08_figure5_supp_chi_square
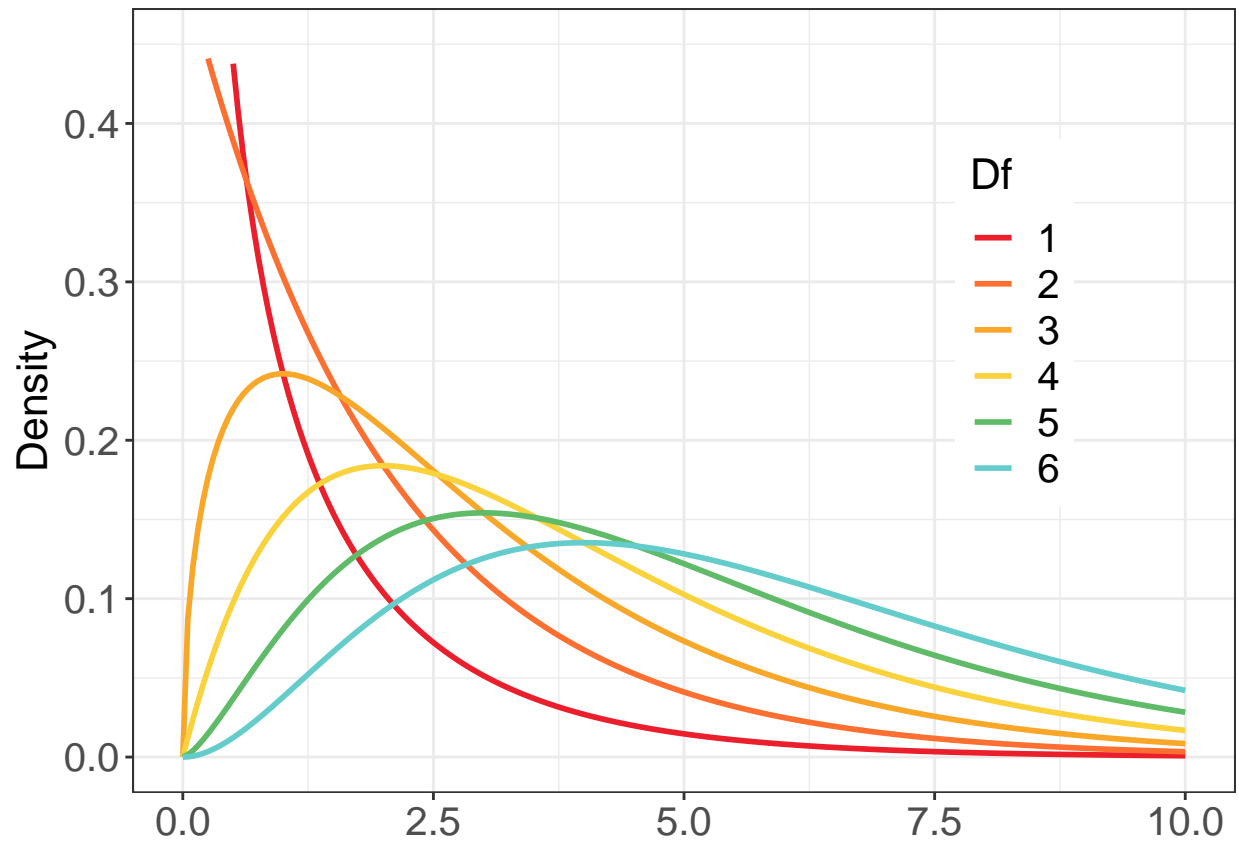
randy

2023-10-24

```r
x <- seq(0, 10, length.out = 200)
chi <- map_dfc(c(1, 2, 3, 4, 5, 6), ~dchisq(x, df = .)) %>%
  dplyr::select(`1` = 1, `2` = 2, `3` = 3, `4` = 4,
                `5` = 5, `6` = 6) %>%
  mutate(x = x)

chi2 <- chi %>%
  pivot_longer(-x,
               names_to = "df",
               values_to = "density") %>%
  mutate(df = factor(df, levels = c(1, 2, 3, 4, 5, 6))) %>%
  ggplot(aes(x, y = density, color = df)) +
  geom_line(linewidth = 1) +
  ylim(c(0, 0.45)) +
  labs(x = NULL,
       y = "Density",
       color = "Df") +
  theme_bw() +
  theme(axis.text.x = element_text(size = 15),
        axis.text.y = element_text(size = 15),
        axis.title.y = element_text(size = 16),
        legend.position = c(0.8, 0.6),
        legend.title = element_text(size = 16),
        legend.text = element_text(size = 15)) +
  ggthemes::scale_colour_tableau("Jewel Bright")
chi2
```

```
#> Warning: Removed 5 rows containing missing values (`geom_line()`).
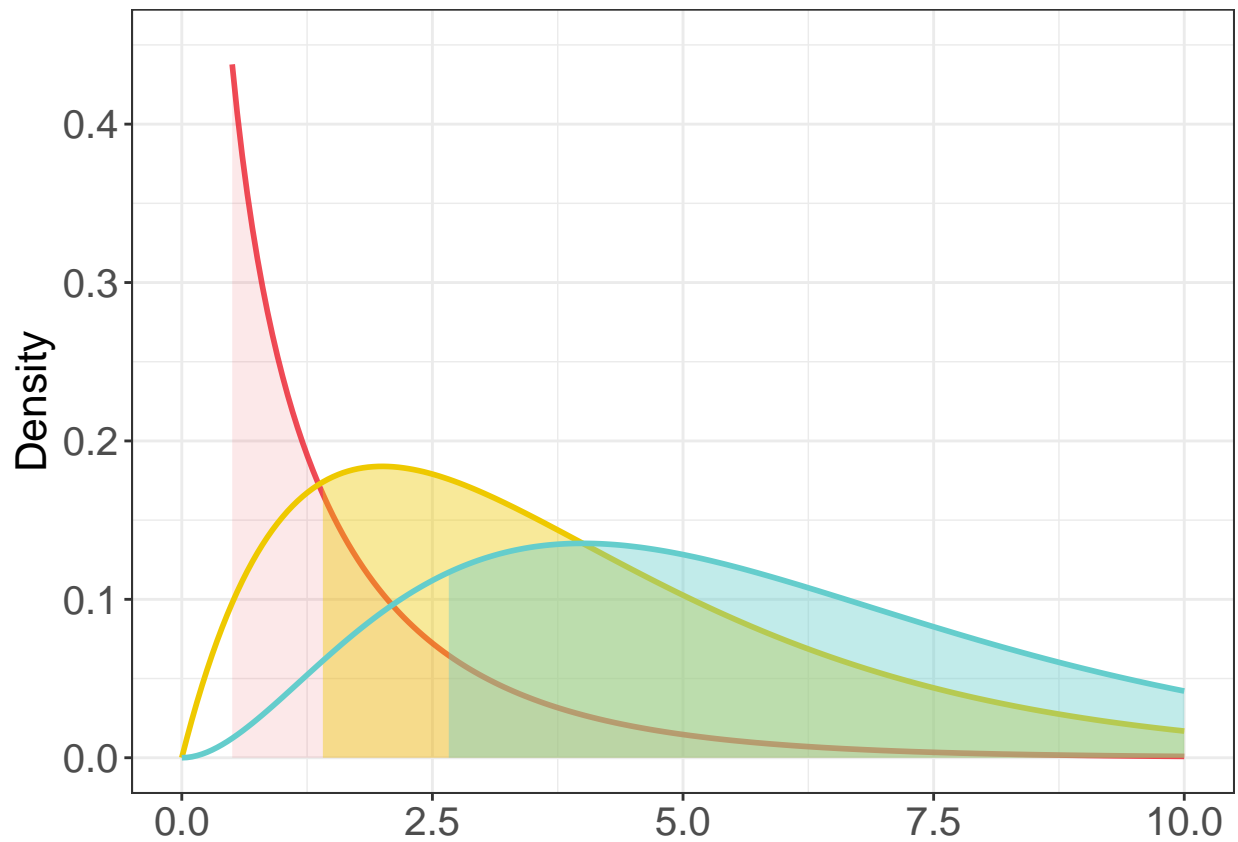```

```
chi1 <- chi %>%
  ggplot() +
  geom_line(aes(x, y = `1`),
            color = "#EB1e2c",
            alpha = 0.8,
            linewidth = 1) +
  geom_ribbon(data = chi[chi$x > qchisq(0.85, 1, lower.tail = F), ],
              aes(x, ymin = 0, ymax = `1`),
              alpha = 0.1,
              fill = "#EB1e2c") +
  geom_line(aes(x, y = `4`),
            color = "gold2",
            linewidth = 1) +
  geom_ribbon(data = chi[chi$x > qchisq(0.85, 4, lower.tail = F), ],
              aes(x, ymin = 0, ymax = `4`),
              alpha = 0.4,
              fill = "gold2") +
  geom_line(aes(x, y = `6`),
            color = "#64cdcc",
            linewidth = 1) +
  ylim(c(0, 0.45)) +
  geom_ribbon(data = chi[chi$x > qchisq(0.85, 6, lower.tail = F), ],
              aes(x, ymin = 0, ymax = `6`),
              alpha = 0.4,
              fill = "#64cdcc") +
```

```
    labs(x = NULL,
         y = "Density",
         color = "Df") +
  theme_bw() +
  theme(axis.text.x = element_text(size = 15),
        axis.text.y = element_text(size = 15),
        axis.title.y = element_text(size = 16),
        legend.position = c(0.9, 0.6),
        legend.title = element_text(size = 16),
        legend.text = element_text(size = 15))
chi1
```



```
library(ggpubr)
figure1 <- ggarrange(chi2, chi1,
                ncol = 2, nrow = 1)
```
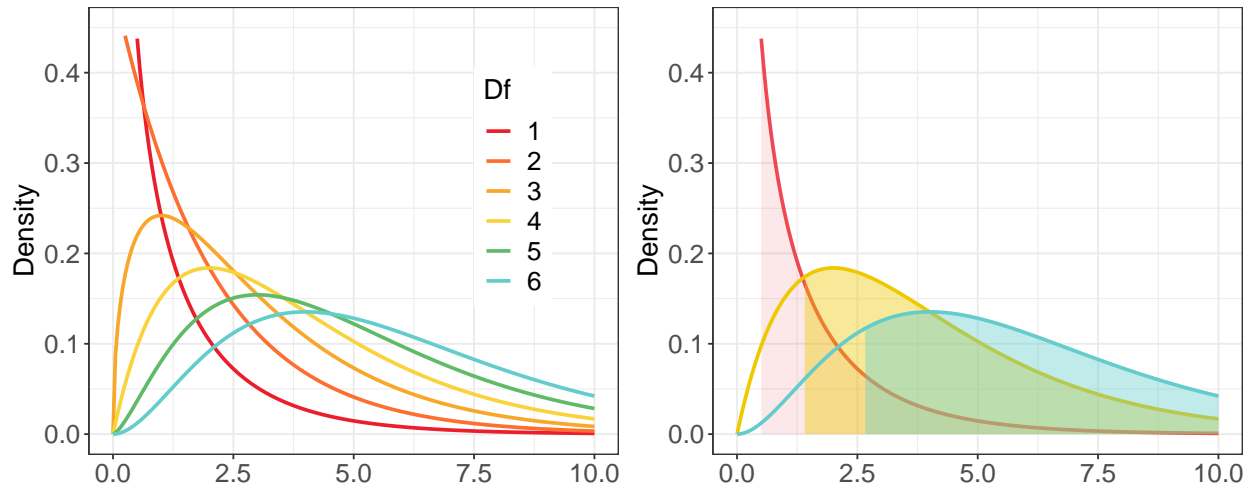
```
#> Warning: Removed 5 rows containing missing values ('geom_line()').
```

figure1


```
ggsave(paste0("figure/S08_supp_figure_chi_square", Sys.Date(), ".png"))
```

```
sessionInfo()
```

```
#> R version 4.2.2 (2022-10-31)
#> Platform: aarch64-apple-darwin20 (64-bit)
#> Running under: macOS 14.0
#>
#> Matrix products: default
#> BLAS:   /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib
#> LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib
#>
#> locale:
#> [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
#>
#> attached base packages:
#> [1] stats     graphics  grDevices utils     datasets  methods   base
#>
#> other attached packages:
#>  [1] ggpubr_0.6.0    flextable_0.9.2 gtsummary_1.7.1 lubridate_1.9.2
#>  [5] forcats_1.0.0   stringr_1.5.0   dplyr_1.1.2     purrr_1.0.1
#>  [9] readr_2.1.4     tidyr_1.3.0     tibble_3.2.1    ggplot2_3.4.3
#> [13] tidyverse_2.0.0 here_1.0.1
#>
#> loaded via a namespace (and not attached):
#>  [1] fontquiver_0.2.1       rprojroot_2.0.3        tools_4.2.2
#>  [4] backports_1.4.1        utf8_1.2.3             R6_2.5.1
#>  [7] colorspace_2.1-0       withr_2.5.0            tidyselect_1.2.0
#> [10] curl_5.0.1             compiler_4.2.2         textshaping_0.3.6
#> [13] cli_3.6.1              gt_0.9.0               xml2_1.3.5
#> [16] officer_0.6.2          fontBitstreamVera_0.1.1 labeling_0.4.2
#> [19] scales_1.2.1           askpass_1.1            systemfonts_1.0.4
#> [22] digest_0.6.33          rmarkdown_2.23         gfonts_0.2.0
#> [25] pkgconfig_2.0.3        htmltools_0.5.5        fastmap_1.1.1
```

```
#> [28] highr_0.10                rlang_1.1.1              ggthemes_4.2.4
#> [31] rstudioapi_0.15.0         httpcode_0.3.0           shiny_1.7.4.1
#> [34] farver_2.1.1              generics_0.1.3           jsonlite_1.8.7
#> [37] zip_2.3.0                 car_3.1-2                magrittr_2.0.3
#> [40] Rcpp_1.0.11               munsell_0.5.0            fansi_1.0.4
#> [43] abind_1.4-5               gdtools_0.3.3            lifecycle_1.0.3
#> [46] stringi_1.7.12            yaml_2.3.7               carData_3.0-5
#> [49] grid_4.2.2                promises_1.2.0.1         crayon_1.5.2
#> [52] cowplot_1.1.1             hms_1.1.3                knitr_1.43
#> [55] pillar_1.9.0              uuid_1.1-0               ggsignif_0.6.4
#> [58] crul_1.4.0                glue_1.6.2               freshr_1.0.2
#> [61] evaluate_0.21             fontLiberation_0.1.0     data.table_1.14.8
#> [64] broom.helpers_1.13.0      vctrs_0.6.3              tzdb_0.4.0
#> [67] httpuv_1.6.11             gtable_0.3.3             openssl_2.1.0
#> [70] xfun_0.39                 mime_0.12                xtable_1.8-4
#> [73] broom_1.0.5               rstatix_0.7.2            later_1.3.1
#> [76] ragg_1.2.5                timechange_0.2.0         ellipsis_0.3.2
```