main

July 10, 2021

1 Clustered dotplots

```
[1]: library(ggplot2)
     library(tidyverse)
```

```
── Attaching packages ──────────────────────── tidyverse
1.3.1 ──

 ✔ tibble  3.1.2      ✔ dplyr   1.0.7
 ✔ tidyr   1.1.3      ✔ stringr 1.4.0
 ✔ readr   1.4.0      ✔ forcats 0.5.1
 ✔ purrr   0.3.4

── Conflicts ──────────────────────────
tidyverse_conflicts() ──
 ✖ dplyr::filter() masks stats::filter()
 ✖ dplyr::lag()    masks stats::lag()
```
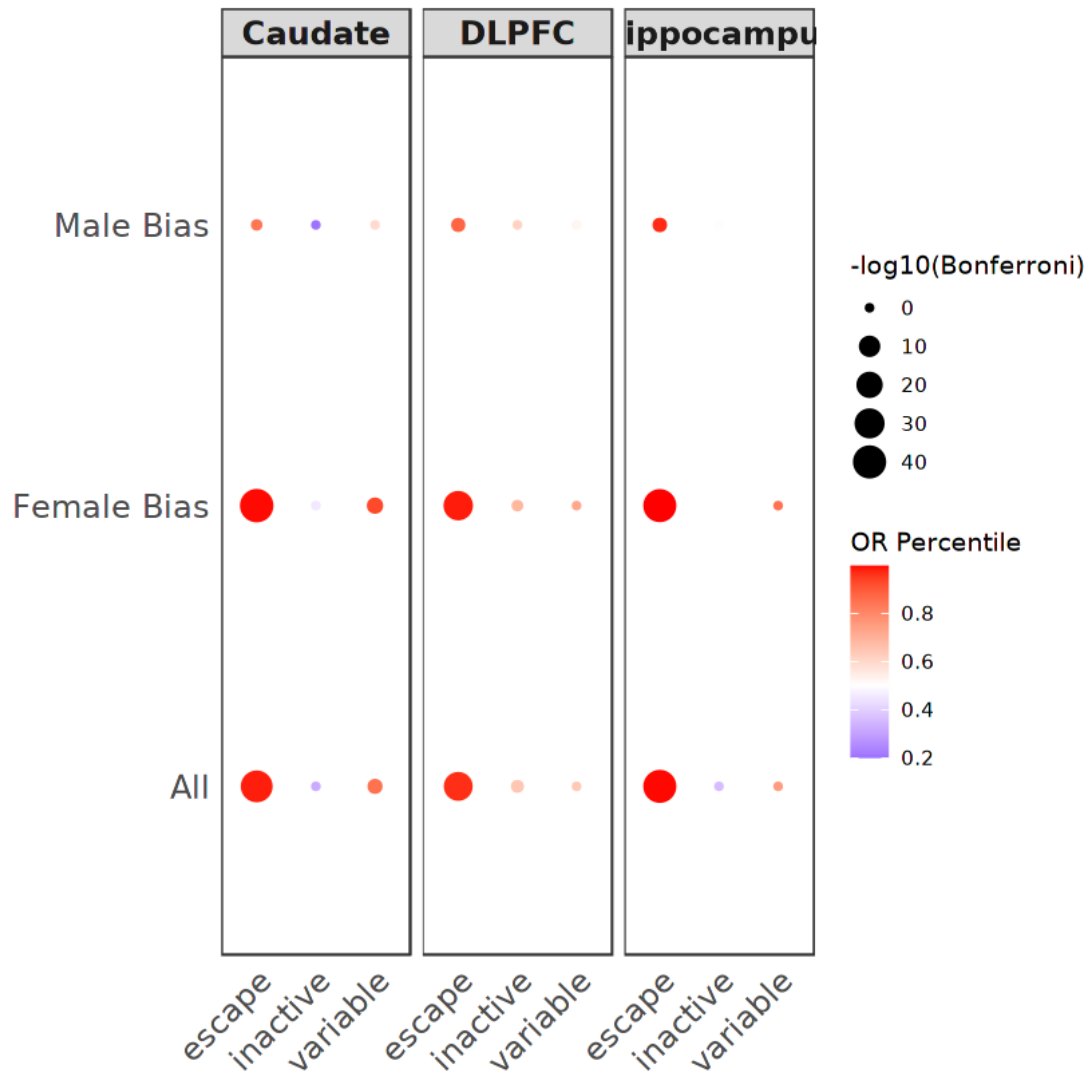
```
[2]: save_plot <- function(p, fn, w, h){
         for(ext in c(".pdf", ".png", ".svg")){
             ggsave(filename=paste0(fn,ext), plot=p, width=w, height=h)
         }
     }
```

1.1 Get data

```
[3]: xci <- data.table::fread("../../_m/xci_enrichment_analysis_3brainRegions.txt")
     xci %>% filter(Bonferroni < 0.05)
```

A data.table: 10 × 6

Tissue	XCI status	OR	PValue	Direction	Bonferroni
<chr>	<chr>	<dbl>	<dbl>	<chr>	<dbl>
Caudate	escape	52.541253	3.525156e-37	All	3.172640e-36
Caudate	variable	5.687289	1.018592e-03	All	9.167329e-03
Caudate	escape	136.346071	1.182377e-42	Female Bias	1.064139e-41
Caudate	variable	13.068562	8.613979e-05	Female Bias	7.752581e-04
DLPFC	escape	29.157326	2.319487e-28	All	2.087538e-27
DLPFC	escape	7.182445	3.797823e-03	Male Bias	3.418041e-02
DLPFC	escape	58.037037	6.541881e-30	Female Bias	5.887693e-29
Hippocampus	escape	148.678385	2.768297e-41	All	2.491467e-40
Hippocampus	escape	32.317784	2.362670e-03	Male Bias	2.126403e-02
Hippocampus	escape	256.447818	2.873171e-41	Female Bias	2.585853e-40

```
[4]: dotplot <- xci %>%
        mutate(`-log10(Bonferroni)` = -log10(Bonferroni), `OR Percentile` = OR /␣
     ↪(1+OR)) %>%
        filter(OR > 0) %>%
        ggplot(aes(x=`XCI status`, y=Direction, color=`OR Percentile`,
                   size=`-log10(Bonferroni)`)) +
        geom_point() + ylab('') + xlab('') + facet_grid(~Tissue) +
        scale_color_gradient2(midpoint = 0.5, low = "blue", mid = "white",
                          high = "red", space = "Lab" ) +
        theme_bw() +
        theme(axis.line  = element_blank(),
              axis.text.x = element_text(angle = 45, hjust=1),
              axis.text = element_text(size=14),
              axis.ticks = element_blank(),
              legend.position="right",
              panel.grid = element_blank(),
              strip.text=element_text(size=14, face="bold"))
    save_plot(dotplot, "dotplot_enrichment_xci", 9, 4)
    dotplot
```

1.2 Repreducibility Information

```
[5]: Sys.time()
     proc.time()
     options(width = 120)
     sessioninfo::session_info()
```

```
[1] "2021-07-10 09:47:34 EDT"

   user  system elapsed
  4.739   0.236   5.324

 Session info
 setting   value
```

```
version  R version 4.0.3 (2020-10-10)
os       Arch Linux
system   x86_64, linux-gnu
ui       X11
language (EN)
collate  en_US.UTF-8
ctype    en_US.UTF-8
tz       America/New_York
date     2021-07-10

 Packages
package     * version  date       lib source
assertthat    0.2.1    2019-03-21 [1] CRAN (R 4.0.2)
backports     1.2.1    2020-12-09 [1] CRAN (R 4.0.2)
base64enc     0.1-3    2015-07-28 [1] CRAN (R 4.0.2)
broom         0.7.8    2021-06-24 [1] CRAN (R 4.0.3)
Cairo         1.5-12.2 2020-07-07 [1] CRAN (R 4.0.2)
cellranger    1.1.0    2016-07-27 [1] CRAN (R 4.0.2)
cli           3.0.0    2021-06-30 [1] CRAN (R 4.0.3)
colorspace    2.0-2    2021-06-24 [1] CRAN (R 4.0.3)
crayon        1.4.1    2021-02-08 [1] CRAN (R 4.0.3)
data.table    1.14.0   2021-02-21 [1] CRAN (R 4.0.3)
DBI           1.1.1    2021-01-15 [1] CRAN (R 4.0.2)
dbplyr        2.1.1    2021-04-06 [1] CRAN (R 4.0.3)
digest        0.6.27   2020-10-24 [1] CRAN (R 4.0.2)
dplyr       * 1.0.7    2021-06-18 [1] CRAN (R 4.0.3)
ellipsis      0.3.2    2021-04-29 [1] CRAN (R 4.0.3)
evaluate      0.14     2019-05-28 [1] CRAN (R 4.0.2)
fansi         0.5.0    2021-05-25 [1] CRAN (R 4.0.3)
farver        2.1.0    2021-02-28 [1] CRAN (R 4.0.3)
forcats     * 0.5.1    2021-01-27 [1] CRAN (R 4.0.2)
fs            1.5.0    2020-07-31 [1] CRAN (R 4.0.2)
generics      0.1.0    2020-10-31 [1] CRAN (R 4.0.2)
ggplot2     * 3.3.5    2021-06-25 [1] CRAN (R 4.0.3)
glue          1.4.2    2020-08-27 [1] CRAN (R 4.0.2)
gtable        0.3.0    2019-03-25 [1] CRAN (R 4.0.2)
haven         2.4.1    2021-04-23 [1] CRAN (R 4.0.3)
hms           1.1.0    2021-05-17 [1] CRAN (R 4.0.3)
htmltools     0.5.1.1  2021-01-22 [1] CRAN (R 4.0.2)
httr          1.4.2    2020-07-20 [1] CRAN (R 4.0.2)
IRdisplay     1.0      2021-01-20 [1] CRAN (R 4.0.2)
IRkernel      1.2      2021-05-11 [1] CRAN (R 4.0.3)
jsonlite      1.7.2    2020-12-09 [1] CRAN (R 4.0.2)
labeling      0.4.2    2020-10-20 [1] CRAN (R 4.0.2)
lifecycle     1.0.0    2021-02-15 [1] CRAN (R 4.0.3)
lubridate     1.7.10   2021-02-26 [1] CRAN (R 4.0.3)
magrittr      2.0.1    2020-11-17 [1] CRAN (R 4.0.2)
modelr        0.1.8    2020-05-19 [1] CRAN (R 4.0.2)
```

```
munsell       0.5.0    2018-06-12 [1] CRAN (R 4.0.2)
pbdZMQ        0.3-5    2021-02-10 [1] CRAN (R 4.0.3)
pillar        1.6.1    2021-05-16 [1] CRAN (R 4.0.3)
pkgconfig     2.0.3    2019-09-22 [1] CRAN (R 4.0.2)
purrr       * 0.3.4    2020-04-17 [1] CRAN (R 4.0.2)
R6            2.5.0    2020-10-28 [1] CRAN (R 4.0.2)
Rcpp          1.0.7    2021-07-07 [1] CRAN (R 4.0.3)
readr       * 1.4.0    2020-10-05 [1] CRAN (R 4.0.2)
readxl        1.3.1    2019-03-13 [1] CRAN (R 4.0.2)
repr          1.1.3    2021-01-21 [1] CRAN (R 4.0.2)
reprex        2.0.0    2021-04-02 [1] CRAN (R 4.0.3)
rlang         0.4.11   2021-04-30 [1] CRAN (R 4.0.3)
rstudioapi    0.13     2020-11-12 [1] CRAN (R 4.0.2)
rvest         1.0.0    2021-03-09 [1] CRAN (R 4.0.3)
scales        1.1.1    2020-05-11 [1] CRAN (R 4.0.2)
sessioninfo   1.1.1    2018-11-05 [1] CRAN (R 4.0.2)
stringi       1.6.2    2021-05-17 [1] CRAN (R 4.0.3)
stringr     * 1.4.0    2019-02-10 [1] CRAN (R 4.0.2)
svglite       2.0.0    2021-02-20 [1] CRAN (R 4.0.3)
systemfonts   1.0.2    2021-05-11 [1] CRAN (R 4.0.3)
tibble      * 3.1.2    2021-05-16 [1] CRAN (R 4.0.3)
tidyr       * 1.1.3    2021-03-03 [1] CRAN (R 4.0.3)
tidyselect    1.1.1    2021-04-30 [1] CRAN (R 4.0.3)
tidyverse   * 1.3.1    2021-04-15 [1] CRAN (R 4.0.3)
utf8          1.2.1    2021-03-12 [1] CRAN (R 4.0.3)
uuid          0.1-4    2020-02-26 [1] CRAN (R 4.0.2)
vctrs         0.3.8    2021-04-29 [1] CRAN (R 4.0.3)
withr         2.4.2    2021-04-18 [1] CRAN (R 4.0.3)
xml2          1.3.2    2020-04-23 [1] CRAN (R 4.0.2)

[1] /home/jbenja13/R/x86_64-pc-linux-gnu-library/4.0
[2] /usr/lib/R/library
```

[ ]: