Experiment Pipeline for the Experiment on the Relationship Between the Illusion of Causality and the Foreign Language Effect

2025-03-16

Overview

This R code is used to extract variables from raw participant sheet data. Only these data will be analyzed ultimately.

Importing the File with Variables

First, we select the `ExperimentVariables.csv` file as the one we intend to use to guide the extraction of data. This file is available on the **OSF project webpage** (this webpage link is in read-only mode for peer review purposes) for this study.

```
#Choose "ExperimentVariables.csv"
# coordinate <- read.csv(file.choose())
```

Function to Extract Raw Data

This function extracts raw data to compose the final dataset to use. The commented-out code can be uncommented to specify the working directory (`setwd()`) containing the experiment raw data.

```
estrai_valori <- function(file_path) {
  dataset <- read.csv(file_path)

  risultati <- c()

  variabili <- coordinate[, 2]  # The column for the variables names

  righe <- coordinate[, 4]  # The rows to extract

  for (i in 1:length(variabili)) {
    var <- variabili[i]
    if (var %in% colnames(dataset)) {
      risultati <- c(risultati, dataset[righe[i], var])
    } else {
      risultati <- c(risultati, NA)
    }
  }

  return(risultati)
}

# setwd("your_directory_path")  # Uncomment to specify working directory
# file_paths <- list.files(getwd())  # Uncomment to list files in working directory
```

Extracting Raw Data to Create a Dataframe

We give an example with a few pilot data used to test the experiment:

```r
risultati <- lapply(file_paths, estrai_valori)

df_risultati <- do.call(rbind, risultati)

# Assign column names based on the coordinate file
colnames(df_risultati) <- coordinate[, 3]

df_risultati <- as.data.frame(df_risultati)

df_risultati
```

```
##         participant condition                 date t_consenso t_istruzioni
## 1 pilot_participant         1 2025-03-25_14h50.55.328      5.681       52.792
## 2 pilot_participant         2 2025-03-25_14h35.21.956     36.105      128.152
##    t_sam    intensita     valenza  t_task t_causalita causalita t_esperienza
## 1 19.673 0.506944444 0.497685185 186.832      17.393         0       12.631
## 2 24.608           0           1 186.325      19.234        50       26.036
##   esperienza trial_nn_e trial_ns_e trial_sn_e trial_ss_e  trial_nn_i trial_ns_i
## 1         50       <NA>       <NA>       <NA>       <NA>          22         21
## 2         90         22         21         12         11        <NA>       <NA>
##   trial_sn_i trial_ss_i   t_pf t_pf_cum_inizio t_pf_cum_fine pf eta     sesso
## 1         12         12  5.215         365.342       337.572  1  22 Maschio
## 2       <NA>       <NA> 16.859         477.569       440.143  5  45 Maschio
##   studi scolarita                          diploma_e
## 1    Sì         1 Sì, l'ho ottenuta negli ultimi due anni
## 2    No        35 Sì, l'ho ottenuta negli ultimi due anni
##                               punteggiodiploma    altrodiploma linguanativa_i
## 1                 Non ricordo la valutazione            <NA>           TRUE
## 2 La valutazione non è presente in questa lista Pilot text 1212          FALSE
##   linguanativa_e AOA_e AOA_i lett_e comp_e scri_e parl_e lett_i comp_i scri_i
## 1          FALSE    11  <NA>      3      4      5      6   <NA>   <NA>   <NA>
## 2          FALSE    11    11      1      2      3      4      5      6      7
##   parl_i estero inizioprovaing PI_1 PI_2 PI_3   PI_4   PI_5   PI_6 PI_7 PI_8
## 1   <NA>   TRUE        Conferma c1ok c2ok c3ok c4err2 c5err2 c6err2 c7err c8err
## 2      8   TRUE        Conferma c1ok c2ok c3ok   c4ok   c5ok   c6ok c7ok c8ok
##   PI_9  PI_10 PI_11 PI_12  PI_13  PI_14 PI_15   PI_16   PI_17   PI_18   PI_19
## 1 c9ok c10err2 c11ok c12ok c13err c14err2 c15ok c16err3 c17err3 c18err2 c19err2
## 2 c9ok   c10ok c11ok c12ok  c13ok c14err2 c15ok   c16ok   c17ok   c18ok c19err2
##    PI_20   PI_21   PI_22   PI_23 PI_24 PI_25 PI_26_controllo CI totaltime
## 1 c20err c21err3 c22err3 c23err2 c24err c25err           c26ok  1   458.321
## 2  c20ok   c21ok   c22ok   c23ok  c24ok  c25ok           c26ok  1   736.995
```