

Examples

```
# load the example data that ships with trimr
data(exampleData)

# perform the trimming, returning mean RT
trimmedData <- nonRecursive(data = exampleData, minRT = 150,
returnType = "mean")
```

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sdTrim   *RT trimming with standard deviation criterion*

Description

sdTrim takes a data frame of RT data and returns trimmed rt data that fall below a set set criterion (based on standard deviations above a particular mean). The criterion can be based on the mean of the whole set of data, based on the mean per experimental condition, based on the mean per participant, or based on the mean of each participant in each experimental condition.

Usage

```
sdTrim(
  data,
  minRT,
  sd,
  pptVar = "participant",
  condVar = "condition",
  rtVar = "rt",
  accVar = "accuracy",
  perCondition = TRUE,
  perParticipant = TRUE,
  omitErrors = TRUE,
  returnType = "mean",
  digits = 3
)
```

Arguments

data	A data frame with columns containing: participant identification number ('pptVar'); condition identification, if applicable ('condVar'); response time data ('rtVar'); and accuracy ('accVar'). The RT can be in seconds (e.g., 0.654) or milliseconds (e.g., 654). Typically, "condition" will consist of strings. Accuracy must be coded as 1 for correct and 0 for error responses.
minRT	The lower criteria for acceptable response time. Must be in the same form as rt column in data frame (e.g., in seconds OR milliseconds). All RTs below this value are removed before proceeding with SD trimming.
sd	The upper criteria for standard deviation cut-off.
pptVar	The quoted name of the column in the data that identifies participants.
condVar	The quoted name of the column in the data that includes the conditions.
rtVar	The quoted name of the column in the data containing reaction times.
accVar	The quoted name of the column in the data containing accuracy, coded as 0 or 1 for incorrect and correct trial, respectively.
perCondition	Set to TRUE if the user wishes the trimming to occur per condition of the experimental design.
perParticipant	Set to TRUE if the user wishes the trimming to occur per participant.
omitErrors	If set to TRUE, error trials will be removed before conducting trimming procedure. Final data returned will not be influenced by errors in this case.
returnType	Request nature of returned data. "raw" returns trial- level data excluding trimmed data; "mean" returns mean response times per participant for each experimental condition identified; "median" returns median response times per participant for each experimental condition identified.
digits	How many decimal places to round to after trimming?

Details

By passing a data frame containing raw response time data, together with trimming criteria, the function will return trimmed data, either in the form of trial-level data or in the form of means/medians for each subject & condition.

Examples

```
# load the example data that ships with trimr
data(exampleData)

# perform the trimming with SD trimming per condition, returning mean RT
trimmedData <- sdTrim(data = exampleData, minRT = 150, sd = 2.5,
perCondition = TRUE, perParticipant = FALSE, returnType = "mean")
```

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