Package ‘splithalf’

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Type Package
Title Calculate Task Split Half Reliability Estimates
Version 0.7.1
Maintainer Sam Parsons <sam.parsons@psy.ox.ac.uk>
Description Estimate the internal consistency of your tasks with a permutation based split-half reliability approach.
  Unofficial release name: "Kitten Mittens”.
Depends R (>= 3.3)
Imports tidy, dplyr, stats, Rcpp, robustbase, ggplot2, piny, grid, patchwork
LinkingTo Rcpp
Suggests knitr, rmarkdown, tools,
License GPL-3
Encoding UTF-8
LazyData true
RoxygenNote 7.0.2
URL http://github.com/sdparsons/splithalf
BugReports http://github.com/sdparsons/splithalf
NeedsCompilation yes
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multiverse.plot Visualising reliability multiverses

Description

The (unofficial) function version name is "This function will make you a master in bird law"

The (unofficial) function version name is "This function will get you up to here with it"

Usage

```r
multiverse.plot(
multiverse, 
title = "", 
vline = "none", 
heights = c(4, 5), 
SE = FALSE
)

threshold(multiverse, threshold, use = "estimate", dir = "above")
```

Arguments

- `multiverse`: multiverse object
- `title`: add a title to the plot?
- `vline`: add a vertical line to the plot, e.g. use .5 for the median reliability estimate
- `heights`: relative heights of plot panels, defaults to c(4,5)
- `SE`: set to true to also plot the standard errors of the scores
- `threshold`: threshold to look for
- `use`: set to check the reliability estimates, or the upper or lower CIs
- `dir`: look above or below the 'use' at the set threshold

Value

Returns a visualisation of a multiverse object

Examples

```r
## see online documentation for examples
```
Internal consistency of task measures via a permutation split-half reliability approach

Description

This function calculates split half reliability estimates via a permutation approach for a wide range of tasks. The (unofficial) version name is "This function gives me the power to fight like a crow"

Usage

```r
splithalf(
  data,
  outcome = "RT",
  score = "difference",
  conditionlist = FALSE,
  halftype = "random",
  permutations = 5000,
  var.RT = "latency",
  var.ACC = "accuracy",
  var.condition = FALSE,
  var.participant = "subject",
  var.trialnum = "trialnum",
  var.compare = "congruency",
  compare1 = "Congruent",
  compare2 = "Incongruent",
  average = "mean",
  plot = FALSE,
  round.to = 2
)
```

Arguments

data specifies the raw dataset to be processed
outcome indicates the type of data to be processed, e.g. response time or accuracy rates
score indicates how the outcome score is calculated, e.g. most commonly the difference score between two trial types. Can be "average", "difference", "difference_of_difference", and "DPrime"
conditionlist sets conditions/blocks to be processed
halftype specifies the split method; "oddeven", "halves", or "random"
permutations specifies the number of random splits to run - 5000 is good
var.RT specifies the RT variable name in data
var.ACC specifies the accuracy variable name in data
var.condition specifies the condition variable name in data - if not specified then splithalf will treat all trials as one condition
var.participant  specifies the subject variable name in data
var.trialnum  specifies the trial number variable
var.compare  specifies the variable that is used to calculate difference scores (e.g. including congruent and incongruent trials)
compare1  specifies the first trial type to be compared (e.g. congruent trials)
compare2  specifies the first trial type to be compared (e.g. incongruent trials)
average  use mean or median to calculate average scores?
plot  gives the option to visualise the estimates in a raincloud plot. defaults to FALSE
round.to  sets the number of decimals to round the estimates to defaults to 2

Value

Returns a data frame containing permutation based split-half reliability estimates
splithalf is the raw estimate of the bias index
spearmanbrown is the spearman-brown corrected estimate of the bias index
Warning: If there are missing data (e.g one condition data missing for one participant) output will include details of the missing data and return a dataframe containing the NA data. Warnings will be displayed in the console.

Examples

## see online documentation for examples

### splithalf.multiverse

Multiverse of data processing decisions on internal consistency reliability estimates.

Description

The (unofficial) function version name is “This function will let you get honey from a hornets nest”

Usage

splithalf.multiverse(input, specifications)

Arguments

input  splithalf object or list of splithalf objects
specifications  list of data processing specifications

Value

Returns a multiverse object containing the reliability estimates and dataframes from all data processing specifications provided
testretest.multiverse

Examples

```
## see online documentation for examples
```

testretest.multiverse  Multiverse of data processing decisions on test retest reliability estimates.

Description

The (unofficial) function version name is "This function will help you pay the troll toll"

Usage

```
testretest.multiverse(
  input,
  specifications,
  test = "ICC2",
  var.participant = "subject",
  var.ACC = "correct",
  var.RT = "RT"
)
```

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>input</td>
<td>list of two datasets</td>
</tr>
<tr>
<td>specifications</td>
<td>list of data processing specifications</td>
</tr>
<tr>
<td>test</td>
<td>correlation, ICC2, r ICC3</td>
</tr>
<tr>
<td>var.participant</td>
<td>= &quot;subject&quot;</td>
</tr>
<tr>
<td>var.ACC</td>
<td>= &quot;correct&quot;</td>
</tr>
<tr>
<td>var.RT</td>
<td>set to internal consistency or test-retest</td>
</tr>
</tbody>
</table>

Value

Returns a multiverse object containing the reliability estimates and dataframes from all data processing specifications provided

Examples

```
## see online documentation for examples
```
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