Display items

```
library(tidyverse)
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.5
v forcats   1.0.0     v stringr   1.5.1
v ggplot2   3.5.0     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.1
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to becor
```

```
library(here)
```

```
here() starts at /Users/caoanjie/Desktop/projects/mb1-africa
```

```
library(papaja)
```

```
Loading required package: tinylabels
```

```
library(kableExtra)
```

```

Attaching package: 'kableExtra'

The following object is masked from 'package:dplyr':

    group_rows
```

1. Demographic data

```
final_demog <- read_csv(here("processed_data/cached_data/final_demog.csv"))
```

```
Rows: 6 Columns: 17
-- Column specification --------------------------------------------------------
Delimiter: ","
chr  (1): lab
dbl (16): tested_participant_n, mean_age, sd_age, Female, Male, gender_unkno...

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
final_demog %>%
  mutate_if(is.numeric, round, 2) %>%
  mutate(
    N = tested_participant_n,
    Age = paste0(mean_age, " (", sd_age, ")"),
    Sex = paste0("Female: ", Female, ";", "Male: ", Male, ";Unknown: ", gender_unknown),
    `Language Background` = paste0("Monolingual: ", monolingual, ";", "Bilingual: ", bilin
  ) %>%
  select(lab, N, Age, Sex, `Language Background`) %>% write_csv("temp.csv")
```

2. Main Figure

```
d <- read_csv(here("processed_data/joint_data.csv")) %>%
  filter(looking_time_s >= 2) %>%
  mutate(trial_num_centered = scale(trial_num, scale = FALSE)) %>%
  mutate(
    lab_clean = str_extract(lab, "(?<=-\\s).*")
  )
```

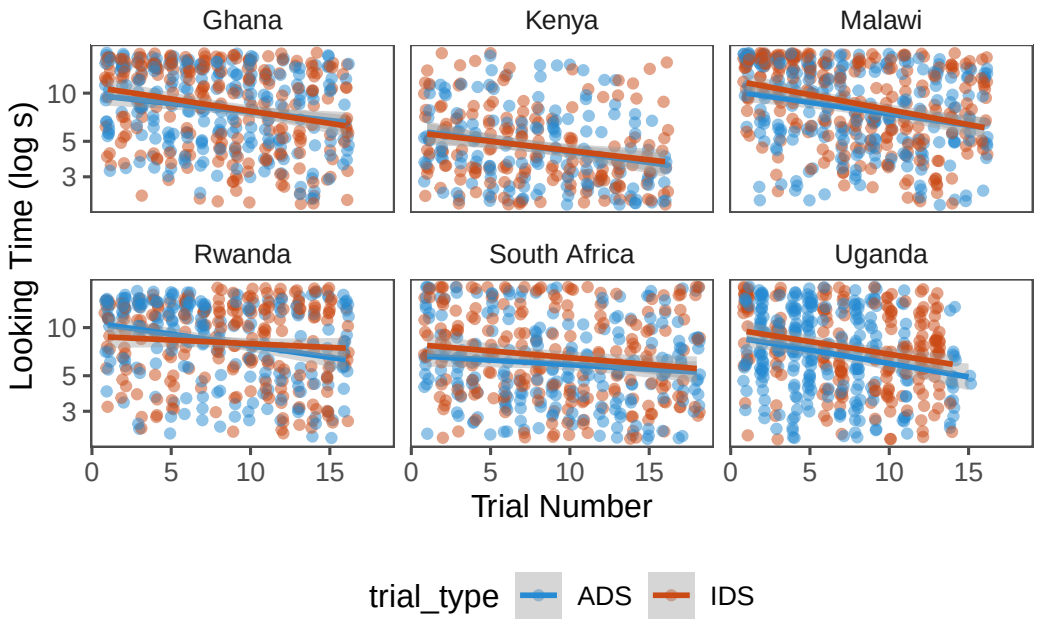
```
Rows: 2923 Columns: 22
-- Column specification --------------------------------------------------------
Delimiter: ","
chr (10): lab, subid, trial_type, stimulus, language_backgrond, gender, hear...
dbl (10): trial_num, looking_time_s, order, looking_time_diff, total_center,...
```

```
lgl  (2): preterm, days_preterm

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
ggplot(d,
       aes(x = trial_num, y = looking_time_s, col = trial_type)) +
  geom_jitter(width = .2, height = 0, alpha = .5) +
  scale_y_log10() +
  facet_wrap(~lab_clean) +
  geom_smooth(method = "lm") +
  ylab("Looking Time (log s)") +
  xlab("Trial Number") +
  theme(legend.title=element_blank())+
  ggthemes::theme_few() +
  ggthemes::scale_color_solarized() +
  theme(legend.position = "bottom")
```

```
`geom_smooth()` using formula = 'y ~ x'
```



3. Table

```
q1_model <- readRDS(here("processed_data/cached_data/q1_model.Rds"))
q1_df <- q1_model %>% broom.mixed::tidy(conf.int = TRUE) %>%
  mutate_if(is.numeric, round, 2) %>%
  filter(effect == "fixed") %>%
  select(term, estimate, std.error, statistic, p.value) %>%
  mutate(
    term = case_when(
      term == "trial_typeIDS" ~ "Trial Type",
      term == "trial_num_centered" ~ "Trial Number",
      term == "age_months_scaled" ~ "Age",
      term == "trial_typeIDS:trial_num_centered" ~ "Trial Type * Trial Number",
      term == "trial_num_centered:age_months_scaled" ~ "Trial Number * Age",
      term == "trial_typeIDS:age_months_scaled" ~ "Trial Type * Age",
      TRUE ~ term
    )
  ) %>%
  mutate(
    # estimate = case_when(
    #   estimate == 0.00 ~ "< .01",
    #   TRUE ~ as.character(estimate)
    # ),
    # std.error = case_when(
    #   std.error == 0.00 ~ "< .01",
    #   TRUE ~ as.character(estimate)
    # ),
    p.value = case_when(
      p.value == 0.00 ~ "< .01",
      TRUE ~ as.character(estimate)
    )
  ) %>%
  rename(
    Term = term,
    Estimate = estimate,
    SE = std.error,
    t = statistic,
    p = p.value
  )
```

```
Loading required package: lmerTest
```

```
Loading required package: lme4

Loading required package: Matrix


Attaching package: 'Matrix'

The following objects are masked from 'package:tidyr':

    expand, pack, unpack


Attaching package: 'lmerTest'

The following object is masked from 'package:lme4':

    lmer

The following object is masked from 'package:stats':

    step
```

```
q1_df %>%
  kable("latex", booktabs = TRUE,
        caption = "Regression coefficients with 95\\% CI",
        align = "lcccc") %>%
  kable_styling(latex_options = c("hold_position"),
                font_size = 11)
```

Table 1: Regression coefficients with 95% CI

Term	Estimate	SE	t	p
(Intercept)	1.89	0.09	21.34	$< .01$
Trial Type	0.06	0.02	2.76	0.06
Trial Number	-0.03	0.00	-9.72	$< .01$
Age	-0.09	0.03	-3.40	$< .01$
Trial Type * Trial Number	0.00	0.00	-0.22	0
Trial Number * Age	0.00	0.00	1.60	0
Trial Type * Age	0.02	0.02	0.94	0.02