

GSS Poster Presentation

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Introduction

Interest and need

- Brief literature review - meta-analysis, systematic review, etc.
- Need in field (MindWare Technologies). See rplos folder for text query. Can `source()` script to bring in rplos info.
- Larger issue of the social science “replicability crisis.”

Logistical and methodological issues

- Possible errors and problems at every stage
- Image of data science pipeline/research workflow
- Inefficiency and disorganization (e.g., file structure; Excel)
- Misinterpretation of error-ridden psychophysiological measures

Computational reproducibility

- R ecosystem
- Rise of data science, open science, and open source software development (e.g., Unconferences)
- Tidyverse principles
- Our answer: **psyphr** - R package suite (currently supporting recent versions of MindWare Technologies workbooks)

Load Packages

```
# devtools::install_github("psyphr-dev/psyphr.read")
library(psyphr.read)
library(tidyverse)
library(readxl)
```

Example data

Would it be better to take snapshots of the file directory structure and even the Excel workbook? I am trying to think about the best way to show that these data are disorganized, messy, and in need of **psyphr** tools. I don't think it would be particularly useful to include all the code required to “wrangle” one Excel workbook.

```
readxl::read_xlsx("../data/Pilot1/Pilot_Sub1_ECG_Baseline.xlsx", sheet = 1) %>%
  tibble::glimpse()
```

```
## Observations: 23
## Variables: 11
## $ `Segment Number` <chr> "Start Event", "Start Time", "End Event", "En...
## $ `1` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `2` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `3` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `4` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `5` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `6` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `7` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `8` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `9` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
## $ `10` <chr> "M_Test_0_0.mwi:Acquisition PC:Keyboard:F1:Ba...
```

Create lists of file names

```
pilot1_files <- list.files("../data/Pilot1",
                           pattern = ".xlsx",
                           full.names = TRUE)

pilot1_files

## [1] "../data/Pilot1/Pilot_Sub1_BP_Baseline.xlsx"
## [2] "../data/Pilot1/Pilot_Sub1_ECG_Baseline.xlsx"
## [3] "../data/Pilot1/Pilot_Sub1_ECG_RLS.xlsx"
## [4] "../data/Pilot1/Pilot_Sub1_EDA_Baseline.xlsx"
## [5] "../data/Pilot1/Pilot_Sub1_EDA_RLS.xlsx"
## [6] "../data/Pilot1/Pilot_Sub1_ICG_Baseline.xlsx"
## [7] "../data/Pilot1/Pilot_Sub1_ICG_RLS.xlsx"

pilot2_files <- list.files("../data/Pilot2",
                           pattern = ".xlsx",
                           full.names = TRUE)

pilot2_files

## [1] "../data/Pilot2/Pilot_Sub2_BP_Baseline.xlsx"
## [2] "../data/Pilot2/Pilot_Sub2_BP_RLS.xlsx"
## [3] "../data/Pilot2/Pilot_Sub2_ECG_Baseline.xlsx"
## [4] "../data/Pilot2/Pilot_Sub2_ECG_RLS.xlsx"
## [5] "../data/Pilot2/Pilot_Sub2_EDA_Baseline.xlsx"
## [6] "../data/Pilot2/Pilot_Sub2_EDA_RLS.xlsx"
## [7] "../data/Pilot2/Pilot_Sub2_ICG_Baseline.xlsx"
## [8] "../data/Pilot2/Pilot_Sub2_ICG_RLS.xlsx"
```

Use `psyphr.read::MW()` to read data

```
pilot1_list <- purrr::map(pilot1_files, psyphr.read::MW)

pilot2_list <- purrr::map(pilot2_files, psyphr.read::MW)
```

Transform