

main

October 13, 2021

1 Clustered dotplots

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

```
Attaching packages: tidyverse
1.3.1
```

```
tibble 3.1.4    dplyr  1.0.7
tidyr  1.1.4    stringr 1.4.0
readr  2.0.2    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

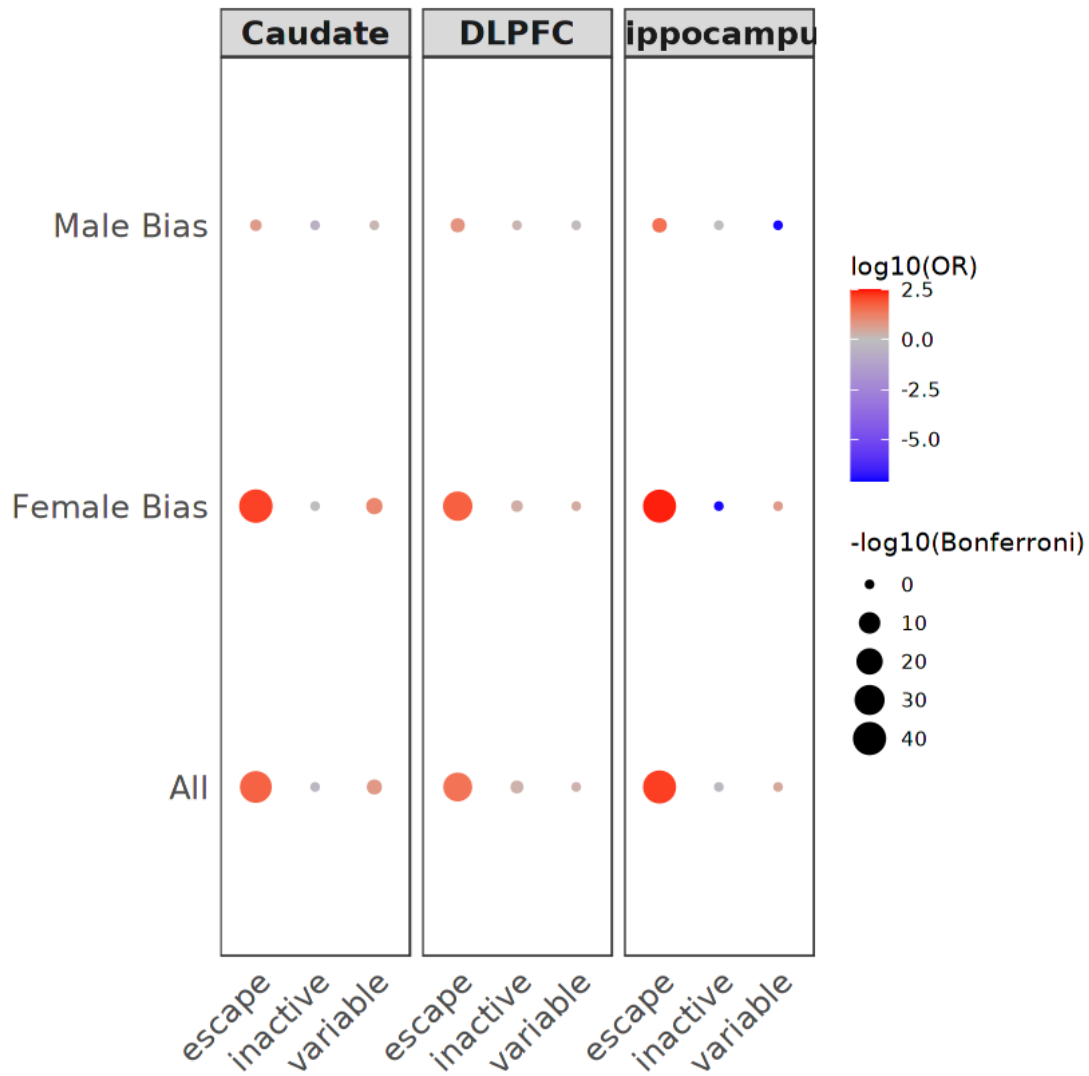
```
[3]: xci <- data.table::fread("../_m/xci_enrichment_analysis_3brainRegions.txt")
xci %>% filter(Bonferroni < 0.05)
```

	Tissue <chr>	XCI status <chr>	OR <dbl>	PValue <dbl>	Direction <chr>	Bonferroni <dbl>
A data.table: 10 × 6	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]: err = 0.0000001
df <- xci %>%
  mutate(`-log10(Bonferroni)` = -log10(Bonferroni),
    `OR Percentile` = OR / (1+OR),
    `log10(OR)` = log10(OR+err))
y1 <- max(df$`log10(OR)`)+0.1
y0 <- min(df$`log10(OR)`)-0.1

dotplot = df %>%
  #filter(OR != 0) %>%
  ggplot(aes(x=`XCI status`, y=Direction, color=`log10(OR)`,
    size=`-log10(Bonferroni)`)) +
  geom_point() + ylab('') + xlab('') + facet_grid(~Tissue) +
  scale_color_gradientn(colors=c("blue", "grey", "red"),
    values=scales::rescale(c(y0, 0, y1)),
    limits=c(y0, y1)) +

  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"))
dotplot
```



```
[5]: save_plot(dotplot, "dotplot_enrichment_xci", 9, 4)
```

1.2 Reproducibility Information

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

```
[1] "2021-10-13 12:30:11 EDT"
```

```
user system elapsed
5.306 0.254 7.540
```

```

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     2021-10-13

```

```

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         0.7.9    2021-07-27 [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           3.0.1    2021-07-17 [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    1.14.2   2021-09-27 [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        0.6.28   2021-09-23 [1] CRAN (R 4.0.3)
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)
fastmap       1.1.0    2021-01-25 [1] CRAN (R 4.0.2)
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         2.4.3    2021-08-04 [1] CRAN (R 4.0.3)
hms           1.1.1    2021-09-26 [1] CRAN (R 4.0.3)
htmltools     0.5.2    2021-08-25 [1] CRAN (R 4.0.3)
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     1.0.1    2021-09-24 [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	1.6.3	2021-09-26	[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	2.5.1	2021-08-19	[1]	CRAN	(R 4.0.3)
Rcpp	1.0.7	2021-07-07	[1]	CRAN	(R 4.0.3)
readr	* 2.0.2	2021-09-27	[1]	CRAN	(R 4.0.3)
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	2.0.1	2021-08-05	[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	1.0.1	2021-07-26	[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	1.7.4	2021-08-25	[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	* 3.1.4	2021-08-25	[1]	CRAN	(R 4.0.3)
tidyr	* 1.1.4	2021-09-27	[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)
tzdb	0.1.2	2021-07-20	[1]	CRAN	(R 4.0.3)
utf8	1.2.2	2021-07-24	[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